527 CMR 1.00: MASSACHUSETTS COMPREHENSIVE FIRE SAFETY CODE

Section

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1.01: Title

527 CMR 1.00, as referred to as "this *Code*", shall be known as the Massachusetts Comprehensive Fire Safety Code.

1.02: Purpose

The purpose and the intent of 527 CMR 1.00 is to prescribe minimum requirements and controls to safeguard life, property, and public welfare from the hazards of fire and explosion created by the storage, handling or use of substances, materials or devices, or from conditions, or materials hazardous to life, property, and the public welfare as prescribed in M.G.L. chs. 22D and 148.

1.03: Scope

The scope of 527 CMR 1.00 includes, but is not limited to, the following in accordance with M.G.L. c. 22D and M.G.L c. 148 and as prescribed by M.G.L. c. 143, § 96:

(1) Rules and regulations for the keeping, storage, use, manufacture, sale, handling, and transportation or other disposition of the following:

(a) Gunpowder, dynamite, crude petroleum or any of its products, or explosive or flammable fluids or compounds, tablets, torpedoes or any explosives of a like nature, or;

(b) Any explosives, fireworks, firecrackers, or any substance having such properties that it may ignite, or generate flammable or explosive vapors or gases to a dangerous extent.

(2) Rules and regulations to prescribe the location, materials and construction of buildings to be used for any of the purposes provided in 527 CMR 1.03(1).

(3) Rules and regulations to prevent or remedy any condition in or about any building, structure or other premises, or any ship or vessel which may tend to become a fire hazard or to cause a fire.

(4) Rules and regulations to provide adequate safety requirements for the protection of the public in the event of a fire in or about any building, structure or other premises or any ship or vessel. Such rules shall require that any equipment, system or construction requirement relating to fire protection of persons or property within said building or structure, be installed in accordance with such applicable requirements as of the date of installation and shall be maintained in accordance with this *Code*.

(5) Rules and regulations to provide for the safe storage, use, handling and manufacturing of corrosive liquids, oxidizing materials, toxic materials or poisonous gases.

1.04: Adoption by Reference

527 CMR 1.00 adopts and incorporates, the provisions of (National Fire Protection Association) *NFPA 1 Fire Code* - 2021 edition as modified by 1.05.

1.05: Modifications to *NFPA 1 Fire Code* - 2021 Edition

NFPA 1 Fire Code - 2021 Edition is modified, on a Chapter by Chapter basis, as follows:

1.05: Modifications to NFPA Fire Code-2021 Edition

NFPA 1 Fire Code -2021 Edition is Modified on a Chapter-by-Chapter basis, as follows

Chapter 1 Administration. Chapter 1 is deleted in its entirety and replaced as follows:

1.1 General Considerations. This Code shall apply to both new and existing conditions. Unless the provisions of this *Code* specify that a requirement shall apply to existing occupancies, conditions or systems, an installation completed prior to the effective date of this *Code* shall be deemed in compliance if the installation was made in accordance with the applicable *Code* in effect at the time of the installation and was approved by the AHJ. Notwithstanding the provisions of Section 1.1, if any prior installation or condition exists which constitutes an imminent danger; the AHJ may require compliance with the provisions of this *Code*.

1.1.1 Massachusetts General Law and State Building Code. Applicable Massachusetts General Law and requirements of the 780 CMR: *State Building Code*, also referred herein as the Building Code, and specialized codes as referenced in Chapter 2 and defined in Chapter 3 shall be adhered to in the design and construction of buildings, structures, and equipment.

1.1.2 Construction Requirements for Buildings and Structures. Unless otherwise regulated by the provisions contained in 527 CMR 1.00:1.03, or as otherwise indicated by specific language, reference or context, any provision of 527 CMR 1.00 or any standard or code referenced in 527 CMR 1.00 relative to construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, removal or demolition of buildings or structures or any appurtenances connected or attached to such buildings or structures shall not be considered a requirement of this *Code*, but rather a reference to the applicable provisions of the *Building Code*. Such reference is for the convenience of the reader and shall be subject to the jurisdiction of the appropriate Building Official.

1.1.3 Requirements of Specialized Codes. Unless otherwise indicated by language, specific reference or context, any provisions of 527 CMR 1.00 or any standard or code referenced in 527 CMR 1.00 relative to the installation, alteration, replacement or repair of any equipment or system subject to the jurisdiction of a specialized code including, but not limited to: plumbing, electrical, sheet metal, or elevator, shall not be considered a requirement of this *Code*, but rather a reference to the applicable specialized code. Such reference is for the convenience of the reader and shall be subject to the jurisdiction of the appropriate specialized code official.

1.1.4 Continued Maintenance of Any Equipment, System, Construction Requirement, Specification or Method Relating to Fire Protection. Notwithstanding the provisions of Sections 1.1.2 or 1.1.3, any equipment, system, construction requirement, specification or method relating to fire protection of persons or property within a building, structure, or ship or vessel shall be properly maintained and shall continue to perform in accordance with the applicable requirements of the *Building Code* or applicable specialized code as of the date of such approved installation or construction.

1.2 Reserved

1.3 Application

1.3.1 Reserved

1.3.2* Referenced Standards.

1.3.2.1 Except as provided in *Sections 1.1.2 and 1.1.3*, all codes and standards referenced in 527 CMR 1.00 shall be considered as part of this *Code*.

1.3.2.3 Nothing herein shall diminish the authority of the AHJ to determine compliance with this *Code* for those activities or installations, as may be otherwise granted under the authority of the provisions of M.G.L. chs. 22D, 48, 148, 148A, and other applicable provisions of Massachusetts General Law.

1.3.3 Conflicts.

1.3.3.1 When a requirement differs between this *Code* and a referenced document, the requirement of this *Code* shall apply.

1.3.3.2 When a conflict between a general requirement and a specific requirement occurs, the specific requirement shall apply.

1.3.3.3 When the requirements of this *Code* conflict with any other applicable regulation, or ordinance, the provisions which establish the higher standard for the promotion and protection of safety and welfare shall prevail.

1.04: continued

1.3.4 Reserved

1.3.5 Vehicles and Marine Vessels. Vehicles and marine vessels, or other similar conveyances, when in fixed locations and occupied as buildings, as described by *Section 11.6* of NFPA 101: *Life Safety Code*, shall be treated as buildings and comply with this *Code*.

1.3.6 Buildings and Structures.

1.3.6.1 Buildings, structures, additions, and alterations permitted for construction after the adoption of this *Code* shall comply with the provisions stated herein for new buildings.

1.3.6.2 * Except as provided in *Section 10.3.2*, buildings in existence or permitted for construction prior to the adoption of this *Code* shall comply with the provisions stated herein or referenced for existing buildings.

1.3.6.3 Repairs renovations, alterations, reconstruction, change of occupancy, and additions to buildings shall conform to this *Code*, and the *Building Code* and applicable specialized codes as authorized by M.G.L. c. 143, § 96.

1.3.6.4 Newly introduced equipment, materials, processes, and operations regulated by this *Code* shall comply with the requirements for this *Code*.

1.3.7 Severability. If any provision of this *Code* or the application thereof to any person or circumstance is held invalid, the remainder of the *Code* and the application of such provision to other persons or circumstances shall not be affected thereby.

1.4 Equivalencies, Alternatives, and Modifications. The provisions of this *Code* shall not prevent the use of equivalencies, alternatives, or modifications unless specifically prohibited herein.

1.4.1 Equivalencies. Nothing in this *Code* is intended to prevent the use of systems, methods, or devices of equivalent or superior quality, strength, fire resistance, effectiveness, durability, and safety to those prescribed by this *Code*, provided technical documentation is submitted to the AHJ in writing to demonstrate equivalency and the system, method, or device is approved for the intended purpose.

1.4.2 Alternatives. The specific requirements of this *Code* shall be permitted to be altered by the AHJ upon application in writing to allow alternative methods that will secure equivalent fire safety, but in no case shall the alternative afford less fire safety, in the judgment of the AHJ, which would be provided by compliance with the provisions contained in this *Code*.

1.4.3 Modifications. The AHJ is authorized to modify any of the provisions of this *Code* upon application in writing by the owner, a lessee, or a duly authorized representative where there are practical difficulties in the way of carrying out the provisions of this *Code*, provided that the intent of the *Building Code* or specialty code is complied with and public safety is secured.

1.4.4 Buildings with equivalency, alternatives, or modifications approved by the AHJ shall be considered as conforming with this *Code*.

1.4.5 Each application for an alternative system, method, or device regulated by this *Code* shall be filed with the AHJ in writing and shall be accompanied by such evidence, letters, statements, results of tests, or other supporting information as required to justify the request. The AHJ shall keep a record of actions on such applications together with the information that supported the action in accordance with *Section 1.11*, and a signed copy of the AHJ's decision shall be provided to the applicant.

1.4.6 Approval. Where allowed by this *Code*, the AHJ shall approve such alternative, systems, materials, or methods of design when it is substantiated that the standards of this *Code* are at least equaled. If, in the opinion of the AHJ, the standards of this *Code* shall not be equaled by the alternative requested, approval for permanent work shall be refused. Consideration shall be given to test or prototype installations.

1.4.7 Tests.

1.04: continued

1.4.7.1 Whenever evidence of compliance with the requirements of this *Code* is insufficient or evidence that any material or method does not conform to the requirements of this *Code* or to substantiate claims for alternative, equivalent or modifications to systems, materials, or methods, the AHJ shall be permitted to require tests for proof of compliance to be made at the expense of the owner or his or her agent.

1.4.7.2 Test methods shall be as specified by this *Code* for the material in question. If appropriate test methods are not specified in this *Code*, the AHJ is authorized to accept an applicable test procedure from another recognized source.

1.4.7.3 Copies of the results of all such tests shall be retained in accordance with *Section 1.11*.

1.5 Units.

1.5.1 International System of Units. Metric units of measurement in this *Code* are in accordance with the modernized metric system, known as the International System of Units (SI).

1.5.2 Primary and Equivalent Values. If a value for a measurement as given in this Code is followed by an equivalent value in other units, the first stated value shall be regarded as the requirement. A given equivalent value could be approximate.

1.6 Enforcement. This *Code* shall be administered and enforced by the AHJ.

1.7 Authority.

1.7.1 Administration. The provisions of this *Code* shall apply without restriction, unless specifically exempted.

1.72 Reserved

1.7.3 Interpretations.

1.7.3.1 Upon a written request of any interested person the Board of Fire Prevention Regulations may render written advisory rulings and interpretations of this *Code*, pursuant to the provisions of M.G.L. c. 30A, § 8.

1.7.4 Enforcement Assistance. Police and other enforcement agencies shall have authority to render necessary assistance in the enforcement of this *Code* when requested to do so by the AHJ.

1.7.5 Delegation of Authority. The AHJ may delegate to other qualified individuals such powers as necessary for the administration and enforcement of this *Code* as provided in M.G.L. c. 148.

1.76 Reserved

1.7.7 Inspections.

1.7.7.1 To the full extent allowed by the provisions of M.G.L. c. 148, the AHJ shall be authorized to inspect, at all reasonable times, any building or premises for dangerous or hazardous conditions or materials in order to determine compliance with this *Code*.

1.7.7.1.1 Coordinated Inspections. In circumstances involving compliance with two or more Massachusetts codes including, but not limited to, the *Building Code*, *Uniform State Plumbing Code*, *Massachusetts Electrical Code (Amendments)*, *Elevator Code* and *Sheet Metal Code*, the AHJ, while enforcing this *Code* shall, to the extent as reasonably practicable, coordinate inspections so that owners and occupants of a building or structure shall not be subjected to visits by numerous inspectors nor multiple or conflicting orders.

1.7.7.1.2 Notification to Other Officials. Whenever the AHJ observes an apparent or actual violation of some provision of law, ordinance, code, or bylaw not within the AHJ's authority, the AHJ shall report the findings to the appropriate code official having jurisdiction to enforce said law, ordinance, code, or bylaw.

1.7.7.2 The AHJ shall have authority to order, in writing, any person(s) to remove or remedy any dangerous or hazardous condition or material as provided in M.G.L. c. 148 and this *Code*.

1.04: continued

1.7.7.3 The AHJ engaged in fire prevention and inspection work shall be authorized at all reasonable times to enter and examine any building, structure, marine vessel, vehicle, or premises for the purpose of making fire safety inspections, to the full extent allowed by the provisions of M.G.L. c. 148 and this *Code*.

1.7.7.4 Before entering, the AHJ shall obtain the consent of the occupant thereof or obtain a proper warrant authorizing entry for the purpose of inspection, except where an emergency exists, or as otherwise permitted by law.

1.7.7.4.1 The applicant for any permit, certificate, or license issued pursuant to the provisions of this *Code* or M.G.L. c. 148, or any person who seeks to renew or continue to hold such permit, certificate or license, shall be deemed to have consented to the inspection, at any reasonable hour, of any documents, premises, structure, marine vessel, building or vehicle reasonably associated with said permit, license, or certificate, or application or renewal thereof, in order to confirm compliance with the requirements of this *Code*, M.G.L. c. 148 or other related law or regulation related to such permit, license, or certificate.

1.7.7.5 As used in Section *1.7.7.4*, emergency shall mean conditions or circumstances that the AHJ knows, or has reason to believe, exist and that can constitute imminent danger.

1.7.8 Imminent Danger Conditions. Where conditions exist and are deemed to be an imminent danger by the AHJ, the AHJ shall have the authority to immediately abate or require immediate abatement of such conditions.

1.7.9 Interference with Enforcement. No person shall interfere or cause conditions that would interfere with an AHJ carrying out any duties or functions prescribed by this *Code*.

1.7.10 Impersonation. Persons shall not use a badge, uniform, or other credentials to impersonate the AHJ.

1.7.11 Reserved

1.7.12 Plans and Specifications.

1.7.12.1 The AHJ shall have the authority to require plans and specifications to ensure compliance with this *Code* and M.G.L. c. 148. Construction documents and shop drawings submitted shall be acted upon before work commences and within 30 days of the date of receipt of a completed application and construction documents unless extended by the AHJ.

1.7.13 Inspection of Construction and Installation.

1.7.13.1 The AHJ shall be notified by the person performing the work when the installation is ready for a required inspection.

1.7.13.2 Whenever any installation subject to inspection prior to use is covered or concealed without having first been inspected, the AHJ shall have the authority to require that such work be exposed for inspection.

1.7.13.3 When any construction or installation work is being performed in violation of the plans and specifications as approved by the AHJ, a written notice shall be issued to the responsible party to stop work on that portion of the work that is in violation.

1.7.13.4 The notice of violation shall identify the violation together with the Section of this *Code* in violation.

1.7.13.5 The AHJ may issue a stop work order at which time the work shall not continue until the violation has been corrected.

1.7.13.5.1 A stop work order, if issued, shall be incorporated with the notice of violation.

1.7.14 Certificate of Occupancy. When the Building *Code* requires a certificate of occupancy, the certificate of occupancy shall be issued in accordance with the Building *Code*.

1.04: continued

1.7.15 Stop Work Order. AHJ shall have the authority to order an operation, construction, or use stopped when any of the following conditions exist:

(1) Work is being done contrary to provisions of this *Code*.

(2) Work is occurring without a permit required by *Section 1.12*.

(3) An imminent danger is present.

1.7.16 Imminent Dangers and Evacuation.

1.7.16.1 Whenever the maintenance, operation, or use of any land, building, structure, material or other object, or any part thereof, including vehicles used in the transport of hazardous materials, constitutes an imminent danger or a fire or explosion hazard which is dangerous or unsafe, or a menace to the public safety (including, but not limited to, fires, explosions, hazardous material incidents, motor vehicle accidents, structural collapses, mass casualty incidents and emergency extrication incidents) and the action to be taken to eliminate such dangerous or unsafe condition which create, or tend to create, the same is not specifically provided for in this *Code*, and unless otherwise prohibited by law, ordinance, by-law, or regulation, the AHJ is hereby authorized and empowered to take such action as may be necessary to abate such dangerous or unsafe conditions.

1.7.17 Public Fire Education.

1.7.17.1 The AHJ shall have the authority to develop and implement a public fire safety education program as deemed necessary for the general welfare with respect to the potential fire hazards within the jurisdiction.

1.7.17.2 The AHJ shall have the authority to ensure duly authorized public fire safety education programs or public fire safety messages are disseminated to the general public.

1.8 Reserved

1.9 Reserved

1.10 Fire Prevention Regulations Appeals Board.

1.10.1 Establishment and Membership of the Fire Prevention Regulations Appeals Board.

(1) Pursuant to the provisions of M.G.L. c. 22D, § 5, there shall be a Fire Prevention Regulations Appeals Board.

(2) The Appeals Board shall consist of the 16 members of the Board of Fire Prevention Regulations, established under M.G.L c. 22D, § 4.

(3) The Chairman of the Board of Fire Prevention Regulations shall serve as the chairman of the Appeals Board.

1.10.1.1 Authority of the Fire Prevention Regulations Appeals Board. The Fire Prevention Regulations Appeals Board is authorized to conduct appeals pursuant to the provisions of M.G.L. c. 22D, § 5.

(1) Whoever is aggrieved by any act, rule, order, directive, decision, or requirement of the AHJ charged with the enforcement of this *Code*, relative to the fire protection requirements for buildings or structures, may submit an application for an appeal to the Appeals Board within 45 days following the service of notice of such act, rule, order, decision, requirement, or directive.

1.10.1.2 Matters not within the Jurisdiction of the Appeals Board. The Fire Prevention Regulations Appeals Board does not have jurisdiction to hear appeals relating to the following matters:

(1) Matters arising out of construction or installation requirements of the *Building Code*, (Building Code Appeals Board, M.G.L. c. 143, § 100);

(2) Matters arising out of the enforcement of the statutory enhanced automatic sprinkler provisions of M.G.L. c. 148, § 26A½, 26G, 26G½, or 26H (Automatic Sprinkler Appeals Board, M.G.L. c. 6, § 201);

(3) Matters arising out of an appeal of a determination of the municipal wiring inspector and/or involving the application of *Massachusetts Electrical Code (Amendments)*, (Board of Electrician's Appeal, M.G.L. c. 143, § 3P);

(4) Matters arising out the issuance of a "Non-Criminal Fire Code Violation Notice" issued under the civil enforcement provisions of M.G.L. c. 148A;

1.04: continued

(5) Matters arising out of the enforcement of a violation of any statute, including the provisions of M.G.L. c. 148 or arising out of any Order issued by the Head of the Fire Department or the State Fire Marshal relating to the abatement of a condition that constitutes a fire or explosion hazard or which is dangerous or unsafe or a menace to public safety (M.G.L. c. 148, § 5);
(6) Administrative matters initiated by the State Fire Marshal relating to the suspension, revocation or refusal to issue any certificate of competency or user's certificate issued by the State Fire Marshal;
(7) Matters arising out of the AHJ's determination to suspend, revoke, issue or renew any permit based upon the exercise of discretionary function rather than a technical fire protection requirement of this *Code*; and
(8) Matters arising out of the enforcement of a city ordinance or town by-law or regulation promulgated or adopted by the municipality.

1.10.1.3 Means of Appeal. Application for an appeal shall be made, within 45 days following the service of notice of such act, rule, order, decision, requirement, or directive which is the subject of the appeal on forms prescribed or approved by the Fire Prevention Regulations Appeals Board.

1.10.1.3.1 Such application shall be accompanied by the required fee and include copies of all records, references, reports, and other information related to the appeal.

1.10.1.3.2 An appeal shall stay all proceedings in the furtherance of the action or failure to act which is the subject of the appeal, unless the AHJ presents evidence that a stay would cause imminent peril of life or property.

1.10.1.4 Appeals Board Hearings. The Chairman of the Appeals Board shall designate three members of the Appeals Board to hold public hearings, hear testimony and take evidence.

1.10.1.4.1 The Appeals Board shall not be bound by the strict rules of evidence prevailing in courts of law or equity.

1.10.1.4.2 The chairman shall fix the time and place for hearings and a hearing shall take place not later than 60 days following the filing of an appeal unless such time is extended by agreement with the appellant.

1.10.1.4.3 The chairman shall give at least ten days' notice of the time and place of the hearing to all interested parties. Any party may appear in person, by agent or by attorney at the hearing.

1.10.1.5 Appeals Board Decisions. The three members of the Appeals Board conducting the hearing shall decide the appeal and issue a written decision. Every decision shall require the concurrence of at least two of the three members and the written decision shall state findings of fact, conclusions, and reasons for the decision and indicate the vote of each member participating in the decision.

1.10.1.5.1 The Appeals Board shall issue a decision or order reversing, affirming, or modifying, in whole or in part, such interpretation, order, or decision, or a postponement of the application thereof, within 45 days following the hearing, unless such time is extended by agreement with the appellant.

1.10.1.5.2 The Appeals Board may grant a variance from any provision of this *Code* and related rules and regulations in any particular case determine the suitability of alternate materials or methods of compliance and provide reasonable interpretations of this *Code* consistent with the purpose thereof.

1.10.1.6 Record of Appeals Board Decisions. A record of all Appeals Board decisions and of votes thereunder, properly indexed, shall be maintained in the office of the Department of Fire Services in accordance with *Section 1.11*.

1.04: continued

1.11 Records and Reports

1.11.1 A record of examinations, approvals, disapprovals, equivalencies, modifications and alternatives shall be maintained by the AHJ and shall be available for public inspection in accordance with provisions of the applicable Massachusetts Public Records Laws.

1.11.2 In accordance with the provisions of the applicable Massachusetts Public Records Laws, the AHJ shall keep records of fire prevention inspections and investigations, including the date of inspections and a summary of violations found to exist, the date of the services of notices, and a record of the final disposition of all violations, in accordance with the applicable records retention schedule.

1.11.3 Emergency Response Records.

1.11.3.1 Reserved

1.11.3.2 The fire department shall report all incident data collected in accordance with the applicable provisions of Massachusetts General Law.

1.11.4 All records shall be retained in accordance with the manner and duration required by the Massachusetts Public Records Law.

1.12 Permits and Permit Approvals.

1.12.1 An application for permit shall be made in writing on a form acceptable by the State Fire Marshal and submitted to the applicable enforcement AHJ. Such application shall be legible and completed in its entirety.

1.12.1.2 The AHJ shall be authorized to issue permits and approvals as required by this *Code*.

1.12.1.3 Persons named in the permit shall comply with this *Code*.

1.12.2 Applications for permits shall be accompanied by such data as required by the AHJ and such fees as required by Massachusetts General Laws.

1.12.2.1 The AHJ shall review all applications submitted and issue permits as required.

1.12.2.2 If an application for a permit is rejected by the AHJ, a written notification shall be sent to the applicant as to the reasons for such rejection.

1.12.2.3 Permits for activities requiring evidence of financial responsibility by the jurisdiction shall not be issued unless proof of any required financial responsibility is furnished.

1.12.3 Conditions of Approval.

1.12.3.1 Any conditions of the approval by the AHJ of a permit shall remain with said permit, unless modified by the AHJ.

1.12.3.2 The AHJ shall be permitted to require conditions of approval to be memorialized via recording on the permit or, if relating to land or buildings, at the appropriate registry of deeds.

1.12.4 Approvals by Other Authorities.

1.12.4.1 The AHJ shall have the authority to require evidence to show that other regulatory agencies having jurisdiction over the design, construction, alteration, repair, equipment, maintenance, process, activity, and relocation of structures have issued appropriate approvals.

1.12.4.2 The AHJ shall not be held responsible for enforcement of the regulations of such other regulatory agencies unless specifically mandated to enforce those agencies' regulations.

1.12.5 Reserved

1.12.6 Permits.

1.12.6.1 A permit shall be conditioned upon the continued compliance with the requirements of this *Code*.

1.04: continued

1.12.6.1.1 Unless specifically stated otherwise, permits required in Section *1.12.8* shall be issued by the AHJ and issued as a precondition before conducting any work or activity regulated under the provisions of this *Code*.

1.12.6.2 Any permit issued under this *Code* shall not take the place of any other approval, certificate, license, or permit required by any other regulations or laws.

1.12.6.3 Where additional permits or approvals are required by other agencies, approval shall be obtained from those other agencies.

1.12.6.4 The AHJ shall have the authority to require or conduct an inspection prior to the issuance of a permit.

1.12.6.5 A permit issued under this *Code* shall remain valid for the period of time designated on the permit unless suspended, revoked, or otherwise extended pursuant to *Section 1.12.6.8.*

1.12.6.6 The permit shall be issued to one person or entity only and shall be limited to locations or purposes described in the permit.

1.12.6.7 Any change that affects any of the conditions of the permit shall require a new or amended permit.

1.12.6.8 The AHJ shall have the authority to grant an extension of the permit time period upon presentation by the permittee of a satisfactory reason for failure to start or complete the work or activity authorized by the permit.

1.12.6.9 A copy of the permit shall be posted or otherwise readily accessible at each place of operation and shall be subject to inspection as specified by the AHJ.

1.12.6.10 Any activity authorized by any permit issued under this *Code* shall be conducted by the permittee or the permittee's agents or employees, in compliance with all requirements of this *Code* applicable thereto and in accordance with the approved plans and specifications.

1.12.6.11 No permit issued under this *Code* shall be interpreted to justify a violation of any provision of this *Code* any other applicable law or regulation.

1.12.6.12 Any addition or alteration of approved plans or specifications shall be approved in advance by the AHJ, as evidenced by the issuance of a new or amended permit.

1.12.6.13 Permits shall bear the name and signature of the AHJ or that of the AHJ's designated representative. In addition, the permit shall indicate the following:

(1) Operation or activities for which the permit is issued;
(2) Address or location where the operation or activity is to be conducted;
(3) Name of the owner, with the address and phone number and the name of the installer, with the address and phone number, if applicable;
(4) Permit number;
(5) Period of validity of the permit;
(6) Inspection requirements and other permit conditions;
(7) Name of the agency authorizing the permit (AHJ);
(8) Date of Issuance;
(9) Quantities of materials to be kept, used or stored, as applicable;
(10) Certificate and/or license issued under M.G.L. c. 148, § 13, as applicable;
(11) Permit conditions as determined by the AHJ.

1.12.6.14 Any application for, or acceptance of, any permit requested or issued pursuant to this *Code* shall constitute agreement and consent by the person making the application or accepting the permit, to allow the AHJ to enter the premises at any reasonable time to conduct such inspections or review such records as required by this *Code*.

1.12.7 Revocation or Suspension of Permits and Approvals.

1.04: continued

1.12.7.1 The AHJ shall be permitted to revoke or suspend a permit or approval issued by said AHJ if any violation of this *Code* or of M.G.L. c. 148 is found upon inspection or if any false statements or misrepresentations have been submitted in the permit application or plans on which the permit or approval was based.

1.12.7.2 Revocation or suspension shall be constituted when the permittee is duly notified by the AHJ.

1.12.7.3 Any person who continues to engage in any permitted or approved business, operation, occupation, or uses any premises, after the permit or approval has been suspended or revoked pursuant to the provisions of this *Code* and before such suspended permit or approval has been reinstated or a new permit or approval is issued, shall be in violation of this *Code*.

1.12.8* Permit. A permit and an application for permit shall be required as prescribed in *Section 1.12.8.* No work or activities described in this *Section* shall commence without first complying with *Section 1.12* and the applicable Table in *Section 1.12.8.*

A.1.12.8 *See* M.G.L. c. 148, § 10A regarding heads of fire departments, permits, inspections, and M.G.L. c. 148, § 23 regarding the keeping and use of flammable fluids, permit, and M.G.L. c. 148, § 24 regarding keeping and handling of fire menace material.

1.12.8.1 General Safety Requirements with Regards to Open Air Burning, Use of a Torch, Fogging and Storage of Combustible Goods. [Chapter 10]

1.12.8.1.1 Permit holder shall be present at such burning to control the fire until it is entirely extinguished.

1.12.8.1.2 Open air burning permits required by Sections *10.10.1* and *10.10.4.1.1* shall be issued for a period not exceeding two days from the date of the permit.

1.12.8.1.3 Removal of Paint using a Torch.

1.12.8.1.3.1 Permit. A permit shall be required for the use of a torch or other flame or heat producing device for the removal of paint or the application or removal of roofing material from any building or structure. An approved fire extinguisher or an adequate water supply shall be readily available at all times.

1.12.8.1.4 No work or activity described in Table 1.12.8.1 shall be performed until such time as a valid permit has been issued.

Chapter 10	**General Requirements**	
Work/Activity	**Issuing Authority**	**Code Section**
*Open Air Burning, *see* Annex	Forest Warden	10.10.1
*Ceremonial Bonfires, *see* Annex	Head of Fire Department	10.10.4.1.1
Open Flame (heat producing) devices		10.10.1 10.10.9.1
Storage of combustible materials		10.15.1.2 10.15.2.1 10.18.2
Fumigation and insecticidal fogging		10.20.1
*Use of canine guards, *see* Annex		10.21.1

Table 1.12.8.1* Permits Required

1.04: continued

A. 1.12.8.1(1) *See* M.G.L. c. 48, § 13, regarding open fires granted by the forest warden or chief of the fire department in cities, towns and districts.

A. 1.12.8.1(2) *See* M.G.L. c. 111, § 142 G, regarding the burning of Christmas trees and; M.G.L. c. 111, § 142H regarding, ceremonial bonfires; permits and M.G.L. c. 111, § 142I regarding, bonfires from July 2nd through July 6th.

A. 1.12.8.1(6) *See* M.G.L. c. 148, § 28B regarding, buildings with canine guards.

1.12.8.2 Building Services with Regards to Fuel-Oil Heating Appliances [Chapter 11]

1.12.8.2.1 Permit Approval

1.12.8.2.1.1 *Table 1.12.8.2* shall apply to Chapter 11, entitled *Building Services*. Except as permitted by *Section 1.12.8.2.1*, and by *Table 1.12.8.50* for heating appliances, on a form approved by the State Fire Marshal, a permit shall be used, completed, required and issued as a precondition before conducting any work/activity by *Table 1.12.8.2.*

1.12.8.2.1.2 Heating Appliances.

(1) A permit shall not be required for routine maintenance, such as the replacement of nozzles, ignition electrodes, or filters; and

(2) If an installation is made under emergency conditions, an application for a permit shall be required within 24 hours thereafter, excluding Saturdays, Sundays and legal holidays.

1.12.8.2.2 Inspection.

1.12.8.2.2.1 If after 30 days, an inspection has not been conducted, then the delivery of fuel oil shall not be prohibited for lack of a permit to store.

Table 1.12.8.2* Permits Required

Chapter 11	**Oil Burners and Fuel-oil**	
Work/Activity	Issuing Authority	Code Section
*Installation or alteration of any fuel oil burning equipment. Oil-line upgrade	Head of Fire Department	11.5.1.8
Storage of acceptable liquid fuel		11.5.1.10
*Installation, removal, or replacement of a fuel storage tank, unless provided otherwise in NFPA Chapter 66		

A. 1.12.8.2(1) *See* M.G.L. c. 148, § 10A regarding, heads of fire departments; permits; inspections and; M.G.L. c. 148, § 10C regarding the alteration, repair or installation of oil burners; necessity of certificate; exceptions and; M.G.L. c. 148, § 38J regarding, residential property utilizing heating oil tanks; safety requirements; inspection; certification.

A. 1.12.8.2(2) *See* M.G.L. c. 148, § 10A regarding, heads of fire departments; permits; inspections and; M.G.L. c. 148, 10C regarding, the alteration, repair or installation of oil burners; necessity of certificate; exceptions.

A. 1.12.8.2(3) *See* M.G.L. c. 148 § 10A regarding, heads of fire departments; permits; inspections and; M.G.L. c. 148, § 23 regarding the keeping and use of inflammable fluids; permit and; M.G.L. c. 148, § 4 regarding, the keeping and handling of fire menace material; *See* M.G.L. c. 148, § 37 regarding, tanks more than 10,000 gallons used to store fluids other than water; permits; violation of statue or regulation and; annual inspections and Chapter 66 of NFPA 1.

1.04: continued

1.12.8.3 Smoke, Fire and Carbon Monoxide Protection Systems. [Chapter 13]

1.12.8.3.1 No person or entity may install any fire protection system in any new or existing building or structure without first complying with the provisions in this section and Table 1.12.8.3.

1.12.8.3.2 Fire Protection System. Any fire alarm device or system or fire-extinguishing device or system, or combination thereof, that is designed and installed for detecting, controlling, or extinguishing a fire or otherwise alerting occupants, or the fire department, or both, that a fire has occurred. A fire protection system shall include any wiring, equipment, and systems used to detect, suppress, or control smoke, fire, and carbon monoxide, or any combination thereof.

1.12.8.3.3 No permit shall be required for the replacement, in kind, of an individual device (battery, carbon monoxide detector/alarm).

1.12.8.3.4 *See* Chapter 42 for additional fire protection system requirements.

Table 1.12.8.3 Permits Required

Chapter 13	**Fire Protection System and Related Equipment**	
Work/Activity	**Issuing Authority**	**Chapter/Code Section/M.G.L.**
Carbon monoxide/Smoke alarm installations [≤ 5 dwelling units] at time of property sale or transfer.	Head of Fire Department	M.G.L. c. 148, §§ 26F and 26F½ *Known as a Certificate of Compliance*
Installations of carbon monoxide protection technical options.		13.7.2
Impairment or disconnection of any sprinkler system, water main, hydrant, or other device used for fire protection system, including carbon monoxide detection and alarm. [M.G.L c. 148, § 27A]		13.1.1.1.2 13.7.2.2
		See also Section 1.12.8.3

1.12.8.4 Safeguarding Construction, Alteration, and Demolition Operations. [Chapter 16]

1.12.8.4.1 *See* Chapter 41 and *Table 1.12.8.23* for permit requirements for Welding, Cutting, and Other Hot Work.

Table 1.12.8.4 Permits Required

Chapter 16	**Safeguarding Construction, Alteration, and Demolition Operations**	
Work/Activity	**Issuing Authority**	**Code Section**
Heating and Cooling Equipment Used During Construction, Alteration, or Demolition	Head of Fire Department	16.19.3.1.1
Torch-applied roofing operations		16.22.1.1
		See also Section 1.12.8.4

1.12.8.5 Combustible Waste and Refuse. [Chapter 19]

1.12.8.5.1 A permit shall not be required for containers which are delivered to a location and removed in the course of a single business day.

1.04: continued

1.12.8.5.2 Containers shall be marked with the name and telephone number of the company who can be reached in an emergency.

Table 1.12.8.5 Permits Required

Chapter 19	**Combustible Waste, Refuse, and Rubbish Containers**	
Work/Activity	**Issuing Authority**	**Code Section**
Rubbish containers > 6 cubic yards	Head of Fire Department	19.1.1
		See also 1.12.8.5

1.12.8.6 Occupancy Fire Safety. [Chapter 20]

1.12.8.6.1 Unvented Heaters.

1.12.8.6.1.1 A copy of the manufacturer's installation/operating literature for unvented propane or natural gas-fired space heaters shall be submitted with each permit application.

1.12.8.6.1.2 Before operation of such heater, the Head of the Fire Department and the local or State Plumbing/Gas Inspector shall inspect the installation.

Table 1.12.8.6 Permits Required

Chapter 20	**Occupancy Fire Safety**	
Work/Activity/Location	**Issuing Authority**	**Code Section**
Assembly Occupancies	Head of Fire Department	20.1.1.1
Special Provisions for Food Service Operations		20.1.5.2.4.1
Open flame devices and Pyrotechnics		20.1.5.3.1
Special Provisions for Exposition Facilities		20.1.5.5.1
Cellulose Nitrate Motion Picture Film Storage		20.15.7.2
High-piled Storage		20.15.8.2
Unvented Fuel-Fired Heating Equipment.		20.2.4.5.1, 20.3.2.1.1, 20.8.2.6.1, 20.9.2.2.1, 20.10.2.1, and 20.11.2.1
		See also Section 1.12.8.6

1.12.8.7 Chapter 21 Reserved

1.12.8.8 Chapter 22 Reserved

1.12.8.9 Cleanrooms. [Chapter 23]

1.12.8.9.1 *See* chapters 60 through 75 for permitting requirements regarding hazardous materials.

Table 1.12.8.9 Permits Required

Chapter 23	**Cleanrooms**	
Work/Activity	**Issuing Authority**	**Code Section**
Use, storage or handling of hazardous materials	Head of Fire Department	23.3 61.1.2 61.5.3.3.1 63.1.2 66.1.5 69.1.2

1.04: continued

1.12.8.10 Dry Cleaning. [Chapter 24]

1.12.8.10.1 *See* chapters 60 through 75 for permitting requirements regarding hazardous materials.

Table 1.12.8.10 Permits Required

Chapter 24	**Dry Cleaning**	
Work/Activity	**Issuing Authority**	**Code Section**
Use, storage or handling of hazardous materials	Head of Fire Department	24.2 61.1.2 61.5.3.3.1 63.1.2 66.1.5 69.1.2

1.12.8.11 Chapter 25 Reserved

1.12.8.12 Laboratories Using Chemicals. [Chapter 26]

1.12.8.12.1 *See* chapters 60 through 75 for permitting requirements regarding hazardous materials.

Table 1.12.8.12 Permits Required

Chapter 26	**Laboratories Using Chemicals**	
Work/Activity	**Issuing Authority**	**Code Section**
The handling or storage of chemicals in laboratory buildings, laboratory units, and laboratory work areas whether located above or below grade.	Head of Fire Department	26.2 61.1.2 61.5.3.3.1 63.1.2 66.1.5 69.1.2

1.12.8.13 Chapter 27 Reserved

1.12.8.14 Chapter 28 Reserved

1.12.8.15 Chapter 29 Reserved

1.12.8.16 Motor Fuel Dispensing Facilities and Repair Garages. [Chapter 30]

1.12.8.16.1 *See* chapters 60 through 75 for permitting requirements regarding hazardous materials.

Table 1.12.8.16 Permits Required

Chapter 30	**Motor Fuel Dispensing Facilities and Repair Garages**	
Work/Activity	**Issuing Authority**	**Code Section**
Use, storage or handling of hazardous materials.	Head of Fire Department	30.1.1.3 61.1.2 61.5.3.3.1 63.1.2 66.1.5 69.1.2

1.12.8.17 Forest Products. [Chapter 31]

Table 1.12.8.17 Permits Required

Chapter 31	**Forest Products**	
Work/Activity	**Issuing Authority**	**Code Section**
Storage of mulch > 300 cubic yards.	Head of Fire Department	31.2

1.12.8.18 Motion Picture and Television Production Studio Soundstages and Approved Production Facilities. [Chapter 32]

1.12.8.18.1 Notification.

1.04: continued

1.12.8.18.1.1 A permit shall not be required provided notification is given to the Head of the Fire Department for production locations where 15 through 30 on-site personnel are present, and when permits are not specifically required by Chapter 32.

Table 1.12.8.18 Permits Required

Chapter 32	**Motion Picture and Television Production Studio Soundstages and Approved Production Facilities**	
Work/Activity	**Issuing Authority**	**Code Section**
For activities listed in 32.2.2.	Head of Fire Department	32.2.2
		See also *Section 1.12.8.18*

1.12.8.19 Chapter 33 Reserved

1.12.8.20 Chapter 34 Reserved

1.12.8.21. Cannabis Growing, Processing, or Extraction [Chapter 38]

1.12.8.21.1 *Table 1.12.8.21* shall apply to Chapter 38 entitled Cannabis Growing, Processing, or Extraction Facilities. No work or activity described in *Table 1.12.8.21* shall be performed until such time as a valid permit has been issued.

Table 1.12.8.21* Permits Required

Work/Activity	**Issuing Authority**	**Code Section**
Processing or extraction of cannabis involving hazardous materials, *see* 38.1.	Head of Fire Department	38.2 60.8

A Table 1.12.8.21. A permit is required for processes involving hazardous materials in accordance with Section 60.8. Chapter 38 provides specific requirements for operations and equipment utilized in the processing and extraction activities commonly associated with cannabis processing facilities. It is generally accepted that processes involving hazardous materials will meet industry best practices. In the case of cannabis processing and extraction, compliance with the published regulations of Chapter 38 are the minimum industry standard.

1.12.8.22 Dust Explosion and Fire Prevention. [Chapter 40]

1.12.8.22.1 *Table 1.12.8.22* shall apply to Chapter 40 entitled Dust Explosion and Fire Prevention. No work or activity described in *Table 1.12.8.22* shall be performed until such time as a valid permit has been issued.

Table 1.12.8.22 Permits Required

Chapter 40	**Dust Explosion and Fire Prevention**	
Work/Activity	**Issuing Authority**	**Code Section**
An operation that uses or produces combustible dust.	Head of Fire Department	40.2

1.12.8.23 Welding, Cutting and Other Hot Work. [Chapter 41]

1.12.8.23.1 Application for a Permit.

1.12.8.23.1.1 A permit application shall specify the time and exact location of the work to be performed, the nature of the work to be done, and any special precautions to be taken during that work.

1.12.8.23.1.2 On the permit application, the applicant shall provide written authorization, signed by the property owner or his agent.

1.12.8.23.2 Permit Requirements.

1.12.8.23.2.1 A single permit shall be permitted to be issued for both operation and storage.

1.04: continued

1.12.8.23.2.2 For daily activities, an annual hot work permit shall be permitted if in compliance with Section 41.7.

1.12.8.23.2.3 A permit prescribed by the Head of the Fire Department shall be required before conducting hot work processes in other than a designated area.

1.12.8.23.2.3.1 A permit prescribed by the State Fire Marshal shall be used for hot work performed in other than designated areas.

1.12.8.23.2.3.2 Replace with the following:

1.12.8.23.2.3.2 Before hot work operations begin in a non-designated location, a written hot work permit by the Permit Authorizing Individual (PAI) shall be required.

1.12.8.23.2.3.2.1 *See Section 41.3.5.1.1.1* for sample hot work permit for permit required areas.

1.12.8.23.3 Permits Not Required.

1.12.8.23.3.1 A hot work permit shall not be required by the Head of the Fire Department when hot work is conducted in approved and designated areas in accordance with *Section 41.3.3.2.1.*

1.12.8.23.3.1.1 *See Section 41.5.4.4* Inspections permitted by the AHJ

1.12.8.23.3.2 A permit shall not be required when the purpose of performing hot work is necessary for required maintenance.

1.12.8.23.3.2.1 *See Section 41.4* entitled Sole Proprietors and Individual Operators.

1.12.8.23.3.3 Where an approved facility hot work permit program exists that meets the requirements of Chapter 41, the permit shall be permitted to be issued for an entire facility

1.12.8.23.4 *See* Chapters 60 through 75 for permitting requirements regarding hazardous materials.

1.12.8.23.5 *See Section 16.6* for permitting requirements regarding use of torch-applied roofing systems.

1.12.8.23.6 *See Section 16.7* for permitting requirements regarding use of tar kettles.

Table 1.12.8.23 Permits Required

Chapter 41	**Welding, Cutting, and Other Hot Work**	
Work/Activity	**Issuing Authority**	**Chapter/Code Section**
Welding, Cutting and Other Hot Work	Head of Fire Department	41.1.5.3
		41.3.3.2
	Permit Authorizing Individual (PAI)	41.3.5
		See Section 1.12.8.23

1.12.8.24 Refueling (Chapter 42)

1.12.8.24.1 Application for Permit.

1.12.8.24.1.1 An application for a permit shall be submitted by the person, firm, or corporation responsible for the installation or construction of a motor vehicle fuel dispensing station.

1.12.8.24.2 Permit Not Required.

1.12.8.24.2.1 A permit shall not be required to make a connection in the fueling of gaseous fuel vehicles, replacement of a portable container, or the filling of a stationary container.

1.04: continued

Table 1.12.8.24 Permits Required

Chapter 42	**Refueling**	
Work/Activity	**Issuing Authority**	**Code Section**
Installation or construction of a motor vehicle fuel dispensing station	Head of Fire Department	42.1.2
		See also Section 1.12.8.24

1.12.8.25 Refueling Cargo Tanks, Portable Tanks or Transfer Tanks.

1.12.8.25.1 General.

1.12.8.25.1.1 All tanks shall be considered full for the purpose of this *Code*.

1.12.8.25.1.2 *Table 1.12.8.25* shall apply to Chapter 42 entitled refueling. A permit shall be used, completed, and issued as a precondition before conducting any work/activity described by *Table 1.12.8.25*

1.12.8.25.2 Cargo, Portable and Transfer Tanks.

1.12.8.25.2.1 A permit shall be required when tanks are left unattended.

1.12.8.25.2.2 Tanks shall only be left in an area remote from buildings of habitation in such a manner required by the AHJ.

1.12.8.25.3 Vehicles and Contents.

1.12.8.25.3.1 The Head of the Fire Department may assume control of the tank vehicle and its contents if the owner is unable or unwilling to remove the vehicle or its contents within a reasonable time.

1.12.8.25.3.3 Inspections Required.

1.12.8.25.3.3.1 Transport vehicles used in the transportation of combustible liquids shall be subject to inspection by the AHJ.

1.12.8.25.3.4 Permits Not Required.

1.12.8.25.3.4.1 A permit shall not be required for gasoline or other flammable petroleum product provided it is transported in an open vehicle or in a compartment of a closed vehicle separated from the passengers, where the total quantity does not exceed 21 gallons, provided such flammable liquid is contained in approved containers and with no individual container exceeding seven gallons capacity.

1.12.8.25.3.4.2 A permit shall not be required for combustible liquids transported in any open vehicle or in the compartment of a closed vehicle separated from the passengers where the total quantity does not to exceed 55 gallons, provided such combustible liquid is contained in approved containers, substantial metal drums or other similar containers.

1.12.8.25.3.7 CNG, LNG, Hydrogen, and LP-Gas (Alternative Fuels).

1.12.8.25.3.7.1 Notice of Completion and Inspection of Work.

1.12.8.25.3.7.1.1 Upon completion of an installation or connection, the person, firm or corporation having made the installation or connection shall notify in writing on a form approved by the State Fire Marshal to the Head of the Fire Department that the work has been completed, and in conformity with the requirements of this *Code*.

1.12.8.25.3.7.1.2 Upon receipt of such notification, the AHJ shall make an inspection of the installation within a reasonable time. If the work is found to be in accordance with this Code and, if applicable, 502 CMR 5.00: Permit Requirements and Annual Inspection of above Ground Storage Tanks or Containers of More than Ten Thousand Gallons Capacity, the AHJ shall issue

1.04: continued

to the owner or occupant a permit for the keeping, storage, manufacture or sale in connection therewith, except where such storage is otherwise authorized by license.

1.12.8.25.3.7.2 Certificate of Completion.

1.12.8.25.3.7.2.1 ***See*** *Section 1.12.8.51* for Certificate of Completion requirements regarding alternate fuel storage installations and connections.

Table 1.12.8.25* Permits Required

Chapter 42	**Refueling [Cargo Tanks, Portable Tanks or Transfer Tanks]**	
Work/Activity	**Issuing Authority**	**Code Section**
*To store flammable and combustible liquids.	Head of Fire Department	1.12.8.50
For dispensing motor fuel from a tank vehicle.		42.7.6
On-Demand Mobile Fueling (dispensing, or storage)		42.12
CNG, LNG, Hydrogen, and LP-Gas (Alternative Fuels)		42.8.2.1

A Table 1.12.8.25 Permits Required. Used here, "to store" includes the parking location of Cargo Tanks, Portable Tanks, or Transfer Tanks during nonbusiness hours. As a condition of the flammable/combustible storage permit, the tank vehicle should comply with NFPA 385 as referenced in *Sections 42.7.2.2.1* and *42.7.6.2*, the conditions of Section 42.15, and the requirements of 49 CFR, Transportation. Each tank vehicle should be specifically identified on the storage permit.

1.12.8.25 Marine Fueling. [Chapter 42]

1.12.8.25.1 Permit Holder. A permit holder shall comply with following:

(1) The permit holder of every marine fueling facility shall designate one or more persons to be an authorized marine fueling operator.

(2) Each marine fueling operator shall be as described in *Section 1.12.8.26.2*

(3) The permit holder shall keep a written record for each authorized marine fueling operator.

(a) Such written record shall be maintained for a period of three years.

(b) Such written records shall include the following information:

1. The name, home address, telephone number, and age;
2. The date and location of the training;
3. A summary of the training program topics;
4. A dated signature of the employee administering the training; and
5. A dated signature from the employee receiving the training.

1.12.8.25.2 Marine Fueling Operator. The operator shall be 18 years of age or older and responsible for the oversight of the actual fueling activity conducted by the marine fueling facility and shall comply with the following:

(1) The operator shall be the permit holder or shall be an agent or employee under the direct control or supervision of said permit holder.

(2) All marine fueling operator shall be adequately and properly trained prior to conducting any fueling activity.

(3) Training shall be conducted at least on an annual basis and at a minimum, shall include the following areas:

(a) Familiarity of Chapter 42 of this *Code*;

(b) The properties and hazards of flammable and combustible liquids;

(c) Handling precautions for flammable and combustible liquids;

1.04: continued

(d) The manufacturers' operating instructions for operating all fueling equipment (pumps, nozzles, controls, emergency shutoff, *etc*.) and related equipment; and
(e) Familiarity with the operation and location of all fueling equipment and of all emergency equipment and procedures, including:

1. Emergency notifications (for mobile operators site by site specific);
2. Evacuation procedures;
3. Emergency shutoff equipment location and operation;
4. Fire extinguisher locations and operations;
5. Location and proper operation of any extinguishing systems; and
6. Standby for the arrival of emergency responders.

1.12.8.26.3 Table 1.12.8.26 shall apply to Chapter 42.9 entitled *Marine Fueling*. No work or activity described in *Table 1.12.8.26* shall be performed until such time as a valid permit has been issued.

Table 1.12.8.26 Permits Required

Chapter 42	**Refueling [Marine Fueling]**	
Activity	**Issuing Authority**	**Code Section**
The dispensing, transferring of fuel at marine fueling facilities.	Head of Fire Department or State Fire Marshal	42.9.1.4
To construct or alter a new or existing marine fueling facility.		
To maintain a fueling facility.		
		See also Section 1.12.8.26

1.12.8.27 Spraying, Dipping, and Coating Using Flammable or Combustible Materials. [Chapter 43]

1.12.8.27.1 Prohibited Products.

1.12.8.27.1.1 The use of any clear or pigmented wood finish formulated with nitrocellulose or synthetic resins to dry by evaporation and without chemical reaction, having a flashpoint below 100°F, and having a vapor pressure not exceeding 40 psi at 100˚F, including clear lacquer or sanding sealers, shall be prohibited. [M.G.L. c. 94, § 329]

1.12.8.27.2 *See* Chapters 60 through 75 for permitting requirements regarding hazardous materials.

1.12.8.27.3 *Table 1.12.8.27* shall apply to Chapter 43 entitled Spraying, Dipping, and Coating Using Flammable or Combustible Materials. A permit shall be used, completed, and issued as a precondition before conducting any work/activity described by *Table 1.12.8.27*

Table 1.12.8.27 Permits Required

Chapter 43	**Spraying, Dipping, and Coating Using Flammable or Combustible Materials**	
Work/Activity	**Issuing Authority**	**Chapter**
Storage, use or handling of hazardous materials	Head of Fire Department	43.1.1.4
		See Section 1.12.8.27

1.04: continued

1.12.8.28 Chapter 44 Reserved

1.12.8.29 Combustible Fibers. [Chapter 45]

1.12.8.29.1 No permit shall be required for the agricultural storage of combustible fibers.

1.12.8.29.2 *Table 1.12.8.29* shall apply to Chapter 45 entitled *Combustible Fibers*. No work or activity described in *Table 1.12.8.29* shall be performed until such time as a valid permit has been issued.

Table 1.12.8.29 Permits Required

Chapter 45	**Combustible Fibers**	
Work/Activity	**Issuing Authority**	**Code Section**
For storage or handling of combustible fibers > 100 ft.^{3} (2.8 m^3)	Head of Fire Department	45.1.4
		See also Section 1.12.8.29

1.12.8.30 Chapter 50 Reserved

1.12.8.31 Industrial Ovens and Furnaces. [Chapter 51]

1.12.8.31.1 *Table 1.12.8.31* shall apply to Chapter 51, entitled *Industrial Ovens and Furnaces*. No work or activity described in *Table 1.12.8.31* shall be performed until such time as a valid permit has been issued.

Table 1.12.8.31 Permits Required

Chapter 51	**Industrial Ovens and Furnaces**	
Work/Activity	**Issuing Authority**	**Code Section**
Installation and operation of an industrial oven, or industrial furnace.	Head of Fire Department	51.1.2

1.12.8.32. Energy Storage Systems. [Chapter 52]

1.12.8.32.1 *Table 1.12.8.32* shall apply to Chapter 52, entitled *Energy Storage Systems*. No work or activity described in *Table 1.12.8.32* shall be performed until such time as a valid permit has been issued.

Table 1.12.8.32 Permits Required

Chapter 52	**Energy Storage Systems**	
Work/Activity	**Issuing Authority**	**Code Section**
To install and operate energy storage systems having a capacity greater than the quantities listed in Table 1.3 of NFPA 855.	Head of Fire Department	52.1.2

1.12.8.34 Hazardous Material. [Chapter 60]

1.12.8.34.1 Permit Requirements.

(1) A permit holder shall apply for the renewal on an annual basis.

(2) A new permit shall be required prior to engaging in any new or modified hazardous material process activity, which results in a change to a different process category authorized by the current permit.

1.12.8.34.2 Process or Processing of any Hazardous Material at any Facility.

(1) A permit shall be required for the process or processing of any hazardous material at any facility identified in this *Code* as Category 2 through Category 5, as described in Chapter 60.

(2) The AHJ may require technical assistance in accordance with *Section 1.15* to evaluate the adequacy of a Category 3 or Category 4 facility process safety conditions, programs, procedures, and practices undertaken at the facility, but only after a notice of denial has been properly served upon the person making application.

1.04: continued

1.12.8.34.3 *Table 1.12.8.34* shall apply to Chapter 60 entitled Hazardous Materials. No work or activity described in *Table 1.12.8.34* shall be performed until such time as a valid permit has been issued.

Table 1.12.8.34 Permits Required

Chapter 60	**Hazardous Material**	
Work/Activity	**Issuing Authority**	**Code Section**
Process or Processing of any Hazardous Material in Category 2, 3, 4, and/or 5.	Head of Fire Department	Section 60.8.1.1.1
Crop ripening or color processing. Where that process involves the storage, handling, and use of a flammable compressed gas Where that process involves the storage, handling, and use of a combustible or flammable liquid	Head of Fire Department	60.8.4 63.1.2 66.1.5
		See also Section 1.12.8.34
		See Table 1.12.8.50

1.12.8.35 Aerosol Products. [Chapter 61]

1.12.8.35.1 Permit Requirement.

1.12.8.35.1.1 A permit shall be required based on the aggregate quantity.

1.12.8.35.2 Permit Not Required.

1.12.8.35.2.1 A permit shall not be required for level 1 aerosol products.

1.12.8.35.3 *Table 1.12.8.35* shall apply to Chapter 61 entitled Aerosol Products. No work or activity described in *Table 1.12.8.35* shall be performed until such time as a valid permit has been issued.

Table 1.12.8.35 Permits Required

Chapter 61	**Aerosol Products**	
Work/Activity	**Issuing Authority**	**Code Section**
Storage > 500 lbs.	Head of Fire Department	61.1.2
		See also Section 1.12.8.35

1.12.8.36 Chapter 62 Reserved

1.12.8.37 Compressed Gases and Cryogenic Fluids. [Chapter 63]

1.12.8.37.1 Permits shall be required in accordance with *Tables 1.12.8.37(a)*, *(b) and (c)*.

1.12.8.37.2 *See* Chapters 41, 42, 60, 63, and 69 for additional requirements and exceptions.

Table 1.12.8.37(a) Permits Required

Chapter 63	**Compressed Gases and Cryogenic Fluids**	
Work/Activity	**Issuing Authority**	**Code Section**
Storage of compressed gases Inside of a building/Outside of a building	Head of Fire Department	63.1.2 *See* Table 1.12.8.50 *See* Tables 1.12.8.37(b) and (c)

1.04: continued

Table 1.12.8.37(b) Permit Amounts for Compressed Gases

Type of Gas	Amount*	
	$ft.^3$	m^3
Corrosive	≥200	≥ 0.5.7
Flammable	≥200	≥ 0.5.7
Highly toxic	Any amount	
Inert and simple asphyxiant	≥6000	≥169.9
Oxidizing (including oxygen)	≥504	≥14.3
Pyrophoric	Any amount	
Toxic	Any amount	
Unstable (reactive)	Any amount	

*Cubic feet measured at normal temperature and pressure.

Table 1.12.8.37(c) Permit Amounts for Cryogens

Type of Cryogen	Inside Building (gal.)	Outside Building (gal.)
Corrosive	Over 1	Over 1
Flammable	Over 1	60
Toxic/highly toxic	Over 1	Over 1
Nonflammable	60	500
Oxidizer (includes oxygen)	10	50

1.12.8.38 Chapter 64 Reserved

1.12.8.39 Blasting, Explosives, Fireworks, and Model Rocketry. [Chapter 65]

1.12.8.39.1 Explosives and Blasting.

1.12.8.39.1.1 Permit Requirements. Compliance with the following shall be required:

(1) For the purpose of obtaining a permit, the capacity of a storage magazine, in pounds, shall be the maximum constructed storage capacity of the magazine as reported to the Bureau of Alcohol Tobacco, Firearms and Explosives (ATF).

(2) An application for a permit to conduct a blasting operation shall include the submittal of an Explosives User's Certificate and a Certificate of Competency.

(3) No permit to detonate explosives shall be issued until compliance with M.G.L. c. 82 §§ 40-40E, has been established by the applicant.

(4) Such permit shall remain in effect for a minimum of 30 days, unless extended, suspended, or revoked.

(5) For deliveries of explosive materials to any magazine, building, or structure shall be in accordance with M.G.L. c. 148, § 12.

1.12.8.39.1.1.1 Sale or Transfer. Compliance with the following shall be required for permits:

(1) The transferee shall immediately apply for a new permit for the magazine, building or structure.

(2) Any owner shall notify the State Fire Marshal immediately of the sale or transfer of a magazine, building or structure. The owner shall remove the permit number from the magazine, building or structure upon sale or transfer.

1.12.8.39.1.1.2 Application to Manufacture.

1.12.8.39.1.1.2.1 Applicants for a permit to manufacture explosives shall submit proof of a valid license to manufacture explosives materials, which has been issued in accordance with 27 CFR Part 55, entitled *Commerce* in Explosives, and as applicable, a license and/or registration, to keep, store,

1.04: continued

manufacture or sell explosive material, issued in accordance with M.G.L c. 148, § 13.

1.12.8.39.1.1.3 Information Required for Application

1.12.8.39.1.1.3.1 An applicant for a permit to manufacture Explosives shall provide the following information:

(1) The name of the owner and/or occupant;

(2) A site plan, which is drawn to scale, and details the arrangement of buildings and magazines, paths of egress from each, their relative location to other buildings and property lines, and the location(s) where explosives manufacturing will take place;

(3) The names and maximum quantities of any/all explosives, raw materials, and finished products anticipated to be on site;

(4) The manner in which the listed explosives, raw materials, and finished products are the be kept, stored, and/or used;

(5) The nature of work to be carried out in each building.

1.12.8.39.1.1.4 Permits Not Required. Permits shall not be required for the following:

(1) For smokeless propellants displayed in commercial establishments intended for sale and not exceeding 25 lbs. and stored in original manufacturer's containers of one lb. maximum capacity.

(2) Small arms ammunition, primers, smokeless propellants and black powder stored in original containers and stored in a locked cabinet, closet or box when not in use as provided in *Section 1.12.8.50.* Small arms ammunition, as used here, shall mean any shotgun, rifle, or pistol cartridge and any cartridge or propellant actuated devices, excluding military ammunition containing bursting charges or incendiary, tracer, spotting, or pyrotechnic projectiles.

1.12.8.39.1.1.5 Notification.

1.12.8.39.1.1.5.1 For each day in which any blasting operations are to be performed, notification shall be given to the head of the fire department at least two hours prior to such operations, if required by the Head of the Fire Department. Failure to notify may be cause for revocation of the permit.

1.12.8.39.2 Fireworks.

1.12.8.39.2.1 Permit Requirements. The following permit provisions shall be complied with:

(1) An application for permit has been submitted and shall include the submittal of a fireworks user's certificate and a certificate of competency.

(2) The quantity and description of materials to be used shall be listed on the permit application.

1.12.8.39.2.2 Displays.

(1) Applications shall be submitted, in writing at least 20 days in advance of a display, unless this advance notification requirement is waived by the Head of the Fire Department.

(2) Upon receipt of an application for a fireworks display, the Head of the Fire Department shall make, or cause to be made, a review of the pertinent facts set forth in the application and a physical inspection of the display grounds for the purpose of determining compliance with the provisions of this *Code*.

(3) These requirements may be waived if the same display has been witnessed at similar separate locations.

(4) Within five (5) days of the completion of such review and inspection for a fireworks display, the Head of the Fire Department shall transmit one copy of said application to the State Fire Marshal and one copy to the applicant, with his or her endorsement that the application complies with the applicable provisions of Massachusetts General Law and this Code, or his or her reason for withholding such endorsement.

1.04: continued

(5) Denial of a permit application for the use of special effects [fireworks] for cause shall be determined by the Head of the Fire Department within 24 hours after witnessing the preliminary display, and the applicant shall be so notified in writing within the next 24 hours with the reasons for such denial detailed.
(6) The Head of the Fire Department shall notify the State Fire Marshal of substitutions of certificate holders within two working days following the display.
(7) The applicant for the special effects [fireworks] permit shall demonstrate the fireworks display in the presence of the Head of the Fire Department or his designees at least four hours before the performance at the proposed location of the performance. Notice of the demonstration shall be given to the Head of the Fire Department at least four days in advance documenting the date and time of such demonstration.

1.12.8.39.2.3 Permit Not Required.

1.12.8.39.2.3.1 A permit shall not be required for the transporting [interstate] of such fireworks or pyrotechnic materials if it is in accordance with U.S. DOT, Title 49 CFR.

1.12.8.39.2.4 Cannon Mortar.

1.12.8.39.2.4.1 Permits Requirements.

1.12.8.39.2.4.1.1 A permit for the supervision of the firing of a cannon shall not be issued unless the person holds a valid Certificate of Competency.

1.12.8.39.2.4.3 Application.
(1) Applications shall be submitted indicating where the supervised firing is to take place not less than 15 days in advance of firing date, and shall state whether blank-fire or live-fire is utilized.
(2) Submission of this application is an assurance that the cannons to be fired will be inspected by the competent operator and meets all safety requirements prior to firing.

1.12.8.39.2.5 Permits Not Required.

1.12.8.39.2.5.1 Persons holding a Certificate of Competency for cannons shall be allowed to store less than 50 lbs. of black powder.

Table 1.12.8.39 Permits Required

Chapter 65	**Blasting, Explosives, Fireworks, Model Rocketry and Flame Effects**	
Work/Activity	**Issuing Authority**	**Code Section/M.G.L.**
Black Powder/Blasting/Explosives/Model Rocketry/Pyrotechnics/Cannons/Flame Effects		
Display of Fireworks Supervision of the use of explosives, fireworks and cannon mortar.	Head of Fire Department	65.2.3
Storage and manufacturing of fireworks.	State Fire Marshal	
A vehicle carrying explosive materials left unattended and parked in an authorized area.	Head of Fire Department	
Pyrotechnics before a proximate audience.		65.3.3
Flame effects before an audience.		65.4.1.1 65.4.2

1.04: continued

Fireworks manufacturing. M.G.L. c. 148, § 12	State Fire Marshal	65.5.1.2
Model rocketry including storage of solid propellant model rocket motors, reloading kits, or motor components > 50 lbs. (23 kg) net weight at a residence.	Head of Fire Department	65.6.1
High power rocketry, including storage of high power model rocket motors, motor reloading kits, and pyrotechnic modules.	Head of Fire Department	Section 65.8.2
Explosives including manufacturing and storage of explosive materials. M.G.L. c. 148, § 12	State Fire Marshal	65.9.2.1
Blasting.	Head of Fire Department	65.9.2.2
Keeping and the storage of explosives. M.G.L. c. 148, § 13	State Fire Marshal	65.9.2.1
Transportation [Intrastate]. M.G.L. c. 148, § 13	State Fire Marshal and Head of Fire Department	65.9.2.1
Storage of in any magazine, building or structure.	State Fire Marshal	65.9.2.1
Delivery of fireworks to authorized personnel.	Head of Fire Department	65.9.6.3
Cannon or Mortar Firing.		65.11.2
		See also Section 1.12.8.39

1.12.8.40 Flammable and Combustible Liquids. [Chapter 66]

1.12.8.40.1 Permit Requirement.

1.12.8.40.1.1 Transport a Tank to a Tank Yard.

1.12.8.40.1.1.1 To transport a tank to an approved tank yard, the person requesting the permit shall provide the permit-granting authority (Head of the Fire Department) with notification of the designated site of disposition.

1.12.8.40.1.1.2 Receipt of Delivery.

1.12.8.40.1.1.2.1 Any person granted a permit to remove an installed tank shall, within 72 hours, provide a receipt for delivery of said tank to the site designated on the permit.

1.12.8.40.1.2 Inspection of Tanks. The Head of the Fire Department shall periodically inspect existing above ground tank installations for safety, and if he determines that the installation or operation constitutes a hazard, he shall require unsafe tanks to be removed from service.

1.12.8.40.1.3 Removal of Tanks and Underground Piping.

1.12.8.40.1.3.1 Within 24 hours after the removal of an underground tank and underground piping, the owner shall acquire a measurement for the presence of a release of oil or hazardous materials to the environment where contamination is most likely to be present on the site and, if requested, submit such documented measurements to the AHJ

1.12.8.40.1.3.2 If contamination is found, the owner shall immediately notify the Head of the Fire Department as well as the Department of Environmental Protection.

1.12.8.40.2 Abandoned Tanks and Piping.

1.12.8.40.2.1 Abandoned tanks and piping shall be removed**.**

1.04: continued

1.12.8.40.2.2 Abandoned, as used here, means any tank and piping without use, either filling or draw off for a continuous period:

(1) Any tank≤10,000 gallons for a continuous period in excess of 12 months.

(2) Any above ground storage tank >10,000 gallons for a continuous period in excess of 60 months and in compliance with 502 CMR 5.00*: Permit and Inspection Requirements of Above-ground Storage Tanks of More than Ten Thousand Gallons Capacity*.

Table 1.12.8.40 Permits Required

Chapter 66	**Flammable and Combustible Liquids**	
Work/Activity	**Issuing Authority**	**Chapter/Code Section/M.G.L.**
Construction, maintenance or use of any aboveground storage tank >10,000 gallons capacity, in aggregate. M.G.L. c. 148, § 37 502 CMR 5.00: *Permit and Inspection Requirements of Above-ground Storage Tanks of More than Ten Thousand Gallons Capacity*	State Fire Marshal	
To keep, store, manufacture, handle flammables or combustible liquids.	Head of Fire Department	66.1.5
Installation, maintenance, and storage of waste oil storage tanks.		66
Storage of alcohol based hand rub preparations > ten gallons.		66
Removal of tanks and underground piping.		66
Abandoned tanks.		66
		See Section 1.12.8.40

1.12.8.41 Flammable Solids. [Chapter 67]

Table 1.12.8.41 Permits Required

Chapter 67	**Flammable Solids**	
Work/Activity	**Issuing Authority**	**Code Section**
Storage of Flammable solids	Head of Fire Department	67.1.2

1.12.8.42 Chapter 68 Reserved.

1.12.8.43 Liquid Petroleum Gases and Liquefied Natural Gas. [Chapter 69]
1.12.8.43.1 Application for a Permit.

1.12.8.43.1.1 An application for a permit shall be submitted by the person, firm or corporation who will make the installation or connection to an LP-gas storage container, in the name of the owner or occupant of the premises.

1.12.8.43.1.2 Notice of Completion and Inspection of Work.

1.12.8.43.1.2.1 Upon receipt of notification of completion of the work, the AHJ shall make an inspection of the installation within a reasonable time. If same is found to be in accordance with Chapter 69 and if applicable 502 CMR 5.00, the AHJ shall issue to the owner or occupant a permit for the keeping, storage, manufacture or sale of LP-gas in connection therewith, except where such storage is otherwise authorized by license.

1.12.8.43.1.2.2 Violation.

1.04: continued

1.12.8.43.1.2.2.1 If such installation is found not to be in accordance with Chapter 69, the permit shall be withheld and shall not be issued until the proper corrections have been made as directed, by written notice if requested, within a reasonably specified time and prior to any LP-gas being stored in the container(s).

1.12.8.43.1.2.2.2 Permits for the storage are considered null and void if such containers are considered abandoned. Where containers are abandoned they shall be removed, as provided in *Table 1.12.8.43.* If permitted by the AHJ, such container may be reused in accordance with 1.12.8.43.1.1.

1.12.8.43.1.3 Certificate of Completion.

1.12.8.43.1.3.1 *See Section 1.12.8.51* for Certificate of Completion requirements regarding LP- gas storage installations and connections.

1.12.8.43.2 Permits Not Required.

1.12.8.43.2.1 No permit shall be required to make a connection in the replacement of a portable container, or the filling of a stationary container.

Table 1.12.8.43 Permits Required

Chapter 69	**Liquid Petroleum Gases and Liquefied Natural Gas**	
Work/Activity	**Issuing Authority**	**Code Section**
Storage, use and handling and the installation or modification of stationary installations.	Head of Fire Department	69.1.2
Keeping, removal, storage or use of LP-gas >42 lbs aggregate capacity.		
		See also Section 1.12.8.43

1.12.8.44 Chapter 70 Reserved.

1.12.8.45 Chapter 71 Reserved.

1.12.8.46 Chapter 72 Reserved.

1.12.8.47 Chapter 73 Reserved.

1.12.8.48 Ammonium Nitrate.

1.12.8.48.1 If applicable, permits shall comply with the requirements of Chapter 65.

1.12.8.49 Chapter 75 Reserved.

1.12.8.50 Quantities, Permits and License Requirements.

1.12.8.50.1 The activities and aggregate quantities listed in *Table 1.12.8.50* shall be used in determining permit and/or license thresholds.

1.12.8.50.2 All tanks, containers, vessels and transport vehicles are to be considered full for the purpose of permitting under this *Code* and under M.G.L. c. 148, § 13.

1.12.8.50.3 This section shall not apply to Class II and III liquids that are not heated to or above their flash points and:

(1) That have no fire point when tested by ASTM D 92, up to the boiling point of the liquid or up to a temperature at which the sample being tested shows an obvious physical change, or

(2) That are in a water-miscible solution or in dispersion with a water and inert (noncombustible) solids content of more than 80% by weight, which do not sustain combustion when tested using the "Method of Testing for Sustained Combustibility", per 49 CFR 173, Appendix H, or the UN *Recommendations on the Transport of Dangerous Goods.*

1.12.8.50.4 If a license is required based on the limits set forth in *Table 1.12.8.50*, it shall be issued in accordance with M.G.L. c. 148, § 13.

1.12.8.50.5 A permit shall be obtained in accordance with *Table 1.12.8.1* through Table 1.12.8.50 as applicable.

1.04: continued

1.12.8.50.6 When storing more than one class of liquid or other materials named in *Table 1.12.8.50*, a license shall only be required for the individual class or materials, which exceed the amounts listed.

1.12.8.50.7 Explosive material classified as Division 1.5 and 1.6 shall not be regulated as an explosive in determining capacities subject to license requirements of M.G.L c. 148, § 13.

Table 1.12.8.50 Permit and/or License Thresholds

Materials	Quantities	Permit	License
Class 1 liquids	< 793 Gallons*	yes	no
Note 1: Gasoline may be used, kept, or stored in any building not used for habitation nor frequented by the public, # 7 gallons and provided the gasoline is stored in one or more approved containers without permit. Note 2: *See* alcohol based hand rub Table 1.12.8.1. * Note 3: No permit or license needed when stored in portable tanks over 60 gallons capacity not intended for fixed use, including intermediate bulk containers (IBCs) designed for mechanical handling.	≥ 793 gallons	yes	yes
Class I liquids (in fixed storage containers)	<10,000 gallons**	yes	no
**Note: No permit or license needed for storage tanks having a liquid capacity that exceeds 60 gallons capacity, intended for fixed installation and not used for processing.	≥ 10,000 gallons	yes	yes
Class II liquids.	< 10,000 gallons	yes	no
	≥ 10,000 gallons	yes	yes
Class IIIA liquids.	< 10,000 gallons	yes	no
	≥ 10,000 gallons	yes	yes
Class IIIB liquids.	< 10,000 gallons	yes	no
	≥10,000 gallons	yes	yes
Flammable Solids.	< 100 lbs.	yes	no
	≥100 lbs.	yes	yes
Flammable gases (within a building).	< 3,000 cubic feet	yes	no
	≥ 3,000 cubic feet	yes	yes
Flammable gases (outside a building).	< 10,000 cubic feet	yes	no
	≥ 10,000 cubic feet	yes	yes
Fuel oil that may be kept for use in a building or other structure.	< 10,000 gallons of light or of heavy	yes	no
	≥ 10.000 gallons of light or of heavy	yes	yes
Small arms ammunition of rim fire ammunition. [private use]	< 10,000 rounds	no	no
	≥10.000- 30,000 rounds	yes	no
	> 30,000 rounds	yes	yes
Small arms ammunition of center fire ammunition. [private use]	< 10,000 rounds	no	no
	≥ 10,000- 50,000 rounds	yes	no
	> 50,000 rounds	yes	yes

1.04: continued

Materials	Quantities	Permit	License
Small arms ammunition of shotgun ammunition. [private use]	< 5,000 rounds	no	no
	≥ 5,000 rounds- 50,000 rounds	yes	no
	> 50,000 rounds	yes	yes
Small arms ammunition primers. [private use]	< 10,000 caps or other small arms primers	no	no
	≥ 10,000 caps or other small arms primers	yes	yes
Small arms ammunition primers. [commercial use]	< 100,000 caps or other small arms primers	yes	no
	≥ 100,000 caps or other small arms primers	yes	yes
Smokeless propellants. [private] Note 1: Persons younger than 18 years old may not keep or store smokeless propellants. Note 2: Not more than two pounds of such propellant shall be stored in a multiple family dwelling or a building of public access.	< 16 lbs.	no	no
Smokeless propellants. [private]	16 lbs. through 47 lbs.	yes	no
	≥ 48 lbs.	yes	yes
Smokeless propellants. [commercial]	≥ 16 lbs. through < 99 lbs.	yes	no
	≥ 100 lbs.	yes	yes
Black powder. [private] Note: Persons younger than 18 years old may not keep or store any amount of black powder.	≤ 2 lbs	no	no
	> 2 lbs. through < 5 lbs.	yes	no
	≤ 5 lbs.	yes	yes
Black powder. [commercial] *See* Section 1.12.8.39.2.5.1 for permit exempted individual.	< 50 lbs.	yes	no
	≥50 lbs.	yes	yes
Special industrial explosive devices.	< 50 lbs. net weight of explosives	no	no
	≥ 50 lbs. net weight of explosives	yes	yes
Explosive material. Note: Fireworks can be stored up to 30 days without a land license.	Classified Division 1.1 - 1.6	yes	yes

1.05: continued

Materials	Quantities	Permit	License
LP-gas.	< 42 lbs. [10 gallons]	no	no
	≥ 42 lbs. [10-gallons] through 2,000 gallons	yes	no
	> 2,000 gallons of LP-gas in the aggregate	yes	yes
Flammable or class II combustible liquids unattended within cargo tanks, portable tanks or transfer tanks on a parcel of land. This shall not apply to parcels of land permitted by the Head of the Fire Department prior to September 1, 2008.	≤ 15,000 gallons in the aggregate	yes	no
	> 15,000 gallons in the aggregate	yes	yes

1.12.8.51 Certificates of Completion. A certificate of completion shall be filed as provided in *Table 1.12.8.51.*

1.12.8.51.1 A person making the installation or connection of an oil burner, alternate fuel installation, or LP-gas installation shall within 72 hours (excluding Saturday, Sunday and holidays) after test-firing the burner, file such Certificate of Completion with the Head of the Fire Department.

1.12.8.51.2 Inspection. Upon receipt of a Certificate of Completion, the Head of the Fire Department shall make an inspection of the installation within a reasonable time, and if same is found to be in accordance with this *Code*, the AHJ shall issue to the owner or occupant an applicable permit.

Table 1.12.8.51 Certificates Required for Permit

Chapters 11, 42 and 69	Certificates of Completion
Type	
Oil Burner Technician [Chapter 11]	
Upon completion, the person, firm or corporation having made the installation or connection:	Shall certify in writing on a form approved by the State Fire Marshal to the Head of the Fire Department that the work has been completed, and is in conformity with the requirements of this *Code*.
CNG, LNG, Hydrogen, and LP-Gas Alternate Fuels [Chapter 42]	
Upon completion of an installation or connection the person, firm or corporation having made the installation or connection:	Shall certify in writing on a form approved by the State Fire Marshal to the Head of the Fire Department that the work has been completed, and in conformity with the requirements of this *Code*.
LP-gas [Chapter 69]	
Upon completion of an installation or connection the person, firm or corporation having made the installation or connection:	Shall certify in writing on a form approved by the State Fire Marshal to the Head of the Fire Department that the work has been completed, and in conformity with the requirements of this *Code*.
	See Section 1.12.8.51

1.13 Certificates.

1.13.1 Authorization. The State Fire Marshal shall have the authority to require certificates and collect fees for individuals or companies performing any of the following activities.

(1) Sale, manufacture, possession or use of explosive materials, blasting operations, firework displays, storage of fireworks, or use of pyrotechnics or special effects before a proximate audience; *see Sections 1.13.10 and 1.13.11*, and Chapter 65

(2) Inspection, servicing, or recharging of portable fire extinguishers; *see Section 1.13.5* and Chapter 13

1.05: continued

(3) Installation, servicing, or recharging of fixed fire extinguishing systems; *see Section 1.13.5* and Chapter 13
(4) Cleaning and inspection of commercial cooking operations; *see Section 1.13.8* and Chapter 50
(5) Operating self-service gas stations; *see Section 1.13.12* and Chapter 42
(6) Operating marine fueling facilities and mobile marine fueling vehicles; Chapter 42
(7) Transportation of any combustible liquid; Chapter 42
(8) Crowd management services; *see Section 1.13.6* and Chapter 20
(9) Activities related to the operation and firing of muzzle-loading cannons; *see Section 1.13.9* and Chapter 65
(10) Altering, repairing, or installing oil burning equipment; *see Section 1.13.7* and Chapter 11

1.13.1.1 No person shall conduct a business or engage in the work or activity prescribed in *Section 1.13*, unless the appropriate certificate(s), as required in *Sections 1.13.5 through 1.13.13*, have been issued, and that such certificate is not expired, suspended, revoked, or fee not paid.

1.13.1.2 The following provisions shall apply to each certificate issued by the State Fire Marshal:

(1) Certificates shall be issued in such form as prescribed by the State Fire Marshal;
(2) Certificates shall not be transferable;
(3) Certificates shall be issued for the period of time as indicated on the certificate;
(4) Address change shall be reported in writing to the State Fire Marshal's Office within 14 days of such change to maintain validity of the affected certificate;
(5) A Certificate shall not be issued to anyone younger than 18 years old;
(6) Any individual or company to whom a certificate has been issued shall, upon request, produce and show proper identification and the certificate to the AHJ or anyone for whom that individual or facility seeks to render services;
(7) Certificates shall not be altered;
(8) Any evidence of alteration of any certificate shall render the certificate invalid. Altered certificates shall be surrendered to the State Fire Marshal or his or her designee; and
(9) Any insurance company providing coverage shall be licensed in the Commonwealth of Massachusetts by the Commissioner of Insurance.

1.13.1.3 Any individual or entity, who holds a permit, certificate, or registration issued by the State Fire Marshal to perform an activity prescribed in this chapter, shall constitute agreement and consent by the individual or entity holding the permit, certificate, or registration, to allow the State Fire Marshal to enter the premises at any reasonable time to conduct such inspection, or review such records, as they pertain to conformity with this Code, and/or the performance of activities conducted pursuant to such permit, certificate, or registration.

1.13.1.3.1 Any individual or entity, as described in *1.13.1.3*, who fails to comply with the requirements of *1.13.1.3,* may be subject to suspension or revocation of its permit, certificate, or registration. Such suspension or revocation shall, where required under the provisions of M.G.L. 30A, be effective after the individual or entity has been given adequate notice and an opportunity to be heard.

1.13.2 Certificates Required by the State Fire Marshal. The following certificates shall be required and issued by the State Fire Marshal:

(1) **Certificate of Competency (CC)**. Issued to a person, in the individual's name, authorizing the person named in the certificate to perform an activity prescribed *Section 1.13.* The holder of a valid Certificate of Competency must have the Certificate of Competency in his/her possession whenever work is being performed under said Certificate of Competency, and the Certificate of Competency shall be immediately presented to any business interest, AHJ, or compliance officer upon request.
(2) **Certificate of Registration (CR)**. Issued to a person, firm, company, or other legal entity authorizing establishment, operation, and advertising of a business in the name stated on the certificate that performs an activity prescribed in *Section 1.13.*
(a) A separate Certificate of Registration is required for each business location.

1.05: continued

(b) A Certificate of Registration does not authorize the holder of the Certificate of Registration to perform work or activities for which a Certificate of Competency is required.

(c) The holder of a Certificate of Registration shall only advertise the name of the business as it is stated on the Certificate of Registration. Any sign, listing, or advertisement of the business shall display the certificate number.

(d) The holder of a Certificate of Registration shall report annually the name, address, and Certificate of Competency number of each certified person in his employ, in a manner acceptable to the State Fire Marshal.

(e) Every business issued a Certificate of Registration shall be properly equipped to perform the act or acts as permitted by the Certificate of Registration.

(f) Each Certificate of Registration shall be identified by type and shall bear an identifying number delineating as MA-Certificate of Registration-(number), the "MA" indicating it is a Massachusetts certificate.

(g) The Head of the Fire Department shall be notified in writing by the business conducting any service for which a certificate is required, within 48 hours of any deficiencies found and within 48 hours of the completion of the work to bring the system into compliance

(h) It shall be the responsibility of the holder of a Certificate of Registration to ensure that any individual under employ or control of the Certificate of Registration, who is required to hold a certificate, or registration issued by the State Fire Marshal to perform an activity prescribed in Section 13, holds a valid certificate, or registration at the time the activity is performed.

(i) Failure by the holder of a Certificate of Registration to comply with the requirement of 1.13.2(2)(h) may subject the holder of the Certificate of Registration to suspension or revocation of its Certificate of Registration. Such suspension or revocation shall, where required under the provisions of M.G.L. 30A, be effective after the holder of the Certificate of Registration has been given adequate notice and an opportunity to be heard.

(3) **User Certificate (UC)**. A UC is required when the holder of a valid Certificate of Registration wishes to operate a business in a name other than the business name listed on the Certificate of Registration. A separate UC is required for each alternate business name that performs an activity prescribed in Section 1.13.

(a) A UC does not authorize the holder of the UC to perform work or activities for which a Certificate of Competency is required.

1.13.3 Application for Certificate. Applications shall be made and submitted in a form and manner as prescribed by the State Fire Marshal.

1.13.3.1 The State Fire Marshal or his or her designee shall review every application for a certificate.

1.13.3.2 Examination.

1.13.3.2.1 The State Fire Marshal or his or her designee shall administer a written exam that measures the applicant's ability, knowledge, and skill level.

1.13.3.2.2 The State Fire Marshal shall be permitted to allow an applicant to submit test results from an examination given by a third-party certification entity, taken within two years of the date of application.

1.13.3.2.2.1 The State Fire Marshal or his or her designees shall determine if said test measures the applicant's ability, knowledge, and skill level in a manner equivalent to or greater than, the test administered by the State Fire Marshal.

1.13.3.2.2.2 The State Fire Marshal shall be permitted to establish other examination criteria based on other laws and regulations

1.13.3.2.3 The State Fire Marshal or his or her designee shall conduct an inspection to determine that the applicant possesses the required equipment for the type of certificate sought. A reasonable opportunity shall be given to correct any deficiencies discovered by the inspection before the issuance of the certificate.

1.05: continued

1.13.3.3 Incomplete Applications. When the State Fire Marshal or his designee determines that an application to receive a certificate is incomplete, inadequate, or does not otherwise comply with the provisions of this *Code,* policy, or any other applicable law, the State Fire Marshal shall refuse to issue said certificate. If the refusal is based on the applicant's inability to pass an examination given to determine competency, the applicant may reapply in accordance with the policy of the State Fire Marshal.

1.13.3.4 Applicants.

(1) Applicants shall meet the eligibility criteria for the applicable certificate as established by the State Fire Marshal and provide documentation of knowledge and experience particular to the profession as required on the application for certificate.

(2) Applicants applying for a certificate issued under *Section 1.13* shall furnish such documents or other evidence as prescribed by the State Fire Marshal as a condition to the issuance of such certificate.

1.13.3.5 Renewal of Certificate.

1.13.3.5.1 A certificate may be renewed upon written request of the holder, subject to approval by the State Fire Marshal.

1.13.3.5.2 Renewal applications shall be accompanied by the appropriate fee and shall be submitted at least one month in advance of the expiration date or as otherwise required by the State Fire Marshal.

1.13.3.5.3 Applicants submitting a renewal application shall meet the eligibility criteria for the applicable certificate as established by the State Fire Marshal.

1.13.3.5.4 Certificates shall expire as indicted in *Table 1.13.12.*

1.13.4 Revocation or Suspension of Certificates issued by the State Fire Marshal.

1.13.4.1 The State Fire Marshal may, after notice and opportunity for a hearing conducted by the Department, impose administrative sanctions, including but not limited to the suspension or revocation of any certificate, for failure by the holder to comply with any applicable provision of this *Code* and/or M.G.L. c. 148. The State Fire Marshal may also suspend or revoke a certificate if any material misrepresentations are knowingly submitted in the application on which issuance of the certificate was based.

1.13.4.1.1 Administrative action shall be conducted in accordance with the requirements of M.G.L. c. 30A.

1.13.4.1.2 Notice delivered. Any notice issued by the State Fire Marshal under this *Code*, shall be deemed delivered and received by said holder, if the notification is sent by certified mail, return receipt requested, to the last known address of said holder, according to the records of the State Fire Marshal at the time of such mailing.

1.13.4.1.3 Penalty for work during suspension. Any person who engages in any work or trade regulated by this *Code*, after suspension of said, certificate, or registration issued by the State Fire Marshal shall be subject to a minimum three-year suspension of said, certificate, or registration. Such suspension shall, where required under the provisions of M.G.L. 30A, be effective after the holder of the suspended, certificate, or registration has been given adequate notice and an opportunity to be heard on the sole issue of whether the holder of the suspended certificate, or registration engaged in work which requires an active certificate, or registration issued by the State Fire Marshal, pursuant to *Section 1.13.*

1.13.4.1.4 Penalty for allowing others to use. Any person who knowingly loans, sells, transfers, or otherwise allows another to use their certificate, or registration issued by the State Fire Marshal shall be subject to permanent revocation of all certificates, or registrations issued by the State Fire Marshal they hold, without the eligibility for renewal. Said individual shall be permanently prohibited from applying for and holding any certificate, or registration issued by the State Fire Marshal in the future. Such permanent revocation and prohibition shall, where required under the provisions of M.G.L. 30A, be effective after the holder of said certificate, or registrations has been given adequate notice and an opportunity to be heard.

1.05: continued

1.13.4.1.5 Penalty for using or possessing another's certificate or registration. Any person who knowingly uses or possesses the certificate, or registration of another or who otherwise falsely represents themselves as a holder of said license, certification, or registration issued by the State Fire Marshal, shall be permanently prohibited from applying for and holding any certificate, or registration issued by the State Fire Marshal. Such prohibition shall be effective, where required under the provisions of M.G.L. 30A, after adequate notice and an opportunity to be heard.

1.13.4.1.6 Penalty for allowing unlicensed employee to use. Any holder of a Certificate of Registration or User Certificate who knowingly permits an unlicensed individual within their employ to use or possess the certificate, or registration of another or to otherwise falsely represent themselves as a holder of a license, certificate, or registration issued by the State Fire Marshal, shall be subject to a minimum three-year suspension of said Certificate of Registration or User Certificate. Such suspension shall, where required under the provisions of M.G.L. 30A, be effective after the holder of the Certificate of Registration or User Certificate has been given adequate notice and an opportunity to be heard.

1.13.4.1.7 Penalty for allowing employee to violate *Code*. Any holder of a Certificate of Registration or User Certificate who knowingly permits an individual in their employ to violate any provision of this *Code*, other than *Section 1.13.4.1.6*, may be subject to suspension or revocation of said Certificate of Registration or User Certificate. Such suspension or revocation shall, where required under the provisions of M.G.L. 30A, be effective after the holder of the Certificate of Registration or User Certificate has been given adequate notice and an opportunity to be heard.

1.13.4.1.8 Penalty for working after expiration. Any person who engages in any work or trade regulated by this *Code*, after the expiration of said, certificate, or registration issued by the State Fire Marshal shall be subject to a minimum six month prohibition from applying for and holding any license, certificate, or registration issued by the State Fire Marshal and shall be required to take and successfully pass any and all examinations required for such license, certificate, or registration holders, prior to reinstatement. Such prohibition shall, where required under the provisions of M.G.L. 30A, be effective after the holder of the expired license, certificate, or registration has been given adequate notice and an opportunity to be heard on the sole issue of whether the holder of the expired license, certificate, or registration engaged in work which requires an active license, certificate, or registration issued by the State Fire Marshal, pursuant to *Section 1.13.*

1.13.4.1.9 Failure to appear. Any person who is the subject of an administrative hearing on their certificate or registration issued by the State Fire Marshal and who fails to respond to, participate in or appear at a scheduled hearing or otherwise defaults, shall be subject to an evidentiary hearing in their absence. The Hearing Officer may assume the truth of the allegations in the *Notice to Suspend or Revoke* and impose an appropriate penalty on the holder of said license, certificate, or registration. Consistent with 801 C.M.R. § 1.02(10)(d) said person shall, within ten business days from the date of said notice of administrative action by the State Fire Marshal, request a rescheduled hearing or the outcome of said default hearing will be considered final.

1.13.4.1.10 Disruptive person at hearing. Any person who is the subject of an administrative hearing on their certificate or registration issued by the State Fire Marshal, their counsel, witnesses, and other persons present at a hearing shall conduct themselves in a manner consistent with the standards of decorum commonly observed in any court. Where such decorum is not observed, the Hearing Officer may take appropriate action. Appropriate action may include, but is not limited to, refusal to allow a disruptive person to remain in the hearing and, if such person is subject to an administrative hearing on their certificate, or registration, to allow participation by representative only.

1.05: continued

1.13.4.1.11 No renewal during pending actions. No person shall have certificate, or registration renewed by the State Fire Marshal, if said certificate, or registration has expired and at the time of application for renewal, there is any administrative, court or similar action pending pertaining to said certificate, or registration, until all such matters have been fully resolved.

1.13.4.1.12 No renewal when fines are outstanding. Any person with a suspended, expired, or otherwise inactive certificate, or registration issued by the State Fire Marshal shall not have said certificate, or registration reinstated until any and all outstanding fines have been paid in full.

1.13.4.1.13 No renewal when inactive more than one year. Any person with a suspended, expired, or otherwise inactive license, certificate, or registration for more than a one (1) year period shall not have said certificate, or registration reinstated until they have, where applicable, retaken and successfully passed the examination required for said certificate, or registration.

1.13.4.1.14 Hearing continuance request. Once an administrative hearing is scheduled, continuances will be granted only for good cause. To request a continuance, the party seeking the continuance must submit a written request to the State Fire Marshal at least seven (7) calendar days before the hearing. The request must include the reason why (good cause) the party needs to postpone and how long the party has known the good cause. Emergency requests to continue may be submitted less than seven (7) calendar days in advance. Such emergency requests shall explain in detail why the request could not have been filed sooner and shall contain supporting documentation, where appropriate.

1.13.4.1.15 Penalty for failure to surrender. Failure to surrender a suspended license, certificate, or registration issued by the State Fire Marshal within seven (7) calendar days of said suspension, shall result in continued suspension at the rate of one day for each day of non-compliance. Surrender shall mean delivering the certificate or registration in-hand to the Department of Fire Services or via first-class mail, postmarked within seven (7) calendar days of said suspension.

1.13.4.1.16 Prohibition for applying during suspension. Any holder of a Certificate of Registration or User Certificate issued by the State Fire Marshal that is subject to a suspension of said Certificate of Registration or User Certificate shall be prohibited from applying for or holding another Certificate of Registration or User Certificate issued by the State Fire Marshal under the same or different business name during said suspension period. This temporary prohibition shall also apply to any individual within the employ of or affiliated with said holder of a Certificate of Registration or User Certificate.

1.13.4.2 Instances Involving an Immediate Threat to Public Safety.

1.13.4.2.1 The State Fire Marshal may immediately suspend or revoke, prior to a hearing, any certificate, or any rights and privileges granted thereby, issued under this Code or M.G.L. c. 148, whenever the holder thereof has committed a violation of any law, ordinance or bylaw relating to the subject matter of M.G.L. c. 148, or any provision of this *Code*, the nature of which would give the State Fire Marshal reason to believe that the continued operation by such holder is and will be so seriously improper as to constitute an immediate threat to the public safety.

1.13.4.2.2 Upon such suspension or revocation, the State Fire Marshal shall forthwith send written notice thereof to the holder. Such notice shall specify the time and place of the violation.

1.13.4.2.3 The State Fire Marshal or his or her designee may order the certificate to be delivered to him or her forthwith.

1.13.4.2.4 The certificate shall not be reissued unless, upon examination or investigation, or after a hearing, the State Fire Marshal, or his designee determines that the certificate may be re-issued.

1.05: continued

1.13.4.2.5 Said holder shall be entitled to a hearing within 30 days of the suspension or revocation.

1.13.5 Servicing Portable Fire Extinguishers and/or Fixed Fire Extinguishing Systems. [Chapter 13]

1.13.5.1 General. To service portable fire extinguishers and/or fixed fire extinguishing systems, both a Certificate of Competency and a Certificate of Registration shall be required.

1.13.5.1.1 A Certificate of Competency shall be required for each person servicing fire extinguishers or systems

1.13.5.1.2 A Certificate of Registration shall be required for each firm, company, corporation or other legal entity servicing fire extinguishers or systems.

1.13.5.1.3 Additional Certificate of Registration shall be required for each business location.

1.13.5.2 Certificate of Competency for Servicing Fire Extinguishers and Systems.

1.13.5.2.1 An applicant requesting a Certificate of Competency shall comply with the following;

(1) Submit a completed application in accordance with *Section 1.13.3* for the servicing of portable fire extinguishers and/or fixed fire extinguishing systems, identifying applicable type of certificate (restriction(s)) to the State Fire Marshal's Office.

(2) An application for a Type 47 and a Type 48 Certificate of Competency shall be accompanied by a written attestation, enumerating the applicant's technical qualifications, competency, and experience to charge, recharge, repair, test, inspect and service engineered or pre-engineered systems.

1.13.5.2.2 Examination for Servicing Fire Extinguishers.

(1) The State Fire Marshal shall establish a comprehensive written examination covering state laws, regulations and industry safety standards pertaining to this *Code*.

(2) The applicant shall successfully pass an examination as a prerequisite to the issuance of a certificate. The examination shall consist of multiple-choice, fill-in, true-false, or short answer questions, and may include the following topics:

(a) Diagrams, plans or sketches;

(b) Portable fire extinguishers: charging, recharging, servicing, testing, and inspecting;

(c) Engineered fixed fire extinguishing systems: charging, recharging, altering, repairing, testing, inspection, installation, and servicing;

(d) Pre-engineered fixed fire extinguishing systems; and

(e) Self-service fire extinguishing systems.

1.13.5.3 Certificate of Registration for Servicing Fire Extinguishers and Systems.

1.13.5.3.1 An applicant requesting a certificate for a firm, company, corporation or other legal entity shall submit a completed application in accordance with *Section 1.13.3* for the servicing of portable fire extinguishers and/or fixed fire extinguishing systems, identifying applicable type of restriction(s).

1.13.5.4 Service Tags.

1.13.5.4.1 The size, content, design, and placement of service tags shall be prescribed by the State Fire Marshal.

1.13.5.4.2 Prior to printing a service tag, each firm holding a valid certificate of registration shall forward one sample of the service tag to the State Fire marshal for approval.

1.13.5.4.3 One service tag shall be attached to each portable fire extinguisher, engineered or pre-engineered fixed fire extinguishing system or to a vessel which has been hydrostatically tested.

1.05: continued

1.13.5.4.4 A service tag shall be affixed and indicate the date, initials and certificate number of the person who conducted the most recent test.

1.13.5.4.5 Any engineered, pre-engineered and self-service fire suppresion system inspected and found to be in noncompliance with its listing or manufacturer's specifications shall have a service attached indicating noncompliance.

1.13.5.4.6 Noncompliance Service Tags.

1.13.5.4.6.1 Installed noncompliance service tags shall be bright orange, have the words "Noncompliance" in block letters not less than ½ inch in height and be black in color.

1.13.5.4.6.2 Tags shall contain the firm name, certificate of registration number, date of inspection, the reason for noncompliance and the initials and certificate of competency number of the person who conducted the inspection.

1.13.5.4.7 Theft or Loss of Service Tags

1.13.5.4.7.1 Any incident involving the loss or theft of service tag(s) must be reported to the State Fire Marshal and the police department within the jurisdiction where the loss or theft occurred within 72 hours. Failure to report such loss or theft shall result in the rebuttable presumption that the holder of the tag performed or allowed another to perform the services associated with said tag(s). Any person who unwittingly allows another to use their service tag(s) after a prudent license-holder would have cause to knowof a loss or theft of same, or misappropriation or misrepresentation of identity, may have their Certificate of Competency and Certificate of Registration suspended for a minimum of two years.

Table 1.13.5 Certificates Required

Chapter 13	**Portable Fire Extinguishers and/or Engineered or Pre-engineered Fixed Fire Extinguishing Systems or Performing of Hydrostatic Testing**		
Certificate of Registration and Certificate of Competency			
Activity	**Description**	**Types for business entities [Registration]**	**Types for individuals [Competency]**
For the installation, servicing, inspection, testing alteration, repair, and recharging. Note: For hydrostatic testing of cylinders, *see* Federal License requirements and DOT provisions.	Self-serve Motor Fuel Facilities.	Type 40	Type 41
	Servicing portable fire extinguishers.	Type 42	Type 46
	Servicing engineered fixed fire extinguishing systems.	Type 43	Type 47
	Servicing pre-engineered fixed fire extinguishing systems.	Type 44	Type 48

NON-TEXT PAGE

1.05: continued

1.13.6 Crowd Managers. [Chapter 20]

1.13.6.1 General. For an individual to manage crowds of 100 or more in a nightclub, dance hall, discotheque or bar, a Certificate of Competency shall be required.

1.13.6.2 Certificate of Competency for Crowd Manager.

1.13.6.2.1 An applicant requesting a Certificate of Competency shall comply with the following:

(1) Submit a completed application in accordance with *Section 1.13.3* to the State Fire Marshal's Office;

(2) The applicant shall be 21 years of age or older;

(3) The applicant shall receive training, as required by the State Fire Marshal; and

(4) The applicant shall successfully complete the training course as a prerequisite to the issuance of a certificate.

Table 1.13.6 Certificate Required

Chapter 20	**Crowd Manager**
Certificate of Competency	
Activity	**Description**
To an individual who will be managing crowds of 100 or more people.	In a nightclub, dance hall, discotheque, or bar

1.13.7 Certificates Required by Chapter 11. In addition to the requirements set forth in *Section 1.13* the specific provisions shall apply to the types of certificates as provided by *Section1.13.7* (1) (a) through (c).

(1) Oil Burner Technician and Apprentice.

(a) Certificate of Competency;

(b) Certificate of Completion; and

(c) Certificate of Compliance.

1.13.7.1* Oil Burner Technician and Apprentice.

A.1.13.7.1 *See* M.G.L. c. 148, §§ 10C through 10H regarding, certificates oil burner installations.

1.13.7.1.1 A Certificate of Competency issued as an oil burner technician or as an apprentice shall be issued to the individual.

1.13.7.1.2 The holder of a Certificate of Competency as an oil burner apprentice, shall not, individually and without supervision, perform any work or activities for which a Certificate of Competency is required, but may assist in the performance of such work or activities so long as the work or activities are performed under direct supervision by an oil burner technician who holds a valid Certificate of Competency.

1.13.7.1.3 Application.

1.13.7.1.3.1 Renewal. License renewal application forms must be submitted no less than 30 days prior to the license expiration date.

1.13.7.1.4* Examination. Except as provided by *Section 1.13.7.1.5.1*, the examination provisions in *1.13.3.4* shall be required as a prerequisite to licensure.

A.1.13.7.1.4 *See* the following references:

(1) M.G.L. c. 148, § 10C Alteration, repair or installation of oil burners; necessity of certificate; exceptions;

(2) M.G.L. c. 148, § 10D Certificate as oil burner technician; minimum age; application; fee; examination; duration of certificate; electrical work;

(3) M.G.L. c. 148, § 10E, governing apprentice certificates; fee; duration; expiration; renewal.

1.13.7.1.4.1 The examination provisions shall not be applicable as a prerequisite to licensure as an apprentice.

1.05: continued

1.13.7.2 Certificate of Completion. Except as otherwise provided by *Section 1.12.8.2.1,* a Certificate of Completion, as it applies to Chapter 11, entitled Building Services, shall be used, completed, required and submitted to the Head of the Fire Department as a precondition before a permit shall be issued:

(1) For the delivery of and storage of fuel oil; and
(2) For the operation of an oil fuel burner.

1.13.7.2.1 The oil burner technician shall be responsible for the submittal of a Certificate of Completion to the Head of the Fire Department within 72 hours (excluding Saturday, Sunday and holidays), regarding one or more of the activities listed in *Sections1.13.7.2.1 (1) and (2).*

(1) Requesting a permit to store fuel oil
(2) Inspection;
  (a) Installation work is completed
  (b) Tank replacement is completed
  (c) Oil line protection is completed
  (d) Combustion performance test is completed.

Exception to *Section 1.13.7.2.1(2)(d)*: A combustion performance test shall not be required when other permitted work, such as the, upgrading oil fuel lines, or the replacement or removal of an oil fuel tank or, for the repair or replacement of zone-valves and circulators and the like are performed.

1.13.7.2.1.1 When the applicable work described in *Section 1.13.7.2.1(2)* is approved, a permit shall be issued for the storage of fuel oil and for the use of the oil fuel boiler.

1.13.7.3 * Certificate of Compliance. A Certificate of Compliance is a standard form FP-056 prescribed by the State Fire Marshal and used to document by inspection, compliance with oil line upgrades.

1.13.7.3.1 A Certificate of Compliance shall be completed and signed by a licensed technician.

(1) Such signature certifies that the subject installation is in compliance and no other work activity is necessary to meet this provision.
  (a) Upon completion, a copy of such certificate shall be given to the owner and Head of the Fire Department.
(2) When an oil line needs upgrading as required by Massachusetts General Law, a permit using form FP-056A shall be used, completed, and issued as prescribed in *1.12.8.2.1.1* thereafter, a Certificate of Compliance shall be completed and submitted as provided in *1.13.7.3.1.*

1.13.7.3.2 The owner shall receive a copy and submit the Certificate of Completion to the Head of the Fire Department.

1.13.7.3.3 The Fire Department Official shall maintain such Certificate of Completion in accordance with *Section 1.11.*

1.13.7.4 Fuel Oil Deliveries.

1.13.7.4.1 Fuel oil deliveries shall not commence, unless the deliverer has verification that a permit has been obtained. Such verification may be considered to consist of any of the following:

(1) Verification by the Head of the Fire Department that such a permit is in effect.
(2) Written verification from the owner or customer that the permit is either in his or her possession or is posted on the premises.
(3) Observation that such a permit is in the possession of the owner or customer, or is posted on the premises.

1.13.7.4.2 Fuel oil shall not be delivered to a storage tank by means of a pump or under pressure, in any case where a tight connection is made between the discharge line and the tank inlet, unless such storage tank is designed to withstand the additional stress to which it may be subjected or unless the vent pipe for such tank is of sufficient size to relieve the tank of any undue pressure in excess of five psi. The delivery truck operator shall remain at the fill point during the entire operation.

1.05: continued

1.13.8 Cleaning and Inspection of Commercial Cooking and Exhaust Systems. [Chapter 50]

1.13.8.1 General. To clean and inspect commercial cooking and exhaust systems the following certificates shall be required.

1.13.8.1.1.1 A Certificate of Competency shall be required for each person performing such activity and shall be issued as either an Unrestricted Type 1 or Restricted Type 2 Certificate.

1.13.8.1.1.2 A Type 1 Unrestricted Certificate of Competency authorizes the holder to clean and inspect all commercial cooking and exhaust systems.

1.13.8.1.1.3 A Restricted Type 2 Certificate of Competency authorizes the holder to clean and inspect only those commercial cooking and exhaust systems which are owned by the certificate holder or their employer.

1.13.8.1.2 A Certificate of Registration shall be required for any business entity offering such activities.

1.13.8.1.2.1 A Type 1 Certificate of Registration authorizes a sole proprietor, company, firm, corporation, or other legal entity to offer cleaning and inspection of all commercial cooking and exhaust systems.

1.13.8.1.2.2 A Type 1 Certificate of Registration is not a substitute for a Certificate of Competency. A Certificate of Registration, by itself, does not authorize the holder of the Certificate of Registration to perform the actual activity of cleaning and inspection of commercial cooking and exhaust systems without a valid Certificate of Competency.

1.13.8.2 Requirements for Certificate of Competency for Cleaning and Inspection of Commercial Cooking Systems.

1.13.8.2.1 An applicant requesting a Certificate of Competency shall comply with the following prior to issuance.

(1) Submit a completed application on a form as prescribed by the State Fire Marshal;

(2) Submit a completed affidavit verifying 500 hours of supervision in the cleaning or inspection of commercial cooking operations.

(3) Successfully pass a written examination which tests the applicant's knowledge of applicable codes.

1.13.8.3 Certificate of Registration for Cleaning and Inspection of Cooking Systems.

1.13.8.3.1 An applicant requesting a Certificate of Registration shall submit a completed application in accordance with *Section 1.13.3* for the cleaning or inspection of commercial cooking operations to the State Fire Marshal's Office.

Table 1.13.8 Certificates Required

Chapter 50	**Cleaning and Inspection of Commercial Cooking and Exhaust Systems**
Certificate of Competency	
Activity	**Type**
For an individual to clean and/or inspect any commercial cooking and exhaust systems.	Type 1
For an individual to clean and/or inspect only those commercial cooking and exhaust systems which are owned by him/her or his/her employer.	Type 2 Restricted

1.05: continued

Chapter 50	Cleaning and Inspection of Commercial Cooking and Exhaust Systems
Certificate of Registration	
Activity	**Type**
For a business entity to clean and/or inspect any commercial cooking and exhaust systems.	Type 1

1.13.9 Cannon and Mortar. **[Chapter 65]**

Table 1.13.9 Certificates Required

Chapter 65	**Cannon and Mortar**
Certificate of Competency	
Activity	**Description**
Individuals to conduct or engage in any operation or activity which governs the firing of muzzle-loading cannons.	For patriotic celebrations and reenactments, including all such cannons ranging from pre-revolutionary war vintage to present day facsimiles, except any cannon exhibit in which explosives are not being used.

1.13.10 Fireworks Display, Special Effects or Proximate Audience Displays. [Chapter65]

1.13.10.1 General. To display fireworks and special effects or proximate audience displays, both a Certificate of Competency and a User Certificate shall be required.

1.13.10.1.1 A Certificate of Competency shall be required for the display of fireworks.

1.13.10.1.2 A Certificate of Competency shall be required for special effects or proximate audience displays.

1.13.10.1.3 A Certificate of Competency shall be required for each person performing each such activity.

1.13.10.1.4 A User Certificates for the display of fireworks shall be required for each firm, company, corporation, or other legal entity.

1.13.10.1.5 Additional User Certificates for the display of fireworks shall be issued contingent upon multiple business locations.

1.13.10.2 Certificate of Competency for Fireworks Display.

1.13.10.2.1 Applicants shall comply with the following:
(1) Submit a completed application in accordance with *Section 1.13.3* for the display of fireworks to the State Fire Marshal's Office.
(2) Provide evidence of active employment for a period of three years on a crew for professional fireworks displays, and encompasses a minimum of ten displays.
(3) Submit at least two letters of reference from holders of valid Certificate of Competency issued by the State Fire Marshal. At the option of the State Fire Marshal, an alternate requirement may be permitted to be substituted.
(4) Provide evidence of having satisfactorily completed a recognized fireworks safety course, subject to review by the State Fire Marshal, during the past 12 months.
(5) The applicant shall be 21 years of age or older.
(6) Pass a comprehensive written examination covering state laws, regulations and industry safety standards pertaining to the display of fireworks and this *Code*.

1.13.10.2.2 Renewal of Certificate of Competency.

1.13.10.2.2.1 The applicant requesting renewal shall comply with the following:
(1) Provide proof of active participation in at least two fireworks displays during the prior two years;

1.05: continued

(2) Provide a notarized statement attesting that the applicant understands the contents of this *Code* pertaining to fireworks displays and M.G.L. c. 148. The statement shall be made part of the application; and

(3) Submit a renewal application as provided in *Section 1.13.3* to the State Fire Marshal's Office.

1.13.10.4 User Certificate for Fireworks. [Chapter 65]

1.13.10.4.1 Applicants shall comply with the following:

(1) Submit a completed application in accordance with *Section 1.13.3* for a User Certificate to the State Fire Marshal's Office; and

(2) Provide evidence of a valid bond in accordance with M.G.L. c. 148, § 42.

(a) Supply evidence of valid liability insurance coverage in the form of a certificate issued by the insurance agency to the State Fire Marshal's Office listing the name and claims representative, providing general liability in the amount of $1,000,000 per occurrence and $1,000,000 aggregate coverage; and

(b) A 30 day cancellation notice to the State Fire Marshal shall be a condition of the policy;

(3) Provide a notarized statement affirming that all fireworks materials within the possession, custody, and/or control of the User Certificate, shall be transported, stored, handled and/or used in accordance with Chapter 65; and

(4) Provide a statement attesting that the person or firm understands the contents of this *Code* and M.G.L. c. 148. The statement shall be made a part of the application.

1.13.10.4.2 Expiration of Fireworks User Certificate.

1.13.10.4.2.1 A fireworks User Certificate shall expire upon the expiration of the ATF permit, bond, or the liability insurance, whichever occurs first.

1.13.10.5 Certificate of Competency for Special Effects or Proximate Audience Displays. [Chapter 65]

1.13.10.5.1 Applicants shall comply with the following:

(1) Submit a completed application in accordance with *Section 1.13.3* to the State Fire Marshal's Office;

(2) Submit evidence of knowledge and experience particular to the profession of conducting special effects displays. Such evidence shall include written documentation that the applicant has worked in at least ten special effects performances within two years from the date of application, under the direct supervision of a person who possesses a valid Certificate of Competency, issued by the State Fire Marshal, for such special effects issued by the Commonwealth or such similar certificate issued by another state;

(3) Provide evidence of having satisfactorily completed a recognized fireworks safety course, approved by the State Fire Marshal, during the past 12 months;

(4) Provide at least two letters of reference from other pyrotechnic certificate holders within the state. At the option of the State Fire Marshal, an alternate requirement can be substituted.

(5) The applicant shall be at least 21 years of age or older; and

(6) Pass a comprehensive written examination covering state laws, regulations and industry safety standards pertaining to the display of special effects and this *Code*..

1.13.10.5.2 Renewal An applicant requesting renewal shall comply with all of the following:

(1) Pass a reexamination covering state laws, regulations and industry safety standards pertaining to the display of special effects;

(2) Submit proof of actively participating in at least two displays during the prior two years;

(3) Provide a statement attesting that the person understands the contents of this Code pertaining to special effects and M.G.L. c. 148. The statement shall be made part of the application; and

1.05: continued

(4) Submit a renewal application as provided in *Section 1.13.3.3* to the State Fire Marshal's Office.

1.13.10.6 Supervision. Fireworks, special effects and pyrotechnic compositions and devices shall be ignited and be supervised continuously by the person holding a Certificate of Competency for the display.

Table 1.13.10 Certificates Required

Chapter 65	**Fireworks, Special Effects and Proximate Audience Displays**
Certificate of Competency	
Activity	**Description**
Individuals to conduct or engage in any activity, operation or act with the use of fireworks.	To conduct outdoor, marine or supervised displays of fireworks.
Individuals to conduct or engage in any activity, operation or act with the use of special effects or proximate audience effects.	To conduct outdoor/indoor, proximate audience special effects displays.
Fireworks User Certificate	
Activity	**Description**
Companies to conduct or engage in any operation (use or manufacture) or act for which governs the use of fireworks or special effects.	To possess and conduct fireworks or special effects.

1.13.11 To Conduct or Engage in Any Activity, Operation, or Act Dealing with the Use and Manufacture of Explosives. [Chapter 65]

1.13.11.1 General. To conduct or engage in any activity, operation, or act dealing with the use of explosives, both a Certificate of Competency and a User Certificate shall be required.

1.13.11.1.1 A Certificate of Competency shall be required for each person performing activities prescribed in this section.

1.13.11.1.2 A User Certificate shall be required for each firm, company, corporation, or other legal entity engaged in the activities as prescribed in this section.

1.13.11.1.3 Additional user certificates shall be required to be issued contingent upon multiple places of business.

1.13.11.2 Certificate of Competency for Explosives. [Chapter 65]

1.13.11.2.1 Applicants shall comply with the following:
(1) The applicant shall be 21 years of age or older
(2) Submit a completed application in accordance with *Section 1.13.3* to the State Fire Marshal's Office;
(3) Pass a comprehensive written examination covering state laws, regulations and industry safety standards pertaining to this *Code*;
(4) Provide evidence of having satisfactorily completed a recognized safety course, subject to review by the State Fire Marshal, during the past 12 months; and
(5) Have at least two letters of reference from other certificate holders within the state. At the option of the State Fire Marshal, an alternate requirement may be permitted.

1.13.11.2.2 Blasting. [Chapter 65]

1.13.11.2.2.1 No blasting operation shall be conducted at any time, unless a blaster holding a Certificate of Competency is physically present.

1.05: continued

1.13.11.2.2.2 Trainees, helpers, and other persons shall be permitted to work only under the supervision of a blaster holding a Certificate of Competency.

1.13.11.2.3 User Certificate for Explosives. [Chapter 65]

1.13.11.2.3.1 The applicant shall comply with the following:

(1) Submit a completed application in accordance with *Section 1.13.3* to the State Fire Marshal's Office;

(2) Provide evidence of valid liability insurance coverage in the form of a certificate issued by the insurance agency to the State Fire Marshal's Office listing the name and claims representative, providing general liability in the amount of $1,000,000 per occurrence and $1,000,000 aggregate coverage. A 30-day cancellation notice to the State Fire Marshal shall be a condition of the policy;

(3) Provide evidence of a valid blasting bond; and

(4) Provide a statement indicating that explosive materials shall be kept in magazines which meet the requirements of Chapter 65 and in accordance with 27 CFR Part 55. Provide a notarized statement attesting that the person or firm understands the contents of this *Code* and M.G.L. c. 148.

1.13.11.2.3.2 A User Certificate shall not be required for small arms ammunition. Small arms ammunition, as used here, means any shotgun, rifle, or pistol cartridge and any cartridge or propellant actuated devices, excluding military ammunition containing bursting charges or incendiary, tracer, spotting, or pyrotechnic projectiles;

1.13.11.2.3.3 The User Certificate for explosives shall expire upon the expiration of the ATF permit, bond, or the liability insurance, whichever occurs first.

Table 1.13.11 Certificates Required

Chapter 65	**Explosive Use and Handling**
Certificate of Competency	
Activity	**Description**
Allows individuals to conduct or engage in any activity, operation or act dealing with the use of explosives.	To conduct blasting operations, including: research and development (R&D), and blasting for the cleaning of boilers.
Explosive User Certificate	
Activity	**Description**
Allows companies to conduct or engage in any operation (use, handling or manufacture) of explosives.	To possess and conduct explosive activity or operation.
	To manufacture explosive materials.

1.13.12 Certificate of Registration for On-demand Fueling.

1.13.12.1 An applicant requesting a Certificate of Registration (CR) shall submit a completed application in accordance with *Section 1.13.3* to conduct On-demand Fueling operations to the State Fire Marshal's Office in accordance with the following:

(1) Provide evidence of valid liability insurance coverage in the form of a certificate issued by the insurance agency to the State Fire Marshal's Office listing the name and claims representative, providing general liability in the amount of $1,000,000 per occurrence, and $5,000,000 aggregate coverage. A 30-day cancellation notice to the State Fire Marshal shall be a condition of the policy.

(2) Provide a notarized statement attesting that fueling operations shall meet the requirements of Chapter 42.

(3) Provide a notarized statement attesting that the applicant understands the contents of this *Code* and M.G.L. c. 148.

(4) Provide a copy of the general safety and emergency response plan.

1.05: continued

Table 1.13.12 Certificates Required

Chapter 42	**On-demand Mobile Fueling**
Certificate of Registration	
Activity	**Description**
Companies to conduct the fueling of motor vehicles to the general public.	Mobile fueling of vehicles

1.13.13 Renewal of Certificates. The following certificates shall be renewed as provided in Table 1.13.12 and Section 1.13.

Table 1.13.13

Chapter	**Type of Certificate**	**Description**	**Expiration Date [*See* Note 1 and 2]**	**Exam Required for Renewal**	**Acronym***
11	Competency Technician	To alter, repair or install any oil burning equipment or any of the appurtenances thereto	Initial licensure 12 months from DOB Every 24 months after based on DOB	No, unless failed to renew within 2 yrs. of expiration	BU
11	Competency Apprentice	Can only work under the direct supervision of a technician regrading oil burning equipment or any of the appurtenances thereto	Initial licensure 12 months from DOB Every 24 months after based on DOB	No	OA
13	Registration	Servicing Self-serve Motor Fuel Fire Suppression Systems. Company Type 40	two yrs. from date of issue	No	CR
13	Registration	Servicing Portable Fire Extinguishers. Company Type 42	two yrs. from date of issue	No	CR
13	Registration	Special Hazards Engineered (Fixed Fire Extinguishing Systems.) Company Type 43	two yrs. from date of issue	No	CR
13	Registration	Special Hazards Pre-engineered (Fixed Fire Extinguishing Systems.) Company Type 44	two yrs. from date of issue	No	CR
42	Registration	On-demand Fueling	two yrs from date of issue	No	ODF
50	Competency	Cleaning of Commercial Cooking Exhaust Systems Individual Type 2 Restricted	three yrs. Renewal on DOB	No	HC
50	Competency	Cleaning/Inspection of Commercial Cooking Exhaust Systems Individual Type 1			
50	Registration	Cleaning/Inspection of Commercial Cooking Exhaust Systems Company Type 1	two yrs. from date of issue	No	HCI
65	Competency	Cannon/Mortar Individual	five yrs. Renewal on DOB	No	CN
20	Competency	Crowd Manager Individual	three yrs. from date of issue	Yes	MFA

1.05: continued

Chapter	Type of Certificate	Description	Expiration Date [*See* Note 1 and 2]	Exam Required for Renewal	Acronym*
65	Competency	Special Effects Individual	two yrs. Renewal on DOB	Yes	SE
	User	Special Effects Company	one yr. or less dependent on ATF permit, bond and/or insurance	No	PY
	User	Pyrotechnic Company	one yr. or less dependent on ATF permit, bond and/or insurance	No	PY
65	User	Fireworks Company		No	PY
65	Competency	Fireworks Individual	two yrs. Renewal on DOB	No	FW
Chapter	**Type of Certificate**	**Description**	**Expiration Date [*See* Note 1 and 2]**	**Exam Required for Renewal**	**Acronym***
65	Competency	Explosives Individual	two yrs. Renewal on DOB	No	BL
65	Registration	Blasting (Site work) Company	Based on the Explosive User Certificate	No	BL
65	User	Blasting (Boiler) Company		No	BL
13	Competency	Servicing Engineered Fixed Fire Extinguishing Systems Individual Type 47	two yrs. Cycle Renewal on DOB	No	CC
13	Competency	Servicing Pre-engineered Fixed Fire Extinguishing Systems Individual Type 48	two yrs. Renewal on DOB	No	CC
13	Competency	Self-serve Motor Fuel Facilities Individual Type 41	two yrs. Renewal on DOB	No	CC
13	Competency	Servicing Portable Fire Extinguishers Individual Type 46	two yrs. Renewal on DOB	No	CC
65	User	Explosives Certificate by location	one yr. or less dependent on ATF permit, and insurance Bond is waived for R & D Licenses	No	EUC
		Blasting Company			
		Research and Development Company			
		Boiler Cleaning Company			
65	User	Transport Fireworks (Permit by location)	one yr. from date of issuance	No	TF
		Magazine Explosives (Permit by location)	Annually on 3/31	No Exam, inspection required	MP
		Mobile			
		Magazine Explosives (Permit by location)	Annually on 10/31	No Exam, inspection required	MP
		Permanent			
65	User	Remote Firing Panel	five yrs. from date of issuance	No Exam, inspection required	RF
65	User	Dense Pack Portable firing trailers			DPP

1.05: continued

Chapter	Type of Certificate	Description	Expiration Date [*See* Note 1 and 2]	Exam Required for Renewal	Acronym*
65	User	Sell Explosives (License by location)	one yr. from date of issuance	No	LS
65	User	Sell Black or Smokeless Powder (License by location)	one yr. from date of issuance	No	SP
42	User	Marine Fueling:	Annually on 12/31	No	MF
		Marine Fuel Barges			
		Mobile Marine Fueling			
		Fixed Marine Fueling			
		Seasonal Marine Fueling Facility			

* Identifier for certificates used in database (MLO)
Note 1. DOB as used here means the date and year someone was born or such anniversary date.
Note 2. ATF as used here means Bureau of Alcohol, Tobacco and Firearms and Explosives.

1.14 Plan Review and Approvals.

1.14.1 General.

1.14.1.2 Where permits and plan reviews are required by this *Code*, the AHJ shall complete the plan reviews for new construction, modification, or rehabilitation, of any building, structure, or facility.

1.14.1.3 Construction documents and shop drawings submitted shall be approved by the AHJ before work commences and within 30 days of the date of receipt of a completed application and construction documents, unless extended by the AHJ.

1.14.1.4 Review and approval by the AHJ shall not relieve the applicant of the responsibility of continued compliance with this *Code*.

1.14.1.5 When required by the AHJ, revised construction documents or shop drawings shall be prepared and submitted for review and approval to illustrate corrections or modifications necessitated by field conditions or other revisions to approved plans.

1.14.2 Applicants Responsibility.

1.14.2.1 The applicant shall be responsible to ensure that the following conditions are met:

(1) The construction documents include fire protection requirements;
(2) The shop drawings are correct and in compliance with the applicable codes and standards; and
(3) The contractor maintains an approved set of construction documents on site.

1.14.3 AHJ Responsibility.

1.14.3.1 It shall be the responsibility of the AHJ to promulgate policies and procedures that govern the following:

(1) Criteria to meet the requirements of *Sections 1.12 and 1.13*; and
(2) Review all of documents and related information within the established time frames for the purpose of acceptance or providing reasons for non-acceptance.

1.14.4 Explosives Manufacturing.

1.14.4.1 Plans.

1.05: continued

1.14.4.1.1 Explosives manufacturing requires a plan drawn to scale showing the arrangement of the various buildings and magazines of the manufactory and the egress therefrom, their relative location to other buildings and property lines and shall be submitted to the Head of the Fire Department and State Fire Marshal indicating the following:

(1) The location of the manufactory;
(2) The name of the owner and/or occupant;
(3) The kind and maximum quantities of the explosives, raw materials, and finished products and the manner in which they are to be kept or stored;
(4) The nature of the work to be carried on in each building; and
(5) A fire safety analysis conducted by a registered professional engineer.

1.14.5 Marine Fueling Facility.

1.14.5.1 General.

1.14.5.1.1 Prior to conducting any construction or alteration activity to a new or existing fixed marine fueling facility, a registered design professional shall prepare and submit three complete stamped and scaled sets of plans and specifications to the Head of the Fire Department and the State Fire Marshal.

1.14.5.1.2 One set of plans shall be marked State Fire Marshal's office copy, a second set of plans shall be marked Head of Fire Department copy, and the third set of plans marked owner's copy. Such marking for each set of plans shall be in bold and located on the lower right hand legend.

1.14.5.1.3 All designs, blueprints, plans, and specifications shall comply with the provisions of this *Code* and any other applicable state and federal regulations. The Head of the Fire Department and the State Fire Marshal's Office must approve the design submission or modification before any construction is commenced. The packet of plans and specifications shall include the following:

(1) The design review fee required by the Head of the Fire Department and the State Fire Marshal's Office;
(2) A cover letter providing an overview of the planned work, the location of the work, and the legal name and address of the facility owner, operator, and person(s) or company who will be conducting the work;
(3) A copy of the current and valid registration or copy of the license to store flammables (Form FP-2) issued under M.G.L. c. 148, § 13 or a current and valid permit if a license is not applicable under M.G.L. c. 148, § 13;
(4) Current permit (existing facilities only);
(5) Scaled design plans indicating the locations of all piers, storage tanks, piping systems, hoses, dispensing nozzle locations, equipment, signage, path of the electrical static grounding systems, fire access roadway(s), travel from the closest fire apparatus to the foot of the marine wharf, the location and type of water standpipe system, the location of the nearest hydrant, location of the piping system, flexible hose, couplings, control valves, and swing and swivel joints, and for mobile fueling facilities, the designated location(s) that the fuel truck shall park to dispense fuel. A notation on the plan legend shall indicate the location and type of fire extinguishing systems, fuel dispensing nozzles, and the maximum number of dispensing nozzles which can be operated simultaneously;
(6) A statement that the blueprints, plans, and specifications of the installation comply with the requirements of the provisions of this *Code* and any other applicable state or federal regulation;
(7) A clear indication of fire access roadways and appropriate signage as directed by the Head of the Fire Department to allow for local enforcement of fire lane designation; and
(8) A detailed drawing of the entire marine wharf, and floats showing the fueling location, tie up area(s), and all of the berthing areas.

1.15 Technical Assistance.

1.15.1 General.

1.05: continued

1.15.1.1 As permitted by other sections of this *Code*, the AHJ shall be permitted to require a review by an approved independent third-party with expertise in the matter, to be reviewed at the submitter's expense.

1.15.1.2 The independent reviewer shall provide an evaluation and, if appropriate, recommend necessary changes of the proposed design, operation, process, or new technology to the AHJ.

1.15.1.3 The AHJ shall be authorized to require design submittals to bear the stamp of a registered design professional.

1.15.1.4 The AHJ shall make the final determination as to whether the provisions of this *Code* have been met.

1.16 Notice of Violations and Penalties.

1.16.1 General.

1.16.1.1 Any person who mutilates, destroys, or removes posted orders or notices without the authorization of the AHJ shall be deemed in violation of this *Code.*

1.16.2 Criminal Enforcement. Whenever the AHJ has reason to believe that a violation of this *Code* has occurred, written notification of said violation shall be issued in accordance with the provisions of M.G.L. c. 148.

1.16.3 Alternative Civil Enforcement Option. As an alternative to initiating criminal proceedings in a court of law under the provisions of M.G.L. c. 148, the AHJ may initiate the alternative civil code enforcement option as provided in M.G.L. c. 148A, by issuing the standardized notice of violation form as prescribed by M.G.L. c. 148A. The provisions of *Section 1.16.3* may only be utilized by the Head of the Fire Department or his or her designee if the jurisdiction has designated a municipal hearings officer in accordance with M.G.L. c. 148A.

1.16.3.1 Any order or notice issued pursuant to this Code shall be served upon the owner, operator, occupant, or other person responsible for the condition or violation in accordance with the provisions of M.G.L. c. 148 or, if applicable, M.G.L. c. 148A, if the alternative civil enforcement option is utilized.

1.16.4 Penalties.

1.16.4.1 Any person who fails to comply with the provisions of this *Code* or who fails to carry out an order made pursuant to this *Code* or violates any condition attached to a permit, approval, or certificate shall be subject to penalties in accordance with M.G.L. c. 148 or, if applicable, M.G.L. c. 148A.

1.16.4.2 Reserved

1.16.4.3 Reserved

1.16.4.4 Reserved

1.16.4.5 Failure to comply with the time limits of an abatement notice or other corrective notice issued by the AHJ shall, unless otherwise specified, result in a new and separate offense for each day that such violation continues.

1.17.1 Misrepresentation. Any attempt to misrepresent or otherwise deliberately or knowingly design, install, service, maintain, operate, sell, represent for sale, falsify records, reports, or applications; or other related activity in violation of the requirements prescribed by this *Code* shall be a violation of this *Code*.

1.17.1.1 The installation or use, in any building, of any device or object that reasonably appears to be a smoke detector, sprinkler head, carbon monoxide alarm, heat detector, or any similar device, used for life safety or fire protection, that is in fact, neither designed nor capable of performing such life safety or fire protection function, shall be prohibited.

1.17.2 Such violations shall be cause for immediate suspension or revocation of any related approvals or permits issued.

1.17.3 Such violations shall be subject to any other criminal or civil penalties provided by the laws or other applicable regulations of the Commonwealth of Massachusetts.

1.05: continued

Chapter 2 Referenced Standards.

2.1 General. **Add**:

(3) Where the requirements of a reference code or standard, called for within a Chapter of this *Code* is deleted, replaced, or revised, the source reference code or standard shall be deemed deleted, replaced or revised as such.

2.2 NFPA 70 Publication. Replace with the following:

NFPA 70, *The National Electrical Code,* codified as 527 CMR 12.00: *Massachusetts Electrical Code* (Amendments).

2.2 NFPA Publications. Replace with the following:

NFPA 241, *Standard for Safeguarding Construction, Alteration, and Demolition Operations*, 2022 edition.

2.2 NFPA Publications. Add:

NFPA 855, *Standard for the Installation of Stationary Energy Storage Systems*, 2020 edition.

2.3.1 ANSI Publications. Add:

ANSI Z21.11.2, *Gas-fired Room Heaters, Volume II, Unvented Room Heaters*, 2013 edition.

ANSI Z-358.1, *American National Standard for Emergency Eyewash and Shower Equipment*.

ANSI Z49, *Safety in Welding, Cutting, and Allied Processes*, 2012 edition.

2.3.7 ASTM Publications. Add:

ASTM D 975-11b, *Standard Specification for Diesel Fuel Oils.*

ASTM D1265, *Standard Practice for Sampling Liquefied Petroleum (LP) Gases, Manual Method.*

ASTM D5305, *Standard Test Method for Determination of Ethyl Mercaptan in LP-gas Vapor.*

2.3.7 ASTM Publications. Replace with the following:

ASTM D6751-11b, *Standard Specification for Biodiesel Fuel Blend Stock (B100) for Middle Distillate Fuel, 2019*.

2.3.7 ASTM Publications. Add:

ASTM D 7462-11, *Standard Test Method for Oxidation Stability of Biodiesel (B100) and Blends of Biodiesel with Middle Distillate Petroleum Fuel* (*Accelerated Method)*.

2.3.19 UL Publications. Add:

UL 217, *Standard for Smoke Alarms,* 8th edition

UL 268, *Smoke Detectors for Fire Alarm Systems*, 7th edition.

ANSI/UL 521, *Standard for Heat Detectors for Fire Protective Signaling Systems,* 1999 edition.

ANSI/UL 539, *Standard for Single and Multiple Station Heat Alarms*, 2009 edition.

2.3.22 U.S. Government Publications. Add:

Code of Federal Regulations (CFR):

Title 21, United States Code, Chapter 9, *Federal Food, Drug, and Cosmetics Act.*

Title 29, Code of Federal Regulations, 1910.119, Occupational Safety and Health Administration (OSHA) *Process Safety Management of Highly Hazardous Materials*. Regulated hazardous materials which are listed in 29 CFR 1910.119: Appendix A and described in 29 CFR 1910.119(a)(1)(ii).

Title 29, Code of Federal Regulations, Part 1910.1450, Occupational Safety and Health Administration (OSHA) *Occupational Exposure to Hazardous Chemicals in Laboratories*.

Title 29, Code of Federal Regulations, 1910.252 Subpart Q - *Welding, Cutting and Brazing*

Title 33, Code of Federal regulations, Part 126, *Handling of Dangerous Cargo at Waterfront Facilities*.

Title 40, Code of Federal Regulations, Part 60 *Standards of Performance for New Stationary Sources*.

Title 40, Code of Federal Regulations, Part 68, EPA (United States Environmental Protection Agency) *Chemical Accident Prevention Provisions*. Regulated hazardous materials included in 40 CFR 68.130 "List of Substances" with threshold quantities of regulated substances listed in the tables in 40 CFR 68.130.

Title 49, Code of Federal Regulations, *Transportation*.

Title 46, Code of Federal Regulations, Part 194, *Handling, Use, and Control of Explosives and Other Hazardous Materials*.

1.05: continued

2.3.23 Other Publications. Add:

American Association of State Highway and Transportation Officials (AASHTO). *Uniform Traffic Control Devices (MUTCD) Guidelines*.
APA *Standard 87-1.*
California - Technical Bulletin 117-2013 (TB 117-2013) *Requirements, Test Procedure and Apparatus for Testing the Smolder Resistance of Materials Used in Upholstered Furniture*.
California - Technical Bulletin 133 - 1991(TB133-1991) *Flammability Test Procedure for Seating Furniture for Use in Public Occupancies, amended 2019.*
IAMPO *Uniform Mechanical Code*.
IME Safety Library Publication No. 20, *Safety Guide for the Prevention of Radio Frequency Radiation Hazards in the Use of Commercial Electric Detonators (Blasting Caps).*
STI SP 001, *Standard for the Inspection of Aboveground Storage Tanks. Transport Canada* (TC)*, Transportation of Dangerous Goods Regulations*.

2.3.24 Massachusetts Regulations. Add:

Code of Massachusetts Regulations (CMR) Publications:
105 CMR: *Department of Public Health*
248 CMR: *Board of State Examiners of Plumbers and Gas Fitters (Plumbing Code).*
257 CMR 2.00: *Certification of Operators of Wastewater Treatment Facilities.* Department of Environmental Protection:
310 CMR 7.00: *Air Pollution Control*.
310 CMR 30.00: *Hazardous Waste*.
310 CMR 80.00: *Underground Storage Tanks*.
522 CMR: *Board of Boiler Rules*.
524 CMR 36: *Personnel Hoists and Employee Elevators on Construction and Demolition Sites*
527 CMR 1.00: *Comprehensive Fire Safety Code Massachusetts (this Code)*. 527 CMR 12.00: *Massachusetts Electrical Code.*
528 CMR: *Bureau of Pipe Fitters and Refrigeration Technicians.* 780 CMR*: Massachusetts State Building Code (Building Code)*.

2.3.25 (M.G.L) Massachusetts General Law.

M.G.L. c. 21E: *Massachusetts Oil and Hazardous Material Release Prevention and Response Act.*
M.G.L. c. 48: *Fires, Fire Departments and Fire Districts*.
M.G.L. c. 22D: *Department of Fires Services*.
M.G.L. c. 148: *Fire Prevention.*
M.G.L. c. 148A: *Code Enforcement Officer.*
M.G.L. c. 141: *Supervision of Electricians.*
M.G.L. c. 142: *Supervision of Plumbing.*
M.G.L. c. 143, § 3L: *Regulations Relative to Electrical Wiring and Fixtures; Notice of Electrical Installation.*
M.G.L. c. 143, § 96: Specialized Codes Rules or Regulations.

Chapter 3 Definitions.

3.2.2 Replace with the following:

3.2.2* Authority Having Jurisdiction (AHJ) An organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure. (*See* Enforcement, 1.6, 1.7.1 Administration, 1.7.1 and Official Interpretations, 1.7.3.1)

3.3.14.2 Replace with the following:

3.3.14.2 ***Control Area***. A building or portion of a building, enclosed and bounded by exterior walls, fire walls, fire barriers and roofs, or a combination thereof, or an outdoor area within which hazardous materials are allowed to be stored, dispensed, used, or handled in quantities not exceeding the maximum allowable quantities (MAQ).

1.05: continued

3.3.29 Replace with the following:
3.3.29 Building. A combination of any materials, whether portable or fixed, having a roof, to form a structure for the shelter of persons, animals or property. For the purpose of this definition "roof" shall include an awning or any similar covering, whether or not permanent in nature. The word "building" shall be construed where the context allows as though followed by the words "or part or parts thereof".

3.3.56.1 Replace with the following:
3.3.56.1 *Building Code*. referenced in Sections 2.3.22 and 1.1.

3.3.56.2 Replace with the following:
3.3.56.2 *Massachusetts Electrical Code*. referenced in Sections 2.2 and 2.3.22.

3.3.56.3 Replace with the following:
3.3.56.3 *Mechanical Code*. The *Massachusetts State Building Code* as referenced in Section 2.3.22.

3.3.56.4 Replace with the following:
3.3.56.4 *Plumbing Code* referenced in Section 2.3.22.

3.3.56.5 Add:
3.3.56.5 ***Fire Code*** as referenced in Section 2.3.22.

3.3.146.12 Replace with the following:
3.3.146.12 ***Oxidizing Gas***. A gas that can support and accelerate combustion of other materials.

3.3.153 Replace with the following:
3.3.153 Handling. The deliberate transport by any means to a point of storage use, or processing.

3.3.168 Replace with the following:
3.3.168 Incident Commander (IC). The individual responsible for all incident activities, including the development of strategies and tactics and the ordering and the release of resources. The IC has overall authority and responsibility for conducting incident operations and is responsible for the management of all incident operations at the incident site.

3.3.187.12 Replace with the following:
3.3.187.12 ***Physical Hazard Material***. A chemical for which there is evidence that it is a combustible liquid, compressed gas, cryogenic, explosive, flammable gas, flammable liquid, flammable solid, organic peroxide, oxidizer, pyrophoric or unstable (reactive) or water-reactive material.

3.3.187.15 Replace with the following:
3.3.187.15 ***Unstable (Reactive) Material***. A material, other than an explosive, which in the pure state or as commercially produced, will vigorously polymerize, decompose, condense or become self-reactive and undergo other violent chemical changes, including explosion, when exposed to heat, friction or shock, or in the absence of an inhibitor, or in the presence of contaminants, or in contact with incompatible materials. Unstable (reactive) materials are subdivided and defined as follows:

Class 1. Materials that in themselves are normally stable, but which can become unstable at elevated temperatures and pressure.

Class 2. Materials that in themselves are normally unstable and readily undergo violent chemical change, but do not detonate. This class includes materials that can undergo chemical change with rapid release of energy at normal temperatures and pressures, and that can undergo violent chemical change at elevated temperatures and pressures.

Class 3. Materials that in themselves are capable of detonation or of explosive decomposition or explosive reaction, but which require a strong initiating source or which must be heated under confinement before initiation. This class includes materials that are sensitive to thermal or mechanical shock at elevated temperatures and pressures.

Class 4. Materials that in themselves is readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures. This class includes materials that are sensitive to mechanical or localized thermal shock at normal temperatures and pressures.

1.05: continued

3.3.187.16 Replace with the following:
3.3.187.16 Water-Reactive Material. A material that explodes; violently reacts; produces flammable, toxic or other hazardous gases; or evolves enough heat to cause self-ignition or ignition of nearby combustibles upon exposure to water or moisture. Water-reactive Material are subdivided and defined as follows:

Class 1. Materials that may react with water with some release of energy, but not violently.

Class 2. Materials that may form potentially explosive mixtures with water.

Class 3. Materials that react explosively with water without requiring heat or confinement.

3.3.205.1.6 Add:
3.3.205.1.6 Unclassified Detonable. Organic peroxides that are capable of detonation. These peroxides pose an extremely high explosion hazard through rapid explosive decomposition.

3.3.224 Replace with the following:
3.3.224 Process or Processing. A sequence of operations in which the sequence can be inclusive of physical operations such as heating, cooling, mixing, distilling, compressing, and pressurizing, and chemical operations, such as polymerization, oxidation, reduction, and other chemical reaction processes. The sequence can involve, but is not limited to: preparation, separation, combination, purification, or any actions that cause a change in state, energy content, or chemical composition.

3.3.230 Replace with the following:
3.3.230 Pyrophoric. A chemical with an autoignition temperature in air, at or below a temperature of 130°F (54.4°C).

3.3.259.2 Replace with the following:
3.3.259.2 ***Flammable Solid***. A solid substance, other than a substance defined as a blasting agent or explosive, that is liable to cause fire resulting from friction absorption or moisture, spontaneous chemical change, or retained heat from, manufacturing or processing, or which has an ignition temperature below 212˚F (100˚C), or that burns so vigorously and persistently when ignited that it creates a serious hazard. A chemical shall be considered a flammable *solid* as determined in accordance with the test method of CPSC 16 CFR; Part 1500.44, if it ignites and burns with a self-sustained flame at a rate greater than 0.1 inch (2.5 mm) per second along its major axis.

3.3.275 Replace with the following:
3.3.275 Structure. A combination of materials assembled at a fixed location to give support or shelter, such as a building, framework, retaining wall, tent, reviewing stand, platform, bin, fence, sign, flagpole, mast for radio antenna or the like. The word "structure" shall be construed, where the context allows, as though followed by the words "or part or parts thereof".

3.3.278.11 Replace with the following:
3.3.278.11 Fire Protection System. Any fire alarm device or system or fire-extinguishing device or system, or combination thereof, that is designed and installed for detecting, controlling, or extinguishing a fire or otherwise alerting occupants, or the fire department, or both, that a fire has occurred. A fire protection system shall include any wiring, equipment, and systems used to detect, suppress, or control smoke, fire, and carbon monoxide, or any combination thereof.

3.3.279.8 Add:
3.3.279.8 Underground Storage Tank (UST). As defined and regulated by 310 CMR 80.00: *Underground Storage Tanks (UST) Systems*.

3.5 Add:
3.5. Additional Massachusetts Definitions.
3.5.1 Boatyard. A facility used for constructing, repairing, servicing, hauling from the water, storing (on land and in water), and launching of boats.

1.05: continued

3.5.2 Cannabis. The plant or any product derived from the plant, of the family cannabaceae; also known as marijuana or hemp.

3.5.3 Certificate. A written document for the purpose of granting permission to conduct or engage in any operation or act for which certification is required by way of one or more of the following:

3.5.3.1 Certificate of Competency. A written document issued by the State Fire Marshal to a person who has passed an examination for a particular profession which allows that person to be in charge of and responsible for the regulated activity.

3.5.3.2 Certificate of Registration. A written document issued by the State Fire Marshal to a person, firm or corporation for the purpose of granting permission to conduct or engage in servicing fire extinguishing systems.

3.5.3.3 Explosives Users Certificate. A certificate issued to a firm or company, indicating the rebuttable presumption of statutory and regulatory compliance with responsible levels of liability insurance and bonds required by M.G.L. c. 148, §§ 19, 20 and 20A, explosive storage magazines, and a general knowledge of the requirements of explosive regulations in the use or handling of explosives.

3.5.3.4 Fireworks User's Certificate. A certificate which allows a person, firm, corporation or other legal entity to use or handle fireworks.

Chapter 4 General Requirements. Chapter 4 Delete in its entirety.

Chapter 5 Performance Based Option. Chapter 5 Delete in its entirety and replace with the following sections.

5.1* General.

5.1.1 Application. The requirements of this Chapter shall apply to facilities designed to the performance-based option permitted by the *Building Code* and this *Code*.

5.1.2 Goals and Objectives. The performance-based design shall meet the goals and objectives of this *Code* in accordance with the *Building Code* or this *Code*.

5.1.3* Plan Submittal Documentation. When a performance based design is submitted to the AHJ and the Building Official for review and approval, the owner shall document, in an approved format, each performance objective and applicable scenario, including any calculation methods or models used in establishing the proposed design's fire and life safety performance.

5.1.4* Independent Review. The AHJ shall be permitted to require an approved, independent third party to review the proposed design and provide an evaluation of the design to the A111 AHJ at the expense of the owner.

5.1.5 Final Determination. The AHJ and the Building Official shall make the final determination as to whether the performance objectives have been met.

5.1.6* Operations and Maintenance Manual. An approved Operations and Maintenance (O&M) Manual shall be provided by the owner to the AHJ and shall be maintained at the facility in the fire command center.

5.1.1 through **5.7.14** Delete

Chapter 6 Classification of Occupancy. Chapter 6 Delete in its entirety.

Chapter 7 Reserved

Chapter 8 Reserved

Chapter 9 Reserved

Chapter 10 General Requirements.

10.1.2 Delete.

10.1.3 Replace with the following:
10.1.3 Building Code. All new construction shall comply with this *Code* and the *Building Code*.

1.05: continued

10.1.4.1 Replace with the following:
10.1.4.1 Where structural elements have visible damage, the AHJ shall notify the Building Official.

10.1.4.2 through **10.1.5** Delete.

10.3.4.1 Replace with the following:
10.3.4.1 In any building or structure, whether or not a physical alteration is needed, a change from one use or occupancy classification to another shall comply with the *Building Code.*

10.4.2.1 Add:
10.4.2.1 Overcrowding. Overcrowding or admittance of any person beyond the established posted occupant load shall be prohibited. The AHJ, upon finding overcrowded conditions or obstructions in aisles, passageways or other means of egress, or any condition which constitutes a hazard to life and safety shall cause the performance, presentation, spectacle or entertainment to be stopped until the area posted occupant load is reestablished or the obstruction or hazardous condition is removed.

10.5.1 Replace with the following:
10.5.1 Where Required. Emergency egress and relocation drills conforming to the provisions of this *Code* shall be conducted as specified by the provisions of Chapter 20 of this *Code*. Drills shall be designed in cooperation with the local authorities.

10.5.2 Drill Frequency. Emergency egress and relocation drills, where required by Chapter 20 of this *Code* shall be held with sufficient frequency to familiarize occupants with the drill procedure and to establish conduct of the drill as a matter of routine. Drills shall include suitable procedures to ensure that all persons subject to the drill participate.

10.6.2 Delete.

10.6.4 Delete.

10.7 Add:
10.7 Tampering with Fire Safety Equipment. *See* M.G.L. c. 266 and M.G.L. c. 148, § 27A.

10.7.1 through **10.7.3** Delete.

10.8.1 Replace with the following:
10.8.1 Where Required. Emergency action plans shall be provided for high-rise, health care, ambulatory health care, residential board and care, assembly, day care centers, special amusement buildings, hotels and dormitories, detention and correctional occupancies, educational, underground and windowless structures, facilities storing or handling materials covered by Chapter 60, special use and occupancy as defined in 780 CMR, or where required by the AHJ.

10.10.1.1 Replace with the following:
10.10.1.1 Fires for cooking and recreational purposes shall comply with the provisions of M.G.L. c. 48, § 13 and the rules and regulations of the State Forester and regulations of the Department of Environmental Protection.

10.10.1.2 through **10.10.1.4** Delete.

10.10.3. Replace with the following:
10.10.3. **Outdoor Fires and Incinerators**.
10.10.3.1 Outdoor fires shall comply with the provisions of M.G.L. c. 48, § 13 and the rules and regulations of the State Forester, and regulations of the Department of Environmental Protection. *See* 310 CMR 7.07.

10.10.3.2 Delete.

10.10.4.1 Replace with the following:

10.10.4.1 Add:
10.10.4.1 Bonfires and the Burning of Christmas Trees. Permits where required, for bonfires and the burning of Christmas trees shall comply with *Section 1.12.*

10.10.4.1.1. Add:

1.05: continued

10.10.4.1.1 Ceremonial Bonfires. The city council of a city with the approval of its mayor, or the board of selectmen or town council of a town, may authorize the fire department of such city or town to issue not more than one permit in any one year for a ceremonial bonfire. Such bonfires shall mark the observance of a significant municipal, state or national event, and such ceremonial bonfire shall be under the continuous supervision of the fire department. Only wood which has not been painted, impregnated, or otherwise treated with any foreign substance shall be permitted to burn in ceremonial bonfires. No bonfire shall burn for more than 12 hours. (M.G.L. c. 111, § 142H.)

10.10.4.1.2 Add:
10.10.4.1.2 Bonfires from July 2nd to July 6th. Any civic, fraternal, veteran, community or business organization may build and ignite bonfires under the supervision and control of the fire department of the city or town in which such burning takes place during the period from July 2nd through July 6th. (M.G.L. c. 111, § 142I.)

10.10.4.1.3 Add:
10.10.4.1.3 Burning of Christmas Trees. Any person may burn Christmas trees during the period from December 26th through January 7th, provided that such burning is under the supervision and control of the fire department. (M.G.L. c. 111, § 142G.)

10.10.4.1.4 Add:
10.10.4.1.4 Burning hours shall be prescribed by the AHJ.

10.10.4.2 through **10.10.5.2** Delete.

10.10.6 Replace with the following:
10.10.6 Appliances - Cooking Equipment
10.10.6.1 General. Cooking appliances shall be kept clean during and cleaned after each use. Cooking appliances shall never be left unattended after the cooking appliance is kindled. Cooking appliances shall be stored only after the appliance is cleaned; the appliance is cool to the human touch and; the fuel is disconnected and removed from the appliance. Cooking appliances shall not be altered, used, kindled, placed, or stored in a manner that is not established by the manufacturer's instructions of the appliance and its equipment.

10.10.6.2 Terms. As used in Chapter 10, the enclosed terms shall have the following meaning assigned to them.

(1) **Appliance (cooking)**. Utilization equipment, generally other than industrial, that is normally built in standardized sizes or types and is used, installed or connected as a unit to perform one or more functions such as grills, ranges, cook top units, wall ovens, and chimineas or similar such appliances.

(2) **Balcony**. A structure attached to a building with no exterior stairs other than through the attached building.

(3) **Deck (including porches, and patios)**. A structure attached to a building where constructed above grade has exterior stairs extending to grade.

(4) **Equipment (cooking)**. The component of an appliance, such as the hose, burner, heating element, electronic controls, igniters, heat exchanger, container or regulator that is designed specifically for the purpose and constructed with approved safety standards and tested by a recognized product testing agency. *See* Chapter 3, for the term Listed in Section 3.2.6*.

(5) **Grade (as it applies to balconies and decks)**. On earth; or on blocks, slab or of other approved material placed on earth and elevated not greater than 30 inches from earth.

(6) **Permanent**. Fastened in place, and cannot be easily moved without requiring the disconnection of fasteners, piping, and fittings.

(7) **Solid Fuel**. Includes wood, charcoal, pellet fuels, and any other non-gaseous fuel but not including fuel generation or co-generation of electric energy.

10.10.6.3 Replace with the following:
10.10.6.3 Solid Fuel, Gaseous Fuel, and Electric Cooking and Heating Appliances Use and Storage on Balconies and Decks or under Overhangs and Structures.

10.10.6.3.1 All cooking and heating appliances shall be permitted to be used, kindled, or stored on a balcony or deck unless specifically prohibited or restricted below.

10.10.6.3.2 No solid fuel cooking and heating appliances shall be permitted to be used, kindled, or stored on any balcony.

1.05: continued

10.10.6.3.3 No gaseous fuel cooking and heating appliances shall be used, kindled, or stored on any balcony located above grade, unless permitted to be permanently installed pursuant to its equipment listings.

10.10.6.3.4 No cooking or heating appliances shall be used, installed, kindled or stored on any fire escape balcony.

10.10.6.3.5 No cooking or heating appliances shall be used, installed, kindled or stored on any balcony or deck where the balcony or deck is enclosed by a roof, walls, other than the wall of the attached building, or any covering that would prevent air circulation, unless a sprinkler system is installed in accordance with the *Building Code*, or such appliance is permitted by the manufacturer's instructions and equipment listings.

10.10.6.3.6 No equipment of any cooking and heating appliances shall be permitted to be used or stored under any overhang; less than ten ft. (3 m) from a building; unless a sprinkler system is installed in accordance with the *Building Code*; or it is permitted by the manufacturer's instructions and equipment listings. The storage of any cooking or heating appliances under the overhang or ten ft. (3 m) from a building shall be permitted only when its fuel is not present within or near any cooking or heating appliance, unless such appliance is permanently installed.

10.10.6.3.7 All appliances that are permanently installed shall be approved by the specialized code official.

10.10.6.4 Add:
10.10.6.4 LP-gas Containers (cylinders) 1-lb or Greater, Use, Placement at Dwellings.

10.10.6.4.1 through **10.10.6.4.4** Add:
10.10.6.4.1 Containers shall only be transported using exterior means independent from the attached building.

10.10.6.4.2 Containers shall not be placed inside or pass through any building.

10.10.6.4.3 Containers shall not be stored or obstruct ingress or egress of any building.

10.10.6.4.4 Containers having water capacities greater than 2.7 lb (1 kg) [nominal one lb (0.5 kg) LP-Gas capacity] shall not be located on decks or balconies of dwellings of two or more living units above the first floor, unless the deck or balcony is served by exterior stairways.

10.10.6.5 Add:
10.10.6.5 Table 10.10.6.5 shall be permitted to be used as guidance for the Sections *10.10.6.3.1* through *10.10.6.4*.

Table 10.10.6.5 Appliances Used or Stored for Cooking or Heating

Balcony. ***See*** **10.10.6.2(2)**				**Deck, Porch, Patio.** ***See*** **10.10.6.2(3)**		
*NOT Permitted under overhangs, roofs or enclosed in by walls or within 10' of a building[1]; unless sprinklered pursuant to the *Building Code.*						
Fuel	**Gaseous Fuels**	**Solid Fuels**	**Electric**	**Gaseous Fuels**	**Solid Fuels**	**Electric**
Type of Appliance	Cooking and Heating Appliance	Cooking and Heating Appliance	Cooking and Heating Appliances	Cooking and Heating Appliances	Cooking and Heating Appliance	Cooking and Heating Appliances
Grade	Permitted* *See* 10.1.7; 10.10.6.3.4 and10.10.6.4	Not Permitted *See* 10.10.6.3.2	Permitted *See* 10.1.7 and 10.10.6.3.1	Permitted* *See* 10.1.7; 10.10.6.3.5 and 10.10.6.3.6	Permitted* *See* 10.1.7; 10.10.6.3.5 and 10.10.6.3.6	Permitted *See* 10.1.7; and 10.10.6.3.1
Above Grade	Not Permitted, unless permanently installed* *See* 10.1.7; 10.10.6.3.3; 10.10.6.3.5 and 10.10.6.4					

1.05: continued

Note 1. For the purposes of this section, a structure or building is not considered the decking of a balcony, or deck.

10.10.8.1 Delete.

10.11.3.1 Replace with the following:
10.11.3.1 Enclosed stairs serving three or more stories and existing enclosed stairs serving five or more stories shall be maintained in accordance with the *Building Code* approved at the time of construction and maintenance.

10.11.3.1.1 through **10.11.3.2.2** Delete.

10.11.3.3 Replace with the following:
10.11.3.3 Stairway Tread Marking. Where new contrasting marking is applied to stairs, such marking shall be maintained in accordance with the provisions of the *Building Code*.

10.11.3.3(1) through **(4)** Delete.

10.11.3.4 Delete.

10.11.4 Add:
10.11.4 Inner Courts Specialized Construction.

10.11.4.1 Any inner court not protected by a roof shall have a parapet or guard at least 42 inches high.

10.11.4.2 Where a roof is provided over an inner court it shall be constructed as prescribed by the *Building Code*.

10.11.4.3 Where a skylight is provided it shall support a minimum of 40 lbs. per square foot, or shall have a parapet or guard at least 42 inches high.

10.12 Replace with the following:
10.12 Vacant Buildings and Premises.

10.12.1 Replace with the following:
10.12.1 Every person owning or having charge or control of any vacant building, premises, or portion thereof shall remove all combustible storage, waste, refuse, and vegetation and shall lock, barricade, or otherwise secure the building or premises to prohibit entry by unauthorized persons pursuant to M.G.L. c. 143, §§ 6 through 14 and the *Building Code.*

10.12.1.1 Delete.

10.12.2 through **10.12.2.2** Replace with the following:
10.12.2 All fire protection systems shall be maintained in service in vacant buildings.

10.12.2.1 With the approval of the AHJ, fire protection and fire alarm systems in vacant buildings shall be permitted to be removed from service as provided in M.G.L c. 148, § 27A.

10.12.2.2 When required by the AHJ, other systems or components pertaining to fire protection shall be maintained as provided in M.G.L c. 148, § 27A.

10.12.4 through **10.12.4.9** Add:
10.12.4 Any owner of a building who has been notified that said building shall be made safe or secure under the provisions of the *Building Code,* shall:

(1) Remove all materials determined by the Head of the Fire Department or Building Official to be dangerous in case of fire.

(2) Secure all floors accessible from grade utilizing one of the following methods so long as such method is approved by the Head of the Fire Department and Building Official in writing:

(a) Secure all window and door openings in accordance with the U.S. Fire Administration, Arson Prevention Initiative Board-up Procedures continuously until such time as the building is reoccupied; or

(b) Provide 24-hour watchman services, continuously until such time as the building is reoccupied; or

(c) Provide a monitored intruder alarm system at the perimeter of all floors accessible from grade, continuously until such time as the building is reoccupied.

1.05: continued

10.12.4.1 Said owner, as the case may be, shall notify the Building Official that the approved method chosen to secure the building has been incorporated.

10.12.4.2 Said owner shall allow the Building Official to enter the building for an inspection to ascertain that the building is secured and made safe. Said owner shall allow the Head of the Fire Department to enter the building.

10.12.4.3 The Building Official shall be supplied with records of maintenance and operation if the provisions of *Section 10.12.4(2)(b) or (c)* are used as provided in the *Building Code*.

10.12.4.4 The owner shall maintain any existing fire alarms or sprinkler systems, unless written permission is obtained from the Head of the Fire Department in accordance with M.G.L. c. 148, § 27A to shut off or disconnect said alarms or systems.

10.12.4.5 The owner shall maintain utilities, unless written permission is obtained from the Building Official to disconnect said utilities. Permission to disconnect utilities shall not be granted if it will result in inadequate heat to prevent freezing of an automatic sprinkler system or inadequate utilities to maintain any other protection systems.

10.12.4.6 The requirements of *Section 10.12.4* do not prevent a Building Official from ordering or taking expeditious, temporary security measures in emergency situations pending the completion of the requirements of *Section 10.12.4.*

10.12.4.7 For the purposes of *Section 10.12.4.6*, an "emergency situation" shall be defined as: an unexpected incident, which by its very nature may present a threat to public safety personnel who may be required to affect a rescue effort or conduct fire extinguishment operations.

10.12.4.8 Upon refusal or neglect of said owner to comply with such notice, any Building Official acting under the authority of the *Building Code*, shall cause to be secured all window and door openings accessible from grade in accordance with the U.S. Fire Administration, Arson Prevention Initiative Board-up Procedures or other equivalent procedure approved by the Head of the Fire Department, continuously until such time as the building is reoccupied.

10.12.4.9 Any building which has been made to conform to the provisions of Section 10.12.4 during vacancy may be reoccupied under its last permitted use and occupancy classification, provided that any systems which were disconnected or shut down during the period of vacancy are restored to fully functional condition and subject to the *Building Code* and M.G.L. c. 40A. The Building Official shall be notified in writing prior to reoccupancy. If said building is changed in use or occupancy or otherwise renovated or altered it shall be subject to the applicable provisions of the *Building Code.*

10.12.5 through **10.12.5.5** Add:
10.12.5 Any building determined to be especially unsafe in case of fire, under the provisions of the *Building Code* shall be identified and caused to be marked by the Building Official, with the cooperation of the Head of the Fire Department, to indicate the degree of hazard.

10.12.5.1 In marking such buildings, the following symbols shall be used:
 This symbol shall mean that interior hazards exist to such a degree that interior operations shall be conducted with extreme caution. This symbol shall not in any way limit the discretion of the on scene Incident Commander in directing operations that the Incident Commander deems necessary.
 This symbol shall mean that exterior or interior hazards exist to such a degree that consideration should be given to conduct operations from the exterior only. This symbol shall not in any way limit the discretion of the on scene Incident Commander in directing operations that the Incident Commander deems necessary.

10.12.5.2 Markings shall be applied on the front of the building at or above the second floor level, where practical, between openings such that they are visible from the street. Markings may be applied to the sides or the rear of a building if the Head of the Fire Department deems such placement necessary. Markings shall also be applied in a conspicuous place near every entrance, and on penthouses. Markings shall not be applied over doors, windows, or other openings where they may be obscured by smoke or fire.

1.05: continued

10.12.5.3 Markings shall be a minimum of 24 inches by 24 inches. Markings shall either be on a placard with a reflective background or painted with a reflective paint of contrasting color directly on the surface of the building. Stripes and borders outside of the marking shall be a minimum of two inches wide.

10.12.5.4 All markings shall bear a date as to when applied or the date of the most recent inspection.

10.12.5.5 Prior to receiving a mark, all buildings shall be inspected thoroughly by the Head of the Fire Department.

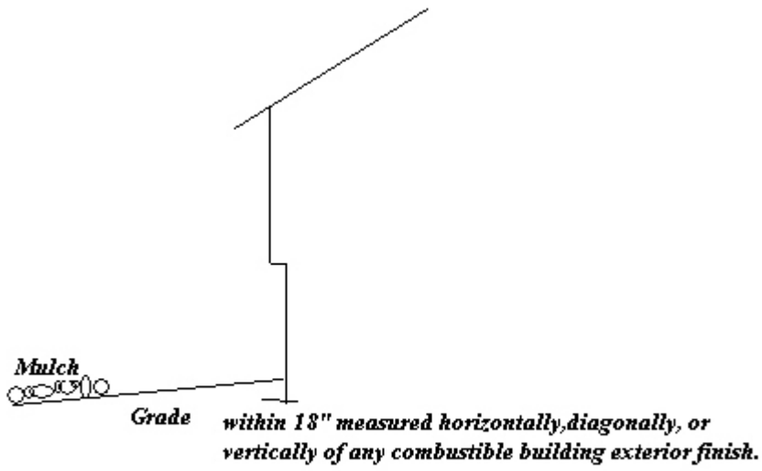
10.13.3. Add:
10.13.3 The Use of Mulch.

10.13.3.1 through **10.13.10.4.2** Add:
10.13.3.1 Mulch shall not be newly applied within 18 inches of any combustible portion of any building [*See* Figure 10.13.3.4.1(a)].

10.13.3.1.1 *Section 10.13.3.1* shall not apply to any building regardless of the existence of fire separations, containing six dwelling units or less.

10.13.3.2 Mulch, as used here, shall mean any type of forest material that is produced for the purpose spreading or application over the surface of the soil as a protective cover, to retain moisture, reduce erosion, provide nutrients, and suppress weed growth, seed germination and for general landscaping purposes.

Figure 10.13.3.1(a) Mulch Application



10.14 Replace with the following:

10.14 Outdoor Events, Carnivals, and Fairs.

10.14.1 Delete.

10.14.4 Delete.

10.14.6 Replace with the following:
10.14.6 Smoke and Carbon Monoxide Detection. A minimum of one single station smoke alarm and CO detector shall be located within each sleeping area in all stock or equipment trailers when they are used for sleeping purposes.

10.14.12.1 Delete.

10.16 Replace with the following:
10.16 Storage.

10.16.1.1 Add:
10.16.1.1 A person shall not store in any building or upon any premises more than 2,500 cubic feet gross volume of combustible empty packing cases, boxes, barrels or similar containers; or rubber tires, baled cotton, rubber, cork or other similarly combustible material without having obtained a permit from the Head of the Fire Department.

1.05: continued

10.16.1.2 Add:
10.16.1.2 Permits. Permits, where required, shall comply with *Section 1.12.1.05*: continued

10.16.2 Replace with the following:
10.16.2 The storage of combustible or flammable material shall be confined to approved storage areas.

10.16.2.1 Add:
10.16.2.1 Permits. Permits, where required, shall comply with *Section 1.12.*

10.16.3 Replace with the following:
10.16.3 Inside Storage. Storage in buildings and structures shall be orderly, shall not be within two feet of the ceiling, and shall be located so as not to obstruct egress from the building.

10.16.4 Replace with the following:
10.16.4 Outside Storage. The outside storage of combustible or flammable materials shall not be more than 20 feet in height and shall be compact and orderly. Such storage shall be located as not to constitute a hazard and no less than 25 feet from any other building on the site or from a lot line.

10.17 through **10.17.2** Delete.

10.19.6 Replace with the following:
10.19.6 Attic, Under-floor, and Concealed Spaces. Attic, under-floor, and concealed spaces used for storage of combustible materials shall comply with the protection from hazards requirements for storage rooms in the *Building Code*.

10.20 through **10.20.1.5** Delete.

10.21 Add:
10.21 Fumigation and Thermal Insecticidal Fogging. Any substance which by itself or in combination with any other substance emits or liberates a gas, fume or vapor used for the destruction or control of insects, fungi, vermin, germs, rats or other pests.

10.21.1 Add:
10.21.1 Permit. Permits, where required, shall comply with *Section 1.12.*

10.21.2 Add:
10.21.2 Fumigating Operations. Any building being so fumigated requiring a permit shall post at all entrances a warning sign of the fumigant hazard as described in *Section 10.21.3.5.*

10.21.3 Add:
10.21.3 Fire Safety Requirements.

10.21.3.1 General. Any person conducting fumigation and thermal insecticidal fogging in any building, ship, vessel or enclosed space shall comply with the following fire protection and safety requirements.

10.21.3.2 Add:
10.21.3.2 Sources of Ignition. All fires, open flames and similar sources of ignition shall be eliminated from the space under fumigation or thermal insecticidal fogging.

10.21.3.3 Add:
10.21.3.3 Electricity. Electricity shall be shut off, except that circulating fans that are to be used shall be designed and installed so as not to create an ignition hazard. Electrical equipment shall be designed and installed in accordance with *Massachusetts Electrical Code*.

10.21.3.4. Add:
10.21.3.4 Notification. The Head of the Fire Department shall be notified in writing at least 24 hours before any building or structure is to be closed in connection with the use of any toxic or flammable fumigant. Such notification shall give the location of the building, structure, ship or enclosed space to be fumigated or fogged as well as its character and use, the fumigants or insecticides to be used, the person or persons in charge of the operation and the date and time when fumigation or fogging will be started. Notice of any fumigation or thermal insecticidal fogging shall be served with sufficient advance notice to the occupants of any building or other enclosed space involved in the operation to enable them to evacuate the premises.

1.05: continued

10.21.3.5 Add:
10.21.3.5 Warning Signs. Suitable warning signs indicating the danger, type of chemical involved and recommended precautions, shall be posted on all doors and entrances to the premises and upon all gangplanks and larders from the deck, pier or land to the ship. Such notice is to be printed in red ink on white background. Letters in the signs are to be at least two inches in height and shall state the date and time of the operation, the name of the operator in charge, together with a warning to the effect that the premises so occupied shall be vacated at least one hour before the operation is started and shall not be reentered until the danger signs have been removed by the proper authorities.

10.21.3.6 Add:
10.21.3.6 Watchman. During the period fumigation is in progress, except when fumigation is conducted in a gastight vault or tank, a capable, alert watchman or watchmen shall remain on duty at the entrance or entrances to the building, ship or enclosed space fumigated until after the fumigation is completed and until the premises are properly ventilated and again safe for human occupancy. Sufficient watchmen shall be provided to prevent any person from entering the building, ship or enclosed space under fumigation without being observed.

10.21.3.7 Add:
10.21.3.7 Thermal Insecticidal Fogging Liquids. Thermal insecticidal fogging liquids with a flash point below 100EF 38EC shall not be used.

10.21.3.8 Add:
10.21.3.8 Fire Protection Systems. Fire Protection system devices shall be adequately protected by covering or other means to isolate insecticidal fogging liquids from rendering a fire system device inoperable. (M.G.L. c. 148, § 27A)

10.22 Add:
10.22 Canine Guards.

10.22.1 Add:
10.22.1 Permit. Permits, where required, shall comply with *Section 1.12.*

10.23 through **10.23.4.3.1** Add:
10.23 Emergency Wash Stations.

10.23.1 Every school, college and university laboratory newly constructed or renovated, or any room used for similar purposes wherein corrosives or flammable liquids are handled or where open flame devices are used, shall be equipped with one or more Emergency Wash Systems.

10.23.2 Emergency Wash Systems shall include Drench/Deluge Showers, Handheld Body/Face Washers and Deck Mounted Drench Hoses. The permanently mounted showers shall be located as close to the main door of the laboratory as possible (to provide an escape route), but shall not be located greater than 50 feet from an experimental area.

10.23.3 The Drench/Deluge Showers, Handheld Body/Face Washers and Deck Mounted Drench Hoses shall be installed in accordance with ANSI Z-358.1 and *Board of State Examiners of Plumbers and Gas Fitters*. Each existing laboratory not equipped with an Emergency Wash System shall be equipped with at least one approved Fire Blanket, and a sign that reads:

"In Case of Clothing Fire
STOP, DROP and ROLL"

10.23.4 The location of the Emergency Wash System Stations and Fire Blankets shall be clearly indicated by signs of contrasting color, either RED and WHITE or GREEN and WHITE. The signs shall be at least 70 square inches in area bearing the words "EMERGENCY WASH STATION", or "SAFETY SHOWER" or "FIRE BLANKET".

10.23.4.1 Every wash station shall be tested by the owner of the building or his or her designee twice annually (every six months) for proper flow and operation. The owner shall, upon request, provide the fire department with the test result (including, but not limited to): date of test, station operation, system malfunctions, and the name of the person performing the test.

1.05: continued

10.23.4.2 Each student shall be advised of the location and proper use of the above emergency safety equipment by the teacher, instructor, or person in charge of the class before the first experiment is conducted.

10.23.4.3 Each student shall also be instructed in the proper procedure for the extinguishment of clothing fires at least twice during the course, as directed by the Head of the Fire Department.

10.23.4.3.1 The installation and operation of each safety device noted above shall be in order before the commencement of any class conducting laboratory experiments.

10.24 Add:
10.24 Maintenance, Inspection, and Testing.

10.24.1 through **10.24.3** Add:

10.24.1 Whenever or wherever any device, equipment, system, condition, arrangement, level of protection, fire-resistive construction, or any other feature is required for compliance with the provisions of this *Code*, such device, equipment, system, condition, arrangement, level of protection, fire-resistive construction, or other feature shall thereafter be continuously maintained. Maintenance shall be provided in accordance with this *Code,* the *Building Code* and applicable NFPA requirements, or requirements developed as part of a performance-based design.

10.24.2 No existing life safety feature shall be removed or reduced where such feature is a requirement for new construction. [*101*:4.6.12.2]

10.24.2.1 Existing life safety features obvious to the public, if not required by this *Code*, shall be either maintained or removed as provided in M.G.L. c. 148, § 27A.

10.24.3 Any device, equipment, system, condition, arrangement, level of protection, fire-resistive construction, or any other feature requiring periodic testing, inspection, or operation to ensure its maintenance shall be tested, inspected, or operated as specified elsewhere in this *Code* and the *Building Code.*

Chapter 11 Building Services.

11.1 through **11.1.2.3** Delete.

11.1.6 through **11.1.6.3.4** Delete.

11.1.7.3 through **11.1.7.3.1** Delete.

11.2 through **11.3.7** Delete.

11.5.1.1.1 Add:
11.5.1.1.1 Terms. As used in Chapter 11, the enclosed terms shall have the following meaning assigned to them.

11.5.1.1.1.1 through **11.5.1.1.3.1** Add:
11.5.1.1.1.1 Gravity Feed Burner. A burner which receives its fuel oil supply by static head pressure due to elevation of the supply source.

11.5.1.1.1.2 Post Purge Control. An electrical control that is designed to allow the power-venter or burner to operate after the burner flame has shut off, thus purging the vent system and heating appliance of combustion gases.

11.5.1.1.2 This Section shall not apply to fuel oil burners installed in steam boilers of nine horsepower and over and operated above 15 psi, but shall apply to the fuel oil storage.

11.5.1.1.3 Unsafe Heating Appliances. The Head of the Fire Department shall order the sealing (preventing the use) of any existing stove, oven, furnace, incinerator, boiler or any other heat producing device or appliance found to be defective or in violation of code requirements for existing appliances after giving 24 hours notice to this effect to any person, owner, firm, agent or operator in charge of same. However, the Head of the Fire Department shall seal any device or appliance without notice when inspection shows the existence of an immediate fire hazard or when imperiling human life. The sealed defective appliance shall remain withdrawn from service until all necessary repairs or alterations have been made.

1.05: continued

11.5.1.1.3.1 Unauthorized Seal Removal. No person or user, firm or agent shall continue the use of any device or appliance which has been sealed or ordered sealed, unless written authority to remove said seal is given by the Head of the Fire Department.

11.5.1.10.5 through **11.5.1.10.10.5** Add:

11.5.1.10.5 General Requirements.

(1) **Installation**. All fuel oil burners and all equipment in connection therewith shall be installed and maintained in accordance with the manufacturer's installation and operation manual. Chimneys, connectors, direct vent systems and power-venters shall also be installed in accordance with the *Building Code.*

(a) A person holding a certificate of competency as an oil burner technician may connect or disconnect for the purpose of repair or replacement, any device or control required by this *Code* to be part of an oil burner installation, or being an integral part of the oil burning equipment, at the connection on such device, control or part to be repaired or replaced, notwithstanding any contrary provision of M.G.L. c. 141.

(b) Any person licensed as an electrician under M.G.L. c. 141 may do any electrical work in connection with the alteration, repair, or installation of oil burning equipment without being certified as an oil burner technician.

(2) **Automatic Shut Off**. An approved automatic means to prevent abnormal discharge of fuel oil shall be provided for any fuel oil burner for which a competent attendant will not be constantly on duty in the room where the burner is located.

(3) **Exposure to Fire**. If any oil tank, oil burner, oil burner control or wiring related to an oil burner has been exposed to fire and is suspected of being damaged, the entire installation shall be made inoperative by the Head of the Fire Department who shall so notify the owner or occupant of the building or structure. Said installation shall not be operated until approved by the Head of the Fire Department.

(4) **Tank Removal**. Unless otherwise provided for in Chapter 66, a permit shall be obtained, in accordance with *Section 1.12.8.2,* from the Head of the Fire Department for the removal of a fuel oil storage tank. Any person removing a fuel oil storage tank from inside a building for a purpose other than replacement or repair, shall remove all fill and vent pipes.

(5) **Fuel Oil**. The grade of fuel oil used for any fuel oil burner shall be one which tests and experience have been shown to be suitable for use with that burner, but in no case shall the grade of fuel oil be heavier than that for which the burner has been designed or adjusted.

(6) **Gravity Feed to Burners**. Gravity feed shall be used only with a burner arranged to prevent abnormal discharge of oil at the burner by automatic means specifically approved for the burner in which it is used.

(7) **Fuel Oil Delivery**. Fuel oil shall not be delivered to any storage tank, unless the deliverer has knowledge that a permit has been obtained in accordance with *Section 1.12.8.2.*

(a) Fuel oil shall not be delivered to a storage tank by means of a pump or under pressure in any case where a tight connection is made between the discharge line and the tank inlet, unless such storage tank is designed to withstand the additional stress to which it may be subjected or unless the vent pipe for such tank is of sufficient size to relieve the tank of any undo pressure in excess of five psi. The delivery truck operator shall remain at the fill point during the entire operation.

(8) Fuel oil equal to the maximum capacity of the storage tank may be delivered without such a permit being in effect whenever an oil burner installation is first made, provided that an application has been made in accordance with *1.12.8.2*.

(9) **Connection**. Cross connection of oil supply and return lines to two or more supply tanks to the same burner shall be acceptable and shall be made by a pipe no smaller than ½ inch iron pipe or ½ inch O.D. tubing.

(10) Two supply tanks may be provided with a single fill and a single vent provided:

(a) The fill and vent pipes are not connected to the same tank;

(b) The crossover pipe is a minimum two inch diameter with swing joints and a ground joint union; and

(c) The vent to the outside is a minimum two-inch diameter.

(11) Tanks shall be mounted on a continuous concrete slab extending eight inches beyond the perimeter of the tank or tanks.

11.5.1.10.5.1 Permit. Permits, where required, shall comply with *Section 1.12.*

1.05: continued

11.5.1.10.6 Unenclosed Tanks: Installation Inside Buildings. When tanks are installed inside garages or other areas subject to vehicular impact, physical barriers shall be provided. The physical barrier shall consist of substantial pipes, or similar barriers.

11.5.1.10.7 Tanks Installations Outside of Buildings.

(1) Tanks installed outside of buildings shall be mounted on a continuous concrete slab at least four inches in thickness and extending eight inches beyond the perimeter of the tank or tanks.

(2) Tanks installed outside of buildings shall be securely supported by rigid noncombustible supports to prevent settling, sliding or lifting.

11.5.1.10.8 Fill and Vent Piping.

(1) Vent pipes shall terminate outside of buildings at a point not less than two feet (0.6 m) measured vertically or horizontally from any building opening.

(2) Outer ends of vent pipes shall terminate in a weatherproof vent cap or fitting or be provided with a weatherproof hood. All vent caps shall have a minimum free open area equal to the cross sectional area of the vent pipe and shall not employ screens finer than four mesh. Vent pipes shall terminate at least three feet from grade to avoid being obstructed with snow and ice. Vent pipes from tanks containing heaters shall be extended to a location where oil vapors discharging from the vent will be readily diffused. If the static head with a vent pipe filled with oil exceeds ten psi (70 kPa), the tank shall be designed to withstand the maximum static head which will be imposed.

(3) A fixed sash window shall not be considered an opening for the purpose of this Section.

11.5.1.10.9 Oil Gauging. All storage tanks in which a constant level of oil is not maintained by an automatic pump shall be equipped with a method of determining oil level. On cross connected tanks provided with a single fill and single vent, the gauge shall be installed on the tank vented to the outside.

11.5.1.10.10 Oil Burners, Light Fuel Oil Type.

11.5.1.10.10.1 Oil Supply and Return Lines.

(1) All threaded joints and connections shall be made tight with suitable lubricant or pipe compound. Teflon tape shall not be used. Unions requiring gaskets or packings, right or left couplings, and sweat fittings employing solder having a melting point of less than 500˚F (260˚C) shall not be used in oil lines. Compression type fittings shall not be used.

Exception: Mechanical connections on tubing of the flare type or gaugeable, two ferrule, swage type fittings are acceptable.

(2) Oil supply lines shall be rigidly secured in place and protected from injury and shall be protected against corrosion. All new oil supply lines in direct contact with concrete or earth shall be enclosed with a continuous nonmetallic sleeve that extends out of the concrete or earth a minimum of four inches on each end. Perimeter lines may be placed in an outer protective covering, in addition to the continuous nonmetallic sleeve, when subject to physical damage.

(3) A person holding a certificate of competency as an oil burner technician may connect or disconnect for the purpose of repair or replacement, any device or control required by this *Code* to be part of an oil burner installation, or being an integral part of the oil burning equipment, at the connection on such device, control or part to be repaired or replaced, notwithstanding any contrary provision of M.G.L. c. 141.

(4) Any person licensed as an electrician under M.G.L. c. 141 may do any electrical work in connection with the alteration, repair or installation of oil burning equipment without being certified as an oil burner technician.

(5) On existing installations, whenever a burner, boiler, furnace or tank is replaced, the oil supply line shall either be replaced or enclosed with a continuous sleeve as for new installations or a listed oil safety valve shall be installed at the tank end of the oil supply line in accordance with the manufacturer's instructions.

(6) An oil safety valve and continuous nonmetallic sleeve is not required when:

(a) The oil supply and return lines are not in direct contact with concrete, earth or any floor surface.

(b) When the burner is located above the oil supply tank and the entire oil supply line is connected to, and above the top of the tank.

1.05: continued

(7) Every owner of a residential property defined as a one- to four-dwelling unit used for living or sleeping (M.G.L. c. 148, § 38J) with oil supply and return lines not enclosed with a continuous nonmetallic sleeve or equipped with a listed oil safety valve, shall either replace the line and enclose it with a continuous sleeve as for new installations or shall have a listed oil safety valve installed at the tank end of the supply line in accordance with the manufacturer's instructions.

(8) Nothing in this *Code* shall prohibit overhead installation of oil supply and return lines or cross connection of oil supply lines from multiple tanks.

(9) Oil supply lines and return lines to tanks exposed to freezing temperatures shall be connected to the top of the tank. This shall not apply to gravity feed oil burners using #1 fuel oil, range oil or kerosene.

(10) Oil supply lines shall be properly reamed and joints and connections shall be made oil tight.

11.5.1.10.10.2 Oil Pumps and Valves.

Only readily accessible hand operated, fusible, spring loaded valves of an approved automatic type shall be installed in the oil supply line, one near each burner and one close to each supply tank so as to automatically stop the flow of oil in case of fire. Manual opening and ball spring check valves shall not be permitted.

11.5.1.10.10.3 Oil Burner Controls.

(1) Each fully automatic oil burner having a firing rate of no more than 20 gallons per hour shall be equipped with a type of approved primary safety control which shall shut off the oil supply to the burner within 15 seconds if ignition is not established or in the event of flame failure after combustion has been established. Once combustion is established and in the event of flame failure, the oil supply shall be shut off to the burner within 3 seconds nominal unless the ignition is reenergized in not less than 0.8 seconds after flame extinguishment occurs. The installation of intermittent (formerly called constant) ignition primary safety controls shall not be permitted.

(2) Each automatically fired, low-pressure steam heating boiler shall have an automatic low-water fuel cutoff, which may be a combined feeder/cutoff device. Each automatically fired hot water heating boiler with heat input greater than 200,000 btus per hour shall have a listed automatic low water fuel cutoff which has been designed for hot water service, so located as to automatically cut off the fuel supply when the surface of the water falls to the lowest safe permissible water level established by the boiler manufacturer. Each automatically fired, high-pressure steam boiler, except miniature boilers, shall have at least two automatic low-water fuel cutoff devices. Each low-water fuel cutoff or combined feeder/cutoff device shall be labeled and listed to UL 353 as a safety control and/or UL 60730-2-15 as a protective control. All non-residential boiler installations shall comply with the Board of Boiler Rules specialized codes 522 CMR.

11.5.1.10.10.4 Certificate and License Requirements for Repair or Replacement of Oil Burner Equipment. In accordance with M.G.L. c. 148, § 10D, a person holding a certificate as an oil burner technician may connect or disconnect for the purpose of repair or replacement, any device or control required by rules and regulations of the board to be a part of an oil burner installation, or being an integral part of the oil burning equipment, at the connection on such device, control or part to be repaired or replaced, notwithstanding any contrary provision of M.G.L. c. 141. Any person licensed as an electrician under said M.G.L. c. 141 may do any electrical work in connection with the alteration, repair or installation of oil burning equipment without being certified as an oil burner technician.

(1) Oil burners electrically controlled, driven and/or operated shall be supplied from a separate branch circuit located at the service disconnect panel, or at branch circuit subpanel. This circuit shall be clearly marked for the equipment it controls.

(2) All protective, control and emergency devices shall be series connected from the electrical distribution panel, through the emergency switch, through the thermal switch, to the service switch in the ungrounded line conductors. The burner controls shall be installed in the ungrounded supply conductors of the circuit and shall not exceed 150 volts to ground.

(3) A control (service switch) to start and stop a light fuel oil burner shall be installed at a location where the operator can view the fire. The switch shall be located at a maximum of three feet from the burner.

1.05: continued

(4) An electrical thermal switch fused to break the ungrounded conductor in the main circuit at 165°F, shall be installed in the main power line within six feet over the top of the burner boiler or burner furnace.
(5) If the ceiling above the burner boiler or burner furnace exceeds 12 feet in height, an additional thermal switch shall be installed at a height of ten feet and connected in series with the lower switch.
(6) Electrical equipment shall not obstruct clear access to clean out and service panels.

11.5.1.10.10.5 Certificates. Certificates, where required, shall comply with *Section 1.12.8.51.*

11.5.2.1 Replace with the following:
11.5.2.1 The use of unvented kerosene burners and oil stoves is prohibited by M.G.L. c. 148, § 25B.

11.5.2.2 through **11.5.2.3** Delete.

11.5.3.1 Delete

11.5.4 Vents Delete

11.6.2 Replace with the following:
11.6.2 Installation and Maintenance. Rubbish chutes and laundry chutes shall be installed and maintained in accordance with NFPA 82, *Standard on Incinerators and Waste and Linen Handling Systems and Equipment*, unless such installations are approved existing installations, which shall be permitted to be continued in service.

11.7.3.2 Delete.

11.7.5.1.1 through **11.7.5.1.2.2** Add:
11.7.5.1.1 A fuel quality test shall be performed at least annually using tests approved by ASTM standards.

11.7.5.1.2 Diesel fuel shall be tested in accordance with ASTM D 975-11b, *Standard Specification for Diesel Fuel Oils*, or ASTM D 6751-11b, *Standard Specification for Biodiesel Fuel Blend Stock (B100) for Middle Distillate Fuels*, as approved by the engine manufacturer, using ASTM D 7462-11, *Standard Test Method for Oxidation Stability of Biodiesel (B100) and Blends of Biodiesel with Middle Distillate Petroleum Fuel (Accelerated Method).*

11.7.5.1.2.1 Where diesel fuel is found to be deficient in accordance with testing required in *Section 11.7.5.1.2,* the fuel shall be reconditioned or replaced, the supply tank shall be cleaned internally, and the engine fuel filter(s) shall be changed.

11.7.5.1.2.2 *After the restoration of the fuel and tank in 11.7.5.1.2.1, the fuel shall be retested every 6 months until experience indicates the fuel can be stored for a minimum of one year without degradation beyond that allowed in 11.7.5.1.2.*

11.8.6 through **11.8.9** Add:
11.8.6 Smoke control systems shall be maintained to ensure to a reasonable degree that the system is capable of controlling smoke for the duration required. The system shall be maintained in accordance with the manufacturer's instructions and the *Building Code*.

11.8.7 A routine maintenance and operational testing program shall be initiated immediately after the smoke control system has passed the acceptance tests. A written schedule for routine maintenance and operational testing shall be established.

11.8.8 A written record of smoke control system testing and maintenance shall be maintained on the premises. The written record shall include the date of the maintenance, identification of servicing personnel, and notification of any unsatisfactory condition and the corrective action taken, including parts replaced.

11.8.9 Dedicated smoke control systems shall be operated for each control sequence semiannually. The system shall also be tested under standby power conditions.

11.9 through **11.9.6** Delete.

1.05: continued

11.10.1.1 Delete.

11.10.2 Replace with the following:
11.10.2 Two-way radio communication enhancement systems, when required, shall be maintained in accordance with Chapter 24 of NFPA 72: National Fire Alarm and Signaling Code.

11.10.3 Delete.

11.12.2 through **11.12.2.1.4.6** Delete.

11.12.2.1.6 through **11.12.2.1.6.3** Delete.

Chapter 12 Features of Fire Protection.

12.1 Replace with the following:
12.1 General. This chapter shall apply to existing, permanent, or temporary buildings.

12.2 through **12.2.2** Delete.

12.3.1 through **12.3.2.2** Delete.

12.3.3.1 Replace with the following:
12.3.3.1 Required fire-resistive construction, including fire barriers, fire partition, fire walls, exterior walls due to location on property, fire-resistive requirements based on type of construction, draft-stop partitions, and roof coverings, shall be maintained as constructed or permitted under the *Building Code*.

12.3.3.3 through **12.3.3.3.2** Delete.

12.4.1 Replace with the following:
12.4.1 *The installation and maintenance of assemblies and devices used to protect openings in walls, floors, and ceilings against the spread of fire and smoke within, into, or out of buildings shall comply with *Section 12.4* and NFPA 80, *Standard for Fire Doors and Other Opening Protectives* and with the *Building Code.*

12.4.2.4 through **12.4.2.7** Delete.

12.5.1 through **12.5.6.2.1** Delete.

12.5.7 through **12.5.9.2** Delete.

12.6.2.1*Smoldering Ignition of Upholstered Furniture. Add:
(3) **The requirements of California Technical Bulletin 117-2013:** *Requirements, Test Procedure and Apparatus for Testing the Smolder Resistance of Materials Used in Upholstered Furniture*.

12.6.3.3 Add:
12.6.3.3 Seating shall not be purchased, leased or rented for use in a particular occupancy, unless labeled or identified by the manufacturer.

12.6.3.3.1 through **12.6.3.5.1**(3) Add:
12.6.3.3.1 The following shall be exempt:
(1) Cushions and pads intended solely for outdoor use.
(2) Any article which is smooth surfaced and contains no more than ½ inch of filling material, provided that such article does not have a horizontal surface meeting vertical surface.
(3) Articles manufactured solely for recreational use or physical fitness purposes, such as weight lifting benches, gymnasium mats or pads, side horses and similar articles.

12.6.3.4 Add:
12.6.3.4 For spaces not protected by an approved sprinkler system, stackable molded plastic seating shall comply with ASTM E 1822 as modified. The test shall consist of a single chair, or prototypes thereof.

12.6.3.5 Add:
12.6.3.5 Labeled Furniture

1.05: continued

12.6.3.5.1 through **12.6.3.5.1**(2) Add:

12.6.3.5.1 The manufacturer shall affix a label to each article of regulated furniture that indicates:

(1) The article of furniture is composed of materials that meet the performance test.

(2) The nationally recognized testing laboratory and standards or publications as provided in this *Code.*

12.6.3.5.2 Add:

12.6.3.5.2 The label shall be stitched or adhered onto each piece of regulated furniture.

12.6.3.6 Add:

12.6.3.6 Documentation of Furniture.

12.6.3.6.1 Add:

12.6.3.6.1 The building manager shall maintain documentation of furniture within the building.

12.6.3.6.2 Add:

12.6.3.6.2 The documentation shall be made available to the AHJ upon request.

12.6.3.6.3 through **12.6.3.8.3**(5) Add:

12.6.3.6.3 The documentation shall include:

(1) The quantity and type of each article of furniture.

(2) Certification that the furniture items meet the performance requirements.

(3) The nationally recognized testing laboratory that conducted the tests.

(4) Descriptions of the upholstery cover fabric for each type of furniture within the inventory area, if the furniture is upholstered. The description of the upholstery cover fabric shall be provided by the fabric company or the chair manufacturer, and shall include fiber content, fabric type, fabric company name, and either a photo of the fabric for identification, or an actual fabric swatch, clearly labeled, at minimum size 2 in. x 2 in.

(5) Fire retardant treatment maintenance and compliance documentation, if applicable.

Table 12.6.9.1.1 Replace with the following:

Table 12.6.9.1.1 Provisions for Christmas Trees by Occupancy

Occupancy	No Tree Permitted	Cut Trees Permitted Sprinkler System Required	Cut Trees Permitted W/O Sprinkler System	Balled Tree Permitted
Ambulatory health care	X			
Apartment Buildings		X Within the unit	X Within the unit	X Within the unit
Assembly	X			
Board and care	X			
Business		X		X With Automatic Sprinklers
Daycare	X			
Detention and correctional	X			
Dormitories	X			
Educational	X			
Health care	X			
Hotels	X			
Industrial		X		X With Automatic Sprinklers
Lodging and rooming				X
Mercantile		X		X With Automatic Sprinklers

1.05: continued

12.7.1 through **12.7.6.2.4** Delete.

Chapter 13 Fire Protection Systems.

13.1.1 Replace with the following:
13.1.1 For alarms and systems regulated by this *Code* the AHJ shall have the authority to require that construction documents for all fire protection systems be submitted for review and approval and a permit be issued prior to the installation, rehabilitation, or modification in accordance with Section 1.14. Further, the AHJ shall have the authority to require that full acceptance tests of the systems be performed in the AHJ's presence prior to final system certification.

13.1.1.1.2 Add:
13.1.1.1.2* No person shall shut off, disconnect, obstruct, remove, and/or impair a fire protection system or carbon monoxide protection system without first obtaining a written permit pursuant to *Section 1.12* as required by the AHJ. [13.1.8 and 13.7.2.2]

A.13.1.1.1.2 *See M.G.L. c. 48, § 27A. Except as hereinafter provided, no person shall shut off, disconnect, obstruct, remove or destroy, or cause or permit to be shut off, disconnected, obstructed, removed or destroyed, any part of any sprinkler system, water main, hydrant or other device used for fire protection or carbon monoxide detection and alarm in any building owned, leased or occupied by such person or under his control or supervision, without first procuring a written permit so to do from the head of the fire department of the city or town wherein such building is situated, which permit such head is hereby authorized to issue subject to such terms and conditions as, in his judgment, protection against fire and the preservation of the public safety may require. This section shall not prevent the temporary shutting off or disconnection or partial removal of such a system, main, hydrant or other device for the purpose of making necessary repairs or preventing freezing or other property damage; provided, however, that the head of the fire department is notified immediately of such emergency action. The head of the fire department shall also be notified when the system, main, hydrant or other device is placed back in service. Violation of this section shall be punished by imprisonment for not more than one year or by a fine of not more than one thousand dollars, or both. The supreme judicial and superior courts shall have jurisdiction in equity to enforce compliance with the provisions of this section.*

13.1.10 Replace with the following:
13.1.10 No person shall shut off, disconnect, obstruct, remove, and/or modify a fire protection system or carbon monoxide protection system without first procuring a written permit in accordance with *Section 1.12* from the AHJ. The AHJ shall be notified when any fire protection system is out of service and on restoration of service.

13.2.1.1 Delete.

13.2.2 through **13.2.2.5(3)** Delete.

13.3.1.1 Replace with the following:
13.3.1.1 Automatic sprinklers shall be installed and maintained in full operating condition in accordance with this *Code* and the applicable standard or document for such system referenced in Chapter 2.

13.3.1.4 Delete.

13.3.2.1 Delete.

13.3.2.7.1 through **13.3.2.21.1.2** Delete.

13.3.2.21.1.3 Replace with the following:
13.3.2.21.1.3 **High-rise Buildings**. *See* M.G.L. c. 148, §§ 26A and 26A½.

13.3.2.21.1.4 through **13.3.2.21.4.2** Delete.

13.3.2.22.1 Delete.

13.3.2.22.3 through **13.3.2.23** Delete.

13.3.2.23.1 Replace with the following:
13.3.2.23.1 *See* M.G.L. c. 148, § 26.

13.3.2.23.2 Delete.

13.3.2.24 through **13.3.2.29** Delete.

1.05: continued

13.4.2 through **13.4.2.2** Delete.

13.6.1.1.3 Add:
13.6.1.1.3 Certificates. Certificates, where required, shall comply with Section 1.13.

13.7 through **13.7.4.5.6** Delete this Section and Replace with the following:
13.7. Smoke Alarms and Detectors, Permits, Massachusetts General Laws, Primary Power Sources, and Carbon Monoxide Protection Systems.

13.7.1 For systems regulated by this *Code*, the AHJ shall have the authority to require construction documents for all fire protection and carbon monoxide systems to be submitted for review and approval and a permit to be issued prior to the installation, rehabilitation, or modification. Further, the AHJ shall have the authority to require that full acceptance tests of the systems shall be performed in the AHJ's presence prior to final system certification.

13.7.2 Permits. Permits, where required, shall comply with *Section 1.12.*

13.7.2.1 For installations described in *Section 13.7* governed by permits issued, the applicable code shall be determined based on the date of issuance stated on the permit.

13.7.2.2 No person shall shut off, disconnect, obstruct, remove, and/or impair a fire protection system or carbon monoxide protection system without first procuring a written permit pursuant to *Section 1.12* as required by the AHJ.

13.7.3 Massachusetts General Laws.

13.7.3.1 For the purpose of compliance with M.G.L. c. 148, §§ 26E and 26F, smoke alarms shall be installed in accordance with the applicable requirements of *Section 13.7.*

13.7.4 Smoke Detection.

13.7.4.1 General. Where fire warning equipment is required by this *Code* to be installed in a building, such equipment shall be installed in accordance with *Massachusetts Electrical Code*, NFPA 72*: National Fire Alarm and Signaling Code* and *Section 13.7.*

13.7.4.2 Low voltage system batteries for smoke detectors shall be maintained in accordance with applicable Sections of NFPA 72: *National Fire Alarm Signaling Code* by the owner, landlord or superintendent.

13.7.4.3 Heat Detection.

13.7.4.3.1 The Head of the Fire Department shall be permitted to require the installation and interconnection of heat alarms/detectors in unheated open porches with stairways. Where such heat alarm/detector is required, it shall be listed for such use.

13.7.5 Primary Power Source.

13.7.5.1 Smoke alarms/detectors, and carbon monoxide alarms shall be permitted to have battery power as a primary source, unless otherwise prohibited by applicable laws, codes, or standards.

13.7.5.1.1 Nonrechargeable, Nonreplaceable Battery Power Alarms/Detectors.
(1) Photoelectric technology shall be required for smoke alarms and detectors.
(2) A silence button shall be required on each smoke alarm, or detector device; within its control panel.
(3) Each smoke alarm and detector device shall be equipped with a nonrechargeable battery.
(4) Each smoke alarm and detector device shall be equipped with a nonreplaceable battery.
(5) All power requirements for all smoke alarms and detectors shall be met for at least ten years of battery life, including weekly testing.
(6) All power requirements for combination alarms with smoke/carbon monoxide shall be capable of powering the unit for its service life, including testing.
(7) Household fire warning systems and smoke detectors shall receive their power in accordance with NFPA 72: *National Fire Alarm and Signaling Code*.

13.7.5.1.2 Battery Powered with Network Technology (wireless) Alarms/Detectors.
(1) Photoelectric technology shall be required for smoke alarms/detectors.
(2) All power requirements for all alarms and detectors are met for at least one year of battery life, including weekly testing.

1.05: continued

13.7.5.1.3 Other Technologies and Nonrequired Devices.

13.7.5.1.3.1 Where devices in *Sections 13.7.5.1.1* and *13.7.5.1.2* have been installed, and placed, alarms and detectors having other technologies and or additional devices shall be permitted as provided in *Sections 13.7.5.1.3.1(1) and (2).*

(1) Other technologies that are part of the same unit shall be permitted with photoelectric technology.

(2) Non-required devices shall be permitted to be connected with required devices or installed within the same or different space, area, or location as provided in Table 13.7A, Table 13.7C and Table 13.7D, provided such devices have been installed in accordance with their applicable listings and have been tested, inspected and maintained pursuant to *Section 10.24.*

13.7.5.1.4 Types of Device.

13.7.5.1.4.1 The following types of device shall be required:

(1) A single station or multiple station alarm;

(2) Detector;

(3) A device as one unit with one or more technologies; and

(4) Types of devices listed in *Sections 13.7.5.1.4.1(1) through (3)* shall be pursuant to Table 13.7B.

13.7.5.1.4.2 Device Requirements.

13.7.5.1.4.2.1 The following device requirements shall comply with the following:

(1) Devices shall be placed pursuant to Table 13.7A and Table 13.7C as applicable.

(2) Single station or multiple station alarms shall meet standard ANSI/UL217: S*tandard for Safety Smoke Alarms* as provided in Table 13.7B.

(3) Smoke detectors shall meet standard ANSI/UL268: *Smoke Detectors for Fire Alarm Signaling Systems* as provided in Table 13.7B.

(4) Devices provided in Sections 13.7.5.1.4.1(1) through (3) with an integrally mounted heat detector shall meet the following standards as provided in Table 13.7B as applicable

(a) Standard ANSI/UL 521: *Heat Detectors for Fire Protective Signaling Systems* that covers heat detectors for fire protective signaling systems

(b) Standard ANSI/UL 539: *Single and Multiple Station Heat Alarms* that covers heat-actuated, single and multiple station heat alarms

(5) A combination device as a single unit with two or more technologies shall meet the following standards as provided in Table 13.7B and as provided below:

(a) ANSI/UL 217: S*tandard for Safety Smoke Alarms* and ANSI/UL 2034: *Standard for Single and Multiple Station Carbon Monoxide Alarms* for combination alarms with smoke/carbon monoxide technologies;

(b) ANSI/UL 268: *Smoke Detectors for Fire Alarm Signaling Systems* and ANSI/UL 2075: *Standard for Safety Gas and Vapor Detectors and Sensors* for combination detectors with smoke/carbon monoxide technologies.

(6) A device shall be permitted to be a single or multiple station alarm or detector with smoke and or heat detection and or carbon monoxide and or intrusion technologies within the same unit provided all of the conditions listed below in *Sections 13.7.5.1.4.2.1(6)(a)* and *(b)* for alarms or *(b)* and *(c)* for detectors are met:

(a) Combination devices with two or more technologies that are incorporated into one unit shall have simulated voice and tone alarm features which clearly distinguishes between two or more events such as carbon monoxide and smoke.

(b) Fire alarm signal shall take precedence, even when a non-fire alarm signal is initiated first.

(c) Combination detectors shall be permitted to satisfy requirements for both smoke and carbon monoxide detection required by this *Code* when listed in accordance with UL 268: *Standard for Safety Smoke Detectors for Fire Alarm Systems* and UL 2075: *Standard for Safety Gas and Vapor Detectors and Sensors*.

(7) Such combination devices shall include both simulated voice and tone alarm features which clearly distinguishes between carbon monoxide and smoke notification, unless such system employs the following:

1.05: continued

(a) Each such combination device produces a distinctive audile and visual alarm signal for smoke and carbon monoxide, in accordance with NFPA 72: *National Fire Alarm Signaling Code*;
(b) A control unit or annunciator is installed displaying a distinctive alphanumeric message (digital or embossed) for smoke and carbon monoxide;
(c) Where such control unit or annunciator is installed it shall be located in an accessible area within each dwelling unit and be visible at all times; and
(d) For transient residential and institutional structures, such control unit or annunciator shall be located at the constantly attended location and shall be monitored.

13.7.6 Carbon Monoxide Detection.

13.7.6.1 General. For the purposes of M.G.L. c. 148, § 26F½, carbon monoxide detection shall be provided and installed in accordance with *NFPA 72: National Fire Alarm Signaling Code* and *Section 13.7.6*.

13.7.6.2 Every owner, superintendent or landlord of every structure that employs carbon monoxide alarm protection by utilizing one or more of the carbon monoxide protection technical options listed in *Section 13.7.7* equipped with a voice or annunciator as provided in *Section 13.7.6.5.1* shall prepare a written emergency plan that is in effect and available to all personnel. The plan shall be presented to and approved by the Head of the Fire Department.

(1) The plan shall include at a minimum:
(a) The development of a policy and procedure as a means to immediately communicate the alarm to the fire department;
(b) An evacuation plan; and
(c) A list of emergency contact phone numbers of responsible parties.
(2) An annual review by the owner, superintendent or landlord of the plan with all employees, who shall be kept informed in respect to their duties and responsibilities under the plan;
(3) Systems installed in accordance with *Section 13.7.6.5.1* shall include information within each room indicating evacuation procedures in the event of an alarm condition.

13.7.6.3 Annually, the owner, superintendent or landlord of every structure shall submit to the Head of the Fire Department an updated emergency plan, record of inspection, maintenance and testing on a form prescribed by the State Fire Marshal.

13.7.6.4 Terms. As used in Chapter 13, the enclosed terms shall have the following meaning assigned to them.

13.7.6.4.1 Adjacent Spaces. Any area, space, room, or dwelling unit located directly next to, below, or above any area space, room, or dwelling unit that contains fossil fuel burning equipment or enclosed parking. It shall not include closets, bathrooms, cabinets, or similar areas used for storage or utility purposes and temporarily occupied for activities relating to such storage or utility use.

13.7.6.4.2 Centralized Fossil Fuel Burning Equipment. A central heating plant, hot water heater, a combustion driven generator or fire pump, central laundry equipment, roof mounted air handling unit or similar equipment that emits carbon monoxide as a by-product of combustion and does not allow for air exchange between centralized fossil fuel burning equipment and dwelling units or common areas.

13.7.6.4.3 Combination Device. A device that employs more than one technology within the same unit such as smoke and carbon monoxide.

13.7.6.4.4 Carbon Monoxide Device. A device intended for the purpose of detecting carbon monoxide gas and alerting occupants either by a distinct audible signal comprising an assembly that incorporates a sensor, control components and an alarm notification appliance in a single unit (alarm) or through a connection to an alarm control unit (detector).

13.7.6.4.5 Daycare Facility. A facility licensed by the Commonwealth under M.G.L. c. 15D, §§ 5, 6, and 7 or under the Department of Early Education and Care as a Child Care Center, School Aged Child Care Program, or Family Child Care Home, including Large Family Child Care and Family Child Care Plus. (606 CMR 7.00: *Standards for the Licensure or Approval of Family Child Care; Small Group and School Age and Large Group and School Age Child Care Programs*.)

1.05: continued

13.7.6.4.6 Dwelling Unit. As used in Table 13.7D, Dwelling Unit means a single unit providing facilities for living and sleeping and used for residential purposes, unless specifically identified otherwise.

13.7.6.4.7 Enclosed Parking. A structure or an area or room, or floor or level thereof, enclosed within an overall building or structure or attached thereto that is designed or used for the parking of vehicles and does not comply with the minimum exterior wall opening requirements in the *Building Code*.

13.7.6.4.8 Fossil Fuel Burning Equipment. Any device, apparatus, or appliance which is designed or used to consume fuel of any kind in which such equipment emits carbon monoxide as a by-product of combustion.

13.7.6.4.9 Habitable. An area or space such as a cellar, basement, or attic that is designed, used, or equipped with furnishing for living purposes.

13.7.6.4.10 Intermittent Ignition Device. A device which ignites an automatic gas appliance to begin normal operation thereof and which is activated only at the time such automatic gas appliance is to be so ignited.

13.7.6.4.11 Institutional Structures. Any dwelling, building, or structure classified as use group I-1 through I-3, as defined in the *Building Code* and those unclassified occupancies that have the same characteristics as I-1 through I-3. Where there is a dispute regarding use group classification of a structure, a determination shall be made by the municipal or state building inspector having jurisdiction.

13.7.6.4.12 Residential Structures. Any dwelling, building, or structure classified as use group R-1 with less than six dwelling units or R-2 through R-5, as defined in the *Building Code* and those unclassified occupancies that have the same characteristics as an R-1 with less than six dwelling units or R-2 through R-5. Where there is a dispute regarding use group classification of a structure, a determination shall be made by the municipal or state building inspector having jurisdiction.

13.7.6.4.13 Roof Mounted Fossil Fuel Burning Equipment. Any fossil fuel burning equipment mounted on top of a structure that is used to condition any medium through heating or cooling.

13.7.6.4.14 Transient Residential Structures. Any dwelling, building, or structure classified as use group R-1 with six or more dwelling units, as defined in the *Building Code* and those unclassified occupancies that have the same characteristics as R-1 with six or more dwelling units. Where there is a dispute regarding use group classification of a structure, a determination shall be made by the municipal or state building inspector having jurisdiction.

13.7.6.5 Carbon Monoxide Requirements. A carbon monoxide device shall be installed as provided in *Section 13.7.6* and Table 13.7D and placed in the following locations:

(1) On every habitable level of a dwelling unit with or without a sleeping area.

(2) In habitable portions of basements, cellars, and attics.

(3) Within the immediate vicinity of a sleeping area but within ten feet measured in any direction from the door to the sleeping area (bedroom).

(4) In each level of each dwelling unit in transient residential and institutional structures, with fossil fuel burning equipment or enclosed parking.

(5) One carbon monoxide alarm shall be installed in each room used by children for sleeping, learning, or participating in early education and care activities in daycare facilities.

(6) Carbon monoxide protection in Family Child Care Homes, Large Family Child Care and Family Child Care Plus facilities shall comply with *Sections 13.7.6.5 (1), (2), and (3).*

13.7.6.6 Voice or Annunciators.

13.7.6.6.1 Smoke and carbon monoxide technologies shall be permitted to be installed as one unit as a combination device. Combination devices shall include both simulated voice and tone alarm features which clearly distinguishes between carbon monoxide and smoke notification, unless such system employs the following:

Each combination device initiates a distinctive audile and visual alarm signal for smoke and carbon monoxide, in accordance with NFPA 72: *National Fire Alarm Signaling Code* and;

1.05: continued

(1) Within each dwelling unit, a control unit or annunciator is installed displaying a distinctive alphanumeric message (digital or embossed) for smoke and carbon monoxide and;
(2) Where such control unit or annunciator is installed it shall be located in an accessible area within each dwelling unit and be visible at all times.
(3) For transient residential and institutional structures, such control unit or annunciator shall be located at the constantly attended location and shall be monitored.

Table 13.7A
Smoke Alarms and Detectors
Device, Placement, Power Supply, Type and Wiring
Household Fire Warning
For one and not more than two dwelling units
Pre-1975-Dwellings-
Pursuant to M.G.L. c. 148, §§ 26E and 26F[1,2]

(Not substantially altered to constitute new)	
Device	(1) Smoke alarms/detectors installed shall require photoelectric technology.
Placement	(2) Smoke alarms/detectors shall be placed: (a) on every habitable level (b) on the basement level (c) on the ceiling of each stairway leading to the floor above, but not within each stairway, at the base of each stairway, including stairways to an unfinished/unheated basement/cellar (d) on ceiling outside of each separate sleeping area (e) in common areas on ceilings
Power Supply	(3) Smoke alarms/detectors pursuant to M.G.L. 148, § 26E: (a) shall be permitted to have either battery or, primary power pursuant to M.G.L. c.148, § 26E for their power supply; and (b) Smoke alarms/detectors that do not include a secondary power source and have a battery as its primary power source shall meet the power provisions and conditions as provided in *Section 13.7.5*
Type of Device	(4) Types of device shall be permitted to be a single station or multiple station alarm or detector. *See Section 13.7.5.1.3*
Type of Technology	(5) Technology (a) Photoelectric shall be required, *see Sections 13.7.5.1.1* and *13.7.5.1.2* (b) Other types of technologies with required photoelectric technology. *See Section 13.7.5.1.3*
Wiring	(6) Non-interconnected smoke alarms/detectors shall be permitted within the dwelling unit. (7) Smoke/Heat alarms/detectors: (a) in a single family dwelling unit shall be permitted to be interconnected in basements (b) in a two-family dwelling unit shall be interconnected in common areas and in basements

NOTE 1. A dwelling, as used here, means one or more units providing facilities for cooking, sanitary, living, sleeping or eating.
NOTE 2. For compliance with M.G.L. c. 148, § 26F in existing buildings, 527 CMR 1.05: 1.1 may be applicable.

1.05: continued

Table 13.7B
Listings for Smoke and Carbon Monoxide Detectors and Alarms

Smoke and Carbon Monoxide alarms and detectors shall be listed as provided below.		
Smoke Alarm and Detector	**Heat Detection**	**Carbon Monoxide Smoke Alarms and Detectors**
ANSI/UL 217 covers electrically operated single and multiple station smoke alarms.	ANSI/UL 539 covers heat-actuated, single and multiple station heat alarms.	ANSI/UL 2034 covers electrically operated single and multiple station carbon monoxide (CO) alarms.
ANSI/UL 268 covers smoke detectors for fire protective signaling systems.	ANSI/UL 521 covers heat detectors for fire protective signaling systems.	ANSI/UL 2075 covers toxic and combustible gas and vapor detectors and sensors.
		Combination smoke/carbon monoxide alarms shall be listed and labeled in accordance with ANSI/UL 217 and ANSI/UL 2034.
		Combination smoke/carbon monoxide detectors shall be listed and labeled in accordance with ANSI/UL 268 and ANSI/UL 2075.

Table 13.7C
Smoke Alarms and Detectors
Device, Placement, Power Supply, Type and Wiring
Household Fire Warning
For three or more dwelling units, but less than six
Pre-1975-Dwellings-
Pursuant to M.G.L. c. 148, §§ 26E and 26F[1,2]

(Not substantially altered to constitute new)	
Device	(1) Smoke alarms/detectors shall require photoelectric technology.
Placement	(2) Smoke alarms/detectors shall be placed: (a) on every habitable level (b) on the basement level (c) on the ceiling of each stairway leading to the floor above, but not within the stairway, at the base of each stairway, including stairways to an unfinished/unheated basement/cellar (d) on ceiling outside of each separate sleeping area. (3) Smoke alarms/detectors shall be placed in common areas on the ceiling. (4) Heat alarms/detectors required by *Section 13.7.4.3* shall be placed: (a) in open porches with stairs on the ceiling (b) in common areas on the ceiling.
Power Supply	(5) Smoke alarms/detectors pursuant to M.G.L. 148, § 26E: (a) shall be permitted to have either battery or, primary power pursuant to M.G.L. c. 148, § 26E for their power supply for alarms/detectors: (b) Smoke alarms/detectors that do not include a secondary power source and have a battery as its primary power source shall meet the power provisions and conditions as provided in *13.7.5* (c) Common halls and basements shall have their power supply by primary power pursuant to M.G.L. c. 148, § 26E.
Type of Device	(6) Types of device shall be permitted to be a single station or multiple station alarm or detector. *See Section 13.7.5.1.3*.

1.05: continued

Type of Technology	(7) Technology (a) Photoelectric shall be required, *see Sections 13.7.5.1.1* and *13.7.5.1.2* (b) Other types of technologies with required photoelectric technology. *See Section 13.7.5.1.3*
Wiring	(8) Non-interconnected smoke alarms/detectors shall be permitted to be within the dwelling unit. (9) Smoke/Heat alarms/detectors shall be interconnected in common areas and in basements.

NOTE 1. A dwelling, as used here, means one or more units providing facilities for cooking, sanitary, living, sleeping or eating.
NOTE 2. For compliance with M.G.L. c. 148, § 26F in existing buildings, 527 CMR 1.05: 1.1 may be applicable.

Table 13.7D
Carbon Monoxide Detection Requirements for Dwellings[1]

Device	(1) Carbon Monoxide Devices.
Placement	(2) Carbon monoxide devices shall be installed in the following locations: (a) on every level of a dwelling unit with or without a sleeping area; (b) in habitable portions of basements, cellars and attics; (c) installed within the immediate vicinity of a sleeping area but within ten feet measured in any direction from the door to the sleeping area [bedroom]; (d) on every level in every dwelling unit of transient or institutional structures with fossil-fuel burning equipment or enclosed parking garage; (e) in each room used for sleeping or learning in daycare facilities; and (f) in locations (d) through (e) for Family Child Care Homes, Large Family Child Care, and Family Child Care Plus facilities.
Power Supply	(3) Carbon monoxide devices shall be powered as follows: (a) Battery powered, wireless appliances or an A/C (alternating current) plug-in with battery backup in accordance with NFPA 72 shall be installed in day care facilities and residential structures. (b) A/C primary power source with battery backup in compliance or wireless systems with secondary power in compliance with NFPA 72 shall be installed in transient residential or in institutional structures. (c) Carbon Monoxide alarms that do not include a secondary power source and have a battery as its primary power source shall meet the power provisions and conditions as provided in *Section 13.7.5.*
Type of Device	(4) Single or multiple station smoke alarms/detectors or combination smoke and carbon monoxide technologies in one unit shall be permitted per Sections *13.7.5.1.3* and *13.7.5.1.4.*
Technical Options	(5) In *lieu* of providing carbon monoxide protection within each level of each dwelling unit, it shall be permitted to use one or more of the carbon monoxide protection technical options as provided in *Section 13.7.7.* However, notwithstanding the use of any alternative compliance option, carbon monoxide protection shall also be installed in any dwelling unit that contains fossil fuel burning equipment.
Wiring	(6) Non-interconnected carbon monoxide alarms and detectors shall be permitted to be within the dwelling unit.

NOTE 1. A dwelling, as it is used, here shall mean a single unit providing facilities for living and sleeping and used for residential purposes.

1.05: continued

13.7.7 Technical Options. In *lieu* of providing carbon monoxide alarm protection within each level of each dwelling unit, it shall be permitted to use one or more of the carbon monoxide protection technical options as described in *Section 13.7.7.* However, notwithstanding the use of any alternative compliance option, carbon monoxide alarm protection shall also be installed in any dwelling unit that contains fossil fuel burning equipment.

(1) **Type A**. Carbon monoxide protection shall provide visual and audible notification in the rooms or areas containing the fossil fuel burning equipment. Such protection shall be monitored in accordance with NFPA 72: *National Fire Alarm Signaling Code*. Such method of monitoring is to be determined at the discretion of the building owner. In accordance with NFPA 72, the retransmission of the signal shall be at the discretion of the Head of the Fire Department.

(2) **Type B**. Carbon monoxide protection for areas or rooms of centralized fossil fuel burning equipment consisting of kitchen appliances equipped with an intermittent ignition device shall comply with the Fuel/Gas Plumbing Code and NFPA 54: *National Fuel Gas Code*. A written certification shall be submitted to the Head of the Fire Department from a registered professional engineer licensed by the Commonwealth, certifying that the kitchen appliances meet Fuel/Gas Plumbing Code and said NFPA 54.

(3) **Type C**. Carbon monoxide protection for areas or rooms with centralized fossil fuel burning equipment which employ an automatic integrated shutdown device which shall be directly connected to the fossil fuel burning equipment and an A/C primary power source with battery backup in compliance with NFPA 72: *National Fire Alarm Signaling Code* or low voltage or wireless systems in compliance with NFPA 72 that will cause a shut down to the fossil fuel burning equipment upon activation of a carbon monoxide device. The device must also provide an audible or visual alarm in the immediate area of the device and fossil fuel burning equipment. The fossil fuel burning equipment must be manually restarted after activation. A sign shall be mounted in the vicinity of the device with a minimum of one inch high letters in contrasting color with the following statement: "If the carbon monoxide device has activated, do not restart the equipment until serviced by a qualified technician".

Exception: Such shut down requirement shall not be applicable to systems that are part of an emergency or standby system required by any municipal, state or federal law or regulation, provided the carbon monoxide detection system shall be monitored in accordance with NFPA 72: National Fire Alarm Signaling Code.

(4) **Type D**. Carbon monoxide protection for adjacent spaces of structures, areas or rooms considered enclosed parking, shall employ listed carbon monoxide alarm protection meeting ANSI/UL 2075: *Standard for Safety Gas and Vapor Detectors and Sensors* or a low voltage or wireless system. Such installation shall provide a visual or audible alarm in the rooms or areas containing the fossil fuel burning equipment. Such protection shall be monitored in accordance with NFPA 72: *National Fire Alarm Signaling Code*. Such method of monitoring is to be determined at the discretion of the building owner. In accordance with NFPA 72, the retransmission of the signal shall be at the discretion of the Head of the Fire Department.

(5) **Type E**. Carbon monoxide protection for enclosed parking shall employ, in the enclosed parking either:

(a) An automatic mechanical ventilation system that automatically operates upon detection of carbon monoxide in accordance with the *Building Code*, without exception or reduction and provides for a supervisory alarm at 50 parts per million (ppm) in accordance with NFPA 72: *National Fire Alarm Signaling Code*. Such method of monitoring is to be determined at the discretion of the building owner in accordance with NFPA 72 and the retransmission of the signal shall be at the discretion of the Head of the Fire Department; or

(b) The enclosed parking has continuous mechanical ventilation at a minimum rate in accordance with the *Building Code* without exception or reduction. Such system shall employ a sensor to ensure the minimum airflow as designed is operating through the system. The sensor shall monitor direct airflow and shall be connected to the fire alarm panel as a supervisory alarm in accordance with NFPA 72: *National Fire Alarm Signaling Code*. A registered professional engineer licensed by the Commonwealth shall provide written certification to the Head of the Fire Department that the subject enclosed parking meets the requirements of Type (E).

1.05: continued

(6) **Type F**. Carbon monoxide protection for roof mounted fossil fuel burning equipment that circulate air from said unit to common areas only, shall be equipped with the following: A duct carbon monoxide gas detection device shall be installed on the discharge side of the roof mounted air handling unit or the common areas on the floor closest to the initial supply discharge from the roof mounted air handling unit. All such devices shall be installed in accordance with the manufacturer's instructions. The carbon monoxide gas detection device shall automatically alarm upon detection of carbon monoxide at 50 parts per million (ppm) and provide for a supervisory alarm in accordance with NFPA 72: *National Fire Alarm Signaling Code*. Such method of monitoring is to be determined at the discretion of the building owner in accordance with NFPA 72, and the retransmission of the signal shall be at the discretion of the Head of the Fire Department. Upon activation of the carbon monoxide detection device and supervisory alarm, the roof mounted fossil fuel burning equipment shall shutdown until manually reset.

Exception: Such shut down requirement shall not be applicable to systems that are part of an emergency or standby system required by any municipal, state or federal law or regulation.

(7) **Type G**. Carbon monoxide protection for roof mounted fossil fuel burning equipment that do not circulate air to any common area or dwelling unit. (Reserved)

(8) **Type H**. Carbon monoxide protection for certain institutional structures that contain fossil fuel burning equipment that circulates air to patient rooms, inmate rooms or common areas. Carbon monoxide protection for certain institutional structures classified as either use group I-2 or I-3, that contains fossil fuel burning equipment that circulates air to dwelling units occupied by patients or inmates may be equipped with type H protection if the following conditions are met:

(a) Such structure contains dwelling units occupied by a person or persons who are not capable of self preservation due to age, mental disability, medical condition, incarceration, restraint, or security; and

(b) The occupants are under constant supervision on a 24-hour basis.

13.7.7.1 Type H protection shall include a duct carbon monoxide gas detection device which shall be installed downstream of air filters, ahead of any branch connections in air supply systems of the fossil fuel air handling unit. All such devices shall be installed in accordance with the manufacturer's instructions. The carbon monoxide gas detection device shall automatically alarm upon detection of carbon monoxide at 50 parts per million (ppm) and provide for a supervisory alarm in accordance with NFPA 72: *National Fire Alarm Signaling Code*. Such method of monitoring is to be determined at the discretion of the building owner in accordance with NFPA 72 and the retransmission of the signal shall be at the discretion of the Head of the Fire Department. Upon activation of the carbon monoxide detection device and supervisory alarm, the fossil fuel burning equipment shall shutdown until manually reset.

13.7.8 Fire alarm systems required by the *Building Code* shall be monitored.

Exception: Single and multiple station smoke alarms required by the Building Code in other than Groups R-1 and R-2 with more than 16 units. Smoke detectors in Group I-3 occupancies automatic sprinkler systems and single- and multi-station smoke in three through five family dwellings. Smoke detectors in patient sleeping rooms in occupancies in Group I-2.

13.7.8.1 In all cases, central stations and those operating approved remote/proprietary station fire alarm system supervising stations shall retransmit alarm signals within 90 seconds of receipt, to the fire department having jurisdiction.

13.7.8.2 Identical control diagrams showing all devices in the system and identifying their location and function shall be maintained current and kept on file with the AHJ and shall be kept on site, adjacent to the fire alarm panel in a format and manner approved by the AHJ.

13.7.8.3 A copy of the final report required by the *Building Code* shall be filed with the fire code official and the building code official and an identical copy shall be maintained in an approved location at the building.

1.05: continued

13.7.8.4 All signs required to identify fire protection equipment, equipment rooms and equipment locations shall be constructed of durable materials, be permanently installed, and be readily visible. Letters and numbers shall contrast with the sign back ground, shall be at least two inches in height, and shall have an appropriate width-to-height ratio to permit the sign to be read easily from a distance of ten feet. The sign and location shall be approved by the AHJ.

13.7.8.5 A-2 Nightclub Use as of January 1, 2007: New Construction, Change of Use, or Substantial Modification. The activation of any "fire protection system" element (signaling system, detection, sprinklering, *etc*.) shall automatically:

(1) Cause immediate illumination of all areas and components of the required means of egress, and additionally;

(2) Cause immediate full activation of all other house lighting; and

(3) Cause immediate stopping of any and all sounds and visual distractions (public address systems, entertainment and dance lighting, music, *etc*.) that conflict/compete with the fire protective signaling system. [*See* the *Building Code*] [*See* Chapter 1, of this *Code*, Section 1.1.4 for maintaining these provisions]

13.8 Replace as follows:

13.8 Other Fire Protection Systems.

Where other fire protection systems are required to be installed by the provisions of this *Code*, or are installed with the approval of the AHJ as an alternative or equivalency, the design and installation of the system shall comply with the appropriate standards listed in Table 13.8.1. The system shall be tested and maintained in accordance with *Section 10.24.*

13.8.1 through **13.8.2** Delete

13.10 through **13.10.10.2** Add:

13.10 Inspection, Testing, and Maintenance.

13.10.1 Application. The inspection, testing, and maintenance of single- and multiple-station alarms, fire alarm systems and household fire warning systems shall comply with the requirements of this section.

13.10.1.1 Procedures that are required by other parties and that exceed the requirements of this section or NFPA 72: *National Fire Alarm Signaling Code* shall be permitted.

13.10.1.2 The requirements of *Section 13.10* shall apply to both new and existing systems.

13.10.2 Purpose.

13.10.2.1 The purpose for initial and reacceptance inspections is to ensure compliance and to ensure installation is in accordance with this *Code,* and other required installation standards.

13. 10.2.2 The purpose for periodic inspections is to assure that obvious damages or changes that might affect the alarm system operability are visually identified.

13.10.3 Deficiencies.

13.10.3.1 Responsibilities.

13.10.3.1.1 Tenants.

13.10.3.1.1.1 Tenants shall ensure that each alarm installed in the tenant's rental unit remains functional and is not disabled.

13.10.3.1.1.2 Tenants or occupants shall not cause or disable any such alarm system or part thereof.

13.10.3.1.1.3 If at any point the tenant believes that the alarm is not functional or malfunctioning, the tenant shall provide notice to the owner, landlord, superintendent or other owner's designated representative.

13.10.3.2 Owner, Landlord, Superintendent or Other Owner's Designee.

13.10.3.2.1 Every owner, superintendent, landlord or designee shall, at a minimum, maintain, test, repair, or replace, if necessary, every alarm upon renewal of any lease term for any dwelling unit or on an annual basis, whichever is more frequent.

13.10.3.2.1.1 Such testing shall be documented by the person performing such inspection on a form designated by State Fire Marshal.

1.05: continued

13.10.3.2.2 When repairs or alterations or additions are made to an existing alarm and system the owner, landlord, superintendent or other owner's designated representative shall be responsible for inspection, documentation of the actual repair or alternation and the testing of the alarm and system.

13.10.3.2.3 A written agreement shall be required documenting delegation of responsibilities provided in this section.

13.10.3.2.4 Where the building or system owner, landlord, superintendent or other owner's designated has delegated any responsibilities or an inspection, testing, repair or alternation has been completed, a copy of the written delegation and the report required by *Sections 13.10.3.2.3* and *13.10.3.2.2* shall be provided to the AHJ upon request.

13.10.3.2.5 Occupant notification shall be required whenever an alarm system configured for releasing service is being serviced or tested.

13.10.3.2.6 The owner, landlord, superintendent or other owner's designated representative shall not cause or disable any such alarm system or part thereof.

13.10.4 Inspection.

13.10.4.1 For the purpose of compliance with M.G.L. c. 148, § 26F½ or to confirm compliance with M.G.L. c.148, § 26F, a visual inspection of smoke or carbon monoxide alarms and detectors shall be performed in accordance with Table 13.10.4, or more often if required by this *Code* or the AHJ.

13.10.4.2 The inspection maintenance for fire alarm and fire detection systems shall be in accordance with NFPA 72.

Table 13.10.4 Visual Inspection

Component	Initial Acceptance	Periodic Frequency	Method	Reference
1. All equipment	X	Sale and Transfer	Ensure there are no changes that affect equipment performance. Inspect for building modifications, occupancy changes, changes in environmental conditions, device location, physical obstructions, device orientation, physical damage, and degree of cleanliness.	10.24 13.7.1
2. Batteries and compartment	X	Sale and Transfer	Inspect for corrosion or leakage. Verify tightness of connections.	10.24 13.7.1
3. Device	X	Sale and Transfer	Inspection for expiration date of smoke alarm	10.24 13.7.1
4. Common Area	X	Annually Sale and Transfer	Inspection for compliance	10.24 13.7.1

13.10.5 Testing.

13.10.5.1 Initial Acceptance Testing.

13.10.5.1. All new alarms and systems required by this *Code* shall be inspected and tested in accordance with the requirements of this section.

13.10.5.2 Periodic Testing.

13.10.5.2.1 The owner, landlord, superintendent or other owner's designee shall, for any existing, new, or modified alarm and system test every alarm and system in accordance with its listing when requested by the AHJ.

1.05: continued

13.10.6 Testing and Frequency.

13.10.6.1 Every owner, superintendent, or landlord shall, at a minimum, maintain, test, repair, or replace, if necessary, every alarm upon renewal of any lease term for any dwelling unit or on an annual basis, whichever is more frequent. *See Section 13.10.3.1* for responsibilities.

13.10.6.2 Unless otherwise permitted by other sections of this *Code*, testing shall be performed in accordance with the schedules in Table 13.10.4 or more often if required by the AHJ.

13.10.6.3 Alarms shall be replaced when they fail to respond to operability tests.

13.10.6.4 The testing, for fire alarm and fire detection systems shall be in accordance with NFPA 72: *National Fire Alarm and Signaling Code*.

13.10.7 Replacement of Single- and Multiple-station Alarms.

13.10.7.1 Alarms shall not remain in service longer than ten years from the date of manufacture, unless otherwise provided by the manufacturer's published instructions.

13.10.7.2 Combination smoke/carbon monoxide alarms shall be replaced when the end-of-life signal activates or ten years from the date of manufacture, whichever comes first, unless otherwise provided by the manufacturer's published instructions.

13.10.7.3 Other than provided in *Section 13.7.5.1.1* where batteries are used as a source of energy for smoke alarms or combination smoke/carbon monoxide alarms or single- and multiple-station smoke alarms, the batteries shall be replaced in accordance with the alarm equipment manufacturer's published instructions.

13.10.7.4 The owner, landlord, superintendent or other owner's designated representative shall be responsible to repair, replace or for the modification of an alarm and system.

13.10.8 Maintenance.

13.10.8.1 Maintenance of an alarm and system shall be conducted according to the manufacturer's published instructions and deficiencies shall be corrected as applicable in *Section 10.24.*

13.10.8.2 The maintenance for fire alarm and fire detection systems shall be in accordance with NFPA 72: *National Fire Alarm and Signaling Code*.

13.10.9 Records.

13.10.9.1 Permanent Records.

13.10.9.1.1 The owner, landlord, superintendent or other owner's designated representative shall be responsible for maintaining records for the life of the alarm and system, for examination.

13.10.10 Inspection, Testing, and Maintenance Records.

13.10.10.1 Records shall be retained until the next test and for one year thereafter.

13.10.10.2 Records shall be on a medium that will survive the retention period. Paper or electronic media shall be permitted.

Chapter 14 Means of Egress.

14.1 Replace with the following:
14.1 Application. Means of egress in new and existing buildings shall comply with this *Code* and the *Building Code*.

14.2 through **14.2**(2) Replace with the following:

14.2 Exit Access Corridors. Corridors used as exit access shall be separated from other parts of the building in accordance with the *Building Code*.

14.3 Replace with the following:
14.3 Exits.

14.3.1 Where the *Building Code* requires an exit to be separated from other parts of the building, the separating construction shall meet the requirements of the *Building Code*.

1.05: continued

14.3.1 through **14.3.1**(12) Delete

14.4.3 Replace with the following:
14.4.3 Impediments to Egress. Any device or alarm installed to restrict the improper use of a means of egress shall be designed and installed so that it cannot, even in case of failure, impede or prevent emergency use of such means of egress, unless otherwise provided in the *Building Code*.

14.4.4 Add:
14.4.4 Exterior Egress. Any fire escape or exterior stairway found to be in a state of deterioration or determined to be unsafe by the Head of the Fire Department shall be repaired immediately. Depending on the structural condition, a load test of any fire escape shall be conducted before it is returned to service.

14.5.1.1 through **14.5.1.1***(7) Replace with the following:
14.5.1.1 * Swinging-type Door Assembly Requirement. Any door assembly in a means of egress shall be of the side-hinged or pivoted-swinging type, and shall be installed to be capable of swinging from any position to the full required width of the opening in which it is installed.

14.5.1.1(1) through **14.5.1.1(7)** Delete

14.5.1.2 Replace with the following:
14.5.1.2* Door Leaf Swing Direction.
Door leaves required to be of the side-hinged or pivoted-swinging type shall swing in the direction of egress travel as required by the *Building Code*.

14.5.1.2(1) through **14.5.12(3)** Delete

14.5.1.3.1 Replace with the following:
14.5.1.3.1 During its swing, any door leaf in a means of egress shall leave not less than one half of the required width of an aisle, a corridor, a passageway, or a landing unobstructed and shall project not more than 7 in. (180 mm) into the required width of an aisle, a corridor, a passageway, or a landing, when fully open.

14.5.1.3.1(1) and **(2)** Delete.

14.5.1.4 Replace with the following:
14.5.1.4 Screen Door Assemblies and Storm Door Assemblies. Screen door assemblies and storm door assemblies used in a means of egress shall be subject to the requirements for direction of swing in accordance with the B*uilding Code*.

14.5.1.5.2(1) through **(4)** Delete.

14.5.2.2 Delete.

14.5.2.4 Delete.

14.5.2.6.1 Replace with the following:
14.5.2.6.1 Where permitted by the *Building Code*, key operation shall be permitted, provided that the key cannot be removed when the door leaf is locked from the side from which egress is to be made.

14.5.2.6.2(1) Replace with the following:
(1) This alternative is permitted by the *Building Code* for the specific occupancy.

14.5.2.6.3 Delete.

14.5.2.7 Replace with the following:
14.5.2.7* Stair Enclosure Re-entry. Every door assembly in a stair enclosure shall meet the requirements of the *Building Code*.

14.5.2.7(1) through **(3)** Delete

14.5.2.7.1 through **14.5.2.7.2** Delete

1.05: continued

14.5.2.7.3 Replace with the following:
14.5.2.7.3 Signage on the stair door leaves as provided in the *Building Code* shall be required as follows:

(1) Door assemblies allowing re-entry shall be identified as such on the stair side of the door leaf.

(2) Door assemblies not allowing re-entry shall be provided with a sign on the stair side indicating the location of the nearest door opening, in each direction of travel, that allows re-entry or exit.

14.5.2.10 Replace with the following:
14.5.2.10 *On doors required to release all latching and all locking devices of the door leaf with not more than one releasing motion in accordance with *14.5.2.3.2*, devices shall not be installed in connection with any door assembly where such devices prevent or are intended to prevent the free use of the leaf for purposes of egress.

14.5.3.1.1 Replace with the following:
14.5.3.1.1 Approved, delayed-egress electrical locking systems shall be permitted to be installed on door assemblies low- and ordinary-hazard in accordance with the *Building Code*, protected throughout by an approved, supervised automatic fire detection system in accordance with *Section 13.7* or an approved, supervised automatic sprinkler system in accordance with *Section 13.3*, provided that the following criteria are met:

(1) The delay of the delayed-egress electrical locking system shall deactivate allowing unobstructed egress upon loss of power controlling the lock or locking mechanism.

(2)* An irreversible process shall release the electrical lock in the direction of egress within 15 seconds, or 30 seconds where approved by the AHJ, upon application of a force to the release device as required by the *Building Code*.

(3)* A readily visible, durable sign that conforms to the visual characters requirements of ICC A117.1, Accessible and Usable Buildings and Facilities, shall be located on the door leaf adjacent to the release device in the direction of egress, and shall read as follows:

(a) PUSH UNTIL ALARM SOUNDS, DOOR CAN BE OPENED IN 15 SECONDS, for doors that swing in the direction of egress travel

(b) PULL UNTIL ALARM SOUNDS, DOOR CAN BE OPENED IN 15 SECONDS, for doors that swing against the direction of egress travel

(4) The egress side of doors equipped with delayed-egress electrical locking system shall be provided with emergency lighting in accordance with the *Building Code*

PUSH UNTIL ALARM SOUNDS
DOOR CAN BE OPENED IN 15 SECONDS

(5) Hardware for new installations shall be listed in accordance with UL 294, Access Control System Units. [101:7.2.1.6.1.1]

14.5.3.1.2 Delete.

14.5.3.2.1* Replace with the following:
14.5.3.2.1 Where permitted by the *Building Code,* door assemblies in the means of egress shall be permitted to be equipped with an approved entrance and egress access control system, provided that all of the following criteria are met:

14.5.3.4 Delete.

14.5.3.5.4 Delete.

14.5.4.1* A door leaf normally required to be kept closed shall not be secured in the open position at any time and shall be self-closing or automatic-closing in accordance with *14.5.4.2,* unless otherwise permitted by the *Building Code.*

14.5.4.2 In any building doors shall be permitted to be automatic-closing, provided that all of the following criteria are met:

14.5.4.3 Delete.

14.6.1.2 Replace with the following:

1.05: continued

14.6.1.2 Inside stairs, other than those serving as an exit or exit component, shall be protected in accordance with *Section 8.6* of the *Building Code*.

14.6.1.3 through **14.6.2.3** Delete.

14.7.1 Delete.

14.7.2 through **14.7.2**(2) Delete.

14.7.4.1 Replace with the following:
14.7.4.1 The width of an exit passageway shall be sized to accommodate the aggregate required capacity of all exits that discharge through it as required by the *Building Code*.

(1)* Where an exit passageway serves occupants of the level of exit discharge as well as other stories, the capacity shall not be required to be aggregated.

(2) As provided in Chapters 36 and 37 of NFPA, an exit passageway in a mall structure shall be permitted to accommodate occupant loads independently from the mall concourse and the tenant spaces.

14.7.4.2 Delete.

14.8.1.2 Delete.

14.8.1.2 Table Delete

14.8.1.3.1 Delete

14.8.1.4 through **14.8.1.6** Delete

14.8.2.1 Replace with the following:
14.8.2.1 The width of means of egress shall be in accordance with the *Building Code*.

14.8.2.2 through **14.8.2.3** Delete

14.8.3.1 Table Delete.

14.8.3.4.1 through **14.8.3.4.1**(2) Replace with the following:
14.8.3.4.1 The width of any means of egress shall be in accordance with the *Building Code*.

14.8.3.4.1.1 Delete.

14.8.3.4.1.3 Delete.

14.9.1.1 Delete

14.9.1.2 Replace with the following:
14.9.1.2 The number of means of egress from any story or portion thereof, shall be as follows;

(1) Occupant load more than 500 but not more than 1000 - not less than 3

(2) Occupant load more than 1000 - not less than 4

(3) Or as otherwise allowed by the *Building Code*.

14.9.1.3 Replace with the following:
14.9.1.3 Accessible means of egress shall be in accordance 521 CMR: *Architectural Access Board* and the *Building Code*.

14.9.1.4 through **14.9.1.6.3** Delete.

14.10.1.1.1* Replace with the following:
14.10.1.1.1* Where exits are not immediately accessible from an open floor area, continuous passageways, aisles, or corridors leading directly to every exit such areas shall be maintained.

14.10.1.1.2 Replace with the following:
14.10.1.1.2 Exit access corridors shall provide access to not less than two approved exits, unless otherwise provided by the *Building Code*.

14.10.1.1.3 Delete.

14.10.1.2 Replace with the following:
14.10.1.2 Corridors shall provide exit access without passing through any intervening rooms other than corridors, lobbies, and other spaces permitted to be open to the corridor, unless otherwise provided in the *Building Code*.

1.05: continued

14.10.1.2.1 Replace with the following:
14.10.1.2.1 * Exit access shall be arranged so that there are no dead ends in corridors, unless permitted by, and limited to the lengths specified in the *Building Code*.

14.10.1.2.2 Replace with the following
14.10.1.2.2 Approved existing corridors that require passage through a room to access an exit shall be permitted to continue to be used, provided that all of the following criteria are met:

(1) The path of travel is marked in accordance with *Section 14.14.*
(2) Doors to such rooms shall comply with the *Building Code*.

14.10.1.3 Replace with the following
14.10.1.3 Remoteness shall be provided in accordance with the Building Code.

14.10.1.3.1 through **14.10.1.4.2** Delete

14.10.1.5 Replace with the following
14.10.1.5 Exit access from rooms or spaces shall be permitted to be through adjoining or intervening rooms or areas, provided that such rooms or areas are accessory to the area served. Foyers, lobbies, and reception rooms constructed as required for corridors shall not be construed as intervening rooms. Exit access shall be arranged so that it is not necessary to pass through any area identified under Protection from Hazards in the *Building Code*.

14.10.2 Replace with the following:
14.10.2 Impediments to Egress.

14.10.2.1* Replace with the following:
14.10.2.1* Access to an exit shall not be through kitchens, storerooms other than as provided in the *Building Code,* restrooms, workrooms, closets, bedrooms, or similar spaces, or other rooms or spaces subject to locking, unless passage through such rooms or spaces is permitted by the *Building Code*.

14.10.2.2.1 Replace with the following:
14.10.2.2.1 Hangings or draperies shall not be placed over exit doors or located so that they conceal or obscure any exit.

14.10.2.2.2 through **14.10.4.9** Delete.

14.11.1 Replace with the following:
14.11.1 * Exit Termination. Exits shall terminate directly, at a public way.

14.11.1.1 through **14.11.1.5** Delete.

14.11.2 Replace with the following:
14.11.2 Exit Discharge Through Interior Building Areas. Exits shall be permitted to discharge through interior building areas, provided that all of the following are met:

14.11.2(1) through **14.11.2**(2) Delete.

14.11.2(4) through **14.11.2**(4)(b)iii. Delete.

14.11.3.1 through **14.11.3.3** Delete.

14.11.4 Replace with the following:
14.11.4 Components of Exit Discharge. Doors, stairs, ramps, corridors, exit passageways, bridges, balconies, escalators, moving walks, and other components of an exit discharge shall comply with the *Building Code*.

14.11.6 Delete.

1.05: continued

14.12.1.1 Replace with the following:
14.12.1.1 * Illumination of means of egress shall be provided in accordance with the *Building Code*. For the purposes of this requirement, exit access shall include only designated stairs, aisles, corridors, ramps, escalators, and passageways leading to an exit. For the purposes of this requirement, exit discharge shall include only designated stairs, aisles, corridors, ramps, escalators, walkways, and exit passageways leading to a public way. [**101**:7.8.1.1]

14.14.8.1 through **14.14.8.2** Delete

14.14.8.3.1 Replace with the following:
14.14.8.3.1 Any door, passage, or stairway that is neither an exit nor a way of exit access and that is located or arranged so that it is likely to be mistaken for an exit shall be identified as required by the Building Code

14.15 Replace with the following:
14.15 Emergency Escape and Rescue.

14.15.1 Replace with the following:
14.15.1 Escape and rescue openings shall comply with the *Building Code.*

14.15.2 Replace with the following:
14.15.2 Where approved on, the emergency escape and rescue openings, security bars, grates, grilles, or similar devices shall be equipped with approved release mechanisms that are releasable from the inside without the use of a tool, a key, special knowledge, or force greater than that which it takes for normal operation of the door or window.

Chapter 15 Fire Department Service Delivery Concurrency Evaluation.

Chapter 15 Delete in its entirety.

Chapter 16 Replace with the following:
Chapter 16 Safeguarding Construction, Alteration, and Demolition Operations

16.1 General Requirements.

16.1.1 Structures undergoing construction, alteration, or demolition operations, including those in underground locations, shall comply with NFPA 241 and this chapter.

16.1.2 A fire protection plan shall be established and submitted in accordance with this code and the building code.

16.1.3 In buildings under construction, adequate escape facilities shall be maintained at all times for the use of construction workers. Escape facilities shall consist of doors, walkways, stairs, ramps, fire escapes, ladders, or other approved means or devices arranged in accordance with the general principles of Chapter 14 and NFPA *101* insofar as they can reasonably be applied to buildings under construction. [*101*:4.6.10.3]

16.1.4 Fire apparatus access roads provided in accordance with *18.2.3* shall be provided at the start of a project and shall be maintained throughout construction.

16.1.5 Permanent fire apparatus access road markings shall not be required until the building is complete or occupied for use.

16.2 Owner's Responsibility for Fire Protection

16.2.1 The owner shall designate a person responsible for the Fire Prevention Program.**[241:4.1.1]**

16.2.1.1 This person shall ensure that the program is carried out to completion. **[241:4.1.1.1]**

16.2.1.2 This person shall have alternate(s) acceptable to the AHJ. **[241:4.1.1.2]**

16.2.1.3 This person's title shall be Fire Prevention Program Manager (FPPM). **[241:4.1.1.3]**

1.05: continued

16.2.2 The FPPM shall have the authority to enforce the provisions of this and other applicable fire protection standards. **[241:4.1.2]**

16.2.3 The FPPM shall be a competent person with knowledge of the applicable fire protection codes and standards, available fire protection systems, and fire inspection procedures. **[241:4.1.3]**

16.2.3.1 When temporary systems are utilized, the FPPM shall consult with the registered design professional in responsible charge. **[241:4.1.3.1]**

16.2.4 The FPPM shall have the overall responsibility for safeguarding life and property from fire during construction, alteration, and demolition. **[241:4.1.4]**

16.2.5 The FPPM, or designee, shall conduct daily inspections to identify deficiencies and hazards. **[241:4.1.5]**

16.2.5.1 The FPPM shall ensure action is taken to correct any deficiencies or hazards without delay. **[241:4.1.5.1]**

16.2.5.2 Inspection records shall be available for review by the AHJ. **[241:4.1.5.2]**

16.2.6 The FPPM shall ensure fire prevention awareness and education is provided to personnel associated with that project in accordance with *4.2.2.* **[241:4.1.6]**

16.2.7 The FPPM shall be made aware of all fires in accordance with the fire safety plan. **[241:4.1.7]**

16.2.8 This plan shall coordinate with other existing safety or action plans as required by other applicable codes and standards. **[241:4.1.8]**

16.2.9 Where guard service is provided, the FPPM shall be responsible for the guard service. **[241:4.1.9]**

16.2.10 The FPPM shall be responsible for ensuring that proper training in the use of protection equipment has been provided. **[241:4.1.10]**

16.2.11 The FPPM shall be responsible for the presence of adequate numbers and types of fire protection devices and appliances and for their proper maintenance. **[241:4.1.11]**

16.2.12 The FPPM shall be responsible for supervising the permit system for hot work operations. (*See Section 16.19.1)*

16.2.13 A weekly self-inspection program shall be implemented, with records maintained and made available. **[241:4.1.13]**

16.2.14 Impairments to the fire protection systems or fire alarm, detection, or communications systems shall be authorized only by the FPPM. **[241:4.1.14]**

16.2.15 Temporary protective coverings used on fire protection devices during renovations, such as painting, shall be removed promptly when work has been completed in the area. **[241:4.1.15]**

16.2.16 Pre-incident Plans.

16.2.16.1 Where there is public fire protection or a private fire brigade, the FPPM shall be responsible for the development of pre-incident plans in conjunction with the fire agencies. **[241:4.1.16.1]**

16.2.16.2 Pre-incident plans shall be updated as necessary. **[241:4.1.16.2]**

16.2.16.3 The pre-incident plan shall include provisions for on-site visits by the fire agency. **[241:4.1.16.3]**

16.2.17 Site Security.

16.2.17.1 Where required by the AHJ, buildings with combustible construction exposed during construction more than 12.19 m (40 ft) above grade plane shall be provided with guard service when there are no crews on-site. **[241:4.1.17.1]**

16.2.17.2 Where guard service is provided, the guard(s) shall be trained in all of the following:

(1) Notification procedures that include calling the fire department and management personnel

(2) Function and operation of fire protection equipment

1.05: continued

(3) Familiarization with fire hazards
(4) Use of construction elevators, where provided. **[241:4.1.17.2]**

16.2.17.3 Guards shall be informed of any special status of emergency equipment or hazards. **[241:4.1.17.3]**

16.2.17.4 Security fences shall be provided where required by the AHJ. **[241:4.1.17.4]**

16.2.17.5 Entrances (*e.g.*, doors and windows) to the structure under construction, alteration, or demolition shall be secured where required by the AHJ. **[241:4.1.17.5]**

16.2.17.6 Egress paths with exit doors available for egress shall remain unobstructed. **[241:4.1.17.6]**

16.3 Fire Prevention Program.

16.3.1 An overall project-specific Fire Prevention Program shall be developed. **[241:4.2.1]**

16.3.2 The following items shall be addressed in the Fire Prevention Program:
(1) Development of a pre-incident plan in accordance with NFPA 1620
(2) Emergency contacts
(3) Site emergency communication procedures
(4) Site personnel responsibilities during an incident
(5) Signage for site address(es) and building identification acceptable to the AHJ
(6) Site hot work operations
(7) Fire protection systems, as follows:
(a) For construction operations, installation of new fire protection systems as construction progresses
(b) For alteration operations, preservation of existing fire protection systems during alteration
(c) For demolition operations, preservation of existing fire protection systems during demolition
(d) Procedure for the FPPM to notify the installing contractor when changes need to be made to previously installed temporary protection
(8) Procedures for reporting specific emergency incident location to first responders
(9) Emergency evacuation procedures for site personnel
(10) Good housekeeping
(11) Waste disposal
(12) On-site security
(13) Consideration of special hazards
(14) Protection of existing structures and equipment from exposure fires
(15) Documentation for applicable project fire-related inspections, tests, training, and drills, as required by this standard
(16) A life safety plan that emphasizes the need to do all of the following:
(a) Alert personnel of emergencies
(b) Provide clear egress paths to safety
(c) Ensure lighting and markings are provided to enable safe personnel travel
(17) Temporary utilities, as follows:
(a) Safety plan for gas supplies on site in accordance with NFPA 55 and NFPA 58
(b) Verification that direct-fired heaters used for drying and temporary heat do not discharge unsafe levels of carbon monoxide
(c) Periodic leak checks and condition checks for temporary piping and hoses used for distribution of fuels
(d) Periodic review and verification of temporary bonding and grounding of electrical systems **[241:4.2.2]**

16.3.3 A fire department status board shall be provided in an approved location and documented in the Fire Prevention Program. **[241:4.2.3]**

16.4 Fire Protection.

16.4.1 General. The provisions of Chapter 16 shall apply in addition to the specific requirements of this section.

1.05: continued

16.4.1.1 Fire protection systems shall be supervised and monitored in accordance with *Section 16.2.13.*

16.4.2 Sprinkler Protection.

16.4.2.1 If automatic sprinkler protection is to be provided, the system(s) shall be placed temporarily in service in accordance with *16.4.2.2* through *16.4.2.9.*

16.4.2.2 Measures used to place permanent fire protection systems temporarily in service during construction shall be as follows:

(1) In conformance with the Fire Prevention Program
(2) Evaluated based on the type and status of the system
(3) Evaluated based on the conditions of the building construction**[241:4.3.2.2]**

16.4.2.3 Systems temporarily placed in service during construction shall not be required to comply with NFPA standards. **[241:4.3.2.3]**

16.4.2.4 The details of installation for systems temporarily placed in service during construction shall be in accordance with the Fire Prevention Program, including the following:

(1) The placement of sprinklers in unfinished spaces including the following:
  (a) The maximum deflector distance from the deck above
  (b) The maximum sprinkler spacing before permanent walls are built
  (c) The position of sprinklers relative to obstructions that will disrupt the discharge pattern
(2) The design criteria for the temporary sprinkler protection including the following:
  (a) The discharge density from the sprinklers based on classification of hazard during construction
  (b) The remote area configuration before permanent walls are built
  (c) The source and adequacy of the automatic water supply including hose allowance
(3) The protection of sprinklers and piping including the following:
  (a) To include or not include protection of sprinklers through the use of protective caps and straps or other means
  (b) The permissible use of exposed nonmetallic piping
  (c) The protection of water-filled pipes during the freezing season
(4) The point in time during construction in which temporary fire protection systems are required
(5) The procedure for the FPPM to notify the installing contractor when changes need to be made to previously installed temporary protection **[241:4.3.2.4]**

16.4.2.5 Where sprinklers are required, the building shall not be occupied until the sprinkler installation has been entirely completed and tested so that the protection is not susceptible to frequent impairment caused by testing and correction, unless otherwise permitted by *16.4.2.6.*

16.4.2.6 The provision of *16.4.2.5* shall not prohibit occupancy of completed floors of a building, even where other floors are in various stages of construction or protection, provided that both of the following conditions are satisfied:

(1) The sprinkler protection of the occupied floors has been completed and tested in accordance with *16.4.2.5.*
(2) The sprinkler protection of the floors remaining under construction is supplied by entirely separate systems and separate control valves so that the absence or incompleteness of protection in no way impairs the sprinkler protection of the occupied floors.

16.4.2.7 The operation of sprinkler control valves shall be permitted only by properly authorized personnel and shall be accompanied by the notification of duly designated parties. **[241:4.3.2.7]**

16.4.2.8 Where the sprinkler protection is regularly turned off and on to facilitate connection of newly completed segments, the sprinkler control valves shall be checked at the end of each work shift to ascertain that protection is in service. **[241:4.3.2.8]**

16.4.2.9 Fire protection system control valves shall be identified and posted with signs that indicate whether they can be used to place systems in service in an emergency. **[241:4.3.2.9]**

16.4.3 Fire Pumps.

16.4.3.1 General. The installation of fire pumps temporarily placed in service during construction shall be in accordance with *16.4.3.2* or *16.4.3.3* and the Fire Prevention Program.

1.05: continued

16.4.3.2 Permanent Fire Pumps. Where a permanent fire pump will be used for temporary fire protection, the installation shall include the following:

(1) Adequately sized water service installed, flushed, and tested per NFPA 24
(2) Any required backflow prevention
(3) Electrical wiring associated with the fire pump and jockey pump completed per NFPA 70 and NFPA 20
(4) Utility meter installed and electrical power turned on to fire pump and jockey pump
(5) Minimum 4.4˚C (40˚F) permanent and reliable heat source in pump room
(6) All required fire alarms associated with the fire pump complete, tested, and in service (local and remote), including tamper switches, fire pump running, fire pump power failure, and power phase reversal, per NFPA 72 or applicable fire alarm code
(7) Inertia base installed and cured
(8) Enclosure in accordance with the Fire Prevention Program**[241:4.3.3.2]**

16.4.3.3 Temporary Pumps. Where a temporary pump will be used for temporary fire protection, the installation shall include the following:

(1) Adequately sized water service
(2) Any required backflow prevention
(3) Necessary electrical wiring to power the pump
(4) Electrical power turned on to the pump
(5) All required fire alarms in accordance with the Fire Prevention Program
(6) Where required by the Fire Prevention Program, a room enclosure
(7) Where required by the Fire Prevention Program, minimum 4.4˚C (40˚F) permanent and reliable heat source in the room enclosure**[241:4.3.3.3]**

16.5 Means of Egress. The means of egress shall be provided in accordance with *4.6.10* of NFPA 101. **[241:4.4]**

16.6 Notification and Emergency Reporting.

16.6.1 Fires shall be immediately reported to the appropriate emergency services organization in accordance with the Fire Prevention Program. **[241:4.5.1]**

16.6.2 A method to contact the emergency services organization shall be available. **[241:4.5.2]**

16.6.3 The emergency services organization contact information and site address shall be conspicuously posted in approved locations. **[241:4.5.3]**

16.7 Fire Alarm Systems. Where a fire alarm system is installed in a building under alteration, the system shall comply with NFPA 72. **[241:4.6**]

16.8 Standpipes.

16.8.1 General.

16.8.1.1 The pipe size, hose valves, hose, water supply, and other details for new construction shall be in accordance with NFPA 14 or the Fire Prevention Program. **[241:4.7.1.1]**

16.8.1.2 On permanent Class II and Class III standpipes with a Class II connection, hose and nozzles shall be provided and made ready for use as soon as the water supply is available to the standpipe. **[241:4.7.1.2]**

16.8.1.3 In combined systems where occupant hose is not required, temporary hose and nozzles shall be provided during construction. **[241:4.7.1.3]**

16.8.2 Standpipe Installations in Buildings Under Construction.

16.8.2.1 In buildings under construction that require a standpipe system, a standpipe system, either temporary or permanent, shall be installed in accordance with 16.8.2 and the Fire Prevention Program.

16.8.2.1.1 Standpipes shall be installed when the progress of construction reaches 12.2 m (40 ft) in height above the lowest level of fire department vehicle access. **[241:4.7.2.1.1]**

16.8.2.1.2 As construction progresses, standpipes shall be extended to within one floor of the highest point of construction having secured decking or flooring. **[241:4.7.2.1.2]**

1.05: continued

16.8.2.1.3 Standpipes shall be tested for integrity in accordance with the Fire Prevention Program as new segments or portions are added. **[241:4.7.2.1.3]**

16.8.2.1.4 The number and location of temporary standpipes shall be in accordance with the Fire Prevention Program. **[241:4.7.2.1.4]**

16.8.2.2 Readily accessible standpipe fire department connections shall be provided on the outside of the building at street level. **[241:4.7.2.2]**

16.8.2.2.1 Standpipes shall be conspicuously identified in accordance with *16.8.5.*

16.8.2.3 When temporary standpipes are provided, the sizing, location of hose valves, water supply, if provided, and other requirements shall be in accordance with the Fire Prevention Program. **[241:4.7.2.3]**

16.8.2.4 The standpipe shall be supported in accordance with NFPA 14 or the Fire Prevention Program. **[241:4.7.2.4]**

16.8.2.5 Standpipes shall be provided with fire department hose connections in accordance with *16.8.2.5.1* through *16.8.2.5.3.*

16.8.2.5.1 Hose connections shall be provided at accessible locations. **[241:4.7.2.5.1]**

16.8.2.5.2 At least one approved hose connection shall be provided at each floor level in the exit stairway. **[241:4.7.2.5.2]**

16.8.2.5.3 Where required by the AHJ, one approved hose connection shall be provided on each intermediate landing of the exit stairway. **[241:4.7.2.5.3]**

16.8.2.6 Hose valves shall be kept closed at all times and hose threads guarded against mechanical damage. **[241:4.7.2.6]**

16.8.2.7 Hose valves shall have National Hose Standard (NHS) external threads for the valve size specified in accordance with NFPA 1963 unless modified by *16.8.2.8.*

16.8.2.8 Where local fire department connections do not conform to NFPA 1963, the AHJ shall designate the connection to be used. **[241:4.7.2.8]**

16.8.2.9 The standpipes shall be extended up with each floor and shall be securely capped at the top to maintain integrity. **[241:4.7.2.9]**

16.8.2.10 Temporary standpipes shall remain in service until the permanent standpipe installation is complete. **[241:4.7.2.10]**

16.8.2.11 In all new buildings in which standpipes are required or where standpipes exist in buildings being altered or demolished, such standpipes shall be maintained in conformity with the progress of building construction in such a manner that they are always ready for use. **[241:4.7.2.11]**

16.8.3 Fire department connections shall be located in an area accessible to the fire department, unobstructed by fences or other enclosures. **[241:4.7.3]**

16.8.4 Standpipe systems shall be supervised and monitored in accordance with *Section 16.10*

16.8.5 Fire Department Connection Identification.

16.8.5.1 Fire department connections shall be identified by approved signs. **[241:4.7.5.1]**

16.8.5.2 A light shall be provided above the fire department connection(s) to identify the location. **[241:4.7.5.2]**

16.8.5.3 The light required by *16.8.5.2* shall be of a color approved by the AHJ.

16.9 Hydrants.

16.9.1 Unobstructed access to fire hydrants and to outside connections for standpipes, sprinklers, or other fire protection equipment, whether permanent or temporary, shall be provided and maintained at all times. **[241:4.8.1]**

1.05: continued

16.9.2 No material or construction activities shall interfere with access to fire protection features or equipment. **[241:4.8.2]**

16.10 Fire Detection and Alarms.

16.10.1 If fire detection, supervision, off-site monitoring, or building notification are required, the installation shall be placed in service in accordance with the Fire Prevention Program. **[241:4.9.1]**

16.10.2 The use of temporary measures to place fire detection, supervision, monitoring, or alarms in service shall be as follows:

(1) In accordance with the Fire Prevention Program
(2) Evaluated based on the hazard and the scope of the temporary measures**[241:4.9.2]**

16.10.3 Fire detection, supervision, monitoring, and alarms placed in service shall comply with NFPA 72 in accordance with the Fire Prevention Program. **[241:4.9.3]**

16.11 First-Aid Fire-Fighting Equipment.

16.11.1 The suitability, distribution, and maintenance of extinguishers shall be in accordance with NFPA 10. **[241:4.10.1]**

16.11.2 Wherever a toolhouse, storeroom, or other shanty is located in or adjacent to the building under construction or demolition, or where a room or space within that building is used for storage, a dressing room, or a workshop, at least one approved extinguisher shall be provided and maintained in an accessible location, unless otherwise permitted by *16.11.3.* **[241:4.10.2]**

16.11.3 The requirement of *16.11.2* shall be permitted to be waived where the structure does not exceed 14 m2 150 Ft^2 in floor area or is equipped with automatic sprinklers or other approved protection.

16.11.4 At least one approved fire extinguisher also shall be provided in plain sight on each floor at each usable stairway as soon as significant combustible material is present. **[241:4.10.4]**

16.11.5 Suitable fire extinguishers shall be provided on self-propelled equipment. **[241:4.10.5]**

16.11.6 Free access to permanent, temporary, or portable first-aid fire equipment shall be maintained at all times. **[241:4.10.6]**

16.12 Temporary Protection During Construction, Alteration, or Demolition. During construction, alteration, or demolition, the use of temporary fire sprinkler protection approved by the AHJ shall be permitted as supplemental protection. **[241:4.11]**

16.13 Access for Fire Fighting.

16.13.1 Command Post.

16.13.1.1 A suitable location at the site shall be designated as a command post and provided with plans, emergency information, keys, communications, and equipment, as needed. **[241:4.12.1.1]**

16.13.1.2 Command posts and their contents shall be approved by the AHJ. **[241:4.12.1.2]**

16.13.1.3 Command posts and their contents shall be maintained to be readily available at all times. **[241:4.12.1.3]**

16.13.1.4 The FPPM or their alternate shall be available to respond to the location command post whenever fire occurs. **[241:4.12.1.4]**

16.13.2 Key Box.

16.13.2.1 Where access to or within a structure or an area is unduly difficult because of secured openings or where immediate access is necessary for life-saving or fire-fighting purposes, the AHJ shall be permitted to require a key box to be installed in an accessible location. **[241:4.12.2.1]**

16.13.2.2 The key box shall be an approved type and shall contain keys to gain access as required by the AHJ. **[241:4.12.2.2]**

16.13.3 Access Roadways.

1.05: continued

16.13.3.1 Every building shall be accessible by fire department apparatus by means of roadways having an all-weather driving surface of not less than 6.1 m (20 ft) of unobstructed width, having the ability to withstand the live loads of fire apparatus, and having a minimum of 4.1 m (13 ft 6 in.) of vertical clearance. **[241:4.12.3.1]**

16.13.3.2 Dead-end fire department access roads in excess of 46 m (150 ft) in length shall be provided with approved provisions for turning around fire department apparatus unless otherwise permitted by *16.13.3.4*.

16.13.3.3 The requirements of *16.13.3.1* through *16.13.3.3* shall be permitted to be modified where, in the opinion of the fire department, fire-fighting or rescue operations would not be impaired by such modification.

16.13.3.4 The required width of access roadways shall not be obstructed in any manner, including obstruction by parked vehicles. **[241:4.12.3.5]**

16.13.3.5 "No Parking" signs or other appropriate notices, or both, prohibiting obstruction shall be permitted to be required and shall be maintained. **[241:4.12.3.6]**

16.13.3.6 The access roadway shall be extended to within 46 m (150 ft) of all portions of the exterior walls of the first story of any building. **[241:4.12.3.7]**

16.13.3.7 Where an access roadway cannot be provided, an approved fire protection system or systems shall be provided as required and approved by the AHJ. **[241:4.12.3.8]**

16.13.3.8 Where a bridge is required to be used as access, it shall be constructed and maintained using design live loading sufficient to carry the imposed loads of the fire apparatus. **[241:4.12.3.9]**

16.13.3.9 Fire department access roadways shall not be used as staging or storage areas for modular construction. **[241:4.12.3.10]**

16.13.4 Stairs.

16.13.4.1 Not less than one half of the required exit stairs in the constructed areas shall be available for egress and fire department access at all times. **[241:4.12.4.1]**

16.13.4.2 This stairway shall be extended upward as each floor is installed in new construction and maintained for each floor still remaining during demolition. **[241:4.12.4.2]**

16.13.4.3 The stairway shall be lighted. **[241:4.12.4.3]**

16.13.4.4 During construction, the stairway shall be enclosed where the building exterior walls are in place. **[241:4.12.4.4]**

16.13.4.5 All exit stairs shall be provided with stair identification signs to include the floor level, stair designation, and exit path direction as required to provide for safe egress. **[241:4.12.4.5]**

16.13.5 Hoists and Elevators.

16.13.5.1 Where hoists and elevators provide the only efficient means of transporting hose and other cumbersome fire-fighting equipment to upper floors, they shall be available to the fire department whenever necessary. **[241:4.12.5.1]**

16.13.5.2 Coordination shall be established to ensure that the fire department is trained in hoist or elevator use when operators are not available in accordance with 524 CMR 36.00.

16.13.5.3 Every opening into a hoistway or shaftway shall be clearly identified and protected against inadvertent entry. **[241:4.12.5.3]**

16.13.5.4 Identification acceptable to the AHJ shall be readily visible from the car indicating each floor level. **[241:4.12.5.4]**

16.14 Construction Materials for Enclosures and Fire Separation. *16.14.1*
Where required by this standard, construction materials shall meet the requirements of *16.14.1.1*, *16.14.1.2*, or *16.14.1.3*, as applicable.

1.05: continued

16.14.1.1 Noncombustible Material. A material that complies with any of the following shall be considered a noncombustible material:

(1)* The material that, in the form in which it is used, and under the conditions anticipated, will not ignite, burn, support combustion, or release flammable vapors when subjected to fire or heat.

(2) The material is reported as passing ASTM E136, *Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750˚C.*

(3) The material is reported as complying with the pass/fail criteria of ASTM E136 when tested in accordance with the test method and procedure in ASTM E2652, *Standard Test Method for Assessing Combustibility of Materials Using a Tube Furnace with a Cone-shaped Airflow Stabilizer, at 750˚C.*

16.14.1.2 Limited-Combustible Material. A material shall be considered a limited-combustible material when one of the following is met:

(1) The conditions of *16.14.1.2.1* and *16.14.1.2.2*, and the conditions of either *16.14.1.2.3* or *16.14.1.2.4* shall be met.

(2) The conditions of *16.14.1.2.5* shall be met.

16.14.1.2.1 The material does not comply with the requirements for a noncombustible material in accordance with *16.14.1.1*.

16.14.1.2.2 The material, in the form in which it is used, exhibits a potential heat value not exceeding 3500 Btu/lb (8141 kJ/kg) when tested in accordance with NFPA 259.**[241:4.13.1.2.2]**

16.14.1.2.3 The material shall have a structural base of noncombustible material with a surfacing not exceeding a thickness of 1/ 8 in. (3.2 mm) where the surfacing exhibits a flame spread index not greater than 50 when tested in accordance with ASTM E84, *Standard Test Method for Surface Burning Characteristics of Building Materials*, or UL 723, *Test for Surface Burning Characteristics of Building Materials.*

16.14.1.2.4 The material shall be composed of materials that in the form and thickness used neither exhibit a flame spread index greater than 25 nor exhibit evidence of continued progressive combustion when tested in accordance with ASTM E84 or UL 723 and are of such composition that all surfaces that would be exposed by cutting through the material on any plane would neither exhibit a flame spread index greater than 25 nor exhibit evidence of continued progressive combustion when tested in accordance with ASTM E84 or UL 723.

16.14.1.2.5 Materials shall be considered limited-combustible materials where tested in accordance with ASTM E2965, *Standard Test Method for Determination of Low Levels of Heat Release Rate for Materials and Products Using an Oxygen Consumption Calorimeter*, at an incident heat flux of 75 kW/m2 for a 20-minute exposure, and both the following conditions are met:

(1) The peak heat release rate shall not exceed 150 kW/m^2 for longer than 10 seconds.

(2) The total heat released shall not exceed 8 MJ/m^2.

16.14.1.3 Fabrics or Plastic Films. Fabrics or plastic films shall meet the requirements of Test Method 2 in NFPA 701. **[241:4.13.1.3]**

16.14.1.4 Fire walls, fire barriers, smoke barriers, rated floor assemblies, exit stairways, and fire stop systems, where required for the completed building, shall be given construction priority for installation. **[241:4.13.1.4]**

16.14.1.5 Fire doors with approved closing devices and hardware shall be installed as soon as practical. **[241:4.13.1.5]**

16.14.1.6 Fire doors, after installation in accordance with NFPA 80 shall not be obstructed from closing. **[241:4.13.1.6]**

16.14.2 Fire-Resistance-Rated Doors and Opening Protectives.

16.14.2.1 Prior to installation, fire-resistance-rated doors and opening protectives shall be stored where they will not be subject to inclement weather or physical or mechanical damage. **[241:4.13.2.1]**

16.14.2.2 Rated door assemblies and rated opening protectives, where required for the completed building, shall be given construction priority for installation. **[241:4.13.2.2]**

1.05: continued

16.14.2.3 Rated door assemblies, once installed, shall not be obstructed and shall be able to close and latch. **[241:4.13.2.3]**

16.14.2.4 A visual inspection of opening protectives shall be performed and documented as part of the weekly self-inspection program required by *16.2.13.*

16.14.2.5 Any installation that has been damaged shall be repaired or replaced without delay. **[241:4.13.2.5]**

16.14.3 Renovations and Alterations.

16.14.3.1 Opening protectives used in renovation, alteration, or demolition operations shall not be altered or obstructed. **[241:4.13.3.1]**

16.14.3.2 Opening protectives shall remain in place during renovation, alteration, and demolition operations until they are no longer needed or required. **[241:4.13.3.2]**

16.14.3.3 Opening protectives and systems used in vertical and horizontal means of egress shall remain until they are no longer needed. **[241:4.13.3.3]**

16.14.4 Temporary Construction Barriers.

16.14.4.1 Barriers shall be provided to separate an occupied portion of the structure from a portion of the structure undergoing alteration, construction, or demolition operations when such operations have a higher level of hazard than the occupied portion of the building. **[241:4.13.4.1]**

16.14.4.1.1 Barriers shall have at least a 1-hour fire resistance rating. **[241:4.13.4.1.1]**

16.14.4.1.2 Opening protectives shall have at least a 45-minute fire resistance rating. **[241:4.13.4.1.2]**

16.14.4.2 Barriers in buildings protected throughout with approved, automatic sprinkler systems that are not impaired in accordance with NFPA 25 shall be permitted to be noncombustible material, limited-combustible material, or fabric or plastic films meeting the requirements of *16.14.1.*

16.14.4.3 In conjunction with the Fire Prevention Program, as an alternative to *16.14.4.1* and *16.14.4.2*, a risk assessment shall be permitted to be performed to determine the required protective measures between an occupied portion of the structure and the portion of the structure undergoing alteration, construction, or demolition operations.

16.14.4.4 Barriers when erected shall not interfere with the operation of any fire and life safety system or devices. **[241:4.13.4.4]**

16.15 Installation, Testing, and Maintenance. Where fire alarm, detection, or protection systems are required, they shall be installed, maintained, and tested in accordance with the appropriate NFPA standards. (*See Chapter 2.*) **[241:4.14]**

16.16 Fire Protection Markings.

16.16.1 While under construction, alteration, or demolition, buildings shall have approved address numbers placed in a position to be plainly legible and visible from the street or road fronting the property. **[241:4.15.1]**

16.16.2 Address numbers shall contrast with their background. **[241:4.15.2]**

16.16.3 Address numbers shall be Arabic numerals or alphabet letters. **[241:4.15.3]**

16.16.4 While under construction, alteration, or demolition, buildings shall have an approved fire fighter safety building marking system (FFSBMS) sign. **[241:4.15.4]**

16.16.5 The FFSBMS sign shall provide basic building and structure information for fire fighters responding to the building or structure. **[241:4.15.5]**

16.16.6 The approved FFSBMS sign shall be in a position to be plainly legible and visible from the street, road, or other means fronting the property or as approved by the AHJ. **[241:4.15.6]**

16.17 Temporary Construction, Equipment, and Storage

1.05: continued

16.17.1 Application. For the purposes of Chapter 5, the term *temporary* shall be defined as the duration of the construction project. **[241:5.1]**

16.17.2 Temporary Offices and Sheds

16.17.2.1 Separation distances between buildings with combustible construction or contents that are unsprinklered and construction-related structures, such as temporary offices, trailers, sheds, modular construction, and other facilities for the storage of tools and materials, shall be in accordance with Table *16.17.2,* except as modified by *16.17.2.1.1.*

16.17.2.1.1 As an alternative to *16.17.2* and Table *16.17.2*, separation distances as accepted by the AHJ shall be permitted to be used. **[241:5.2.1.1]**

16.17.2.2 Detachment between temporary structures, adequate temporary fixed fire protection systems, and portable equipment shall be provided as required by the AHJ. **[241:5.2.2]**

16.17.2.3 Only approved heating devices installed in accordance with the manufacturer's specifications shall be used in temporary offices and sheds. **[241:5.2.3]**

16.17.2.4 Clearance shall be provided around stoves, heaters, and all chimney and vent connectors to prevent ignition of adjacent combustible materials in accordance with NFPA 31 (liquid fuel devices); NFPA 54 (fuel gas devices); and NFPA 211 (connectors and solid fuel). **[241:5.2.4]**

16.17.2.5 Temporary heating devices shall be in accordance with *Section 16.19.3.*

Table 16.17.2 Separation Distances

Temporary Structure Exposing Wall Length		**Minimum Separation Distance**	
m	**ft**	**m**	**ft**
6	20	9	30
9	30	11	35
12	40	12	40
15	50	14	45
18	60	15	50
>18	>60	18	60

Notes:

(1) Where the separation distance between temporary structures is less than the minimum separation distance, then the exposing wall length is considered to be the sum of the individual exposing wall lengths of the temporary structures.
(2) A 75 percent reduction in separation distances shall be permitted to be applied, provided automatic sprinkler protection is used in the exposing structure.
(3) The separation distances apply to single-level structures only. This table does not apply to multilevel, unsprinklered structures. A level, where applying this table, is 3.6 m (12 ft).

16.17.3 Temporary Enclosures.

16.17.3.1 Construction materials shall be noncombustible material, limited-combustible material, or plastic films that meet the requirements of *16.4.4.*

16.17.3.2 Where used to enclose structures, forming equipment, and similar items, the enclosing material shall be fastened securely or guarded by construction so it cannot be blown by the wind against heaters or other sources of ignition. **[241:5.3.2]**

16.17.3.3 Fire Extinguishers.

16.17.3.3.1 Temporary enclosures shall be equipped with a minimum of one fire extinguisher suitable for all classes of fires that are expected inside the enclosure. **[241:5.3.3.1]**

16.17.3.3.2 Fire extinguishers shall be located so that travel distance to a fire extinguisher does not exceed 15 m (50 ft). **[241:5.3.3.2]**

1.05: continued

6.17.4 Equipment.

16.17.4.1 Internal combustion engines and associated equipment, such as air compressors, hoists, derricks, pumps, and similar devices, shall be located so that the exhausts discharge well away from combustible materials. **[241:5.4.1]**

16.17.4.2 Where the exhausts are piped outside the structure under construction, alteration, or demolition, a clearance of at least 230 mm (9 in.) shall be maintained between such piping and combustible material. **[241:5.4.2]**

16.17.4.3 Internal combustion engines and associated equipment shall be shut down and allowed to cool sufficiently prior to refueling. **[241:5.4.3]**

16.17.4.4 Service areas for equipment shall not be located within structures under construction, alteration, or demolition. **[241:5.4.4]**

16.17.4.5 Fuel for internal combustion engines shall not be stored within structures under construction, alteration,or demolition, unless otherwise permitted in *Section 16.19.8.*

16.18 Utilities

16.18.1 Electrical.

16.18.1.1 All construction-operation electrical wiring and equipment for light, heat, or power purposes shall be in accordance with the applicable provisions of NFPA 70.**[241:6.1.1]**

16.18.1.1.1 Electrical devices shall be maintained in a safe condition. **[241:6.1.1.1]**

16.18.1.1.2 Extension cords shall be maintained free from damage. **[241:6.1.1.2]**

16.18.1.1.3 Damaged equipment and cords shall be removed from service until rendered safe. **[241:6.1.1.3]**

16.18.1.1.4 During construction or demolition activities, all temporary and permanent service equipment disconnecting means shall be readily accessible to emergency service personnel and shall be labeled as to which equipment is controlled by such disconnects. **[241:6.1.1.4]**

16.18.1.2 Temporary Wiring.

16.18.1.2.1 Branch Circuits. All branch circuits shall originate in an approved power outlet or panelboard. **[241:6.1.2.1]**

16.18.1.2.2 Conductors shall be permitted within multiconductor cord or cable assemblies or as open conductors. **[241:6.1.2.2]**

16.18.1.2.3 All conductors shall be protected by overcurrent devices rated for the ampacity of the conductors. **[241:6.1.2.3]**

16.18.1.2.4 Runs of open conductors shall be located where the conductors are not subject to physical damage, and the conductors shall be fastened at intervals not exceeding 3 m (10 ft). **[241:6.1.2.4]**

16.18.1.2.5 Each branch circuit that supplies receptacles or fixed equipment shall contain a separate equipment grounding conductor where run as an open conductor. **[241:6.1.2.5]**

16.18.1.3 Lighting.

16.18.1.3.1 Temporary lights shall be equipped with guards to prevent accidental contact with the bulb unless the construction of the reflector is such that the bulb is deeply recessed. **[241:6.1.3.1]**

16.18.1.3.2 Temporary lighting fixtures, such as quartz, that operate at temperatures capable of igniting ordinary combustibles shall be fastened securely so that the possibility of their coming in contact with such materials is precluded. **[241:6.1.3.2]**

16.18.1.3.3 Temporary lights shall be equipped with heavy-duty electrical cords with connections and insulation maintained in safe condition. **[241;6.1.3.3]**

16.18.1.3.4 Temporary lights shall not be suspended by their electrical cords unless such cords and lights have been designed for that purpose. **[241:6.1.3.4]**

1.05: continued

16.18.1.3.5 Splices shall have insulation equivalent to that of the cable. **[241:6.1.3.5]**

16.18.1.3.6 Temporary wiring and lights shall be removed immediately upon the completion of the construction or purpose for which the wiring and lights were installed. **[241:6.1.3.6]**

16.18.1.3.7 Emergency Lighting.

16.18.1.3.7.1 Emergency lighting for egress shall be permitted to be provided by natural light during periods of work from first light until dusk. **[241:6.1.3.7.1]**

16.18.1.3.7.2 Areas shielded from natural light shall require that each worker have personal lighting to provide illumination for the expected duration of passage to natural light. **[241:6.1.3.7.2]**

16.18.1.3.7.3 Temporary lighting, supplemented by personal lighting, shall be provided at all other times. **[241:6.1.3.7.3]**

16.18.2 Fuel Gas.

16.18.2.1 Fuel gas piping shall be properly cleaned and purged prior to it being commissioned or decommissioned in accordance with NFPA 56. **[241:6.2.1]**

16.18.2.2 Fuel gas shall not be utilized for the cleaning of piping under any circumstance. **[241:6.2.2]**

16.18.3 Water Supply.

16.18.3.1 A water supply for fire protection, either temporary or permanent, shall be made available as soon as significant combustible material is present. **[241:6.3.1]**

16.18.3.2 There shall be no delay in the installation of fire protection equipment.

16.18.3.3 Where underground water mains and hydrants are to be provided, they shall be installed, completed, and in service prior to commencing construction work on any structure. **[241:6.3.3]**

16.18.3.4 Water mains, fire hydrants, and all appurtenances shall not be impaired once placed in service. **[241:6.3.4]**

16.18.3.5 In the event underground water main sectional valves or individual fire hydrant control valves are impaired, the AHJ shall be notified in accordance with NFPA 25. **[241:6.3.5]**

16.18.4 Permanent Heating Equipment. The permanent heating equipment for a new building shall be installed and put into operation as soon as practicable. **[241:6.4]**

16.18.5 Natural Gas.

16.18.5.1 The installation of gas piping for construction purposes, or modifications to existing gas piping, gas utilization equipment, or accessories, shall be performed only by a qualified agency. **[241:6.5.1]**

16.18.5.2 All such work shall be in accordance with NFPA 54. **[241:6.5.2]**

16.18.5.3 All modifications to existing gas piping systems shall be performed with the gas turned off, unless otherwise permitted by *16.18.5.4.* **[241:6.5.3]**

16.18.5.4 Hot taps shall be permitted to be made, provided they are installed by a trained and experienced crew utilizing equipment specifically designed for such purpose. **[241:6.5.4]**

16.19 Hot Work.

16.19.1 General.

16.19.1.1 Responsibility for hot work operations and fire prevention precautions, including permits and fire watches, shall be in accordance with NFPA 51B except as modified in Chapter 41 of this code.

16.19.1.2 Gas-operated cutting and welding equipment using multiple oxygen and fuel gas cylinders shall be in accordance with NFPA 51. **[241:7.1.2]**

1.05: continued

16.19.1.3 Where hot work will be conducted and it is not practical to remove combustibles in the area, the combustibles shall be covered with welding pads, blankets, or curtains tested in accordance with ANSI/FM 4950, *Evaluating Welding Pads, Welding Blankets and Welding Curtains for Hot Work Operations*, for at least a 10.7 m (35 ft) radius of the operation. **[241:7.1.3]**

16.19.1.4 Fire Watch.

16.19.1.4.1 Fire watches shall be assigned no other duties. [241:7.1.4.1]

16.19.1.4.2 A fire watch shall be posted for the duration of the work and for 2 hours thereafter for torch applied roofing operations (*see 16.22.3.9*). **[241:7.1.4.2]**

16.19.2 Thermit Welding.

16.19.2.1 In Thermit welding, the mold shall be dried thoroughly before the charge is ignited and provided with a cover. **[241:7.2.1]**

16.19.2.2 Bulk storage of Thermit welding materials shall be maintained in a detached shed at least 15 m (50 ft) from the main buildings. **[241:7.2.2]**

16.19.2.3 Storage sheds shall be maintained dry, posted as a "No Smoking" area, and kept locked. **[241:7.2.3]**

16.19.2.4 Containers for the starting material shall be closed tightly immediately after each use. **[241:7.2.4]**

16.19.2.5 The molds shall not be removed until sufficient cooling has taken place in accordance with the manufacturer's published instructions. **[241:7.2.5]**

16.19.2.6 Smoking shall not be permitted in areas where Thermit welding material is being used. **[241:7.2.6]**

16.19.3 Heating and Cooling Equipment Used During Construction, Alteration, or Demolition.

16.19.3.1 General.

16.19.3.1.1 Permits. Permits, where required shall comply with *Section 1.12.*

16.19.3.1.2 Heaters used in the vicinity of tarpaulins, canvas, or similar coverings shall be located a safe distance from coverings and other combustible materials. The coveringsshall be securely fastened to prevent ignition of the covering or upsetting of the heater due to wind action on the covering or other material.

16.19.3.1.3 Testsfor the presence of carbon monoxide shall be made by a qualified person within one hour after the start of each work shift and at least every three hours thereafter. If concentrations of carbon monoxide reach 30 parts per million (ppm) by volume, tests shall be made more frequently to determine if there is a continuing increase of carbon monoxide concentration. Records of all tests, including the date, time, results obtained, and person making tests, shall be maintained for a seven day period.

16.19.3.1.4 Each time a salamander is placed in operation it shall be checked to ensure that it is functioning properly and its operation shall be checked periodically thereafter. When concentrations of carbon monoxide attain quantities greater than 50 parts per million (ppm) to air volume at employee breathing levels, the salamander shall be extinguished unless additional natural or mechanical ventilation is provided to reduce the carbon monoxide content to permissible limits.

16.19.3.1.5 No employee shall be permitted to enter the heated area until notification of such entry is given to another person located outside. Periodic checks of at least one every 15 minutes shall be made to ensure the safety of employees entering the heated area.

16.19.3.1.6 Fresh air shall be supplied in sufficient quantities to maintain the safety of employees. Where natural means of fresh air supply is inadequate (less than 16% oxygen by volume) mechanical ventilation shall be provided. Particular attention shall be given to confined spaces and pockets where heat and fumes may accumulate and employees may be present.

1.05: continued

16.19.3.2 Heating and cooling equipment shall be listed. [241:7.3.1]

16.19.3.3 Heating and cooling equipment shall be installed in accordance with its listing, including clearance to combustible material, equipment, or construction. **[241:7.3.2]**

16.19.3.4 Heating and cooling equipment shall be installed, used, and maintained in accordance with the manufacturer's instructions, except as otherwise provided in *16.19.3.4.*

16.19.3.5 Where instructions, as addressed in *16.19.3.3*, are not available, heating and cooling equipment shall be used in accordance with recognized safe practices.

16.19.3.6 Heating and cooling equipment shall be designed, placed, or and used in such a manner that it is secured against overturning, overheating, displacement, or electrical heaters with tip- over protection. **[241:7.3.5]**

16.19.3.7 Only personnel familiar with the operation of the heating and cooling equipment shall be allowed to operate such devices. **[241:7.3.6]**

16.19.3.8 The area where heating and cooling equipment is utilized shall be inspected not less than daily for safe conditions. **[241:7.3.7]**

16.19.3.9 Heating and cooling equipment and devices determined to be damaged or unsafe shall not be used. **[241:7.3.8]**

16.19.3.10 Heating equipment using exposed radiant heating wires shall not be used. **[241:7.3.9]**

16.19.3.11 Electric wiring shall comply with other sections in this standard and with the Massachusetts Electrical Code.

16.19.3.12 Chimney or vent connectors, where required from direct-fired heaters, shall be maintained at least 460 mm (18 in.) from combustibles and shall be installed in accordance with NFPA 211 or with the manufacturer's written instructions. **[241:7.3.11]**

16.19.3.13 Oil-fired heaters shall comply in design and installation features with NFPA 31. **[241:7.3.12]**

16.19.3.14 Fuel supplies for LP-Gas-fired heaters shall comply with other sections in this chapter and with NFPA 58.

16.19.3.15 Fuel supplies for natural gas–fired heaters shall comply with other sections in this chapter and with NFPA 54.

16.19.3.16 Refueling operations shall be conducted in an approved manner. **[241:7.3.15]**

16.19.3.17 Only a one day supply of heater fuel shall be stored inside a building in the vicinity of the temporary heating equipment.

16.19.3.18 Areas where equipment is utilizing fossil fuel or wood shall be provided with carbon monoxide detection in accordance with NFPA 72. **[241:7.3.16]**

16.19.4 Smoking.

16.19.4.1 Smoking shall be prohibited at or in the vicinity of hazardous operations or combustible/flammable materials, and "No Smoking" signs shall be posted in these areas. **[241:7.4.1]**

16.19.4.2 Smoking shall be permitted only in designated areas. **[241:7.4.2]**

16.19.4.3 Where smoking is permitted, safe receptacles for smoking materials shall be provided. **[241:7.4.3]**

16.19.5 Waste Disposal.

16.19.5.1 Accumulations of combustible waste material, dust, and debris shall be removed from the structure and its immediate vicinity at the end of each work shift or more frequently as necessary for safe operations. **[241:7.5.1]**

16.19.5.1.1 A metal waste-can with a self-closing cover shall be provided for all waste materials, including wood, dust, and rags. All such materials shall be removed from the building and disposed of daily. **[241:7.5.2]**

16.19.5.2 Rubbish shall not be burned on the premises without first obtaining a permit from the AHJ. **[241:7.5.2]**

1.05: continued

16.19.5.3 Materials susceptible to spontaneous ignition, such as oily rags, shall be stored in a listed disposal container. **[241:7.5.3]**

16.19.5.4 Trash chutes, where provided, shall comply with *16.19.5.1* through *16.19.5.5.4.6.*

16.19.5.4.1 A trash chute safety plan shall be submitted to and approved by the AHJ. **[241:7.5.4.1]**

16.19.5.4.2 Trash chutes located on the exterior of a building shall be constructed of noncombustible or limited-combustible material that meets the requirements of *16.14.1*, or protected in accordance with*16.19.5.4.3* through *16.19.5.4.6* if of combustible construction.

16.19.5.4.3 The interior of combustible trash chutes shall be provided with not less than one temporary automatic sprinkler within a recess near the top of the chute. **[241:7.5.4.3]**

16.19.5.4.4 The temporary sprinkler required by *16.19.5.4.3* shall be protected by the recess as well as a listed sprinkler guard.

16.19.5.4.5 The temporary sprinkler required by *16.19.5.4.3* shall be connected to any available water supply with a listed fire hose, or a flexible, commercial rubber hose, with a diameter of not less than 19 mm (¾ in.) and a listed flexible connector.

16.19.5.4.6 The temporary sprinkler required by *16.19.5.4.3* shall be protected against freezing where required by the AHJ.

16.19.6 Construction Material and Equipment Storage.

16.19.6.1 Temporary storage of equipment to be installed, or excessive combustible construction or packing materials, shall not be permitted in unprotected structures under construction or alteration unless authorized by the AHJ. **[241:7.6.1]**

16.19.6.2 In structures required to be protected, combustible storage shall not be permitted until an approved level of protection is provided. **[241:7.6.2]**

16.19.6.3 Yard storage of equipment to be installed or combustible construction materials shall not be stored closer than 9 m (30 ft) from the structure under construction or alteration. (*See 16.17.2.1*)

16.19.7 Scaffolding, Shoring, and Forms.

16.19.7.1 Accumulations of unnecessary combustible forms or form lumber shall be prohibited. **[241:7.7.1]**

16.19.7.2 Combustible forms or form lumber shall be brought into the structure only when needed. **[241:7.7.2]**

16.19.7.3 Combustible forms or form lumber shall be removed from the structure as soon as stripping is complete. **[241:7.7.3]**

16.19.7.4 Those portions of the structure where combustible forms are present shall not be used for the storage of other combustible building materials. **[241:7.7.4]**

16.19.7.5 During forming and stripping operations, portable fire extinguishers or charged hose lines shall be provided to protect the additional combustible loading adequately. **[241:7.7.5]**

16.19.8 Flammable and Combustible Liquids and Flammable Gases.

16.19.8.1 Storage.

16.19.8.1.1 Storage of flammable and combustible liquids shall be in accordance with NFPA 30 unless otherwise modified by this section. **[241:7.8.1.1]**

16.19.8.1.2 Storage of Class I and Class II liquids shall not exceed 227 L (60 gal) within 15 m (50 ft) of the structure. **[241:7.8.1.2]**

16.19.8.1.3 Storage areas shall be kept free of weeds, debris, and combustible materials not necessary to the storage. **[241:7.8.1.3]**

16.19.8.1.4 Open flames and smoking shall not be permitted in flammable and combustible liquids storage areas. **[241:7.8.1.4]**

1.06: continued

16.19.8.1.5 Such storage areas shall be appropriately posted as "No Smoking" areas. **[241:7.8.1.5]**

16.19.8.1.6 Storage areas shall be appropriately posted with markings in accordance with NFPA 704. **[241:7.8.1.6**]

16.19.8.2 Handling of Flammable and Combustible Liquids at Point of Final Use.

16.19.8.2.1 Handling of flammable and combustible liquids shall be in accordance with NFPA 30 except as modified by *16.19.8.2.2* through *16.19.8.2.4.*

16.19.8.2.2 Class I and Class II liquids shall be kept in approved safety containers. **[241:7.8.2.2]**

16.19.8.2.3 Means shall be provided to contain and dispose of leakage and spills promptly and safely. **[241:7.8.2.3]**

16.19.8.2.4 Class I liquids shall be dispensed only where there are no open flames or other sources of ignition within the possible path of vapor travel. **[241:7.8.2.4]**

16.19.7.8.3 Storage and Handling of Combustible and Flammable Gases.

16.19.8.3.1 Storage and handling of combustible and flammable gases shall be in accordance with NFPA 54 and NFPA 58. **[241:7.8.3.1]**

16.19.8.3.2 Open flames and smoking shall not be permitted in flammable gas storage areas. **[241:7.8.3.2]**

16.19.9 Explosive Materials.

16.19.1 The storage, handling, and use of explosive materials shall be in accordance with NFPA 495. **[241:7.9.1]**

16.19.9.2 All blasting operations shall be under the direct supervision of an individual who is legally licensed to use explosives and who possesses the required permits. **[241:7.9.2]**

16.19.10 Cooking.

16.19.10.1 Cooking equipment shall be placed and used in such a manner so that it is secured against overturning or displacement. **[241:7.10.1]**

16.19.10.2 Cooking shall only be performed in approved cooking areas that are designated by approved signs, which state the following:

DESIGNATED COOKING AREA — COOKING OUTSIDE THIS AREA IS PROHIBITED **[241:7.10.2]**

16.19.10.3 Cooking outside of approved cooking areas shall be prohibited. **[241:7.10.3]**

16.19.10.4 Mobile cooking operations shall comply with *50.8.*

16.19.10.5 Mobile cooking operations shall comply with applicable sections of this standard for site access and separation distances for heat sources and combustibles. **[241:7.10.5]**

16.19.10.6 Cooking operations shall be documented in the Fire Prevention Program. **[241:7.10.6]**

16.19.11 Asbestos.

16.19.11.1 The removal of asbestos and other hazardous material shall be done in accordance with *16.19.11.1* through *16.19.11.5.*

16.19.11.2 The AHJ and the fire department shall be notified prior to the removal operations. **[241:7.11.2]**

16.19.11.3 Signs shall be posted at the entrance, exit and exit access door, decontamination areas, and waste disposal areas. **[241:7.11.3]**

16.19.11.4 The signs shall state that the material is being removed from the area and state any health hazards,contact information, and any personal protective equipment (PPE) requirements. **[241:7.11.4]**

16.19.11.5 Signs shall have a reflective surface, and lettering shall be a minimum of 50.8 mm (2 in.) in height. **[241:7.11.5]**

1.05: continued

16.20 Safeguarding Construction and Alteration Operations

16.20.1 General. In addition to the specific requirements in other chapters, the provisions of *Sections 16.20.2,16.20.3, and 16.20.4* shall be followed for all construction and alteration operations.

16.20.2 Cultural Resource Properties. Construction and alteration operations within cultural resource propertiesshall be performed in accordance with other chapters of this standard and NFPA 909. **[241:8.2]**

16.20.3 Historic Structures. Construction and alteration operations within historic structures shall be performed in accordance with other chapters of this standard and NFPA 914. **[241:8.3]**

16.20.4 Impairments. Impairments shall be in accordance with *16.2* through *16.16.*

16.21 Safeguarding Demolition Operations

16.21.1 General. In addition to the specific requirements of this chapter, the provisions of Chapter 1 and Chapters 3 through 7 shall be followed, as applicable, for all demolition operations. **[241:9.1]**

16.21.2 Special Precautions.

16.21.2.1 Special precautions shall be taken where demolition work is performed in areas where floors are soaked with oil or other flammable liquid; where dust accumulations are present; or where combustible insulation is present in floors, walls, or ceilings/roofs where hot work is being performed. In these situations, charged hose lines of an adequate number and size shall be provided. **[241: 9.2.1]**

16.21.2.2 Flammable and combustible liquids shall be drained from tanks and machinery reservoirs in a safe manner and removed from the building immediately. Particular attention shall be paid to the removal of residue and sludge accumulations if hot work operations are involved. **[241:9.2.2]**

16.21.3 Heating and Cooling Equipment.

16.21.3.1 During cold-weather demolition operations, building heat shall be maintained to allow the operation of sprinklers, hose, and extinguishers in areas not in the process of demolition. **[241:9.3.1]**

16.21.3.2 The minimum temperature at the extremities of such areas equipped with wet sprinkler systems shall be 4˚C (40˚F). **[241:9.3.2]**

16.21.4 Smoking. Smoking shall be prohibited throughout the demolition areas. **[241:9.4]**

16.21.5 Demolition Using Explosives. Demolition of buildings by use of explosives shall be performed by a qualified agency following approved procedures. **[241:9.5]**

16.21.6 Utilities.

16.21.6.1 Electrical Service. Electrical service shall be reduced to a minimum, and the identity of energized circuits shall be ensured to avoid any uncertainty. **[241:9.6.1]**

16.21.6.2 Gas.

16.21.6.2.1 Prior to demolition, gas supplies shall be turned off and capped at a point outside the building. **[241:9.6.2.1]**

16.21.6.2.2 Gas lines within the building shall be purged after capping unless otherwise permitted by the AHJ. **[241:9.6.2.2]**

16.21.7 Fire Cutoffs.

16.21.7.1 Vertical and horizontal cutoffs shall be retained until razing operations necessitate their removal as permitted by the AHJ. **[241:9.7.1]**

16.21.7.2 Fire doors shall be closed at the end of each working day. **[241:9.7.2]**

16.21.8 Fire Protection During Demolition.

1.05: continued

16.21.8.1 General. The provisions of Chapter 4 shall apply in addition to the specific requirements of this section. [241:9.8.1]

16.21.8.2 System Operation. Where a building is equipped with sprinklers, the sprinkler protection shall be retained in service as long as the condition requiring the use of sprinklers exists. **[241:9.8.2]**

16.21.8.3 Sprinkler Control Valves.

16.21.8.3.1 The operation of sprinkler control valves shall be permitted only by properly authorized personnel and shall be accompanied by the notification of designated parties. **[241:9.8.3.1]**

16.21.8.3.2 Where the sprinkler protection is regularly turned off and on to facilitate removal and capping of segments, the sprinkler control valves shall be checked at the end of each work shift to ascertain that protection is in service. **[241:9.8.3.2]**

16.21.8.4 Standpipes. Standpipes shall be maintained in conformity with the progress of demolition activity in such a manner that they are always ready for fire department use. **[241:9.8.4]**

16.21.8.5 Fire Protection. Approved fire protection shall be provided. **[241:9.8.5]**

16.22 Safeguarding Roofing Operations

16.22.1 General. All roofing operations involving heat sources and hot processes shall be conducted by a qualified agency. **[241:10.1]**

16.22.1.1 Permits. Permits, where required shall comply with Section 1.12

16.22.2 Asphalt and Tar Kettles.

16.22.2.1 Asphalt and tar kettles and associated LP-Gas cylinders shall be located in a safe place outside of the building at a point that avoids the danger of ignition of combustible material. **[241:10.2.1]**

16.22.2.2 Asphalt and tar kettles shall not be located on roofs. **[241:10.2.2]**

16.22.2.3 A lid that can be closed by means of gravity shall be provided on all roofing kettles. **[241:10.2.3]**

16.22.2.4 The tops and covers of all kettles shall be close-fitting and constructed of steel having a thickness of not less than No. 14 manufacturer's standard gauge [2 mm (0.075 in.)]. **[241:10.2.4]**

16.22.2.5 Used roofing mops and rags shall be cleaned of excessive asphalt and stored away from the building and combustible materials. **[241:10.2.5]**

16.22.2.6 Discarded roofing mops and rags shall not be in contact with combustibles. **[241:10.2.6]**

16.22.2.7 Kettles shall be constantly attended when in operation by a minimum of one employee knowledgeable of the operations and hazards. The employee shall be within 7.6 m (25 ft) of the kettle and have the kettle within sight. **[241:10.2.7]**

16.22.2.8 Roofing kettles shall not block exits, means of egress, gates, roadways, or entrances. In no case shall kettles be closer than 3 m (10 ft) from exits or means of egress. **[241:10.2.8]**

16.22.3 Single-Ply and Torch-Applied Roofing Systems.

16.22.3.1 General.

16.22.3.1.1 Single-ply and torch-applied roofing systems shall be installed using extreme caution. **[241:10.3.1.1]**

16.22.3.1.2 Torches or hot-air guns used to secure roofing membranes shall be used in accordance with the manufacturer's recommendations. **[241:10.3.1.2]**

16.22.3.1.3 In order to prevent smoking or ignition of roofing membranes, they shall not be overheated. **[241:10.3.1.3]**

16.22.3.1.4 Personnel applying torch-applied roofing shall be qualified. **[241:10.3.1.4]**

1.05: continued

16.22.3.2 Openings, Penetrations, and Flashings.

16.22.3.2.1 Caution shall be used where working near roof openings, penetrations, or flashings. **[241:10.3.2.1]**

16.22.3.2.2 The flame of the torch shall not come in direct contact with wood nailers, cant strips, or metal flashing. **[241:10.3.2.2]**

16.22.3.2.3 Small torches shall be used to heat the underside of the membrane at a safe distance from openings, penetrations, and flashing before securement. **[241:10.3.2.3**]

16.22.3.2.4 Hot trowels shall be used to feather seams at laps and flashings. **[241:10.3.2.4]**

16.22.3.2.5 The torch shall not be used in areas where the flame impingement cannot be fully viewed. **[241:10.3.2.5]**

16.22.3.2.6 Open flames shall not be left unattended. **[241:10.3.2.6]**

16.22.3.3 Flame Contact Protection.

16.22.3.3.1 The torch flame shall not be applied to a combustible substrate for the membrane. **[241:10.3.3.1]**

16.22.3.3.2 Base ply shall be used to cover wooden decks, combustible insulation (such as foam plastic, kraft faced glass fiber, or wood fiber), small crevices, cant strips, plastic fastener plates, or any other combustible surface. **[241:10.3.3.2]**

16.22.3.3.3 Base ply shall be permitted to consist of either glass fiber felts or minimum 18 kg (40 lb) organic felts. **[241:10.3.3.3]**

16.22.3.3.4 Torch flames shall not come in contact with exposed plastic roofing cement. **[241:10.3.3.4]**

16.22.3.4 Installation.

16.22.3.4.1 The installation of torch-applied roofing and, in some cases, single-ply roofing systems is hot work and shall comply with *Section 16.19.1*, except where otherwise noted.

16.22.3.4.2 Torch-applied roofing shall be exempt from the requirements of *16.19.1*, commonly referred to as the "35-foot rule," of NFPA 51B.

16.22.3.5 Personal Protection. Protective clothing and personal protective equipment shall be worn by installers. **[241:10.3.5]**

16.22.3.6 Equipment.

16.22.3.6.1 Proper equipment shall be used to heat roofing membranes. **[241:10.3.6.1]**

16.22.3.6.2 Torches shall be equipped with a pilot adjustment, a flame height adjustment, a minimum of 7.6 m (25 ft) to a maximum of 15 m (50 ft) of listed hose, a pressure gauge, and a regulator. **[241:10.3.6.2]**

16.22.3.6.3 A spark igniter shall be used. **[241:10.3.6.3]**

16.22.3.6.4 Torch trolleys and multiple torch head machines shall be equipped with listed safety valves. **[241:10.3.6.4]**

16.22.3.7 Equipment Inspection. Equipment shall be inspected thoroughly and repaired or replaced as needed prior to use. **[241:10.3.7]**

16.22.3.8 Fuel Gas Cylinders.

16.22.3.8.1 Valves. Fuel gas cylinders shall not be hoisted by their valves. **[241:10.3.8.1]**

16.22.3.8.2 Straps. Straps placed around the cylinders shall be utilized. **[241:10.3.8.2]**

16.22.3.8.3 Carts. Carts used to transport fuel gas cylinders shall be stable. **[241:10.3.8.3]**

16.22.3.8.4 Caps. Safety caps shall be attached to all fuel gas cylinders and installed on the valves whenever cylinders are not in use. **[241:10.3.8.4]**

1.05: continued

16.22.3.8.5 Size. The fuel gas cylinder shall be sized for the torch used. **[241:10.3.8.5]**

16.22.3.8.6 Frost Buildup.

16.22.3.8.6.1 If frost buildup occurs on fuel gas cylinders and the rate of vapor withdrawal is no longer adequate for operating conditions, the cylinder shall not be placed on its side or heated with the torch flame. **[241:10.3.8.6.1]**

16.22.3.8.6.2 If frost buildup occurs on fuel gas cylinders and the rate of vapor withdrawal is no longer adequate for operating conditions, the hose shall be disconnected and a cylinder with greater propane volume shall be used. **[241:10.3.8.6.2]**

16.22.3.9 Fire Watch. A fire watch shall be conducted for at least 2 hours after torches have been extinguished. **[241:10.3.9]**

16.22.4 Fire Extinguishers for Roofing Operations.

16.22.4.1 There shall be at least one portable fire extinguisher having a rating of not less than 20- B no closer than 1.5 m (5 ft) and no more than 7.6 m (25 ft) of horizontal travel distance from every kettle at all times while such kettle is in operation. **[241:10.4.1]**

16.22.4.2 Fire extinguishers shall be located in an accessible, visible, or identified location. **[241:10.4.2]**

16.22.4.3 There shall be at least one multipurpose 2-A:20-B:C portable fire extinguisher on the roof being covered or repaired, or other fire protection shall be provided as determined by the AHJ. **[241:10.4.3]**

16.22.4.4 There shall be at least one multipurpose 2-A:20-B:C portable fire extinguisher within 6.1 m (20 ft) of horizontal travel distance from torch-applied roofing equipment. **[241:10.4.4]**

16.22.4.5 All kettle operators and torch-applied roof installers shall be trained in the use of fire extinguishers. **[241:10.4.5]**

16.22.5 Fuel for Roofing Operations.

16.22.5.1 Fuel containers, burners, and related appurtenances of roofing equipment in which LP-Gas is used for heating shall comply with all the applicable requirements of NFPA 58. **[241:10.5.1]**

16.22.5.2 Fuel containers having capacities greater than 0.45 kg (1 lb) shall be located at least 3 m (10 ft) from the burner flame or at least 0.6 m (2 ft) therefrom where properly insulated from heat or flame. **[241:10.5.2]**

16.22.5.3 Solid fuel or Class I liquids shall not be used as fuel for roofing kettles. **[241:10.5.3]**

16.22.5.4 LP-Gas cylinders shall be secured to prevent accidental tip over. **[241:10.5.4]**

16.22.5.5 Fuel containers shall be protected against physical damage as approved. **[241:10.5.5]**

16.23 Safeguarding Underground Operations

16.23.1 General.

16.23.1.1 Modifications. In addition to the specific requirements of this chapter, the provisions of Chapter 1 and Chapters 3 through 9 shall apply to all underground operations unless otherwise modified by this chapter. **[241:11.1.1]**

16.23.1.2 Tunnels. The tunnels covered by this standard shall be underground structures with a design length greater than 23 m (75 ft) and a diameter greater than 1.8 m (6 ft). **[241:11.1.2]**

16.23.1.3 Drainage. Drainage systems shall be properly designed and installed to remove water from sprinkler discharge and fire hose streams. **[241:11.1.3]**

16.23.1.4 Fire Safety. Fire safety for existing, operating, fixed guideway underground transportation systems undergoing alteration or renovation shall be in accordance with NFPA 130. **[241:11.1.4]**

16.23.1.5 Means of Egress. Means of egress for existing, operating, underground structures shall be in accordance with the *Building Code.*

16.23.1.6 Security.

1.05: continued

16.23.1.6.1 At each aboveground entrance, underground operations shall have a check-in/check-out system, supervised by a qualified individual at all times, that provides an accurate record of each person who is underground. **[241:11.1.6.1]**

16.23.1.6.2 The location of the check-in/check-out system shall be within 7.6 m (25 ft) of the entrance and shall be easily identified. **[241:11.1.6.2]**

16.23.1.6.3 Completed or unused sections of the underground facility shall be barricaded, properly marked, and made off limits. **[241:11.1.6.3]**

16.23.1.7 Compartmentation. Compartmentation by means of the installation of fire and smoke barriers shall be at intervals that limit the extent and severity of the fire and that provide areas of refuge for occupants. **[241:11.1.7]**

16.23.1.8 Water Supply.

16.23.1.8.1 A fire protection water supply system shall be provided in accordance with *16.18.3.*

16.23.1.8.2 A standard fitting with outlet threads compatible with the equipment of the local fire department shall be provided so that travel distance does not exceed 46 m (150 ft). **[241:11.1.8.2]**

16.23.2 Emergency Procedures.

16.23.2.1 Evacuation Plans.

16.23.2.1.1 A written fire prevention, fire suppression, and emergency evacuation plan shall be developed, maintained, and kept current. **[241:11.2.1.1]**

16.23.2.1.2 The AHJ shall be provided with a copy of the current plan for its review and shall have the opportunity to comment on the plan. **[241:11.2.1.2]**

16.23.2.1.3 Special attention shall be given to rescue and smoke-venting procedures, to means of ingress/egress, and to training and orientation of employees and visitors. **[241:11.2.1.3]**

16.23.2.2 All personnel, including visitors, shall be trained in emergency and evacuation procedures and informed of the hazards prior to going underground. **[241:11.2.2]**

16.23.2.3 Drills.

16.23.2.3.1 Underground operations shall conduct disaster and evacuation drills for each shift at least once at the start of underground operations and every 6 months, or more frequently as appropriate. **[241:11.2.3.1]**

16.23.2.3.2 A record of such drills shall be maintained. **[241:11.2.3.2]**

16.23.3 Fire Detection, Protection, and Communications Systems.

16.23.3.1 Fire Detection and Protection Systems.

16.23.3.1.1 Fire protection extinguishing equipment applicable to the hazard shall be provided at the head, tail, drive, and take-up pulley areas of belt conveyors and at intervals along belt conveyor lines that shall not exceed 91 m (300 ft). **[241:11.3.1.1]**

16.23.3.1.2 Belt conveyors installed in underground locations, other than belts that carry the load of the belt on a low-friction metal deck without rollers, shall meet all of the following requirements:

(1) Conveyor belting shall be approved.

(2) Entrances in which belt conveyors are installed shall be kept free of accumulations such as muck, debris, and combustibles.

(3) All belt conveyors shall be equipped with an approved slippage switch system designed to shut down the belt when sliding friction develops between the drive pulley(s) and the belt, and both of the following shall apply:

(a) The slippage switch system shall be tested weekly.

(b) On each new installation, the slippage switch system shall be tested before the conveyor is used.

(4) All conveyor belt systems shall be equipped with approved interlock systems that shut down belt conveyors when any of the following occurs:

(a) Any conveyor in the system stops or reduces its normal speed.

1.05: continued

(b) Any required fire protection system is activated.

(5) Fixed combustible materials such as posts, cribbing, and roof supports shall be protected against frictional ignition by one of the following methods:

(a) The material shall be guarded from contact by the belt using metal.

(b) The material shall be located at a distance of at least ½ the width of the belt from any idler or pulley.

(c) Alignment switches shall be provided at intervals sufficient to prevent the belt from contacting such materials.

(6) Guarding, if provided, for machinery in the drive area and at other points along the belt shall be of noncombustible material.

(7) New installations of belt conveyors shall utilize a structure that does not provide a deck between the upper and lower strands of the belt. **[241:11.3.1.2]**

16.23.3.1.3 Suitable fire extinguishers shall be installed so that travel distance from any one point in a tunnel does not exceed 91 m (300 ft) on a horizontal plane. **[241:11.3.1.3]**

16.23.3.1.4 Audible and visible alarm and emergency lighting for safe evacuation shall be required. **[241:11.3.1.4]**

16.23.3.2 Fire Communications Systems.

16.23.3.2.1 Two means of communications with the surface shall be available at all times from all areas of the underground facility. **[241:11.3.2.1]**

16.23.3.2.2 All communications systems shall be tested weekly. **[241:11.3.2.2]**

16.23.4 Electrical.

16.23.4.1 Electrical cords and plugs shall be heavy duty and suitable for use in damp locations. **[241:11.4.1]**

16.23.4.2 Conductors.

16.23.4.2.1 Conductors shall be located or guarded so as to be protected from physical damage. Multiconductor portable cable shall be permitted to supply mobile equipment. **[241:11.4.2.1]**

16.23.4.2.2 An equipment grounding conductor shall be run with circuit conductors inside the metal raceway or inside the multiconductor cable jacket. **[241:11.4.2.2]**

16.23.4.2.3 The equipment grounding conductor shall be permitted to be insulated or bare. **[241:11.4.2.3]**

16.23.4.3 Oil-filled transformers shall only be used underground where located in a fire-resistant enclosure suitably vented to the outside and surrounded by a dike to retain the contents of the transformers in the event of rupture. **[241:11.4.3]**

16.23.4.4 Enclosures.

16.23.4.4.1 Bare terminals of transformers, switches, motor controllers, and other equipment shall be enclosed to prevent accidental contact with energized parts. **[241:11.4.4.1]**

16.23.4.4.2 Enclosures for use in tunnels shall be raintight, rainproof, or watertight as defined in *NFPA 70* where necessitated by the environmental conditions. **[241:11.4.4.2]**

16.23.4.5 Special attention shall be given to maintaining clear access and adequate work space around electrical equipment in accordance with *NFPA 70E*. Proper housekeeping shall be maintained to avoid fire hazards. **[241:11.4.5]**

16.23.4.6 All nonenergized metal parts of electrical equipment and metal raceways and cable sheaths shall be effectively grounded and bonded to all metal pipes and rails at the portal and at intervals not exceeding 300 m (1000 ft) throughout the tunnel. **[241:11.4.6]**

16.23.5 Hazardous Operations and Procedures.

16.23.5.1 Hot work operations shall be in accordance with NFPA 51B except as modified in Chapter 41.

16.23.5.2 A suitable fire extinguisher or other fire control device shall be ready for instant use in any location where hot work is performed. **[241:11.5.2]**

1.05: continued

16.23.5.3 Acetylene, LP-Gas, liquefied oxygen (LOX), and methylacetylene propadiene stabilized gas (MPS) shall be permitted to be used underground where both of the following conditions are met:

(1) The material is used only for welding, cutting, and hot work.
(2) The quality of air is within approved limits. **[241:11.5.3]**

16.23.5.4 The quantity of combustible materials to be used underground shall be kept to a minimum. Advance planning shall provide for the use of materials having the most favorable combination of high ignition points,low rates of combustion, and low emissions of smoke and harmful gases. **[241:11.5.4]**

16.23.5.5 Flammable and Combustible Liquids.

16.23.5.5.1 Class I flammable liquids shall not be taken, stored, or used underground or within 30 m (100 ft) of a tunnel portal or shaft opening. **[241:11.5.5.1]**

16.23.5.5.2 Class II and Class III liquids shall be transported and stored in approved closed containers, safety cans, or tanks. **[241:11.5.5.2]**

16.23.5.5.3 Quantities shall be limited to those necessary for one work shift. **[241:11.5.5.3]**

16.23.5.5.4 Lubricating oils, greases, and rope dressings taken underground shall be in closed and reclosable approved containers that do not allow the contents to leak or spill. [241:11.5.5.4]

16.23.5.5.5 Oil, grease, and diesel fuel stored underground shall be kept in tightly sealed containers in fire-resistant areas located at least 30 m (100 ft) from shafts and inclines. **[241:11.5.5.5]**

16.23.5.5.6 Storage areas shall be positioned or diked so that the contents of ruptured or overturned containers cannot flow from the storage area. **[241:11.5.5.6]**

16.23.5.5.7 Areas within 7.6 m (25 ft) of major electrical installations and unburied tanks for storage of combustible liquids shall be free of transient combustible materials. **[241:11.5.5.7]**

16.23.6 Storage.

16.23.6.1 No combustible structure shall be erected and no combustible materials shall be stored within 30 m (100 ft) of an access shaft, shaft hoist, or other entry. **[241:11.6.1]**

16.23.6.2 Metal containers with self-closing lids shall be provided and used to store combustible waste and debris and shall be removed and taken to the surface daily. **[241:11.6.2]**

16.23.7 Equipment.

16.23.7.1 Less hazardous hydraulic fluids that are listed shall be used in underground machinery and equipment unless the machinery and equipment are protected by an approved fire suppression system or by approved multipurpose fire extinguishers rated at least 4-A:40-B:C. **[241:11.7.1]**

16.23.7.2 Wherever self-propelled equipment is used underground, a fire suppression system or a fire extinguisher rated at least 4-A:40-B:C shall be provided on the equipment. **[241:11.7.2]**

16.23.7.3 Ventilation.

16.23.7.3.1 Where single-entry shafts/tunnel ventilation systems are used, they shall be reversible from a location outside and in close proximity to the shaft/tunnel. **[241:11.7.3.1]**

16.23.7.3.2 The ventilation system shall be sufficient for the number of personnel and equipment underground. **[241:11.7.3.2]**

16.23.7.3.3 Air-sampling logs shall be maintained. Air tests shall be conducted before or after each shift. **[241:11.7.3.3]**

16.23.7.3.4 Air-sampling logs shall be available to the AHJ. **[241:11.7.3.4]**

16.23.7.3.5 Fan houses, fan bulkheads for main and booster fans, and air ducts connecting main fans to underground openings shall be constructed of noncombustible materials. **[241:11.7.3.5]**

1.05: continued

16.23.8 Standpipe Installations in Tunnels Under Construction. Where required by the AHJ, a Class I, II, or III standpipe system shall be installed and tested in tunnels under construction in accordance with *16.23.8.1* through *16.23.8.6,* NFPA 14, and NFPA 25.

16.23.8.1 A standpipe system shall be installed before the tunnel has exceeded a length of 61 m (200 ft) beyond any access shaft or portal. **[241:11.8.1]**

16.23.8.1.1 The standpipe system shall be extended as work progresses so that a hose valve connection is available within 61 m (200 ft) of the most remote portion of the tunnel or tunnel heading. **[241:11.8.1.1]**

16.23.8.2 Standpipe and hose valves shall be securely supported and the system shall be securely capped at the end. **[241:11.8.2]**

16.23.8.3 Threaded connections for hose valves and fire department connections shall be of the size and type required by the responding fire department. **[241:11.8.3]**

16.23.8.4 Standpipe hose valves shall be spaced at not greater than 61 m (200 ft) intervals, and be positioned in the tunnel and kept clear to ensure ready access from the walking surface. **[241:11.8.4]**

16.23.8.5 Standpipe system water supply and fire department connection(s) shall be provided at a location(s) adjacent to the tunnel construction access point and shall be readily accessible to fire department apparatus. **[241:11.8.5]**

16.23.8.6 Temporary standpipe systems shall remain in service until the permanent standpipe system is complete. **[241:11.8.6]**

16.23.8.7 Underground Operations.

16.23.8.7.1 Where required, an underground rescue plan shall be developed and addressed in the Fire Prevention Program in accordance with *16.3.2.*

16.23.8.7.1.1 Technical rescue professional qualifications regarding underground operations shall be in accordance with NFPA 1006. **[241:11.8.7.1.1]**

16.23.8.7.1.2 Technical rescue regarding underground operations shall be in accordance NFPA 1670. **[241:11.8.7.1.2]**

16.24 Safeguarding Construction Operations for Tall Mass Timber Wood Structures

16.24.1 General. The provisions of Chapter 1, Chapters 3 through 8, and this chapter shall apply for all construction, as applicable. **[241:12.1]**

16.24.2 Roofing Operations. The requirements of Chapter 10 shall apply for roofing operations, except that torch-applied roofing systems shall be prohibited. **[241:12.2]**

16.24.3 Fire Exposure Analysis. Before construction begins, a study shall be conducted to ensure that the installation of passive and active fire protection features, combined with the separation provided between other structures on the same or adjacent lots, are adequate to allow safe egress and to prevent fire spread to the exposed structures. **[241:12.3]**

16.24.3.1 The analysis shall be included with the construction documents submitted with the building permit and acceptable to the AHJ. **[241:12.3.1]**

16.24.3.2 Construction shall comply with the requirements established by the fire exposure analysis. **[241:12.3.2]**

16.24.4 Wood Structural Panels. Wood structural panels shall be designed, manufactured, and identified in accordance with the building code.

16.24.4.1 Structural wood members that are required to receive passive fire protection shall have the protection installed as required by the fire exposure analysis outlined in *Section 16.24.3.*

16.24.5 Site Security.

16.24.5.1 Guard service trained in accordance with *16.2.17.2* or other methods acceptable to the AHJ shall be required at all times that combustible construction has exceeded three stories and workers are not on the site.

1.05: continued

16.24.5.2 Minimum 1.8 m (6 ft) high security fences shall be provided around the entire exterior of the construction site. **[241:12.5.2]**

16.24.6 Water Mains, Standpipes, Hydrants, and Fire Department Connections.

16.24.6.1 Underground fire protection water mains and hydrants shall be installed in accordance with *16.18.3.3.*

16.24.6.2 Each stairwell required for egress in the constructed areas of the structure shall be equipped with an operational standpipe during construction in accordance with *Section 4.7.* **[241:12.6.2]**

16.24.6.3 The distance between the fire department connection and hydrant shall not exceed 30.5 m (100 ft). **[241:12.6.3]**

16.24.7 Fire Protection Systems. Fire protection systems that are temporarily placed in service shall be in accordance with the Fire Prevention Program. **[241:12.7]**

16.24.8 Hot Work. Fire watches shall remain in place for 2 hours after hot work is complete. **[241:12.8]**

16.24.9 Temporary Heat.

16.24.9.1 The use of direct-fired heaters shall be prohibited inside the structure. **[241:12.9.1]**

16.24.9.2 Heating shall be indirect fired or ducted heat from heaters located outside the structure or by permanent heating systems. **[241:12.9.2]**

16.24.10 Temporary Lighting. The use of high-intensity lighting, such as quartz or metal halide, shall be prohibited during construction or alterations. **[241:12.10]**

16.25 Safeguarding Construction Operations for Large Wood Frame Structures

16.25.1 General.

16.25.1.1 The provisions of Chapter 1, Chapters 3 through 8, and this chapter shall apply for all construction, as applicable. **[241:13.1.1]**

16.25.1.2 A large wood structure shall be considered all wood structures that meet one of the following:

(1) Up to, and including, three stories and greater than 13,935 m^2 (150,000 ft^2) aggregate total floor area

(2) Over three stories, or over 12.2 m (40 ft) above the lowest level of fire department vehicular access, and greater than 4645.2 m^2(50,000 ft^2) aggregate total floor area **[241:13.1.2]**

16.25.2 Roofing Operations.

16.25.2.1 The requirements of Chapter 10 shall apply for roofing operations except as specified in *16.25.2.2.*

16.25.2.2 Torch-applied roofing systems shall be prohibited. **[241:13.2.2]**

16.25.3 Fire Exposure Analysis. Before construction begins, a study shall be conducted to ensure that the installation of passive and active fire protection features, combined with the separation provided between other structures on the same or adjacent lots, or adjacent buildings under construction simultaneously, are adequate to allow safe egress and prevent fire spread to the exposed structures. **[241:13.3]**

16.25.3.1 The analysis shall be included with the construction documents submitted with the building permit and acceptable to the AHJ. **[241:13.3.1]**

16.25.3.2 Construction shall comply with the requirements established by the fire exposure analysis. **[241:13.3.2**]

16.25.4 Site Security.

16.25.4.1 Guard service trained in accordance with *16.2.17.2* or other methods acceptable to the AHJ shall be required at all times.

1.05: continued

16.25.4.2 Minimum 1.8 m (6 ft) high security fences shall be provided around the entire exterior of the construction site. **[241:13.4.2]**

16.25.5 Water Mains, Standpipes, Hydrants, and Fire Department Connections.

16.25.5.1 Underground fire protection water mains and hydrants shall be installed in accordance with *16.18.3.3.*

16.25.5.2 Where standpipes are required in the occupied building or by the Fire Prevention Program, the number of temporary standpipes to be provided shall be in accordance with the Fire Prevention Program. **[241:13.5.2]**

16.25.5.3 The distance between the fire department connection and hydrant shall not exceed 30.5 m (100 ft). **[241:13.5.3]**

16.25.6 Fire Protection Systems. Fire protection systems that are temporarily placed in service shall be in accordance with the Fire Prevention Program. **[241:13.6]**

16.25.7 Hot Work. Fire watches shall remain in place for 2 hours after hot work is complete. **[241:13.7]**

16.25.8 Temporary Heat.

16.25.8.1 The use of direct-fired heaters shall be prohibited inside the structure. **[241:13.8.1]**

16.25.8.2 Heating shall be indirect-fired or ducted heat from heaters located outside the structure or by permanent heating systems. **[241:13.8.2]**

16.25.9 Temporary Lighting. The use of high-intensity lighting, such as quartz or metal halide, shall be prohibited during construction or alterations. **[241:13.9]**

16.26 Floor Finishing or Refinishing.

16.26.1 General. Floor finishing or refinishing requirements shall apply to persons, or other entities, that engage in sanding, finishing, or refinishing wood floors, with or without compensation, in any building orstructure. No person or entity shall apply or otherwise use any flammable floor finishing product during the course of any activity relating to the refinishing or finishing of the surface of a wood floor. This shall be in addition to the prohibitions of M.G.L. c. 94, § 329 relating to the sale and use of certain lacquer sealers during the course of commercial wood floor finishing operations.

16.26.2 Flammable Floor Finishing Product. Flammable floor finishing product as used herein, shall mean any clear or pigmented wood finish, formulated with nitrocellulose or synthetic resins to dry by evaporation and without chemical reaction, having a flashpoint below 100EF, and having a vapor pressure not exceeding 40 psi at 1000°F, including clear lacquer sanding sealers.

16.26.3 Fire Safety Requirements. No person shall sand, strip, or refinish wood floors where such sanding, stripping, or vapor would create an explosive atmosphere from dust or vapor that when dispersed could be ignited in the air without first complying with the following fire/explosion safety requirements. The requirements in *Sections 16.9.3(1) and (3)* are not applicable if ventilation or a dust collection equipment system is used continuously to reduce vapor or dust from accumulating in concentrations that could cause ignition or explosion:

(1) **Sources of Ignition**. All fires, open flames, or other sources of ignition, including smoking materials, spotlights, halogen lights or appliance pilot lights shall be eliminated from the area or unit.

(2) **Electrical Permit Required**. An electrical permit is required when connecting any floor-refinishing machine directly to the electrical panel in accordance with *Massachusetts Electrical Code*.

(3) **Warning Signs**. Any person or other entity sanding or stripping floors in a building containing more than one dwelling unit shall post suitable warning signs indicating the danger of dust and fire/explosion hazard andshall be conspicuously posted on all doors and entrances to the building and/or unit. Such notice is to be printed in contrasting colors and shall have lettering at least two inches high and shall state the name of the operator in charge, the date and time of the operation, and the area or unit where work is to be performed. Warning signs shall be posted at least 24 hours prior to engaging in such work.

1.05: continued

(4) No Smoking signs, featuring the international pictograph prohibiting smoking, must be posted at all entrances to the house or building before floor sanding or finishing begins and until 24 hours after the end of all floor sanding and finishing activities.

Chapter 17 Wildland Urban Interface.

Chapter 17 Delete in its entirety.

Chapter 18 Fire Department Access and Water Supply.

18.1 Replace with the following:
18.1 General Scope. Fire department access and water supplies shall comply with this chapter. The provisions of this chapter shall not apply to any city, or town which has accepted the provisions of M.G.L. c. 41, § 81 *et. seq*. or similar laws which provide local jurisdiction over fire department access and water supply. In the absence of any such laws, fire department access and water supply shall comply with this chapter.

18.1.1.3 Add:
18.1.1.3 This chapter shall apply to new one- or two-family dwellings, not provided with adequate frontage and located behind an existing building that has frontage. For purposes of this section, adequate frontage shall mean at least 20 feet or more abutting a public way.
18.1.1.3.1 Existing and new one- and two-family detached dwellings, not located behind a building with adequate frontage, and their accessory structures such as garages, carports, and sheds shall be exempt from the provisions of *Section* 18.2.3.

18.1.1.4 Add:
18.1.1.4 The fire apparatus access road plans must include an analysis and evaluation of fire apparatus maneuvers throughout the access roads created by swept path analysis and turn simulation software.

18.1.1.5 Add:
18.1.1.5 The fire apparatus access plans shall bear the seal and signature of the responsible registered professional engineer.

18.1.1.6 Add:
18.1.1.6 Nothing in this Section shall reduce the requirements established by cities or towns under M.G.L. c. 40A and planning and zoning bylaws.

18.1.3.1 Replace with the following:
18.1.3.1 Fire Apparatus Access. Plans, where required, for fire apparatus access roads shall be submitted to the fire department for review and approval prior to construction.

18.2.2.1.1 Add:
18.2.2.1.1 Approval of access roads shall be subject to the AHJ and capable of supporting the imposed loads of fire apparatus and shall be provided with an all-weather driving surface and shall be maintained as provided.

18.2.2.3 Replace with the following:
18.2.2.3 Access Maintenance. The owner or occupant of a structure or area, with required fire department access as specified in *Section 18.2.2.1 or 18.2.2.2,* shall notify the AHJ when the access is modified.

18.2.3.1.3*(1) through **18.2.3.1.3***(4) Delete.

18.2.3.1.3* Replace with the following:
18.2.3.1.3* (6) Other detached buildings having an area not exceeding 400 ft.^{2}

18.2.3.1.4 Replace with the following:
18.2.3.1.4 When fire department access roads cannot be installed due to location on property, topography, waterways, nonnegotiable grades, or other similar conditions, the AHJ shall be permitted to accept alternatives proposed by the owner of the building to allow additional fire protection features, up to and including the installation of an approved fire sprinkler system installed in accordance with the *Building Code,* cistern(s), additional fire hydrant(s), or similar devices or systems.

1.05: continued

18.2.3.2 Replace with the following:
18.2.3.2 Access to Buildings and Facilities.

18.2.3.2.1.1 Add:
18.2.3.2.1.1 Where a new building, not provided with adequate frontage, is to be located behind an existing building that has frontage, a fire department access road shall extend to within 25 feet of at least one exterior door that can be opened from the outside and that provides access to the interior of the building.

18.2.3.2.1.1.2 Where a townhouse as defined in the *Building Code*, is protected with an approved automatic sprinkler system that is installed in accordance with NFPA 13D or NFPA 13R, as applicable, the distance in *Section 18.2.3.2.1* shall be permitted to be increased to 150 ft. (46 m).

18.2.3.2.2.1 When buildings are protected throughout with an approved automatic sprinkler system that is installed in accordance with NFPA 13: *Standard for the Installation of Sprinkler Systems* the distance in *Section 18.2.3.2.2* shall be permitted to be increased to 250 feet.

18.2.3.2.2.2 Except new one- or two-family dwellings, and townhouses, not provided with adequate frontage and located behind an existing building that has frontage.

18.2.3.5.1.1 Replace with the following:
18.2.3.5.1.1 Fire department access roads shall have an unobstructed width of not less than 20 feet (6.1 m). Fire department access roads constructed in the boulevard-style shall be allowed where each lane is less than 20 feet but not less than tem feet when they do not provide access to a building or structure.

18.2.3.5.2.1 Add:
18.2.3.5.2.1 Permeable drivable surfaces, that meet loading of *Section 18.2.3.4.2*, are allowed when approved by the AHJ. When approved, the permeable surfaces shall be identified by a method acceptable to the AHJ.

18.2.3.5.3.1 Replace with the following:
18.2.3.5.3.1 The minimum inside turning radius of a fire department access road shall be 25 feet. The AHJ shall have the ability to increase the minimum inside turning radius to accommodate the AHJ's apparatus.

18.2.3.5.6.1 Replace with the following:
18.2.3.5.6.1 The gradient for a fire department access road shall not exceed 10%, unless approved in writing by the AHJ.

18.2.3.5.8 Add:
18.2.3.5.8 Travel in the Opposing Lane. The use of the opposite travel lane is prohibited in the design of all new fire apparatus access roads.

Delete:
18.2.4.2.3 through **18.5.4.4**.

Chapter 19 Combustible Waste and Refuse.

19.3 Add:
19.3 Special Hazards, Rubbish.

19.3.1 Spontaneous Combustion. Substances subject to spontaneous heating or ignition, such as oily or greasy rags, or other materials or combinations of materials, shall not be deposited in combustible containers or so kept or stored as to ignite combustible material.

19.3.1.1 Such substances shall not be mixed with combustible rubbish or stored in the same containers.

19.3.1.2 Materials subject to spontaneous ignition shall be kept in listed metal receptacles equipped with self-closing hinged covers designed to guard against the hazard of spontaneous combustion.

19.3.1.3 Contents shall be emptied every night and disposed of properly.

19.3.1.4 Hot Waste. Hot coals, cinders, hot scrap metal, and similar substances shall not be deposited in combustible containers, or kept or stored so as to ignite combustible material.

1.05: continued

19.3.2.1 Such substances shall not be mixed with combustible rubbish or stored in the same containers.

19.3.2.2 Such substances shall be kept, handled, or stored inside buildings only in noncombustible receptacles approved by the Head of the Fire Department for that purpose and location.

19.3.2.3 Such substances shall be kept, handled, or stored outside of building locations so that they cannot ignite buildings on the premises or adjacent premises and will not endanger people.

19.3.3 Containers which require mechanical assistance to be moved, shall be marked with the name and telephone number of the company or person from which emergency service to expedite movement of the container can be obtained.

19.3.4 Waste storage rooms shall not contain boilers or furnaces used for the central heating of buildings, nor shall rooms with boilers or furnaces be used for waste storage of any kind.

Chapter 20 Occupancy Fire Safety.

20.1.1 Replace with the following:
20.1.1 Application. New and existing assembly occupancies shall comply with *Section 20.1.*

20.1.1.2 Delete.

20.1.3.1 Replace with the following:
20.1.3.1 General. Interior finish shall be in accordance with the *Building Code*.

20.1.3.2 through **20.1.3.3** Delete.

20.1.3.5 through **20.1.3.5.4** Delete

20.1.4.1.1* Replace with the following:
20.1.4.1.1* Special amusement buildings, regardless of occupant load, shall meet the requirements for assembly occupancies, in addition to the requirements of *Section 20.1.4* and the *Building Code*.

20.1.4.2* through **20.1.4.6** Delete.

20.1.5.1.2 Delete

20.1.5.1.3 Replace with the following:
20.1.5.1.3 Inspection of Door Openings. Door openings shall be inspected by the owner or their representative and be in an operable condition at all times.

20.1.5.4.5 Add:
20.1.5.4.5 Upholstered furniture shall be tested in accordance with the provisions of *Section 12.6.3.*

20.1.5.5.2 through **20.1.5.5.3** Delete.

20.1.5.5.4.1 through **20.1.5.5.4.3** Delete.

1.05: continued

20.1.5.5.4.2 Delete.

20.1.5.5.4.3 Delete.

20.1.5.5.4.4 Replace with the following:
20.1.5.5.4.4 Exhibit booth construction materials shall be limited to the following:
(1) Flame-retardant materials complying with one of the following:
(a) They shall meet the flame propagation performance criteria contained in Test Method 1 or Test Method 2, as appropriate, of NFPA 701.
(b) They shall exhibit a heat release rate not exceeding 100 kW when tested in accordance with NFPA 289 using the 20 kW ignition source.

20.1.5.5.4.7 through **20.1.5.5.4.4.7.3** Delete.

20.1.5.6.1 A nightclub, dance hall, discotheque or bar with an occupant load of 100 or more, shall be provided with a minimum of one trained crowd manager. Where the occupant load exceeds 250, additional trained crowd managers or crowd manager supervisors shall be provided at a ratio of 1 crowd manager or crowd manager supervisor for every 250 occupants.

20.1.5.6.1.1 Add:
20.1.5.6.1.1 A nightclub, dance hall, discotheque or bar shall be defined as:
(1) Any facility classified as a A-2 or A-3 use group under the *Building Code*, which is principally designed or used as a nightclub, dance hall, discotheque, or bar; or
(2) Any facility that features entertainment by live band or recorded music generating above normal sound levels and has a specific area designated for dancing.

20.1.5.6.1.2 A crowd manager is not required for:
(1) A temporary structure erected at the same location for no more than ten days in any calendar year; or
(2) A facility that features fixed seating, such as a theatre, auditorium, concert hall or similar place of assembly; or
(3) A facility used for organized private function where:
(a) Each guest has a seat and table for dining purposes; and
(b) Attendance for each event is limited by pre-arrangement between the facility operator and the private event organizers; and
(c) The legal capacity of the facility provides not less than 15 square feet (net) per occupant.

20.1.5.6.2 Replace with the following:
20.1.5.6.2 The crowd manager and crowd manager supervisor shall receive training as required by the State Fire Marshal. The State Fire Marshal shall develop a reasonable method to confirm, on a three-year basis, that a crowd manager has completed the training in regards to their responsibility.

20.1.5.6.2.1 Add:
20.1.5.6.2.1 Certificates. Certificates where required, shall comply with *Section 1.13.*

20.1.5.6.3 Replace with the following:
20.1.5.6.3 A crowd manager shall be 21 years of age or older, shall be the owner or operator of the business or under the direct control and supervision of said owner or operator and shall be responsible for all of the following:
(1) Maintaining clear paths of egress, assuring that the facility does not exceed its occupant load limit, initiating a fire alarm if necessary, directing occupants to exits;
(2) Assuring general fire and life safety awareness of employees and occupants, including assuring that exit announcements are made in accordance with *Section 20.1.5.8.3*; and
(3) Accurately completing the safety plan checklist required by *Section 20.1.5.6.4.*

1.05: continued

20.1.5.6.4 Replace with the following:
20.1.5.6.4 Fire and Building Safety Checklist.

(1) The crowd manager shall be responsible for the completion of the Fire and Building Safety Checklist, as prescribed by the State Fire Marshal, on each day of operation prior to opening the facility to patrons.

(2) This checklist shall include, but not be limited to, the routine safety check of existing fire protection systems, fire extinguishers, signage, interior finish, exits, unobstructed egress, crowd control procedures and building occupancy limits.

(3) The original completed checklists shall be kept on the premises for at least one year and shall be subject to inspection by the AHJ.

20.1.5.6.4.1 Add:
20.1.5.6.4.1 Certificates. Certificates where required, shall comply with *Section 1.13.*

20.1.5.7 Delete.

20.1.5.8.2 Delete.

20.1.5.8.3*(4) Delete

20.1.5.8.3*(5) Add:

(5) Nightclubs, dance halls, discotheques or bars.

20.1.5.10 through **20.1.5.10.2.3** Delete.

20.1.5.11 through **20.1.5.12.2** Delete

20.1.5.13 Replace:
20.1.5.13 Integrated Fire Protection and Life Safety Systems. Integrated fire protection and life safety systems shall be tested in accordance with the *Building Code*.

20.2.2 through **20.2.2.5** Delete

20.2.1 Replace with the following:
20.2.1 Application. New and existing educational occupancies shall comply with *Section 20.2.*

20.2.2 through **20.2.2.5** Delete.

20.2.3.2 through **20.2.3.3.4** Delete.

20.2.4.2.1* Replace with the following:
20.2.4.2.1 Emergency egress drills shall be conducted in accordance with the applicable provisions of *Section 20.2.4.2.*

20.2.4.2.1.1 Add:
20.2.4.2.1.1 The responsible school official in charge of the school or the school system, shall formulate a plan for the protection and evacuation of all persons in the event of fire, and shall include alternate means of egress for all persons involved. Such plan shall be presented to and approved by the Head of the Fire Department.

20.2.4.2.1.2 Add:
20.2.4.2.1.2 The responsible school official in charge of the school or the school system shall see that each class instructor or supervisor shall receive proper instructions on the fire drill procedures specified for the room or area in which that person carries out their duties before they assume such duties.

20.2.4.2.1.3 Add:
20.2.4.2.1.3 Every student in all schools shall be advised of the fire drill procedure or shall take part in a fire drill within three days after entering such school.

20.2.4.2.1.4 Add:
20.2.4.2.1.4 The Head of the Fire Department, or person designated by him or her, shall visit each school at least four times each year for the purpose of conducting fire drills and questioning the teachers and supervisors. These drills shall be conducted without advance warning to the school personnel other than the person in charge of the school at the time.

20.2.4.2.1.5 Add:
20.2.4.2.1.5 Records. A record of all fire exit drills shall be kept on the premises and persons in charge of such occupancies shall file written reports at least twice a year with the Head of the Fire Department giving the following information:

(1) Time of drill;

1.05: continued

(2) Date of drill;
(3) Weather conditions when occupants were evacuated;
(4) Number of occupants evacuated;
(5) Total time for evacuation; and
(6) Other information relevant to the drill.

20.2.4.2.1.6 Add:
20.2.4.2.1.6 Evacuation. Fire exit drills shall include the complete evacuation of all persons from the building.

20.2.4.2.1.7 Add:
20.2.4.2.1.7 A drill of the multi-hazard evacuation plan, required by the provisions of St. 2000, c. 159, § 363, shall be permitted to be substituted for one of the fire drills required by *20.2.4.2.*

20.2.4.2.2 through **20.2.4.2.3** Delete.

20.2.4.3.2 through **20.2.4.3.3** Delete.

20.2.4.4.2 Replace with the following:
20.2.4.4.2 Upholstered and molded plastic seating furniture shall be tested in accordance with the provisions of *12.6*

20.2.4.4.3 Replace with the following:
20.2.4.4.3 Paper materials displayed in educational use occupancies shall be permitted on walls only in accordance with the following:
(1) In classrooms, paper materials displayed shall not exceed 20% of the total wall area.
(2) Paper materials displayed shall be attached directly to the walls and shall not be permitted to cover an egress door or be placed within five feet of an egress door, unless approved by the AHJ. When determining wall areas, the door and window openings shall be included unless:
(a) Paper materials are displayed in fully enclosed viewing cabinets with glass or polycarbonate viewing panels or covered with glass or polycarbonate sheet material in accordance with the *Building Code;*
(b) Flame retardant paper material is used for display.
(3) Paper material displays shall be permitted to cover up to 50% of the total wall area in classrooms that are fully sprinklered in accordance with Chapter 13.

20.2.4.4.4 Add:
20.2.4.4.4 Exit Access Passageways, Assembly Areas, and Corridors. Paper materials shall be permitted on walls only in accordance with the following:
(1) Paper materials displayed shall not exceed 10% of the surface area of any wall;
(2) Such paper material shall be positioned in such manner to avoid concentration of materials to reduce flame spread in the event of a fire;
(3) In no event shall any one grouping exceed a maximum horizontal measurement of 12 feet and a maximum vertical measurement of six feet. Groups of paper material shall be allowed as long as there is space between each group equal to the horizontal width of the largest adjacent group;
(4) Paper material used for display shall be attached directly to the walls and shall not be permitted to cover an egress door or be placed within five feet of an egress door, unless approved by the AHJ or unless:
(a) Paper materials are displayed in fully enclosed viewing cabinets with glass or polycarbonate viewing panels or covered with glass or polycarbonate sheet material in accordance with the *Building Code.*
(b) Flame retardant paper material is used for display.
(5) Paper material displays may cover up to 50% of the total wall area in classrooms that are fully sprinklered in accordance with Chapter 13.

20.2.4.4.5 Add:
20.2.4.4.5 Exits and Enclosed Exit Stairs. Displayed paper materials shall not be permitted in exits and enclosed exit stairs.

20.2.4.4.6 Add:
20.2.4.4.6 This Section shall not prohibit the posting of exit signage or evacuation plans in accordance with this *Code*.

1.05: continued

20.2.4.4.7 Add:
20.2.4.4.7 The provisions of *Section 20.2.4.4.3* or *20.2.4.4.4* shall not be applicable to any election materials required by law to be posted during any local, state or federal election.

20.2.4.5 Replace with the following:
20.2.4.5 Unvented Fuel-fired Heaters. Unvented fuel-fired heaters, other than gas space heaters in compliance with 248 CMR shall not be used in accordance with the following:

(1) **Prohibited Installations**. Unvented room heaters shall not be installed in bathrooms or bedrooms.

(2) **Listing and Installation**. Unvented room heaters shall be listed in accordance with ANSI Z21.11.2, *Gas-fired Room Heaters - Volume II, Unvented Room Heaters*, and shall be installed in accordance with the manufacturer's installation instructions.

20.2.4.5.1 Add:
20.2.4.5.1 Permit. Permits, where required, shall comply with *Section 1.12.*

20.3.1 Replace with the following:
20.3.1 Application. New and existing day-care occupancies shall comply with *Section 20.2.*

20.3.1.1 through **20.3.1.4** Delete.

20.3.1.5.1 through **20.3.1.5.3** Delete.

20.3.2 Delete.

20.3.2.1 Replace with the following:
20.3.2.1 Unvented Fuel-fired Heaters. Unvented fuel-fired heaters, other than gas space heaters in compliance with 248 CMR, shall not be used in accordance with the following:

(1) **Prohibited Installations**. Unvented room heaters shall not be installed in bathrooms or bedrooms.

(2) **Listing and Installation**. Unvented room heaters shall be listed in accordance with ANSI Z21.11.2, *Gas-fired Room Heaters - Volume II, Unvented Room Heaters*, and shall be installed in accordance with the manufacturer's installation instructions.

20.3.2.1.1 Add:
20.3.2.1.1 Permit. Permits, where required, shall comply with *Section 1.12.*

20.3.2.4 through **20.3.2.4.6** Delete.

20.3.3.1 Replace with the following:
20.3.3.1 General. Interior finish shall be in accordance with the *Building Code*.

20.3.3.2 through **20.3.4.2.3.6** Delete.

20.4.1 Replace with the following:
20.4.1 Application. New and existing health care occupancies shall comply with *Section 20.4*.

20.4.2.5.7.1* Replace with the following:
20.4.2.5.7.1* Soiled linen or trash collection receptacles shall not exceed 32 gal (121 L) in capacity and shall meet the following requirements:

(1) The average density of container capacity in a room or space shall not exceed 0.5 gal/ft² (20.4 L/m²).

(2) A capacity of 32 gal (121 L) shall not be exceeded within any 64 ft² (6 m²) area.

(3) Mobile soiled linen or trash collection receptacles with capacities greater than 32 gal (121 L) shall be located in a room protected as a hazardous area when not attended.

(4) Container size and density shall not be limited in hazardous areas.

20.4.2.5.7.2* Replace with the following:
20.4.2.5.7.2* Containers greater than 64 gal (242 L) used solely for recycling clean waste or for patient records awaiting destruction shall be permitted to be excluded from the limitations of 20.4.2.5.7.1 where all the following conditions are met:

(1) Each container is limited to a capacity of 96 gal (363 L) except as permitted by *20.4.2.5.8 (2), (3)* or *(4).*

1.05: continued

(2) Containers for combustibles shall be labeled and listed as meeting the requirements of FM Approval 6921, *Approval Standard for Containers for Combustible Waste;* however, such testing, listing, and labeling shall not be limited to FM Approvals.

(3) Containers with capacities greater than 96 gal (363 L) shall be located in a room protected as a hazardous area when not attended.

(4) Container size shall not be limited in hazardous areas.

20.4.2.6* Replace with the following:

20.4.2.6* Portable Space-Heating Devices. Portable space-heating devices shall be prohibited in all health care occupancies, unless both of the following criteria are met:

(1) Such devices are permitted to be used only in nonsleeping staff and employee areas.

(2) Such devices are listed and labeled for use as a freestanding, movable heater in accordance with UL 1278, Movable and Wall- or Ceiling-Hung Electric Room Heaters

(3) The heating elements of such devices do not exceed 212˚F (100˚C)

20.4.3.1 Replace with the following:

20.4.3.1 General. Interior finish shall be in accordance with the *Building Code*.

20.4.3.2 through **20.4.3.5.3** Delete.

20.5.1 Replace with the following:

20.5.1 Application. New and existing residential board and care occupancies shall comply with *Section 20.5.*

20.5.2.3.6 Replace with the following:

20.5.2.3.6 Residents who cannot meaningfully assist in their own evacuation or who have special health problems shall not be required to actively participate in the drill *Subsection 20.4.2* shall apply in such instances.

20.5.2.5.1 Replace with the following:

20.5.2.5.1 New draperies, curtains, and other similar loosely hanging furnishings and decorations in board and care facilities shall comply with *20.5.2.5.1.1* and *20.5.2.5.1.2*.

20.5.3 through **20.5.3.3.2** Delete.

20.6.1 Replace with the following:

20.6.1 Application. New and existing ambulatory health care centers shall comply with *Section 20.6.*

20.6.2.5.5.1 Replace with the following:

20.6.2.5.5.1 Soiled linen or trash collection receptacles shall not exceed 32 gal (121 L) in capacity, and the following also shall apply:

(1) The average density of container capacity in a room or space shall not exceed 0.5 gal/ft² (20.4 L/m²).

(2) A capacity of 32 gal (121 L) shall not be exceeded within any 64 ft² (6 m²) area.

(3) Mobile soiled linen or trash collection receptacles with capacities greater than 32 gal (121 L) shall be located in a room protected as a hazardous area when not attended.

(4) Container size and density shall not be limited in hazardous areas.

20.6.2.5.5.2* Replace with the following:

20.6.2.5.5.2* Containers greater than 64 gal (242 L) used solely for recycling clean waste or for patient records awaiting destruction shall be permitted to be excluded from the requirements of 20.6.2.5.5.1 where all the following conditions are met:

(1) Each container shall be limited to a maximum capacity of 96 gal (363 L), except as permitted by *20.6.2.5.5.2 (3)* or *(4)*

(2) Containers for combustibles shall be labeled and listed as meeting the requirements of FM Approval 6921, Approval Standard for Containers for Combustible Waste; however, such testing, listing, and labeling shall not be limited to FM Approvals.

(3) Containers with capacities greater than 96 gal (363 L) shall be located in a room protected as a hazardous area when not attended.

(4) Container size shall not be limited in hazardous areas

1.05: continued

20.6.2.6 Replace with the following:
20.6.2.6 Portable Space-Heating Devices. Portable space-heating devices shall be prohibited in all ambulatory health care occupancies, unless both of the following criteria are met:

(1) Such devices are used only in nonsleeping staff and employee areas.

(2) Such devices are listed and labeled for use as a freestanding, movable heater in accordance with UL 1278, Movable and Wall- or Ceiling-Hung Electric Room Heaters.

(3) The heating elements of such devices do not exceed 212˚F (100˚C)

20.6.3 through **20.6.3.4** Delete

20.7.1 Replace with the following:
20.7.1 Application. New and existing detention and correctional occupancies shall comply with *Section 20.7*

20.7.2.1.1 Replace with the following:
20.7.2.1.1 Detention and correctional facilities, or those portions of facilities having such occupancy, shall be provided with 24-hour staffing.

20.7.2.1.1.1 Add:
20.7.2.1.1.1 For Use Condition III, Use Condition IV, and Use Condition V. The arrangement shall be such that the staff involved starts the release of locks necessary for emergency evacuation or rescue and initiates other necessary emergency actions within two minutes of alarm.

20.7.2 through **20.7.2.1.2** Delete.

20.7.2.4.7 through **20.7.2.5** Delete.

20.7.3.1 Replace with the following:
20.7.3.1 General. Interior finish shall be in accordance with the *Building Code.*

20.7.3.2 through **20.7.3.6.2.3** Delete.

20.8.1 Replace with the following:
20.8.1 Application. New and existing hotels and dormitories shall comply with *Section 20.8*

20.8.2.6 Replace with the following:
20.8.2.6 Unvented Fuel-fired Heaters. Unvented fuel-fired heaters, other than gas space heaters in compliance with NFPA 58/ANSI Z223.2, *Liquefied Petroleum Gas Code* shall not be used in accordance with the following:

(1) Prohibited Installations. Unvented room heaters shall not be installed in bathrooms or bedrooms.

(2) Listing and Installation. Unvented room heaters shall be listed in accordance with ANSI Z21.11.2, Gas-Fired Room Heaters-Volume II, Unvented Room Heaters, and shall be installed in accordance with the manufacturer's installation instructions.

20.8.2.6.1 Add:
20.8.2.6.1 Permit. Permits, where required, shall comply with *Section 1.12.*

20.8.3. through **20.8.3.5** Delete.

20.9.2.1 Replace with the following:
20.9.2.1 Emergency Instructions for Residential Housing for the Elderly. Emergency instructions shall be provided annually by the housing complex administrator to each dwelling unit when containing 6 or more to indicate the location of alarms, egress paths, and actions to be taken, both in response to a fire in the dwelling unit and in response to the sounding of the alarm system.

20.9.2.1.1 Add:
20.9.2.1.1 The AHJ shall visit four times a year to:

(1) To conduct a fire drill; or

(2) Ascertain the evacuation process and procedure.

1.05: continued

20.9.3.1 Replace with the following:
20.9.3.1 General. Interior finish shall be in accordance with the *Building Code.*

20.9.3.2 through **20.9.3.5** Delete.

20.10.1 Replace with the following:
20.10.1 Application. New and existing lodging or rooming houses shall comply with *Section 20.10.*

20.10.2 Replace with the following:
20.10.2 Unvented Fuel-fired Heaters. Unvented fuel-fired heaters, other than gas space heaters in compliance with 248 CMR, shall not be used in accordance with the following:

(1) **Prohibited Installations**. Unvented room heaters shall not be installed in bathrooms or bedrooms.

(2) **Listing and Installation**. Unvented room heaters shall be listed in accordance with ANSI Z21.11.2, *Gas-fired Room Heaters - Volume II, Unvented Room Heaters*, and shall be installed in accordance with the manufacturer's installation instructions.

20.10.2.1 Add:
20.10.2.1 Permit. Permits, where required, shall comply with *Section 1.12.*

20.10.3.1 Replace with the following:
20.10.3.1 General. Interior finish shall be in accordance with the *Building Code*

20.10.3.2 through **20.10.3.3.2** Delete

20.11.1 Replace with the following:
20.11.1 Application. New and existing one- and two-family dwellings shall comply with *Section 20.*

20.11.2 Replace with the following:
20.11.2 Unvented Fuel-Fired Heaters. Unvented fuel-fired heaters, other than gas space heaters in compliance with 248 CMR, shall not be used. [101:14.5.2.2; 101: 15.5.2.2], shall not be used in accordance with the following:

(1) Prohibited Installations. Unvented room heaters shall not be installed in bathrooms or bedrooms.

(2) Listing and Installation. Unvented room heaters shall be listed in accordance with ANSI Z21.11.2, Gas-Fired Room Heaters-Volume II, Unvented Room Heaters, and shall be installed in accordance with the manufacturer's installation instructions.

20.10.2.1 Replace with the following:
20.10.2.1 Permit. Permits, where required, shall comply with *Section 1.12.*

20.11.3 through **20.11.4.2** Delete

20.11.4.5 through **20.11.5** Delete

20.12.1 Replace with the following:
20.12.1 Application. New and existing mercantile occupancies shall comply with *Section 20.12*

20.12.2.3 Delete

20.12.3.1 Replace with the following:
20.12.3.1 General. Interior finish shall be in accordance with the *Building Code*.

20.12.3.2 through **20.3.3.4** Delete

20.13.1 Replace with the following:
20.13.1 Application. New and existing business occupancies shall comply with *Section 20.13.*

20.13.2.3 Delete.

20.13.3.1 Replace with the following:
20.13.3.1 General. Interior finish shall be in accordance with the *Building Code*.

20.13.3.2 through **20.14.4.3.2** Delete.

1.05: continued

20.15.1 Application. New and existing storage occupancies shall comply with the appropriate codes or standards referenced in Chapter 2 and *Section 20.15.*

20.15.4 Add:
20.15.4 Storage, Arrangement, Protection and Quantities of Hazardous Commodities. The storage, arrangement, protection, and quantities of hazardous commodities shall be in accordance with the applicable provisions of the following:

(1) NFPA 13, Standard for the Installation of Sprinkler Systems
(2) NFPA 30, Flammable and Combustible Liquids Code
(3) NFPA 30B, Code for the Manufacture and Storage of Aerosol Products
(4) NFPA 400, Hazardous Materials Code, Chapter 14, for organic peroxide formulations
(5) NFPA 400, Hazardous Materials Code, Chapter 15, for oxidizer solids and liquids
(6) NFPA 400, Hazardous Materials Code, various chapters, depending on characteristics of a particular pesticide [101:36.4.5.3]
(7) NFPA 1124. Code for the Manufacture, Transportation, Storage, and Retail Sales of Fireworks and Pyrotechnic Articles, as modified by the *Building Code*.

20.15.4.1 through **20.15.4.3.2** Delete

20.15.6 through **20.15.6.2** Delete.

20.16 through **20.17.3** Delete.

20.18 Add:
20.18 Special Provisions for Certain Places of Worship Which Have Been Issued a Valid Certificate of Occupancy for Use as a Temporary Overnight Shelter Pursuant to the *Building Code*.

20.18.1 Add:
20.18.1 A place of worship which has been issued a valid certificate of occupancy for use as a temporary overnight shelter in accordance with the provisions of the *Building Code* shall not be deemed in violation of the provision of this *Code* as a result of such temporary use, as long as the facility meets the following conditions:

(1) The temporary overnight shelter is in possession of a valid certificate of occupancy for such temporary use which has been reviewed and approved by the Head of the Fire Department in accordance with the *Building Code*.
(2) The approved temporary overnight shelter is used, occupied, and operated in accordance with the terms and conditions specified in said certificate of occupancy and said certificate of occupancy is posted in a conspicuous location.
(3) In addition to the terms and conditions specified in the certificate of occupancy, the following fire safety requirements shall be applicable:
(a) The building which houses the approved temporary overnight shelter shall have no known existing or outstanding violations of this *Code* or M.G.L. c. 148;
(b) A copy of the fire safety and evacuation plan, approved in accordance with the provisions of the *Building Code* shall be kept on the premises and posted near the main entrance;
(c) The responsible person(s) identified in the application for the Temporary Certificate of Occupancy shall maintain the condition of the shelter in accordance with the layout contained in the approved fire safety and evacuation plan;
(d) The employees, volunteers, or attendants of the temporary overnight shelter shall be trained and drilled in the duties that they are to perform in case of fire, panic, or other emergency in accordance with the provisions of *Section 20.2.4.2.1.1*;
(e) No person shall be permitted to smoke within the temporary overnight shelter;
(f) Smoking may be allowed outside in an area approved by the Head of the Fire Department;
(g) A document shall be posted, in a location approved by the Head of the Fire Department, containing an accurate number of sheltered occupants on a nightly basis;
(h) Such document shall also contain the names of all workers and volunteers who are overseeing or assisting in the temporary overnight shelter usage on a nightly basis. In the event of an evacuation, a copy of the document shall be in the possession of the person in charge at a designated meeting point;

1.05: continued

(i) The temporary overnight shelter shall maintain a working landline phone that must be accessible to initiate a call for assistance in the event of an emergency. A cell phone is not acceptable for compliance with this requirement;
(j) The use of battery operated smoke alarms and carbon monoxide detectors, as outlined in Chapter 13. All temporary overnight shelters shall be equipped with monitored and interconnected smoke and carbon monoxide detection system as described in the *Building Code;*
(k) Carbon monoxide alarms shall be installed in accordance with Chapter 13. For purpose of compliance with Chapter 13, the dwelling unit of an approved temporary shelter shall be considered that portion of the building used for sleeping purposes;
(l) An approved temporary overnight shelter shall feature working and approved smoke detectors in accordance with the requirements of the *Building Code*, if applicable. If smoke detectors are not currently required under the *Building Code*, the shelter shall, at a minimum, feature approved working smoke detectors in accordance with the provisions of Chapter 13.
(1) *Approved Smoke Detectors*. Such approved smoke detectors shall be installed in any room or area used for sleeping purposes and in any room or area directly adjacent to said sleeping area;
(m) The Head of the Fire Department shall be notified, in writing, at least 48 hours prior to the actual activation of an approved temporary overnight shelter and shall be notified, in writing, upon the termination of such activation.

Chapter 21 Airports and Heliports.

Chapter 21 Delete in its entirety.

Chapter 22 Automobile Wrecking Yards.

22.8 Replace with the following:
22.8 Burning Operations. Burning operations shall not be allowed.

Sections 22.9.3 - 22.9.5.2 Delete.

Chapter 23 Cleanrooms.

23.2.1 Add:
23.2.1 Maximum Quantities of Hazardous Chemicals. The maximum quantities of hazardous chemicals for a single fabrication area or at a workstation are limited by the *Building Code*. A permit shall not be issued until such time that the Building Official has confirmed the facility is classified and constructed as the appropriate H-use group or is exempt.

Chapter 24 – Drycleaning
No amendments

Chapter 25 Grandstands and Bleachers, Folding and Telescopic Seating, Tents, and Membrane Structures.

Chapter 25 Delete in its entirety.

Chapter 26 Laboratories Using Chemicals.

1.05: continued

26.1.5 Add:
26.1.5 (2) The special fire protection required when handling radioactive materials (*See* NFPA 801).

26.1.1.1 Add:
26.1.1.1 Amendments to NFPA 45 include:

1. The term "laboratory unit" shall also mean "laboratory suite" in coordination with 780 CMR.
2. Delete Section 10.1.6.9

26.1.6.1.1 Add:
26.1.6.1.1 Documentation In addition to all other documents required by 780 CMR and 527 CMR, the building management company, or a designated representative, must submit the following documents with the permit documents. These shall be reviewed with the Building and Fire Official and updated accordingly to receive a Certificate of Occupancy.

1. Emergency Action Plan
2. Hazardous Materials Management Plan
3. Hazardous Materials Inventory Statement

It is it responsibility of the building management company, or designated representative, to keep these documents current.

26.1.6.1.1 Add:
26.1.6.1.1. Documentation shall be maintained in accordance with 527 CMR 1.00 and reviewed annually, or at the discretion of the Fire Official.

26.1.6.1.2 Add:
26.1.6.1.2 Information required. A report shall be submitted to the AHJ identifying the maximum expected quantities of hazardous materials to be stored, used in a closed system and used in an open system, and subdivided to separately address hazardous material classification categories. The methods of protection from such hazards, including but not limited to control areas, laboratory suites, fire protection systems and Group H occupancies shall be indicated in the report and on the construction documents. The opinion and report shall be prepared by a qualified person, firm or corporation approved by the AHJ and provided without charge to the enforcing agency. For buildings and structures with control areas, laboratory suites, or Group H occupancies, separate floor plans shall be submitted identifying the locations of anticipated contents and processes so as to reflect the nature of each occupied portion of every building and structure.

1.05: continued

26.3 Add:
26.3 Penetrations. Penetrations through fire-rated floor/ceiling, floor, and wall assemblies shall be protected in accordance with the *Building Code*.

Chapter 27 Manufactured Home and Recreational Vehicle Sites.

Chapter 27 Delete in its entirety.

Chapter 28 Marinas, Boatyards, Marine Terminals, Piers, and Wharves.

28.1.1.1 Replace with the following:
28.1.1.1 *Section 28.1* also applies to support facilities and structures used for construction, repair, storage, hauling and launching, or fueling of vessels, and independent storage and or service areas.

28.1.1.3 Replace with the following:
28.1.1.3 *Section 28.1* shall not apply to a private, noncommercial docking facility constructed or occupied for the use of the owners or residents of the associated single-family dwelling.

28.1.2.1.2 Replace with the following:
28.1.2.1.2 Visibility and Identification. All portable fire extinguishers shall be clearly visible and installed in compliance with NFPA 10.

28.1.2.2.1.2 Delete

28.1.2.2.1.3 Replace with the following:
28.1.2.2.1.3 Existing facilities shall not be required to be protected by an automatic fire-extinguishing system, unless required by the building code or other code or standard.

28.1.2.2.2.2 Replace with the following:
28.1.2.2.2.2 Existing facilities shall not be required to be protected by an automatic fire-extinguishing system unless required by the *Building Code* or other appliable code or standard.

28.1.2.2.3.1 Replace with the following:
28.1.2.2.3.1 Combustible piers and substructures in excess of 25 ft (7.62 m) in width or in excess of 5000 ft2 (465 m^2) in area, or within 30 ft (9.14 m) of other structures required to be so protected, shall be protected in accordance with Section 4.3 of NFPA 307 unless otherwise permitted by *28.1.2.2.3.2, 28.1.2.2.3.3,* or *28.1.2.2.3.4.*

28.1.2.2.3.4 Replace with the following:
28.1.2.2.3.4*Existing facilities shall not be required to be protected by an automatic fire-extinguishing system unless required by the building code or other applicable code or standard.

28.1.2.4.1 Replace with the following:
28.1.2.4.1 Fire protection shall be provided as described in 28.1.2.4.1.2

28.12.4.1.1 Delete

28.1.2.4.2 Delete

28.1.3.1.3 Replace with the following:
28.1.3.1.3 Electrical lighting shall be provided and meet the requirements of NFPA 70 to ensure adequate illumination of all exterior areas, piers, and floats.

28.1.3.2.1.2 Delete

1.05: continued

28.1.3.2.1.3 Replace with the following:
28.1.3.2.1.3 The use of blow torches or other hot works devices shall comply with Chapter 41.

28.1.3.2.1.4 Replace with the following:
28.1.3.2.1.4 The use of flammable solvents for cleaning purposes, paint removal, or other similar activities shall only be allowed in well-ventilated areas in accordance with the manufacturer's instructions.

28.1.3.2.1.6 Replace with the following:
28.1.3.2.1.6 No unattended electrical equipment shall be in use aboard boats unless being used in accordance with manufacturer's operational guidelines.

28.1.3.2.1.8.1 Add:
28.1.3.2.1.8.1 Exceptions: (1) Yards with a preapproved plan accepted by the AHJ.

28.1.3.2.1.8.2 Replace with the following:
28.1.3.2.1.8.2 Access to buildings in which boats are stored shall comply with Chapter 18 of this Code.

28.1.3.2.1.8.3 Replace with the following:
28.1.3.2.1.8.3 Class I standpipe systems shall be permitted to be used to meet the requirement in *28.1.3.2.1.8.1* or *28.1.3.2.1.8.2*. [**303**:7.2.1.8.3]

28.1.3.2.2 Replace with the following:
28.1.3.2.2 **Indoor Storage and Repair.**

28.1.3.2.3.4 and **28.1.3.2.3.5** Delete

28.1.3.2.4 Replace with the following:
28.1.3.2.4 Battery On Board for Long Term Storage. Where due to size and weight the removal of batteries for storage or charging is impractical, batteries shall be permitted to remain onboard provided the following conditions are met:

(1) The battery compartment is arranged to provide adequate ventilation.
(2) A listed battery charger is used to provide a suitable charge.
(3) The power connection to the charger consists of a three-wire cord of not less than No. 14 AWG conductors connected to a source of 110 V to 125 V single-phase current, with a control switch and approved circuit protection device designed to trip at not more than 125 percent of the rated amperage of the charger.
(4) There is no connection on the load side of the charger to any other device except the battery, and the boat battery switch is turned off.
(5) The battery is properly connected to the charger, and the grounding conductor effectively grounds the charger enclosure.
(6) Boats are stored at ground level.

28.1.4.1.1 Replace with the following:
28.1.4.1.1 Management shall have an inspection made of each boat received for major repair or storage as soon as practicable after arrival of the boat and before commencement of any work aboard. [**303**:8.1.1]

28.1.4.1.3 Replace with the following:
28.1.4.1.3 Management shall, as a condition to accepting a boat received for major repair or storage, require the owner to correct any inadequacies found in *28.1.4.1.2* or to authorize management to do so. [**303**:8.1.3]

28.1.4.2.7 Replace with the following:
28.1.4.2.7 The information on fueling procedures shall be in accordance with *42.9.10.8*

28.2.1 Replace with the following:
28.2.1 *Section 28.2* shall apply to marine terminals as defined herein. Special use piers and wharf structures that are not marine terminals, such as public assembly, residential, business, or recreational occupancies that differ in design and construction from cargo handling piers, require special consideration. NFPA 307 shall be applicable for the construction and fire protection of piers and wharves and such structures shall comply with NFPA 307 and *Section 28.2* unless otherwise regulated by the *Building Code* or other applicable code or standard.

1.05: continued

28.2.1.1 Replace with the following:
28.2.1.1 Fueling operations at marine terminals, piers, and wharves shall comply with *28.1.4.2.7.*

Chapter 29 Parking Garages.

29.1.1 Replace with the following:
29.1.1 The protection of new and existing parking garages, as well as the control of hazards in open parking structures, enclosed parking structures, and basement and underground parking structures shall comply with this chapter and the *Building Code*.

29.1.1.1 Add:
29.1.1.1 Parking garages that have elevator equipment used as motor vehicle parking devices shall also comply with the *Elevator Code.*

29.1.1.2 Add
29.1.1.2 Barriers, textile, scrim or other covering added to an exterior wall of an open parking garage shall comply with the *Building Code*.

29.1.2 Delete

Chapter 30 Motor Fuel Dispensing Facilities and Repair Garages.

30.1.1.4 Add:
30.1.1.4 Underground Storage Tanks. Associated Piping and Other Environmental Requirements, *see* 310 CMR: *Department of Environmental Protection*.

30.1.5.1* Replace with the following:
30.1.5.1 For an unattended self-serve, motor fuel dispensing facility, additional fire protection shall be provided where required by the State Fire Marshal.

30.1.5.3 Add:
30.1.5.3 The fire protection system shall be installed in accordance with the requirements of the State Fire Marshal.

30.2.5 Replace with the following:
30.2.5 Fixed Fire Protection. If in the opinion of the AHJ, it is deemed necessary, automatic sprinkler protection shall be installed in accordance with NFPA, when any vehicle containing or using gasoline or any other petroleum product for fuel or power is kept in a garage and are loaded with merchandise, which is of such a flammable nature as to be readily ignitable.

30.2.6 Replace with the following:
30.2.6 Gas Detection System. Repair garages used for repair of vehicle engine fuel systems fueled by nonodorized gases, such as hydrogen and non-odorized LNG/CNG, shall be provided with an approved flammable gas detection system. Gas detection systems in repair garages for hydrogen vehicles shall be in accordance with NFPA 2.[**30A**:7.4.6]

30.2.6.1.2 Replace with the following:
30.2.6.1.2 The gas detection system shall be designed to activate when the level of flammable gas exceeds 25 percent of the lower flammable limit (LFL). Gas detection shall also be provided in lubrication or chassis repair pits of garages used for repairing non-odorized LNG/CNG fueled vehicles [**30A**:7.4.6.1.2]

30.2.8.2.2 Replace with the following:
30.2.8.2.2 Heat-producing appliances shall be of an approved type. Solid fuel stoves, improvised furnaces, salamanders, and space heaters shall not be permitted in areas of repair garages used for repairing or servicing of vehicles or in a fuel dispensing area. [**30A**:7.6.2.2]

1.05: continued

30.2.8.2.2 Exception 1 Add:
Exception 1: Unit heaters, when installed in accordance with Chapter 7 of NFPA 30A, need not meet this requirement.

30.2.8.6* Add: **30.2.8.6*** Where major repairs are conducted on CNG-fueled vehicles or LNG lighter-than-air-fueled vehicles, open flame heating equipment with exposed surface shaving a temperature in excess of 750°F (399°C) shall not be permitted in areas subject to ignitable concentrations of gas. [**30A**: 7.4.4.1]

30.2.9 Add
30.2.9 Pits, Below Grade Work Areas, and Subfloor Work Areas.

30.2.9.1 Add:
30.2.9.1 Pits, below grade work areas, and subfloor work areas used for lubrication, inspection, and minor automotive maintenance work shall comply with the provisions of this chapter, in addition to other applicable requirements of NFPA 30A. [**30A**: 7.4.4.1]

30.2.9.2 Add:
30.2.9.2 Walls, floors, and structural supports shall be constructed of masonry, concrete, steel, or other approved noncombustible materials. [**30A**: 7.4.4.2]

30.2.9.3 Add:
30.2.9.3 In pits, belowgrade work areas, and subfloor work areas, the required number, location, and construction of means of egress shall meet the requirements for special purpose industrial occupancies in Chapter 40 of NFPA *101*. [**30A**: 7.4.4.3]

30.2.9.4 Add:
30.2.9.4 Pits, below grade work areas, and subfloor work areas shall be provided with exhaust ventilation at a rate of not less than 1 ft3/min/ft2 (0.3 m3/min/m2) of floor area at all times that the building is occupied or when vehicles are parked in or over these areas. Exhaust air shall be taken from a point within 12 in. (0.3 m) of the floor. [**30A**: 7.4.4.4]

Chapter 31 Forest Products and Biomass Feedstocks

31.1 Replace with the following:
31.1 General. ***The outside storage of forest product materials within the purpose and scope of this Chapter shall be in accordance with the provisions of this Chapter.

31.3.2.1.4 Replace with the following:
31.3.2.1.4 Where the storage of materials regulated by this Chapter are permitted to accumulate in a quantity or location that may constitute an undue public safety hazard, adequate fencing of not less than six (6) ft. (1.8388 m) in height with an approved locked gate located as necessary to allow the entry of fire department apparatus, shall be provided. The fencing shall encompass the material or property.

31.3.3.3.4 Replace with the following:
31.3.3.3.4 Where stacks are supported clear of the ground, 6 in. (150 mm) of clearance shall be provided for cleaning operations under the stacks or, as otherwise approved by the AHJ.

31.3.3.4.1.1 Replace with the following:
31.3.3.4.1.1 Open yard stacking shall be located with not less than 15 ft. (4.6 m) clear space to buildings or, as otherwise approved by the AHJ.

31.3.3.4.1.2 Replace with the following:
31.3.3.4.1.2 Boundary posts with signs designating stacking limits shall be provided to designate the clear space to unsprinklered buildings in which hazardous manufacturing or other operations take place or, as otherwise approved by the AHJ.

1.05: continued

31.3.6.4.3* Replace with the following:
31.3.6.4.3 Property line clearance of not less than 25 ft. (7.62 m) at the base of the pile shall be provided.

Chapter 32 Motion Picture and Television Production Studio Soundstages and Approved Production Facilities.

32.1.1 Add:
32.1.1 Terms. As used in Chapter 32, the enclosed terms shall have the following meaning assigned to them.

32.1.1(1) Add:
(1) **On-site Personnel**. Cast, crew, vendors, contractors, and any other personnel servicing the production.

32.2.2 Replace with the following:
32.2.2 Welding, cutting, and other hot work
(1) Storage and use of flammable or combustible liquids or gases
(2) Use of fog and haze
(3) Use of the site as a production location

32.2.2 Add:
32.2.2(10) Use of liquified petroleum gases

32.3.1 Replace with the following:
32.3.1 Where required by the AHJ, a fire watch, or standby fire personnel shall be provided for sound stages and approved production facilities where pyrotechnic special effects are used.

32.6.2 Replace with the following:
32.6.2 Chapter 65 shall be used to regulate any pyrotechnic use.

32.9.3.1 Replace with the following:
32.9.3.1 Means of egress shall be in accordance with the *Building Code* unless otherwise modified by **32.9.3.2** through **32.9.3.6.**

32.9.4.1.2 Replace with the following:
32.9.4.1.2 A new soundstage or new approved production facility shall be equipped with an approved, supervised automatic sprinkler system in accordance with the *Building Code*.

32.10.1.1 Replace with the following:
32.10.1.1 Electrical power connections made to the site electrical service shall be in accordance with the *Massachusetts Electrical Code*.

32.10.1.2 and **32.10.1.3** Delete

Chapter 33 Outside Storage of Tires.

Chapter 33 Delete in its entirety.

Chapter 34 General Storage.

34.3.10.3 Replace with the following:
34.3.10.3 Lightweight Class. Lightweight class shall be defined so as to include all papers having a basis weight [weight per 1000 ft^2 (93 m^2)] of less than 10 lb (4.5 kg).

34.5.2.2* Replace with the following:
34.5.2.2* Storage in buildings and structures shall not be within two feet of a ceiling, or roof deck or otherwise required by NFPA 13.

1.05: continued

34.11.4.1* Replace with the following:
34.11.4.1* The outside storage of pallets on the same site as a manufacturing or recycling facility shall comply with *34.11.4.*

Chapter 35 Animal Housing Facilities

Chapter 35 Delete in its entirety.

Chapter 36 Telecommunication Facilities and Information Technology Equipment.

Chapter 36 Delete in its entirety.

Chapter 37 Fixed Guideway Transit and Passenger Rail Systems.

Chapter 37 Delete. in its entirety.

Chapter 38 Cannabis Growing, Processing or Extraction Facilities

38.5.1 Replace with the following:
38.5.1 Ventilation for Light Fixtures. Light fixture ductwork shall be installed in accordance with the manufacturer and NFPA 90A and the *Mechanical Code*.

38.5.4.1 Replace with the following:
38.5.4.1 Interior finish, including the use of any plastic, mylar, or other thin film sheeting to enclose rooms or cover any walls or ceilings shall be in accordance with *Sections 12.5,12.6* and the *Building Code*.

Chapter 39 Wastewater Treatment and Collection Facilities

Chapter 39 Delete in its entirety.

Chapter 40 Dust Explosion and Fire Prevention

No amendments

Chapter 41 Welding, Cutting, and Other Hot Work.

41.1.1.1 through **41.1.1.1**(8) Add:
41.1.1.1 Terms. As used in Chapter 41, the enclosed terms shall have the following meaning assigned to them.

(1) **Hot Work**. Work involving, burning, welding, or a similar operation that is capable of initiating fires or explosions.

(2) **Hot Work Operator**. A qualified person and if required, shall be certified pursuant to the provisions of this chapter and standards referenced in this chapter.

(3) **Qualified Person**. A person who has successfully completed the training criteria pursuant to *Section 41.7.*

(4) **Management**. For the purpose of hot work, all persons, including owners, contractors, educators, and so on, who are responsible for hot work operations.

1.05: continued

(5) **Permissible Areas**.

(a) **Designated Area**. A specific location designed and approved for hot work operations that is maintained fire-safe, such as a maintenance shop or a detached outside location, that is of noncombustible or fire-resistive construction, essentially free of combustible and flammable contents, and suitably segregated from adjacent areas.

(b) **Permit-required Area**. Any location other than a designated area that is approved for hot work and is made fire-safe by removing or protecting combustibles from ignition sources.

(6) **Permit**. For the purposes of hot work, a document issued, by the AHJ, to a qualified person as defined in *Section 41.1.1.1(3)* for the purpose of authorizing that individual to carry out the activity of hot work.

(7) **Permit Authorizing Individual (PAI)**. An individual designated by management to authorize hot work.

(8) **Welding and Allied Processes**. Processes such as arc welding, oxy-fuel gas welding, open-flame soldering, brazing, thermal spraying, oxygen cutting, and are cutting.

41.1.5.3 Add:
41.1.5.3 Hot Work Permit. Hot work permits, where required shall comply with *Section 1.12* and Chapter 41.

41.2.1.8 through **41.2.1.10** Add:
41.2.1.8 Management shall ensure that the contractor has evidence of financial responsibility, which can take the form of an insurance certificate or other document attesting to coverage or responsibility, a copy and an education certification of completion shall be submitted to the AHJ when requested.

41.2.1.9 Management shall assure that welders and their supervisors are trained in the safe operation of their equipment, the safe use of the process, and emergency procedures and maintain education certificates of completion on file and if requested submit to the AHJ.

41.2.1.10 Management or designated agent shall select contractors to perform welding who provide trained and qualified personnel, and who have an awareness of the risks involved. [ANSI Z49, 2012]

41.2.2 Replace with the following:
41.2.2 Permit Authorizing Individual (PAI). In conjunction with management and in consultation with the AHJ if required, the PAI shall be responsible for the safe operation of hot work activities.

41.2.3(4) Add:

(4) The hot work operator shall be permitted to be the PAI, however, in those cases, the hot works operator shall not be permitted to issue a hot work permit for the work to be performed by himself, *see* the provisions of *Section 41.4(1) or 41.4(2).*

41.2.4.8 through **41.2.4.8.1** Add:

41.2.4.8 A fire watch, when required, shall be maintained for at least 1 hour after completion of hot work operations in order to detect and extinguish smoldering fires. The duration of the fire watch shall be permitted to be extended if the PAI or the AHJ determines the fire hazards warrant the extension.

41.2.4.8.1 More than one fire watch shall be required if determined by the AHJ that combustible materials could be ignited by the hot work operation which cannot be directly observed by the initial fire watch.

41.2.5.1 Add:
41.2.5.1 Certificates. A hot work training certificate shall be carried on person at all times, and shall be produced upon request.

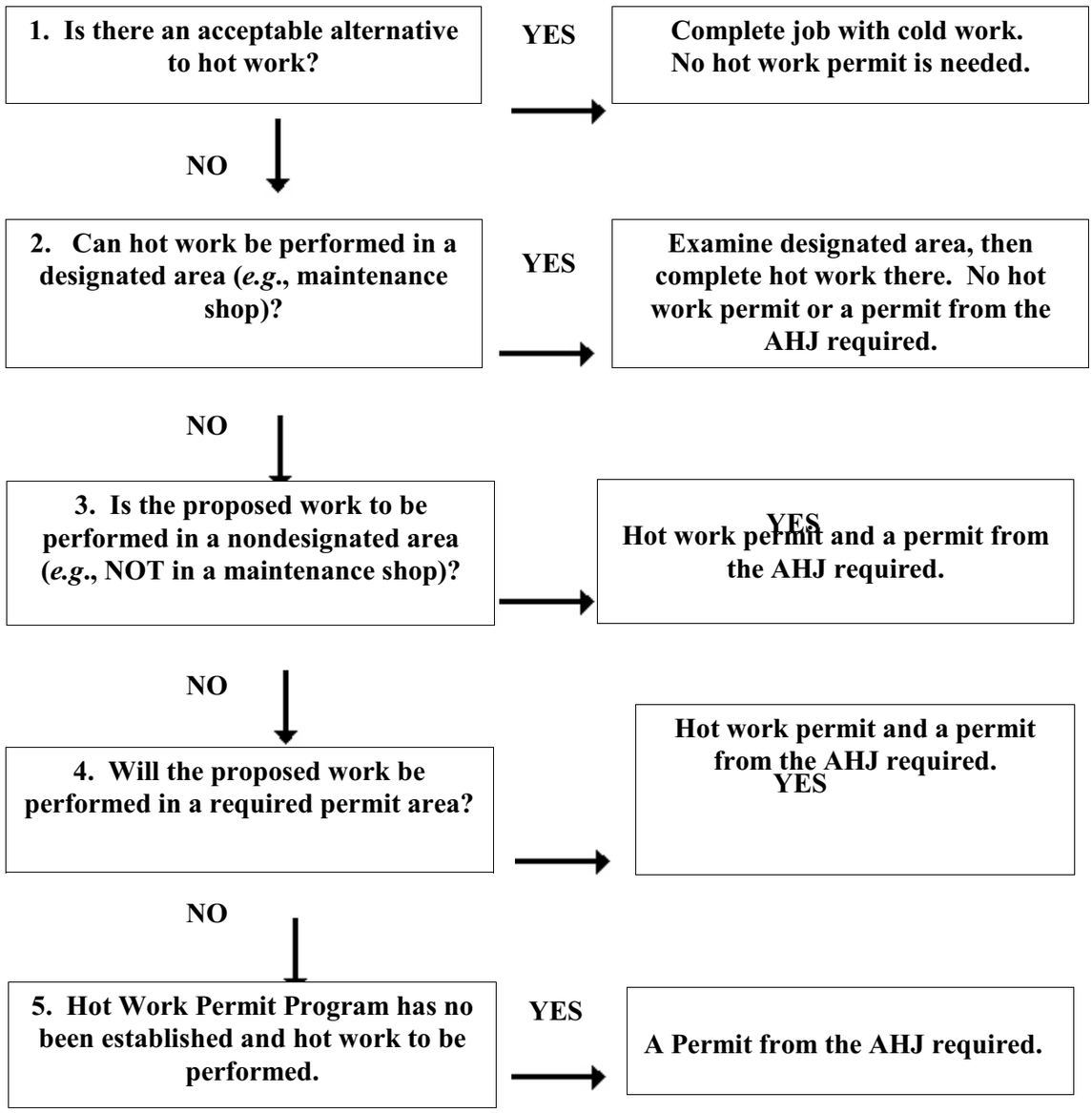
41.3.5.1 Replace with the following:
41.3.5.1 Before a hot work permit is issued the following conditions in *41.3.5.1.1* through *41.3.5.1.15* shall be verified by the PAI, and with the AHJ if required.

41.3.5.1.1 Replace with the following:

1.05: continued

41.3.5.1.1 The decision tree in Figure 41.3.4.1.1 shall be permitted to be used to determine if a hot work permit is necessary.

Figure 41.3.4.1.1 Hot Work Permit Decision Tree



41.3.5.1.1.1 Add:
41.3.5.1.1.1 A Hot Work Permit shall be used when hot work is to be carried out in a Permitted Required Area.

1.05: continued

Figure 41.3.5.1.1.1 Sample Hot Work Permit.

HOT WORK PERMIT

Seek an alternative/safer method if possible!

Before initiating hot work, ensure precautions are in place as required by NFPA 51B and ANSI Z49.1.
Make sure an appropriate fire extinguisher is readily available.

This Hot Work Permit is required for any operation involving open flame or producing heat and/or sparks. This work includes, but is not limited to, welding, brazing, cutting, grinding, soldering, thawing pipe, torch-applied roofing, or chemical welding.

Date	Hot work by ❑ employee ❑ contractor
Location/Building and floor _____	Name (print) and signature of person doing hot work
Work to be done _____	I verify that the above location has been examined, the precautions marked on the checklist below have been taken, and permission is granted for this work.
Time started _____ Time completed _____	Name (print) and signature of permit-authorizing individual (PAI)
THIS PERMIT IS GOOD FOR ONE DAY ONLY	

❑ Available sprinklers, hose streams, and extinguishers are in service and operable.

❑ Hot work equipment is in good working condition in accordance with manufacturer's specifications.

❑ Special permission obtained to conduct hot work on metal vessels or piping lined with rubber or plastic.

Requirements within 35 ft (11 m) of hot work

❑ Flammable liquid, dust, lint, and oily deposits removed.
❑ Explosive atmosphere in area eliminated.
❑ Floors swept clean and trash removed.
❑ Combustible floors wet down or covered with damp sand or fire-resistive/noncombustible materials or equivalent.
❑ Personnel protected from electrical shock when floors are wet.
❑ Other combustible storage material removed or covered with listed or approved materials (welding pads, blankets, or curtains; fire-resistive tarpaulins), metal shields, or noncombustible materials.
❑ All wall and floor openings covered.
❑ Ducts and conveyors that might carry sparks to distant combustible material covered, protected, or shut down.

Requirements for hot work on walls, ceilings, or roofs

❑ Construction is noncombustible and without combustible coverings or insulation.
❑ Combustible material on other side of walls, ceilings, or roofs is moved away.

Requirements for hot work on enclosed equipment

❑ Enclosed equipment is cleaned of all combustibles.
❑ Containers are purged of flammable liquid/vapor.
❑ Pressurized vessels, piping, and equipment removed from service, isolated, and vented.

Requirements for hot work fire watch and fire monitoring

❑ Fire watch is provided during and for a minimum of 30 min. after hot work, including any break activity.
❑ Fire watch is provided with suitable extinguishers and, where practical, a charged small hose.
❑ Fire watch is trained in use of equipment and in sounding alarm.
❑ Fire watch can be required in adjoining areas, above and below.
❑ Yes ❑ No Per the PAI/fire watch, monitoring of hot work area has been extended beyond the 30 min.

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1.05: continued

41.3.5.1.1.2 Add:
41.3.5.1.1.2 The hot work equipment to be used shall be in satisfactory operating condition and in good repair.

41.3.5.3 Replace with the following:
41.3.5.3 The PAI in consultation with the AHJ, if required shall determine the length of the period for which the hot work permit is valid.

41.3.6.1 Replace with the following:
41.3.6.1 A fire watch shall be required by the PAI in consultation with the AHJ, when hot work is performed in a location where other than a minor fire might develop or where the following conditions exist:

(1)* Combustible materials in building construction or contents closer than 35 ft (11 m) to the hot work operation

(2) Combustible materials more than 35 ft (11 m) away from the hot work operation but easily ignited by sparks

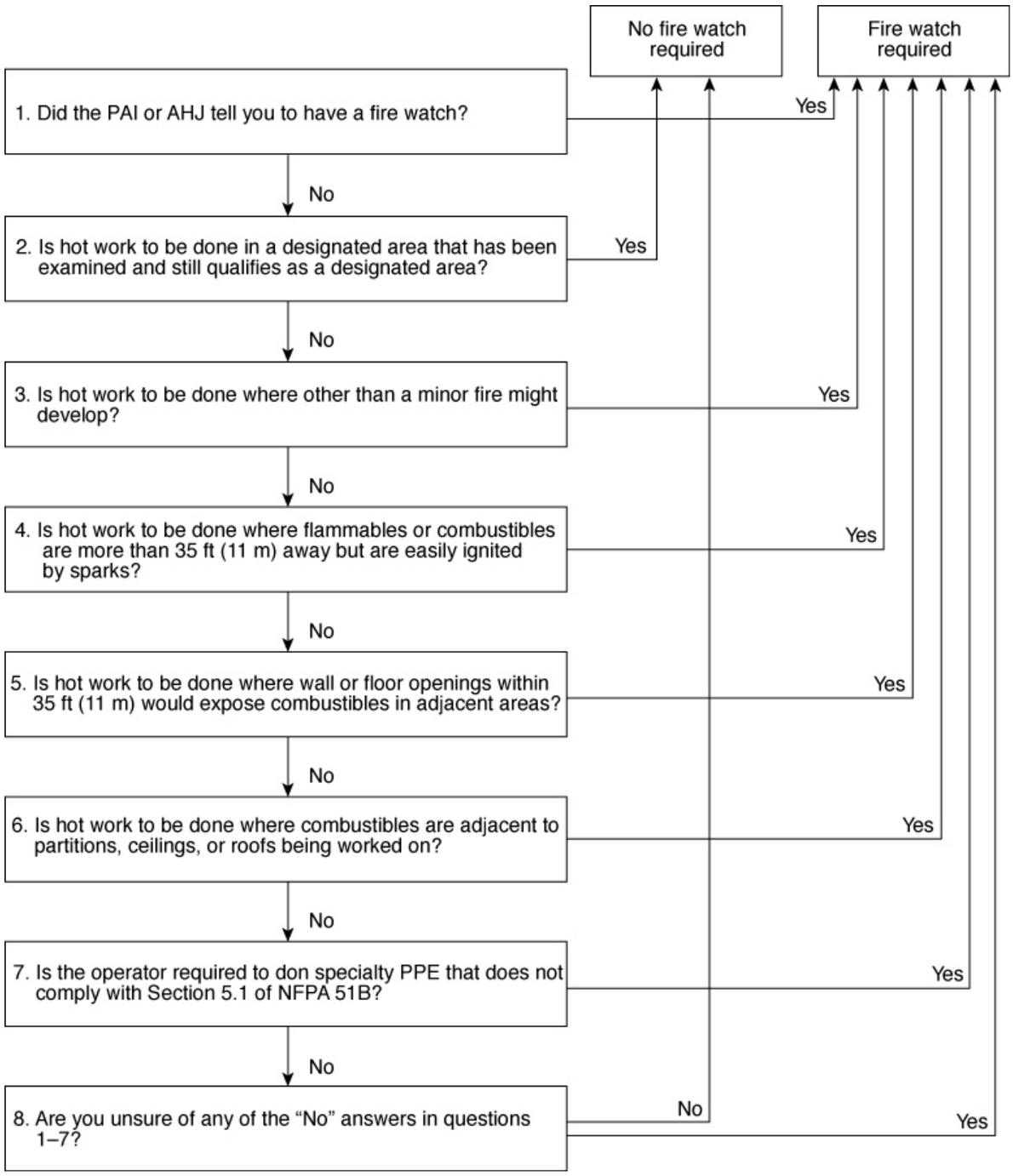
(3) Wall or floor openings within a 35 ft (11 m) radius that expose combustible materials in adjacent areas, including concealed spaces in walls or floors

(4) Combustible materials adjacent to the opposite side of partitions, walls, ceilings, or roofs and likely to be ignited

41.3.6.1.3 Add:
41.3.6.1.3 Figure 41.3.6.1.3 entitled Fire Watch Decision Tree shall be permitted to be used by the PAI and AHJ to determine if a fire watch is necessary.

1.05: continued

Figure 41.3.6.1.3 Fire Watch Decision Tree



1.05: continued

41.4 Replace with the following:
41.4 Sole Proprietors and Individual Operators.

41.4.1 Replace with the following:
41.4.1 All hot work operations shall require a permit from the Head of the Fire Department unless specifically otherwise allowed by *41.4.1(1)* through *(3)*:

(1) **Hot Work Operations Conducted by Persons Licensed by Other Jurisdictions**. Pursuant to *Section 1.1.2*, a hot work permit shall not be required from the fire department when the hot work activity is performed by a person, or under the direct supervision of a person, licensed and permitted pursuant to a specialized code as defined in M.G.L. c. 143, § 96. Any licensed person performing hot work must have obtained training for hot work safety either:

(a) by obtaining training approved by the authority issuing them a license to perform specialized code work; or

(b) by meeting the requirements of *Section 41.7* of Chapter 41.

(2) **Hot Work Operations Conducted by Persons on Their Own Equipment on Their Own Premises**. A permit from the Head of the Fire Department for hot works shall not be required by individuals who conduct hot work operations on their own equipment on their own premises. Any person performing such hot work shall be trained as provided by *41.7* of Chapter 41.

(3) **Homeowners and Hobbyists**. Homeowners and hobbyists are exempt from the permit requirements as provided by *1.12*, and the training requirements required in *41.7* of Chapter 41. *See* exhibitions 41.5.

41.4.2 Replace with the following:
41.4.2 Assignment of PAI and Fire Watch. Sole proprietors and individual operators as provided in Sections 41.4(1) and (2) shall be permitted to serve as PAI, fire watch and operator.

41.4.3 Add:
41.4.3 Written Hot Work Permit. A checklist shall be permitted to serve as the written hot work permit.

41.5.4.4 Add:
41.5.4.4 Inspection by the AHJ.

41.5.4.4.1 through **41.5.4.4.2** Add:
41.5.4.4.1 The AHJ shall be permitted to require annual inspection for designated areas.

41.5.4.4.2 The AHJ shall be permitted to inspect a premise for compliance before any hot work is carried out.

41.7 Add:
41.7 Qualifications. An individual to be qualified to be a PAI, perform fire watches, perform, supervise or delegate any activities of hot work as defined in this chapter shall first provide documentation that he or she has successfully completed training approved by the State Fire Marshal in the following areas:

(1) 527 CMR 1.00: *Massachusetts Comprehensive Fire Safety Code*, Chapter 41: *Hot Work Operations*;

(2) 29 CFR 1910.252 Subpart Q: *Welding, Cutting and Brazing*;

(3) NFPA 51B: *Standard for Fire Prevention During Welding, Cutting, and Other Hot Work;*

(4) NFPA 241: *Standard for Safeguarding Construction, Alteration, and Demolition Operations;*

(5) ANSI Z49: *Safety in Welding, Cutting, and Allied Processes*.

41.7.1 Successfully completed as used here means training successfully completed on the currently adopted standard as provided in *41.7(1)* through (5).

41.7.2 A certificate of completion shall be issued to the individual with the date of completion on the certificate and a providers/instructors signature acknowledging such individual attended and completed the training as provided in *41.7(1)* through (5).

1.05: continued

Chapter 42 Refueling.

42.1 Replace with the following:
42.1 General. Chapter 42 shall apply to refueling of automotive vehicles and marine vessels. It shall not be applied to the transportation of fuel gases over the highways in interstate commerce or vehicles complying with Federal Motor Vehicle Safety Standards.

42.1.1 Replace with the following:
42.1.1 Terms. As used in Chapter 42, the enclosed terms shall have the following meaning assigned to them.

42.1.1.1 Add:
42.1.1.1 Point of Delivery. The outlet of the service meter assembly or the outlet of the service regulator or the crash valve or service shut off valve where no meter is provided.

42.1.3 Certificates. Certificates, where required, shall comply with *Section 1.12.8.51* and *Section 1.13*, as applicable.

42.2.2.2 Add:
42.2.2.2 This Chapter shall apply to the transportation of Class II and Class IIIA combustible liquids, by Massachusetts registered motor vehicles in cargo tanks, portable tanks and transfer tanks by transport vehicles and flammable liquids in non-bulk packagings.

42.2.2.3 Add:
42.2.2.3 The intent of this Chapter is to protect the public safety and welfare from the danger of fire due to tank or container leakage of flammable or combustible liquids and is in addition to the requirements of the U.S. Department of Transportation, (DOT) Title 49 CFR.

42.3.3.1.1.1 Add:
42.3.3.1.1.1 Underground Tanks. Underground storage tanks shall comply with 310 CMR 80.00: *Underground Storage Tank (UST) Systems* and meet all applicable requirements of NFPA 30, Chapters 21: *Storage of Liquids in Tanks - Requirements for All Storage Tanks* and 23: *Storage of Liquids in Tanks - Underground Tanks*.

42.3.3.7 Replace with the following:
42.3.3.7 Corrosion Control. Any portion of a tank or its piping that is in contact with the soil shall have properly engineered, installed, and maintained corrosion protection in accordance with the American Petroleum Institute, the American Society of Mechanical Engineers, or Underwriters Laboratories Inc. If corrosion is anticipated beyond the applicable design formulas or standards, metal thickness or approved protective coating or liners shall be provided to compensate for corrosion loss expected during the design life of the tank. If requested by the AHJ, an engineering analysis shall be permitted required to assure compliance.

42.5.3.4.1 through **42.5.3.4.1**(2) Add:
42.5.3.4.1 Dispensing devices shall:
(1) Be rigidly mounted;
(2) Be protected from vehicle damage by at least one of the following:
(a) The dispensing device shall be mounted on a concrete platform at least six inches in height.
(b) Vertical barriers shall be installed at the ends of pumps.

42.5.3.6.3 Replace with the following:
42.5.3.6.3 Maintenance. At least annually or when maintenance to dispensing devices is necessary and such maintenance is capable of causing accidental release or ignition of liquid, the following precautions shall be taken before such maintenance is begun:
(1) Only persons knowledgeable in performing the required maintenance shall perform the work.
(2) All electrical power to the dispensing devices, to the pump serving the dispensing devices, and to all associated control circuits shall be shut off at the main electrical disconnect panel.
(3) The emergency shutoff valve at the dispenser, if installed, shall be closed.
(4) All vehicular traffic and unauthorized persons shall be prevented from coming within 20 ft (6 m) of the dispensing device.

1.05: continued

42.5.7.8 Replace with the following:
42.5.7.8 The manner of resetting shall be approved by the AHJ.

42.5.7.10.1 through **42.5.7.10.3** Delete

42.7.2.1 Delete.

42.7.2.4.3 Add:
42.7.2.4.3 No gasoline shall be handled outside of storage tanks or portable gasoline tanks except in approved safety cans or approved metal or plastic containers, and they shall be kept tightly closed except when in use. Containers used for the handling and storage of gasoline in garages shall have a total quantity not to exceed 12 gallons.

42.7.2.6.3 Replace with the following:
42.7.2.6.3 Fire Suppression Systems. For attended self-serve facilities, automatic fire suppression systems shall be installed in accordance with the appropriate NFPA standard, manufacturers' instructions, and the listing requirements of the systems.

42.7.4.5 through **42.7.4.5(2)(b)** Add:
42.7.4.5 The dispensing of motor fuel by means of self-service automated dispensing systems shall be permitted, provided that the applicant for such a system has submitted complete plans and specifications of the proposed installation to the State Fire Marshal, accompanied by the required examination fee as authorized in M.G.L. c. 7, § 3B and has obtained approval of such plans, and further provided that there is compliance with the following:

(1) Attended Self-service Motor Fuel Dispensing Facility may be allowed provided that:

(a) The service station is under the control of the owner, operator, or duly authorized employee who shall be on duty at all times while motor fuel is being sold or dispensed.

(b) The motor fuel shall be dispensed only by a competent licensed motor vehicle operator or by the service station attendant.

(c) Approved signs bearing the wording "Extinguish All Smoking Materials" and "Stop Engine While Refueling" shall be conspicuously posted at both ends of the pump dispensing island visible to approaching vehicles. All approved signs required shall consist of block letters not less than two inches in height and be either red letters on a white background or white letters on a red background.

(d) The controlling mechanism console providing power to the pump motor is in constant attendance by the owner, operator or duly authorized employee at all times while motor fuel is being dispensed and is properly protected against physical damage from motor vehicles. Constant attendance shall mean that the console operator must be at the console during its operation.

(e) There is constant contact between the controlling mechanism console operator and the pump island by means of an intercommunication system which shall be maintained in proper operating condition at all times while motor fuel is being dispensed.

(f) A means is provided for the controlling mechanism console operator to observe the filling operation at each vehicle, and the dispensing of motor fuel shall be continuously observed by the console operator during the time that any of the pumps have been activated to dispense motor fuel.

(g) The controlling mechanism console includes a disconnect switch which will instantly cut off all pumping power to all motor fuel pumps at the service station.

(h) The controlling mechanism console, switches and related equipment are of a design and type listed for use with the dispensing devices.

(i) Any person, firm, or corporation constructing a self-service facility or making changes or alterations, in the method of dispensing motor fuel, or to the pre-engineered fixed fire extinguishing system(s) other than normal maintenance, or to the self-service dispensing island arrangement(s) resulting in a change of hazard area protection, or environmental changes resulting in the inability of a console operator to constantly observe the fuel dispensing operation, shall notify the Head of the Fire Department, in writing, prior to submitting plans to the State Fire Marshal.

(j) Self-service automated motor fuel dispensing systems shall be equipped with an overhead fixed fire extinguishing system of a type approved by the State Fire Marshal, details of which shall be included with plans submitted to the State Fire Marshal for approval.

1.05: continued

(k) The use of automatic credit card reading devices as a means of payment at the pump island shall be allowed provided that:

1. Each sale shall be individually authorized by the self-serve attendant; authorization functions shall not be overridden.

2. The automatic credit card reading device shall not be used as physical authorization for the dispensing of motor fuel; and

3. The automatic credit card reading devices are included on plans submitted to and approved by the State Fire Marshal.

(l) Activation of such new fire extinguishing system shall be electrically supervised by a listed fire alarm control unit and such alarm signal shall be automatically transmitted in accordance with the requirements of 780 CMR

(2) Split island facilities shall be permitted provided that:

(a) There shall be installed on the full service islands an additional switch which will activate the overhead fire extinguishing system, and deactivate power to the self-service island dispensing pumps.

(b) Whenever the self-service dispensing mechanism is in operation, the service station operator shall be within visual range of the filling operation by either being at the controlling mechanism console or at the full service pump island within 25 feet of the switch.

42.7.5 through **42.7.5.6** Delete.

42.7.6.3 Replace with the following:
42.7.6.3 The dispensing hose shall not exceed 150 ft. (46 m) in length.

42.9.1.2(4) Add:

(4) Foreign vessels regulated under Title 33 CFR 155 and U.S. and foreign public vessels, *i.e.*, warships, naval auxiliaries or other ships owned and operated by a country when engaged in noncommercial service.

42.9.3 through **42.9.3.7.5 (9)** Add:
42.9.3.7 Wharf of a Marine Fueling Facility.

42.9.3.7.1 Any wharf of a Marine Fueling Facility shall be equipped with only listed and labeled control valves and devices.

42.9.3.7.2 Authorized Fueling Facility System Operators shall be aware of the location of all such shut-off control devices.

42.9.3.7.3 The use of additional shut-off control valves in excess of the required minimum shall be permitted to facilitate fuel system servicing and to control fuel flow during both normal and emergency operation.

42.9.3.7.4 Cast iron valves or fittings shall not be used in any pipe connection located between the tank and dispensing nozzle.

42.9.3.7.5 Items (1), (2) (3) and (5) shall be required for all fixed facilities. Items (4), and (6) shall be permitted on a site specific basis.

(1) Dispensing Nozzle shall be approved.

(2) Dispenser Shut-off.

(a) All dispensers shall be provided with an approved shut-off valve at the fuel-dispensing unit.

(b) This valve shall be permitted to be the dispenser unit shut-off.

(3) Manual Electrical Emergency Fuel Shut-off Pull Stations shall be U.L. listed; and

(a) shall be provided to disrupt power to all dispensers and fuel storage tank discharge pump(s).

(b) These Pull Stations shall be located within 25 ft. of any metering unit; and shall be located to be in the path of exit travel.

(c) Additional pull station shall be provided as required by the Head of the Fire Department or the State Fire Marshal.

(d) Pull stations shall not be located on gangways.

1.07: continued

(e) All pull stations shall be marked "EMERGENCY FUEL SHUT-OFF" in two inch red block capital letters; and shall be accessible at all times.

(4) Fuel piping systems to floats shall be provided with a readily accessible approved shut off valve on the fixed pier (or land if applicable) within 15 ft. of the flexible connector from the pier (or land) to the float.

Said shut-off controls shall be marked "EMERGENCY FUEL SHUT-OFF" in two inch red block capital letters; and shall be accessible at all times.

(5) Fuel piping systems on fixed piers shall be provided with a readily accessible shut-off valve on the pier within four feet of the flexible connector to the land and on the land within 15 ft. of the pier.

Shut-off controls shall be marked "EMERGENCY FUEL SHUT OFF" in two inch red block capital letters and shall be accessible at all times.

(6) Emergency shut-off valves, incorporating a fusible link or other approved thermally actuated device designed to close automatically in event of fire exposure or severe impact, shall be installed in accordance with the manufacturer's instructions in the flammable or combustible liquid supply line.

(a) The shut-off valve shall be located at the base of each individual dispenser or at the inlet to the overhead dispenser.

(b) The automatic closing feature of excess flow valves shall be tested at least once per month by manually tripping the hold open device.

(c) The valves shall be readily accessible; and

1. shall employ cover or similar means located on the shore side of the wharf; and
2. shall be so marked by two inch red block capital letters.

(7) Divisional valves shall be installed on the marine wharf so that the maximum length of the piping system is 300 ft. between divisional valves.

(a) Divisional valves shall be marked by two inch red block capital letters.

(b) Each valve shall be clearly identified, by marking with a permanent plate or tag indicating its system function.

(8) At marine fueling facilities where tanks are at an elevation which produces a gravity head on the dispensing unit, the tank outlet shall be equipped with a device, such as a solenoid valve, positioned adjacent to, and downstream, so installed and adjusted that liquid cannot flow by gravity from the tank in case of piping or hose failure when the dispenser is not in use.

(9) Shut-off and check valves shall be equipped with a pressure-relieving device that will relieve any pressure generated by thermal expansion of the contained liquid back to the storage tank.

42.9.3.8 Add:

42.9.3.8 Shut-off and check valves shall be equipped with a pressure-relieving device that will relieve any pressure generated by thermal expansion of the contained liquid back to the storage tank.

42.9.3.9 Add:

42.9.3.9 Marine piping systems shall contain a sufficient number of approved valves to control the flow of flammable or combustible liquid during normal operations and to provide adequate shut-off protection in the event of fire or physical damage.

42.9.4.1.1.1 Add:

42.9.4.1.1.1 Said hose shall be a rubber like material resistant to petroleum products and petroleum product, containing a continuous static ground, not exceeding 30 feet in length. Where hose length at a marine fueling facility exceeds 30 feet, the hose shall be secured by a hose retrieving mechanism so as to protect it from damage.

42.9.4.8 through **42.4.8.2** Add:

42.9.4.8 If a remote pumping system is used, a labeled or listed rigidly anchored emergency shut-off valve incorporating a fusible link or other thermally actuated device, designed to close automatically in event of fire exposure or severe impact, shall be installed in accordance with the manufacturer's instructions in the flammable or combustible liquid supply line at the base of each individual dispenser or at the inlet of each overhead dispenser.

42.9.4.8.1 The automatic closing feature of this valve shall be checked at least once a month by manually tripping the hold-open linkage.

1.05: continued

42.9.4.8.2 An emergency shut-off valve incorporating a slip-joint feature shall not be used.

42.9.4.9 Add:
42.9.4.9 The fueling facility shall be located so as to minimize exposure to all other operational marina or pleasure boat berthing area facilities. Where tide and weather conditions permit, all flammable and combustible liquid fuel handling shall be outside the main berthing area. Inside marina or pleasure boat berthing area, fueling facilities shall be so located that in case of fire aboard a boat alongside, the danger to other boats near the facility will be minimal. No vessel or craft shall be made fast to or berthed at any marine wharf, except during fueling operations, and no vessel or craft shall be made fast to any other vessel or craft occupying a berth at a marine wharf, or other fueling facility.

42.9.4.10 Add:
42.9.4.10 Fueling of floating marine craft at other than a fueling facility is prohibited, except by prior written authorization by the AHJ.

42.9.7.4 through **42.9.7.4.1** Add:
42.9.7.4 All marine fueling facilities shall provide roadways to provide for adequate access for emergency vehicles, including fire apparatus to within 150 feet (45 m) or less travel distance to the shore end of the marine wharf.

42.9.7.4.1 When approved by the Head of the Fire Department, a manual standpipe system shall be permitted to be installed along marine wharfs when conditions are such that providing fire department access roads to within 150 feet (45 m) of the shore end of the marine wharf is not practical.

42.9.7.5 through **42.9.7.5.3** Add:
42.9.7.5 A manual standpipe system shall be installed at all fueling wharfs where the travel distance from the closest point of access for the fire department apparatus to the most remote accessible portion of the marine wharf exceeds 150 feet (45 m).

42.9.7.5.1 The type and location of standpipe systems and standpipe outlets shall be approved by the Head of the Fire Department, but in no case shall they be more than 150 feet (45 m) of travel distance apart, and no more than 150 feet (45 m), travel distance from a dead end.

42.9.7.5.2 The fire department pumper can be considered as a standpipe system discharge point if it is within 150 feet (45 m) of the shore end of the marine wharf.

42.9.7.5.3 The standpipe piping shall be no less that three inches (76.2 mm) inside side nominal diameter and sized to provide a minimum of 500 gpm (1893L/min) at 100 psi outlet pressure at the hydraulically most remote outlet with an outlet.

42.9.7.6 through **42.9.7.6.3** Add:
42.9.7.6 Hydrants shall be provided on marine fueling facility wharfs where fire apparatus is expected to drive onto the wharf to protect a fueling facility.

42.9.7.6.1 The hydrants shall be installed, tested and maintained in accordance with NFPA 307: *Standard for the Construction and Fire Protection of Marine Terminals, Piers, and Wharves* in locations approved by the Head of the Fire Department.

42.9.7.6.2 In a hydrant shall be within 100 feet (30.48 m) of the required standpipe connection.

42.9.7.6.3 If available, the type and capacity of the water supply system for the fire hydrants shall be sufficient to deliver adequate water and water pressure as determined by the Head of the Fire Department, who shall take into consideration the relative fire hazard, the property involved, the availability of marine firefighting equipment, and the time frame that the water supply volume will be required to be maintained.

42.9.8.4 Add:
42.9.8.4 No cargo tank, portable tank or transfer tank shall be mounted in the bed or body of any vehicle which contains a hoist to raise such bed or body.

42.9.9.8 Add:
42.9.9.8 Vehicles, other than approved tank vehicles, shall be permitted to transport combustible liquids in transfer tanks, provided that an application has been made and a permit to transport has been issued. The vehicle shall be approved for the transportation of the combustible liquid provided that:

1.05: continued

(1) The tank shall be constructed of not less than 14 USS gauge standard open hearth steel tank plate or 1/8 inch aluminum and otherwise constructed to withstand any stress to which it may reasonably be subjected.
(2) The liquid is drawn only from the top of the tank by means of a suitable pump to which is attached a durable hose equipped with a self-closing nozzle.
(3) All openings in the tank are secured by plugs or caps maintained wrench tight while the vehicle is in transit.
(4) The tank is securely mounted to the vehicle body or truck bed and its capacity does not exceed 110 gallons.

42.9.9.9 Any flammable or combustible liquid transported by other than cargo tank, portable tank or transfer tank shall be transported in listed containers, with all openings tightly closed, and in an upright and secured position.

42.9.10.1(5) Add:
(5) In the event of a leak, rupture, spill, overflow or other incident involving the handling of flammable or combustible liquids, at the fuel facility, both the Fire Department and the State Fire Marshal shall be notified immediately by the fueling operations supervisor or the permit holder.

42.10 through **42.10.6.2.9** Delete.

42.11.1 Delete.

42.11.1.1.2 through **42.11.1.1.4** Delete

42.11.1.1.5 Add:
42.11.1.1.5 Marker Plate, Sign. Any liquefied gaseous system container or cylinder installation shall be provided with a marker plate or sign indicating the name and telephone number of the supplier, facility maintenance person, owner, or operator responsible for responding to the permitted location in the event of an emergency.

42.13.1 through **42.13.11** Add:
42.13.1 Fuel Vessels and Barges.

42.13.2 No fuel barge or fuel vessel shall be permitted to anchor or moor for fueling purposes within a marina or pleasure boat berthing area.

42.13.3 A 200 ft. (60.96 m) radius marine fueling safety zone shall be maintained between the fuel barge, or fuel vessel acting as a fueling facility, and any marina or pleasure boat berthing area.

42.13.4 This 200 ft. (60.96 m) radius marine fueling safety zone if required, shall be subject to written review by the Head of the Fire Department in specific instances.

42.13.5 The State Fire Marshal shall approve the marine fueling safety zone written review.

42.13.6 Fuel barges and fuel vessels shall be subject to assignment as to location by the harbor master in accordance with the authority vested in him by M.G.L. c. 102. When located on waters where no harbor master is provided, such assignment shall be made by the State Fire Marshal. The State Fire Marshal shall approve the permanent assignment of fuel barges and fuel vessels.

42.13.7 Fuel barges, fuel vessels, and fueling facilities shall be open to inspection by the AHJ or a harbor master having jurisdiction.

42.13.8 Flammable and combustible liquids kept for resale on fuel barges or fuel vessels shall be stored in metal tanks. Such tanks shall be constructed, braced and secured so as to prevent injury, rupture or displacement and to withstand the normal stresses to which they may be subjected. Tanks constructed in accordance with 46 CFR Part 30 through 40, Subchapter D - *Tank Vessels*, will be considered as complying with the requirements of this chapter.

42.13.9 Every fuel barge or fuel vessel used for the keeping of flammable or combustible liquids for resale and every fuel barge or fuel vessel used for the transportation of flammable or combustible liquids, shall be identified by a name marked in clearly legible letters not less than four inches in height on some clearly visible exterior part of the port and starboard bow and the stern of that fuel barge or fuel vessel.

1.05: continued

42.13.10 Fuel barges and fuel vessels which, in the opinion of the Head of the Fire Department or the State Fire Marshal, pose a substantial fire hazard due to the cargo they are carrying or the location they are moored shall rig fire warps. Fire warps shall consist of hausers of sufficient size to take the barge or vessel under tow in the event of an emergency. Fire warps shall be secured to the deck of the barge or vessel and shall hang over the outboard side to within 6 feet of the surface of the water. An eye shall be spliced into the outboard end of the warp of sufficient size to permit the rapid attachment of a towing shackle.

42.13.11 Every fuel barge, fuel vessel, or fueling facility used for the keeping of flammable or combustible liquids for resale shall be provided with such fire extinguishing appliances as required by *Section 13.6.*

42.14 Add:
42.14 Containers and Movable Tanks.

42.14.1 through **42.14.4** Add:
42.14.1 The temporary use of movable tanks in conjunction with the dispensing of liquids into the fuel tanks of marine craft shall be permitted. Such use shall only be made with the approval of the AHJ.
42.14.2 Class I or Class II liquids shall not be dispensed into a portable container, unless the container is constructed of metal or is listed for its use, has a tight closure, and is fitted with a spout or is so designed that the contents can be dispensed without spilling.
42.14.3 Portable containers of 12 gal. (45 L) capacities or less shall not be filled while they are in or on a marine craft.
42.14.4 Smoking is prohibited on any fuel barge or fuel vessel used for the keeping of flammable or combustible liquids for resale and on any fuel barge or fuel vessel used for the transportation, storage or delivery of flammable or combustible liquids.

42.15.1 Add:
42.15.1 All electrical components shall be installed and used in accordance with the *Massachusetts Electrical Code*.

42.15.2 Add:
42.15.2 Clearly identified emergency switches, readily accessible in case of fire or physical damage at any dispensing unit, shall be provided on each marine wharf so interlocked as to shut off power to all pump motors from any individual location and to reset only from the master switch at the main electrical disconnect panel. Each such switch is to be identified by an approved sign stating "EMERGENCY PUMP SHUT-OFF" in two inch red block capital letters.

42.15.3 Add:
42.15.3 A readily accessible valve to shut off the liquid supply from shore shall be provided in each pipeline, at or near the approach to the pier and at the shore end of each marine pipeline adjacent to the point where each flexible hose is attached. Each valve shall be marked "EMERGENCY FUEL SHUT-OFF" in two inch red block capital letters.

42.16 Add:
42.16 Transportation by Transfer Tanks.

42.16.1 Add:
42.16.1 Vehicles other than approved tank vehicles shall be permitted to transport combustible liquids in transfer tanks, provided that an application has been made in accordance with this *Code*.

42.16.2 through **42.15.2(5)** Add:
42.16.2 The vehicle shall be approved for the transportation of the combustible liquid provided that:

(1) The tank is securely mounted to the vehicle body or truck bed and its capacity does not exceed 119 gallons;

(2) The tank shall be constructed of not less than 14 USS gauge standard open hearth steel tank plate or ⅛ inch aluminum and otherwise constructed to withstand any stress to which it may reasonably be subjected;

(3) The liquid is drawn only from the top of the tank by means of a suitable pump to which is attached a durable hose equipped with a self-closing nozzle;

1.05: continued

(4) All openings in the tank are secured by plugs or caps maintained wrench tight while the vehicle is in transit; and

(5) The vehicle is equipped with a fire extinguisher in accordance with *Section 13.6.*

42.16.3 Add:

42.16.3 Any flammable or combustible liquid transported by other than cargo tank, portable tank or transfer tank shall be transported in listed and labeled containers, with all openings tightly closed, and in an upright and secured position.

42.16.4 Add:

42.16.4 No person shall transport by cargo tank or transport vehicle, any combustible liquid within the Commonwealth, unless such liquid is transported in accordance with the requirements of this Chapter. No person shall transport by cargo tank or transport vehicle, any flammable liquid unless such liquid is transported in accordance with U.S. DOT, Title 49 CFR.

Chapter 43 Spraying, Dipping, and Coating Using Flammable or Combustible Materials

43.1.3.1.1.2 Replace with the following:

43.1.3.1.1.2 Air intake filters that are a part of a wall or ceiling assembly shall be listed as Class 1 or Class 2, in accordance with ANSI/UL 900, *Standard for Air Filter Units*. [33:5.1.1.2]

43.1.5.3* Make-Up Air. An adequate supply of clean make-up air shall be provided to compensate for the air exhausted from spray operations. The intake for this make-up air shall be located so that the air exhausted from spray operations is not recirculated. [33:7.3]

Chapter 44 Solvent Extraction.

44.3.1 Add:

44.3.1 Permits may be required by Chapter 60, or other chapters, based on the type of process and level of hazard.

Chapter 45 Combustible Fibers.

45.5.3.1 Replace with the following:

45.5.3.1 Quantities exceeding 100 $ft.^3$ (2.8 m^3) of loose combustible fibers, but not exceeding 500 $ft.^3$ (14.2 m^3), shall be permitted to be stored in rooms or compartments in which the floors, walls, and ceilings have a fire-resistance rating of not less than 1 hour.

45.6.1.1 Replace with the following:

45.6.1.1 No single block or pile shall contain more than 7,500 $ft.^3$ (212.376 m^3) of combustible fibers, exclusive of aisles or clearances. However, a single block or pile shall be permitted containing 25,000 $ft.^3$ (708 m^3) of combustible fibers, exclusive of aisles or clearances, if the criteria of NFPA 13: *Standard for the Installation of Sprinkler Systems* are met.

Chapter 46 Additive Manufacturing (3D Printing)

1.05: continued

Chapter 47 Reserved

Chapter 48 Reserved

Chapter 49 Reserved

Chapter 50 Commercial Cooking.

50.1.3* Cooking equipment used in fixed, mobile, or temporary concessions, such as trucks, buses, trailers, pavilions, tents, or any form of roofed enclosure, shall comply with NFPA 96 or this chapter unless otherwise exempted by the AHJ in accordance with *1.3.2* of NFPA 96. [96.1.13]

50.2.1.1(1) through **50.2.1.1**(2)(b) Add:
50.2.1.1(1) Cooking equipment used in processes producing smoke or grease-laden vapors shall be equipped with an exhaust system that complies with all the equipment and performance requirements of this chapter.

(1) Type 1 hoods are required for the removal of grease-laden vapors provided they meet all the material and performance requirements of this *Code*.

(2) The following are types of hoods used for exhaust:

(a) **Type I**. Hoods designed for grease exhaust applications.

(b) **Type II**. Hoods designed for heat and steam removal and other non-grease applications. These hoods are not applicable to this standard.

50.2.1.2.1 Add:
50.2.1.2.1 Certificates. Certificates, where required, shall comply with *Section 1.13.*

50.6.4.1 Add:
50.6.4.1 If the AHJ determines that the exhaust system of such operation has not been inspected pursuant to *Section 50.6.4* for grease buildup within the past 12-month period, the AHJ shall issue an order to cease such operation pending such inspection. *Section 50.6.4.1* shall not limit the ability of the AHJ to issue such other reasonable orders relating to compliance with this Chapter.

50.6.6.2* Replace with the following:
50.6.6.2 Hoods, grease removal devices, fans, ducts, and other appurtenances shall be cleaned to remove combustible contaminants to a minimum of 50 μm (0.002 in.). A measurement system of deposition shall be established for each facility to trigger a need to clean, to verify the requirements contained in Table 50.6.4, in addition to a time reference based on equipment emissions.

50.6.6.2.1 Add
50.6.6.2.1 The owner or operator of the commercial cooking operation, or employee thereof, shall not be prohibited from conducting the actual cleaning and grease removal of hoods, grease removal devices, fans, ducts and other appurtenances of his or her own commercial cooking operations, as long as said owner, operator, or employee holds a "restricted" Certificate of Competency issued by the State Fire Marshal. However, this provision does not allow such owner, operator, or employee to conduct such cleaning services for any other commercial kitchen operation.

1.05: continued

50.6.6.13 Replace with the following:
50.6.6.13 When an exhaust cleaning service is used, a certificate showing the name of the servicing company, the name of the person performing the work, and the date of inspection or cleaning shall be maintained on the premises. The content, size, design, and placement of any label shall be prescribed by the State Fire Marshal. [96:11.6.13].

50.6.6.14.1 through **50.6.6.14.1.2** Add:
50.6.6.14.1 If a qualified individual determines that a commercial cooking system, after cleaning or inspection thereof, is not in compliance with this Chapter, relative to grease buildup and related contaminants, said individual shall, within 48 hours, notify in writing, on a form prescribed by the State Fire Marshal, the Head of the Fire Department of the location of said system and the nature of such noncompliance. A copy of said form shall also be given to the owner and operator of the system.

50.6.6.14.1.1 A record of each inspection for grease and related contaminants and each cleaning activity relating to grease buildup shall be produced by the qualified person who conducted said inspection or cleaning. Said record shall include:
(1) The dates of inspection or cleaning;
(2) Location;
(3) The CR number for the contractor and CC number for the inspector and cleaner;
(4) Signatures of each involved in the inspection and cleaning;
(5) Any other information as determined by the State Fire Marshal; and
(6) A copy of such record shall be maintained by:
  (a) The operator within the building or structure where the system is located; and
  (b) The qualified person who conducted said inspection or cleaning activity.

50.6.6.14.1.2 Such records shall be open to the inspection of the AHJ during regular hours of operation and shall be maintained for a period of at least three years.

50.6.6.14.1.3 Any incident involving the loss or theft of any label(s) must be reported to the State Fire Marshal and the police department within the jurisdiction where the loss or theft occurred within 72 hours. Failure to report such loss or theft shall result in the rebuttable presumtion that the holder of the label performed or allowed another to perform the services associated with said label(s). Any person who unwittingly allows another to use their label(s) after a prudent license-holder would have cause to know of a loss or theft of same, or misappropriation or misrepresentation of identity, may have their Certificate of Competency and Certificate of Registration suspended for a minimum of two years.

Chapter 51 Industrial Ovens and Furnaces

No amendments

Chapter 52 Energy Storage Systems

52.1.1.1 Add:
52.1.1.1 One- and Two-Family Dwelling and Townhouse Units. Where one- and two-family dwellings and townhouse units are provided with energy storage systems (ESS) they shall be in accordance with Chapter 15 of NFPA 855 and *Section 52.9.*

52.1.8.2 Replace with the following:
52.1.8.2 Operational permits shall be in accordance with *52.1.2.*

52.9 Replace with the following:
52.9 One- and Two-Family Dwelling and Townhouse Units. Where one-and two-family dwellings and townhouse units are provided with energy storage systems (ESS) they shall be in accordance with Chapter 15 of NFPA 855.

52.9.1* through 52.9.7.2* Add:
52.9.1* Other technology
Where other than lithium-ion energy storage systems are provided, they shall be in accordance with Table 1.3 of NFPA 855 and this code.

52.9.2 Construction Documents. The plans and specifications associated with an ESS and its intended installation, replacement or renewal, commissioning, and use shall be submitted to the AHJ for approval and include the following:

1.05: continued

1. Location and layout diagram of the room or area in which the ESS is to be installed.
2. Details on wall construction for rooms or areas where ESS are installed.
3. The quantities and types of ESS units.
4. Manufacturer's specifications, ratings, and listings of ESS.
5. Description of energy storage management systems and their operation.
6. Location and content of required signage.
7. Details on fire suppression, smoke or fire detection, gas detection, thermal management, ventilation, exhaust, and deflagration venting systems, if provided.
8. Support arrangement associated with the installation, including any required seismic support.
9. Description of scope of work for retrofit or repairs of ESS.

52.9.3 Decommissioning. A decommissioning plan shall be prepared in accordance with Chapter 8 of NFPA 855, submitted to the AHJ and approved prior to decommissioning the system.

52.9.4 Location. ESS shall only be installed in the locations specified by Chapter 15 of NFPA 855 and *52.9.4.1*

52.9.4.1 ESS installed in enclosed utility closets, storage, or utility spaces is permitted only where the enclosed utility closet, storage, or utility space does not open into a sleeping area.

Exception: Buildings provided throughout with an automatic fire sprinkler system complying with NFPA 13D, 13R, or 13.

52.9.5 Operation, Testing and Maintenance. Operation, maintenance, and testing of ESS shall be in accordance with the manufacturer's instructions. Records shall be provided to the AHJ upon request.

52.9.6 Combustible Storage. Combustible materials not related to the ESS shall not be stored in rooms, cabinets, enclosures, or closets containing ESS equipment.

52.9.6.1 Where ESS is installed in a garage and not separated from the remainder of the room by an enclosure, combustible materials shall not be stored within 3 ft. of the ESS equipment.

52.9.7 Equipment. Repairs and retrofitting of ESS shall only be done by qualified persons, comply with the applicable provisions of NFPA 855, and documented per *52.9.2.*

52.9.7.1 Replacements. Replacement of ESS shall be considered new ESS installations and comply with the provisions applicable to new ESS.

52.9.7.2* Increase in power rating or maximum stored energy.
A complete new ESS that is added to an existing installation of one or more systems shall be treated as a new system and meet the applicable requirements. The increased system shall be evaluated in the aggregate.

Chapter 53 Mechanical Refrigeration.

53.1.1.4 through **53.1.1.4.1** Add:
53.1.1.4 Hazardous Materials Processing

53.1.1.4.1 Ammonia and LP Gas Refrigeration systems shall comply with *60.8*.

53.1.2.1 Delete.

Chapter 54 Ozone Gas Generating Equipment

Chapter 54 Delete in its entirety.

Chapter 55 Cleaning and Purging of Flammable Gas Piping Systems
No amendments

Chapter 56 Reserved

Chapter 57 Reserved

Chapter 58 Reserved

1.05: continued

Chapter 59 Reserved

Chapter 60 Hazardous Materials.

60.1.2(14) Add:
(14) Consumer fireworks, 1.4G in mercantile occupancies complying with *Section 65.10* [5000:34.1.1.2]

60.1.2 (15) through (17) Add:
(15) Closed piping systems containing flammable or combustible liquids or gases utilized for the operation of machinery or equipment.
(16) The storage or utilization of materials for agricultural purposes on the premises complying with the *Building Code* Appendix C *Group U—Agricultural Buildings*.
(17) The storage of black powder, smokeless propellants, small arms primer in use group M or R-3 and special industrial explosive devices in use group B, F, M, and S provided the storage conforms to Chapter 65.

60.4.2.1.1.3 Replace with the following:
60.4.2.1.1.3 A permit shall not be issued in excess of these quantities until such time that the Building Official has confirmed the facility is classified and constructed as the appropriate a H-use, control area, or is exempt.

60.4.2.1.1.3 Replace table as follows:
Table 60.4.2.1.1.3 Maximum Allowable Quantity (MAQ) of Hazardous Materials per Control Area [a,p,q,s,u,v]

Insert Table 60.4.2.1.1.3

Table 60.4.2.1.1.3 Maximum Allowable Quantity (MAQ) of Hazardous Materials per Control Area

		High	**Storage[a]**			**Use – Closed Systems[a]**			**Use – Open Systems[a]**	
		Hazard		**Liquid**			**Liquid**			**Liquid**
		Protection	**Solid**	**Gallons**	**Gas[b] scf**	**Solid**	**Gallons**	**Gas[b] scf**	**Solid**	**Gallons**
Material	**Class**	**Level**	**Pounds**	**(lb)**	**(lb)**	**Pounds**	**(lb)**	**(lb)**	**Pounds**	**(lb)**
Physical Hazard Materials										
Combustible liquid[m,o]	II	2 or 3	N/A	120[c,d]	N/A	N/A	120[d]	N/A	N/A	30[d]
	IIIA	2 or 3	N/A	330[c,d]	N/A	N/A	330[d]	N/A	N/A	80[d]
	IIIB	N/A	N/A	13200[c,e]	N/A	N/A	13200[e]	N/A	N/A	3300[e]
Combustible dust	N/A	2	*See* note v	N/A	N/A	*See* note v	N/A	N/A	*See* note v	N/A
Combustible fiber[t]	Loose	3	(100)	N/A	N/A	(100)	N/A	N/A	(20)	N/A
	Baled[r]	3	(1000)	N/A	N/A	(1000)	N/A	N/A	(200)	N/A
Cryogenic fluid [55:Table 6.3.1]	Flammable	2	N/A	45[d]	N/A	N/A	45[d]	N/A	N/A	45[d]
	Oxidizing	3	N/A	45[d]	N/A	N/A	45[d]	N/A	N/A	45[d]
	Inert	N/A	N/A	N/A	NL	N/A	N/A	NL	N/A	N/A
Explosives	Division 1.1	1	1[c,i]	(1)[c,i]	N/A	¼[i]	(1/4)[i]	N/A	¼[i]	(1/4)[i]
	Division 1.2	1	1[c,i]	(1)[c,i]	N/A	¼[i]	(1/4)[i]	N/A	¼[i]	(1/4)[i]
	Division 1.3	1 or 2	5[c,i]	(5)[c,i]	N/A	1[i]	(1)[i]	N/A	1[i]	(1)[i]

	Division 1.4	3	50 [c,i]	(50) [c,i]	N/A	50 [i]	(50) [i]	N/A	N/A	N/A
	Division 1.4G	3	125 [c,i]	N/A	N/A	N/A	N/A	N/A	N/A	N/A

1.05: continued

Material	Class	High Hazard Protection Level	Storage[a] Solid Pounds	Storage[a] Liquid Gallons (lb)	Storage[a] Gas[b] scf (lb)	Use – Closed Systems[a] Solid Pounds	Use – Closed Systems[a] Liquid Gallons (lb)	Use – Closed Systems[a] Gas[b] scf (lb)	Use – Open Systems[a] Solid Pounds	Use – Open Systems[a] Liquid Gallons (lb)
	Division 1.5	1	1 [c,i]	(1) [c,i]	N/A	¼ [i]	(1/4) [i]	N/A	¼ [i]	(1/4) [i]
	Division 1.6	1	1 [c,i]	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flammable Gas[l] [55: Table 6.3.1]	Gaseous	2	N/A	N/A	1000 [c,d]	N/A	N/A	1000 [c,d]	N/A	N/A
	Liquefied	2	N/A	N/A	(150) [c,d]	N/A	N/A	(150) [c,d]	N/A	N/A
	Liquefied Petroleum (LP)	*See* note	*See* note	*See* note	*See* note	*See* note	*See* note	*See* note	*See* note	*See* note
Flammable Liquid[m]	IA	2	N/A	30 [c,d]	N/A	N/A	30 [d]	N/A	N/A	10 [d]
	IB and IC	3	N/A	120 [c,d]	N/A	N/A	120 [d]	N/A	N/A	30 [d]
	Combination (IA, IB, IC)	2 or 3	N/A	120 [c,d,n]	N/A	N/A	120 [d,n]	N/A	N/A	30 [d,n]
Flammable Solid	N/A	3	125 [c,d]	N/A	N/A	125 [d]	N/A	N/A	25 [d]	N/A
Inert Gas	Gaseous	N/A	N/A	N/A	NL	N/A	N/A	NL	N/A	N/A
	Liquefied	N/A	N/A	N/A	NL	N/A	N/A	NL	N/A	N/A
Organic Peroxide	UD	1	1 [c,i]	(1) [c,i]	N/A	¼ [i]	(1/4) [i]	N/A	¼ [i]	(1/4) [i]
	I	2	5 [c,d]	(5) [c,d]	N/A	1 [d]	(1) [d]	N/A	1 [d]	(1) [d]
	II	3	50 [c,d]	(50) [c,d]	N/A	50 [d]	(50) [d]	N/A	10 [d]	(10) [d]
	III	3	125 [c,d]	(125) [c,d]	N/A	125 [d]	(125) [d]	N/A	25 [d]	(25) [d]
	IV	N/A	NL	NL	N/A	NL	NL	N/A	NL	NL
	V	N/A	NL	NL	N/A	NL	NL	N/A	NL	NL
Oxidizer	4	1	1 [i]	(1) [i]	N/A	¼ [i]	(1/4) [i]	N/A	¼ [i]	(1/4) [i]
	3[f]	2 or 3	10 [c,d]	(10) [c,d]	N/A	2 [d]	(2) [d]	N/A	2 [d]	(2) [d]
	2	3	250 [c,d]	(250) [c,d]	N/A	250 [d]	(250) [d]	N/A	50 [d]	(50) [d]
	1	N/A	4000 [c,e]	(4000) [c,e]	N/A	4000 [e]	(4000) [e]	N/A	1000 [e]	(1000) [e]
Oxidizing Gas	Gaseous	3	N/A	N/A	1500 [g,c,d]	N/A	N/A	1500 [g,c,d]	N/A	N/A
	Liquefied	3	N/A		(1500) [g,c,d]	N/A		(1500) [g,c,d]	N/A	N/A
Pyrophoric		2	4 [c,i]	(4) [c,i]	N/A	1 [i]	(1) [i]	N/A	0	0
Pyrophoric Gas	Gaseous	2	N/A	N/A	50 [c,i]	N/A	N/A	10 [c,i]	N/A	N/A
	Liquefied	2	N/A	N/A	(4) [c,i]	N/A	N/A	(4) [c,i]	N/A	N/A
Unstable (reactive)	4	1	1 [c,i]	(1) [c,i]	N/A	¼ [i]	(1/4) [i]	N/A	¼ [i]	(1/4) [i]
	3	1 or 2	5 [c,d]	(5) [c,d]	N/A	1 [d]	(1) [d]	N/A	1 [d]	(1) [d]
	2	2	50 [c,d]	(50)	N/A	50 [d]	(50) [d]	N/A	10 [d]	(10) [d]

1.05: continued

Material	Class	High Hazard Protection Level	Storage[a] Solid Pounds	Storage[a] Liquid Gallons (lb)	Storage[a] Gas[b] scf (lb)	Use – Closed Systems[a] Solid Pounds	Use – Closed Systems[a] Liquid Gallons (lb)	Use – Closed Systems[a] Gas[b] scf (lb)	Use – Open Systems[a] Solid Pounds	Use – Open Systems[a] Liquid Gallons (lb)
				[c,d]						
	1	N/A	NL	NL	N/A	NL	NL	N/A	NL	NL
Unstable (reactive) Gas	Gaseous 4 or 3	1	N/A	N/A	10 [c,i]	N/A	N/A	2 [i]	N/A	N/A
	Detonable 3	2	N/A	N/A	50 [c,d]	N/A	N/A	10 [d]	N/A	N/A
	Nondetonable 2	3	N/A	N/A	750 [c,d]	N/A	N/A	750 [d]	N/A	N/A
	1	N/A	N/A	N/A	NL	N/A	N/A	NL	N/A	N/A
Water (reactive)	3	2	5 [c,d]	(5) [c,d]	N/A	5 [d]	(5) [d]	N/A	1 [d]	(1) [d]
	2	3	50 [c,d]	(50) [c,d]	N/A	50 [d]	(50) [d]	N/A	10 [d]	(10) [d]
	1	N/A	NL	NL	N/A	NL	NL	N/A	NL	NL
Corrosive	N/A		5000 [d]	500 [d]	N/A	5000[d]	500[c,d]	N/A	1000[d]	100 [d]
Corrosive gas	Gaseous	4	N/A	N/A	810 [c]	N/A	N/A	810 [c,d]	N/A	N/A
	Liquefied	4	N/A	N/A	(150) [c]	N/A	N/A	(150) [c,d]	N/A	N/A
Highly Toxic	N/A		10 [d]	(10) [d]	N/A	10[d]	(10)[c,d]	N/A	3 [d]	(3) [d]
Highly Toxic Gas	Gaseous	4	N/A	N/A	20[d,g]	N/A	N/A	20 [d,g]	N/A	N/A
	Liquefied	4	N/A	N/A	(4) [d,g]	N/A	N/A	(4) [d,g]	N/A	N/A
Toxic	N/A		500 [d]	(500) [d]	N/A	500[d]	(500) [d]	N/A	125 [d]	(125) [d]
Toxic Gas	Gaseous	4	N/A	N/A	810 [c,d]	N/A	N/A	810 [c,d]	N/A	N/A
	Liquefied	4	N/A	N/A	(150) [c,d]	N/A	N/A	(150) [c,d]	N/A	N/A

UD: Unclassified detonable
For SI units, 1 lb = 0.454 kg; 1 gal = 3.785 L; 1 scf = 0.0283 Nm3. N/A: Not applicable. NL: Not limited. NP: Not permitted.
Note: The hazardous material categories and MAQs that are shaded in this table are not regulated by Chapter 60 or NFPA 400: *Hazardous Materials Code* but are provided here for informational purposes. *See* Chapter 2 for the reference code or standard governing these materials and establishing the MAQs. In accordance with *1.1.1.2* of NFPA 400, materials having multiple hazards that fall within the scope of NFPA 400 shall comply with NFPA 400.

a. Table values in parentheses correspond to the unit name in parentheses at the top of the column. The aggregate quantity in use and storage is not permitted to exceed the quantity listed for storage.

b. Measured at NTP or 70°F (21°C) and 14.7 psia (101.3 kPa).

c. Quantities are permitted to be increased 100% where stored or used in approved cabinets, gas cabinets, exhausted enclosures, gas rooms explosives magazines, or safety cans, as appropriate for the material stored, in accordance with this *Code*. Where footnote d also applies, the increase for both footnote c. and footnote d. is permitted to be applied accumulatively.

d. Maximum quantities are permitted to be increased 100% in buildings equipped throughout with an automatic sprinkler system in accordance with NFPA 13: *Standard for the Installation of Sprinkler Systems*. Where footnote c. also applies, the increase for both footnote c. and footnote d. is permitted to be applied accumulatively.

e. The permitted quantities are not limited in a building equipped throughout with an automatic sprinkler system in accordance with NFPA 13: *Standard for the Installation of Sprinkler Systems*.
f. A maximum quantity of 200 lb (91 kg) of solid or 20 gal (76 L) of liquid Class 3 oxidizer is permitted where such materials are necessary for maintenance purposes, operation, or sanitation of equipment. Storage containers and the manner of storage are required to be approved.
g. Allowed only where stored or used in gas rooms or approved cabinets, exhausted gas cabinets or exhausted enclosures, as specified in this *Code*. [5000: Table 34.1.3.1]
h. Conversion. Where quantities are indicated in pounds and when the weight per gallon of the liquid is not provided to the AHJ, a conversion factor of 10 lb/gal (1.2 kg/L) shall be used.
i. Permitted only in buildings equipped throughout with an automatic sprinkler system in accordance with NFPA 13: *Standard for the Installation of Sprinkler Systems*.
j. None allowed in unsprinklered buildings unless stored or used in gas rooms or in approved gas cabinets or exhausted enclosures, as specified in this *Code*.

1.05: continued

k. With pressure-relief devices for stationary or portable containers vented directly outdoors or to an exhaust hood. [55: Table 6.3.1.1]
l. Flammable gases in the fuel tanks of mobile equipment or vehicles are permitted to exceed the MAQ where the equipment is stored and operated in accordance with this *Code*. [400: Table 5.2.1.1.3]
m. The quantities of alcoholic beverages in retail and wholesale sales occupancies shall not be limited provided the liquids are packaged in individual containers not exceeding 1.3 gallons. In retail and wholesale sales occupancies, the quantities of medicines, foodstuffs or consumer products, and cosmetics containing not more than 50% by volume of water-miscible liquids with the remainder of the solutions not being flammable, shall not be limited, provided that such materials are packaged in individual containers not exceeding 1.3 gallons.
n. Containing not more than the maximum allowable quantity per *control area* of Class IA, IB or IC flammable liquids.
o. The maximum allowable quantity shall not apply to fuel oil storage complying with *Section 603.3.2* of the *International Fire Code* in accordance with the *Building Code*.
p. For gallons of liquids, divide the amount in pounds by ten in accordance with *Section 5003.1.2* of the *International Fire Code* in accordance with the *Building Code*.
q. For storage and display quantities in Group M and storage quantities in Group S occupancies complying with the *Building Code*.
r. Densely packed baled cotton that complies with the packing requirements of ISO 8115: *Cotton Bales -- Dimensions and density* shall not be included in this material class in accordance with the *Building Code*.
s. The following shall not be included in determining the maximum allowable quantities in accordance with the *Building Code*:

1. Liquid or gaseous fuel in fuel tanks on vehicles.
2. Liquid or gaseous fuel in fuel tanks on motorized equipment operated in accordance with the *International Fire Code*.
3. Gaseous fuels in piping systems and fixed appliances regulated by the *International Fuel Gas Code*.
4. Liquid fuels in piping systems and fixed appliances regulated by the *International Mechanical Code*.
5. Alcohol-based hand rubs classified as Class I or II liquids in dispensers that are installed in accordance with Sections 5705.5 and 5705.5.1 of the *International Fire Code*. The location of the alcohol-based hand rub (ABHR) dispensers shall be provided in the construction documents.

t. Where manufactured, generated or used in such a manner that the concentration and conditions create a fire or explosion hazard based on information prepared in accordance with the *Building Code.*
u. For use of control areas, *see* the *Building Code.*
v. Quantities in parenthesis indicate quantity units in parenthesis at the head of each column.

60.4.2.1.2 through **60.4.2.1.4** Delete

Table 60.4.2.1.2.1 Delete

60.5.1.3.7.1 Replace with the following:
60.5.1.3.7.1 The person, firm, or corporation responsible for an unauthorized release shall institute and complete all actions necessary to remedy the effects of such unauthorized release, whether sudden or gradual, at no cost to the AHJ, in accordance with M.G.L. 21E, Massachusetts Oil and Hazardous Material Release Prevention Act.

60.5.1.4.3.2(5) through **60.5.1.4.3.2(9)** Add

(5) Identify Emergency Coordinators who will either be on the premises or on call and available to respond to an emergency within one hour of an emergency situation.
(6) Maintain an updated list containing the names, and the office, home, and/or mobile telephone number(s) of all designated Emergency Coordinators and the times of their availability. If for a particular period more than one individual is listed, the primary Emergency Coordinator shall be identified and others shall be listed in the order in which they will assume responsibility to fulfill the requirements of this role.

(7) Maintain and provide to the AHJ, a facility floor plan, not to scale, showing the locations of the hazardous material stored, the typical volumes, location of emergency spill containment equipment (pads, booms, *etc*.).
(8) For those facilities covered by *Section 60.8* and having either Category 3, Category 4 and Category 5 processes, their Emergency Response Liaison personnel shall communicate to the fire department any concerns and establish a protocol in conjunction with the AHJ on the shutdown of any of the process that would pose a risk to the public in the event of loss of any controls. This protocol shall include a facility liaison to meet with the Incident Commander upon arrival to ensure a safe shutdown if necessary.
(9) Notify the AHJ of any material changes to the Emergency Response Plan, including the name of the primary Emergency Coordinator, within 14 calendar days of the change.

60.5.1.19.1.1 Replace with the following:
60.5.1.19.1.1 Underground storage tanks are regulated by 310 CMR 80.00: *Underground Storage Tank (UST) Systems*.

60.7 Replace with the following:
60.7 Performance Alternative. In *lieu* of complying with Chapter 60 in its entirety, occupancies containing high hazard Level 1 to high hazard Level 5 contents shall be permitted to comply with Chapter 10 of NFPA 400, *Hazardous Materials Code*, subject to an independent review in accordance with *Section 1.15* and a copy, including its recommendations, shall be submitted to the Building Official.

60.8 through **60.8.1.1**(20) Add:
60.8 Hazardous Material Process or Processing.

60.8.1 General. This section shall apply to both new and existing facilities that process hazardous materials.

60.8.1.1 This section shall not apply to the following:
(1) Motor vehicle service stations regulated in accordance with Chapter 30;
(2) Construction and maintenance projects regulated in accordance with this *Code*;
(3) Products that are designed pre-mixed in accordance with the manufacturer's instructions or products that are labeled and packaged for sale to the consumer at retail;
(4) The activities of healthcare professional offices or facilities under the supervision of a licensed medical doctor, dentist, or veterinarian;
(5) Retail facilities such as pharmacies, hardware stores, department stores, or restaurants regulated by and in accordance with the provisions of this *Code*;
(6) Refrigeration systems which employ a refrigerant other than ammonia or LPG;
(7) The processing or treatment of potable water and sanitary wastewater;
(8) Wastewater treatment operations that are operated by Grades 1I, 1M, 2I, and 2M operators as classified according to 257 CMR 2.00: *Certification of Operators of Wastewater Treatment Facilities*;
(9) The consumption of fuels solely for the purpose of the operation of equipment, such as generators, torches, and consumptive use boilers regulated in accordance with the provisions of this *Code*;
(10) The storage of hazardous materials in atmospheric vessels, if they are maintained below the stored material's normal boiling point without benefit of chilling, refrigeration, or heat;
(11) The processing of hazardous materials and their byproducts which has a hazard ratings of two or less, according to criteria of NFPA 704;
(12) Hazardous waste activities regulated and in compliance with the provisions of 310 CMR 30.00: *Hazardous Waste*;
(13) Biological and medical activities regulated by the Department of Public Health;
(14) Handling and use of liquid nitrogen cooling systems at atmospheric pressure;
(15) The handling and repackaging of products regulated in accordance with the provisions of this *Code*;
(16) Use of inert gas;
(17) Swimming pools regulated by Department of Public Health under 105 CMR 435.000: *Minimum Standards for Swimming Pools (State Sanitary Code: Chapter V)*;

1.05: continued

(18) Air pollution control devices that are a component of a process regulated by Massachusetts Department of Environmental Protection under 310 CMR 7.00: *Air Pollution Control;*

(19) The production and handling of explosives and fireworks regulated in accordance with Chapter 65;

(20) The equipment, process, handling, storage, or use of compounds, liquids, pesticides, fertilizers, or soil treatments regulated in accordance with the provisions of this *Code* or as regulated by 248 CMR: *Board of State Examiners of Plumbers and Gas Fitters*.

60.8.1.1.1 Add:
60.8.1.1.1 Permits. Permits where required, shall comply with *Section 1.12.*

60.8.2 Add:
60.8.2 Terms. As used in Chapter 60, the enclosed terms shall have the following meaning assigned to them.

60.8.2.1 through **60.8.2.3**(6) Add:
60.8.2.1 Capacity. The nominal capacity of the vessel as specified by the manufacturer.

60.8.2.2 Category 3 Hazard Evaluation. A written evaluation performed or procedure conducted to identify hazards, including adjacent vessels that contain hazardous materials, and determine the required preventive, protective, and safety control measures in conformance with recognized and generally accepted good engineering and safe work practices associated with a particular process or condition and the facility wherein such process or condition is taking place.

60.8.2.3 Category 4 Limited Safety Program. A documented evaluation, policy, or required procedure to ensure compliance with all of the following:

(1) Process information including, but not limited to, SDS for the chemicals and products being processed, process chemistry, piping and instrumentation diagram, safety relief design, process control safety alarms and interlocks;

(2) Facility suitability including, but not limited to, the *Building Code* compliance, electrical hazard (Check article 500) classification, ventilation design, fire alarm and fire protection, spill containment and control;

(3) A process hazard safety analysis including but not limited to, effects in the event of failure, suitable administrative and engineering controls to minimize failure and to control unanticipated releases, and emergency responses to safeguard life and property;

(4) Written procedures, including routine operating and maintenance, as well as precautionary, shut-down and emergency response measures;

(5) A written training program for operating and maintenance personnel and outside contractors whose work or activity may affect process safety;

(6) A written records management protocol which tracks any changes, including but not limited to changes to chemicals, equipment, operating procedures training program. Such records shall include the date of such change and the name of the manager responsible for such change; and an internal review at a maximum every three years.

60.8.2.4 Competent Professional. A person who, based upon education, training, skill, experience or professional licensure or a combination thereof, has a specialized knowledge beyond that of an average person, about risk assessment, process hazard analysis, and/or process safety management principles, for the process or processes being evaluated.

60.8.2.5 Facility. A structure, building or complex of buildings or structures where hazardous materials are processed.

60.8.2.6 Facility Category. Since multiple hazardous material processes may exist within a facility, each facility shall identify all the categories of processes present and verify compliance with all the categories for each process identified at the facility.

60.8.2.6.1 For purposes of determining facility category classification under *Section 60.8*, the highest level of actual or possible hazardous process category shall determine the appropriate Facility Category.

1.05: continued

60.8.2.7 High-hazard Group H. High-hazard Group H occupancy includes, among others, the use of a building or structure, or a portion thereof that involves the manufacturing, processing, generation or storage of materials that constitute a physical or health hazard in quantities in excess of those allowed in control areas complying with the *Building Code*.

60.8.2.8 Incident. An unplanned event arising from a hazardous material process resulting in a fire, explosion, reportable release, or injury.

60.8.2.9 Mixture. A combination of materials in a vessel. The mixture shall be considered a different material from those before being added to the vessel, regardless of whether a reaction or change of state occurred in the vessel, and regardless of whether the mixture is homogeneous or heterogeneous. Material hazards of the mixture shall be classified based on the hazards of the mixture as a whole, in accordance with nationally recognized reference standards, by an approved qualified organization, individual, or Safety Data Sheets (SDS), or by other approved methods.

60.8.2.10 Person. An individual, firm, corporation, company, partnership, association, including any officer, trustee, assignee, receiver, personal representative, designee, manager or employee thereof.

60.8.2.11 Vessel. The container in which partial or the actual process takes place. Examples of vessels are beakers, pails, tanks, reactor kettles, pipe reactors, and drums. The size of a vessel is its capacity.

60.8.3 through **60.8.6.1** Add:
60.8.3 Hazardous Process Category. Hazardous Material processes shall be defined per *60.8.3.1* through *60.8.3.5*.

60.8.3.1 Category 1 Process. A process which involves or produces a Hazardous Material which occurs in a vessel with a capacity that is less than or equal to 2.5 gallons.

60.8.3.2 Category 2 Process. A process which involves or produces a Hazardous Material which occurs in a vessel with capacity that is greater than 2.5 gallons but less than or equal to 60 gallons.

60.8.3.3 Category 3 Process. A process which involves or produces a Hazardous Material which occurs in a vessel that is greater than 60 gallons but is less than or equal to 300 gallons that contains a hazardous material that is processed or a process area that is classified as being a H Occupancy as defined by the *Building Code*.

60.8.3.4 Category 4 Process. A process which involves or produces a Hazardous Material which occurs in a vessel with a capacity that is greater than 300 gallons and is not considered a Category 5 Process.

60.8.3.5 Category 5 Process. A process which involves or produces Hazardous Material which occurs in a vessel with a capacity that is equal or in excess of threshold quantities stated in 29 CFR 1910.119 or 40 CFR Part 68 and regulated by such standard.

60.8.3.6 Multiple Processes. Since multiple hazardous material processes may exist within a facility, each facility shall identify all the categories of processes present and verify compliance with all the categories for each process identified at the facility.

60.8.3.6.1 For purposes of determining category classification under this *Code* the actual or possible Hazardous Processing activity shall determine the appropriate Category.

60.8.4 Add:
60.8.4 Permits. Permits, where required, shall comply with *Sections 1.12* and *60.8.4.1* through 60.8.4.4

60.8.4.1 No person shall engage in the Process or Processing of any Hazardous Material at any Facility identified in *Section 60.8* as Category 2 through Category 5 unless said Facility is in compliance with the permit requirements of the provisions of this *Code*.

60.8.4.1.1 A permit holder shall apply for the renewal of said permit on an annual basis.

60.8.4.1.2 The application shall contain such information and be in a form as prescribed by the State Fire Marshal.

60.8.4.2 An applicant for the permit required by *Section 1.12* shall submit an application for Permit to Process Hazardous Material to the Head of the Fire Department on a form prescribed by the State Fire Marshal.

60.8.4.3 As provided in M.G.L. c. 148, § 10A the AHJ may deny or withhold the issuance of a permit however, such denial or withholding shall be in writing. Said notice of denial shall contain specifications of the alleged violation or deficiency together with their interpretation of *Section 60.8.* The AHJ shall be permitted to require technical assistance in accordance with *Section 1.15* to evaluate the adequacy of Category 3 or Category 4 process safety conditions, programs, procedures, and practices undertaken at the facility but only after a notice of denial has been properly served upon the person making application.

60.8.4.4 Any person who has been permitted to engage in the Process or Processing of Hazardous Material at any Facility or any person creating a new process facility, shall, prior to engaging in any new or modified hazardous material process activity which results in a change to the highest process category authorized by the current permit, notify the Head of the Fire Department of such new change or modification and submit a new application to appropriately modify the existing permit.

60.8.5 Add:
60.8.5 Compliance Requirements.

60.8.5.1 Add:
60.8.5.1 Facilities operating hazardous material processes as defined by this *Code* shall maintain, for each process in their facility, the following required documents and procedures at their facility for periodic inspection and review by the Head of the Fire Department to remain in compliance with this Section.

60.8.5.1.1 Category 1 Process Documents. Provide the following documentation for Category 1 processes.

(1) Documentation that adequately demonstrates that the facility maintains and implements a policy in compliance with 29 CFR 1910.1200 and 29 CFR 1910.1450 as applicable, and

(2) Documentation that adequately demonstrates that the facility maintains and implements a policy in compliance with Chapter 66, *Flammable and Combustible Liquids,* Chapter 67, *Flammable Solids,* as applicable, and

(3) Demonstrate compliance with *Sections 60.1.5.1 Emergency Action Plan* and Sections 60.5.1.4.3.2 (5) through (9).

(4) Comply with the permitting requirements of *Sections 1.12* and *60.8.4.*

60.8.5.1.2 Category 2 Process Documents. Provide the following documentation for Category 2 processes.

(1) Provide documentation that adequately demonstrates that the facility complies with the requirements for a Category 1 Process in accordance with *Section 60.8.5.1.1.*

60.8.5.1.3 Category 3 Process Documentation and Analysis. Provide the following documentation and evaluations for Category 3 processes.

(1) Provide documentation that adequately demonstrates that the facility complies with the requirements for a Category 2 Process in accordance with *Section 60.8.5.1.2*; and

(2) Complete a Category 3 Hazard Evaluation for each Category 3 process; and

(3) Ensures a Hazard Evaluation policy is in place and has been completed prior to conducting such process or activity modification thereto; and

(4) Implement appropriate process safety controls to mitigate the hazards associated with normal and abnormal operating conditions as identified in the Category 3 Hazard Evaluation; and

(5) Maintain Category 3 Hazard Evaluation documents and records for review by the Head of the Fire Department or Marshal for a minimum of two years following issuance of a permit.

60.8.5.1.4 Category 4 Process Documentation and Analysis. Provide the following documentation and evaluations for Category 4 processes.

(1) Provide documentation that adequately demonstrates that the facility complies with the requirements for a Category 3 Process in accordance with *Section 60.8.5.1.3*; and

(2) Complete a Category 4 Limited Process Safety Program for each Category 4 Process.

(3) Ensure a Category 4 Limited Process Safety Program policy is in place and has been completed prior to each process or being modified.

(4) Implement appropriate process safety controls to mitigate the hazards associated with normal and abnormal operating conditions as identified in the Category 4 Process Limited Safety Program; and

(5) Maintain Category 4 Limited Safety Program documents and records for review by the Head of the Fire Department or Marshal for a minimum of two years following issuance of a permit.

60.8.5.1.5 Category 5 Process Documentation and Analysis. Provide the following documentation and evaluation for Category 5 processes.

(1) Provide documentation that adequately demonstrates that the facility complies with the requirements for Category 4 process in accordance with *Section 60.8.5.1.4*; and

(2) Implement and self-certify compliance with 29 CFR 1910.119 *Process Safety Management of Highly Hazardous Chemicals* program or with 40 CFR Part 60 *Chemical Accident Prevention Provisions*.

(3) Maintain Hazard Evaluation documents and records for review by the Head of the Fire Department or Marshal for a minimum of two years following issuance of a permit.

60.8.6 Add:
60.8.6 Post-incident Analysis.

60.8.6.1 Post-incident analysis shall be applicable to Category 3 and Category 4 processes. For a Category 5 Process, a copy of the report submitted in accordance with the OSHA or EPA Risk Management Standard, shall be considered acceptable.

60.8.6.1.1 In the event of an incident involving a process in which there is fire department, EMS response, or a notification of unauthorized release, a written post incident analysis must be initiated within 48 hours. Upon completion of the analysis, the AHJ shall be given a duplicate copy of the analysis.

60.8.6.1.2 A completed post-incident written analysis report shall be completed within 45 days, unless an extension is provided by the AHJ for just reason.

60.8.6.1.3 The post-incident analysis report shall provide the following information:

(1) A summary of the cause of the incident and contributing factors;

(2) Recommendations to prevent a future recurrence;

(3) A summary of the dates of implementation of the post-incident analysis recommendations and corrective actions;

(4) A reassessment and confirmation of the category under which the facility is operating or application for a new permit as part of the report.

60.8.7 Add
60.8.7 Trade Secrets. A facility owner or operator subject to this *Code* and required to submit to the AHJ a permit application and/or supporting documents may claim information as a trade secret as provided in this Section.

60.8.7.1 A facility owner/operator shall be permitted to withhold the name of a specific hazardous material when notifying the fire department under *Section 60.8* if that chemical is claimed as a trade secret or confidential business information.

60.8.7.2 If the hazardous material is claimed as a trade secret:

(1) The generic class or category that is structurally descriptive of the chemical must be provided on the permit application as a matter of public record;

(2) The Safety Data Sheet (SDS) for the hazardous substance shall be available for review on-site by representatives of the Fire Department or the State Fire Marshal.

60.8.7.3 A facility owner or operator shall be permitted to claim information, required under this *Code*, is treated as confidential and not as a matter of public record if:

(1) The information has not been disclosed to anyone else, other than employees of the facility or the AHJ, an officer or employee of the United States or a state or local government, or anyone who is bound by a confidentiality agreement;

(2) The facility has taken reasonable measures to protect the confidentiality of such information and intends to continue to take such measures;

(3) The information is not required to be disclosed, or otherwise made available to the public under any other federal or state law; and

(4) Disclosure of the information may cause substantial harm to the competitive position of the facility.

1.05: continued

60.8.7.4 All documentation and records claimed as trade secret or confidential information, including but not limited to the "Permit to Process Hazardous Material Application", "hazard evaluation documentation", "process safety program documentation", shall be clearly marked as "Trade Secret", "Confidential", or other words of similar meaning.

Chapter 61 Aerosol Products
(No amendments)

Chapter 62 Reserved

Chapter 63 Compressed Gases and Cryogenic Fluids
(No amendments)

Chapter 64 Corrosive Solids and Liquids
(No amendments)

Chapter 65 Explosives, Fireworks, Model Rocketry, Cannons, and Mortars

Title of Chapter 65. Modify by adding Cannons, and Mortars to the end of the title **Explosives, Fireworks, Model Rocketry, Cannons, and Mortars**.

65.1.3 Add:
65.1.3 Certificates. Certificates, where required, shall comply with *Section 1.13*.

65.1.4 Add:
65.1.4 Terms. As used in Chapter 65 the enclosed terms shall have the following meaning assigned to them.

65.1.4.1 Barrier. As used in Chapter 65, is an object or structure, such as, but not limited to, a fence with warning sign, or tape, that prohibits or restricts passage or travel.

65.1.4.2 Blasting Mat. A mat of woven steel wire, rope, scrap tires, or other suitable material, earth fill or construction to cover blast holes, for the purpose of preventing flyrock.

65.1.4.3 Blasting Operation. Any person engaged in the conduct of blasting under the terms of a contract or otherwise.

65.1.4.4 Maximum charge per delay. The maximum weight of explosives detonated per eight (8) milliseconds or less when using pyrotechnic initiation (non-electric and electric) or the maximum weight of explosives detonated per millisecond when using non-pyrotechnic electronic initiation.

65.1.4.5 Natural Barrier. A restrictive terrain, or body of water, that in itself, will assist in restricting the display area at a fireworks show without the need for an additional barrier to be erected. Natural barriers must be approved by the State Fire Marshal in advance of a show.

65.1.4.6 Physical Barrier. A structure of substantial strength that is uniformly supported and provides an uninterrupted barrier both vertically and horizontally that consists of a height no less than 40 inches including, but not limited to, snow fencing or its equivalent.

65.1.4.7 Special Industrial Explosives Device. Shaped materials, sheet forms, and various other extrusions, pellets, and packages of high explosives used for high-energy-rate forming, expanding, and shaping in metal fabrication and for dismemberments and reduction of scrap metal.

65.1.4.7.1 The high explosives used include dynamite, trinitrotoluene (TNT), PETN, and cyclotrimethylenetrinitramine (RDX).

1.05: continued

65.1.4.7.2 Special industrial explosive material shall also include explosive materials used exclusively for research and development including, but not limited to, explosive detection and explosive safety.

65.2.1 Replace with the following:
65.2.1 The construction, handling, and use of fireworks intended solely for outdoor display as well as the general conduct and operation of the display, shall comply with the requirements of NFPA 1123, *Code for Fireworks Display*, including its annexes A, D and E.

65.2.2 Replace with the following:
65.2.2 All storage of display fireworks shall comply with NFPA 1124, *Code for the Manufacture, Transportation, Storage, and Retail Sales of Fireworks and Pyrotechnic Articles*.

65.2.4 Add:
65.2.4 Delivery of Fireworks.

65.2.4.1 Delivery of fireworks shall be made only to authorized persons who are in possession of a valid Certificate of Competency (Fireworks Display) and a Permit to Display Fireworks (Supervised Display of Fireworks).

65.2.4.2 As soon as the fireworks have been delivered to a display site, they shall not be left unattended, and they shall be kept dry.

65.2.4.3 Upon delivery of the fireworks to the display site, members of the public, the audience, spectators, and other persons not otherwise authorized by the AHJ, shall be kept at a distance not less than those specified in NFPA 1123, Table 5.1.3.1 *Distances for Outdoor Aerial Shell Display Sites: Minimum Separation Distances from Mortars to Spectators for Land or Water Displays*.

65.2.4.3.1 Where it is impractical to locate the delivery vehicle within the perimeter of the display site the vehicle shall be parked and secured.

65.2.4.3.1.1 The minimum secured radius from any point of transfer of fireworks from the vehicle to the display site shall be 150 ft.

65.2.4.3.1.2 Audience members, spectators and the general public shall not be allowed within this area.

65.2.5 Add:
65.2.5 Requirements for Display Fireworks.

65.2.5.1 The audience at a supervised display of fireworks shall be restrained behind a physical or natural barrier.

65.2.5.1.1 Such barrier shall clearly define the restricted display site.

65.2.5.1.2 This restricted area shall be defined based on the minimum separation distances specified by NFPA 1123, Table 5.1.3.1 *Distances for Outdoor Aerial Shell Display Sites: Minimum Separation Distances from Mortars to Spectators for Land or Water Displays.*

65.2.5.2 A portable anemometer or similar device for measuring wind velocity shall be available for use at all times by the operator.

65.2.5.2.1 Any supervised display of fireworks shall be stopped immediately in the event that upper level wind conditions cause the fall out area to change and pose a threat to public safety or property.

65.2.5.2.2 A test shot shall be provided to check for high level winds at the request of the AHJ.

65.2.5.2.3 The term high winds as used in this section are when the wind velocity exceeds 20 miles per hour at ground level.

65.2.6 Add:
65.2.6 Nighttime Fireworks. Where fireworks are displayed at night, a thorough search of the display site shall be made by the competent operator immediately after the display and again at first light the following morning to ensure recovery of all unexploded shells.

65.2.6.1 If the competent operator is unavailable due to unforeseen circumstances such as illness or injury, a substitute competent operator, upon approval of the AHJ, shall be permitted conduct the aforementioned searches. A thorough search shall include, but not be limited to:

1.05: continued

(1) A Search as described above;
(2) Completed form prescribed by the State Fire Marshal that indicates the start and stop time of the search; and
(3) Acknowledgement by the operator and Head of the Fire Department or his or her designee that they have completed the requirements of this section.

65.2.7 Add:
65.2.7 Fire Department Coordination. The sponsor shall be responsible for the detailing of one or more members of the fire department as may be required by the Head of the Fire Department.

65.2.7.1 The fire department detail shall be on duty from the time the fireworks are delivered to the site until the termination of the display and removal of all fireworks and debris from the site and in compliance with *Section 65.2.6.*

65.2.8 Add:
65.2.8 Mortar and Shells.

65.2.8.1 No fireworks display shall include mortars or shells in excess of 12 inches in diameter, unless the certificate holder shall have obtained prior written approval from the State Fire Marshal.

65.2.8.2 Add:
65.2.8.2 Multiple shot mortar devices using mortars less than three inches in diameter including, but not limited to cakes, and repeaters, shall be buried ⅞ of their length in a trench, mortar trough, or sturdy drum filled with clean sand or substantial wooden boxes.

65.2.8.2.1 The Head of the Fire Department shall be permitted to allow for an equivalent alternative, such as sandbags or racks constructed with material similar to mortar rack construction, provided the same degree of protection is provided.

65.2.8.3 The use of aluminum mortars is prohibited.

65.2.8.4 All supervised displays of fireworks shall be electrically fired. Mortars shall not be reloaded.

65.2.8.5 Add:
65.2.8.5 Electrical Firing Units.

65.2.8.5.1* All electrical firing units shall be included on an approved list from the State Fire Marshal's Office, or display be inspected by the State Fire Marshal and a decal issued by the State Fire Marshal for a term determined by the State Fire Marshal shall be displayed on the panel.
A65.2.8.5.1 Electronic firing panels that have been approved by the State Fire Marshal are published on a list maintained by the State Fire Marshal's office.

65.2.8.5.2 The panel shall contain a key operated safety switch which controls the overall power and functionality of the firing unit.

65.2.8.5.3 The unit shall be operated in accordance with the manufacturer's instructions.

65.2.8.5.4 All electrical firing units, and any associated devices, wiring, or connections shall be adequately maintained.

65.2.8.6 Add:
65.2.8.6 Racks.
A65.2.8.6 Guidance for the construction of racks is included in the appendix of NFPA 1123

65.2.8.6.1 Parallel racks or rows of racks shall be separated by a minimum distance not less than twice the inside diameter of the largest mortar in an adjacent rack.

65.2.8.6.2 Dense Pack Modular Racks, approved for use on licensed trailers and trailer launched portable barges shall be permitted.

65.2.8.6.3 Dense Pack Modular Racks shall be made of aluminum or other suitable metal framework system and shall be subject to restrictions and inspections as established by the State Fire Marshal.

65.2.8.6.4 All mortars approved for use in dense pack modular racks must be secured to the framework system.

65.2.8.6.4.1 Spacing between mortars in a rack shall be at least ½ the diameter of the adjacent mortar.

1.05: continued

65.2.8.6.5 Only single break shells shall be fired.

65.2.8.6.6 Dense Pack Modular Racks shall be permitted to be placed on firm ground, bridge, barge or secured to an approved trailer or barge licensed for the use of firing display shells utilizing dense pack modular racks.

65.2.8.6.7 Dense Pack Modular Racks placed on the ground or on a barge, not part of an approved trailer or barge system shall be placed in rows of racks separated by twice the diameter of the largest mortar within the rack.

65.2.8.6.8 Parallel rows of racks shall be separated by a minimum distance not less than 24 inches.

65.3.4 Add:
65.3.4 The use of pyrotechnic special effects indoors is prohibited in nightclubs, discotheques, dance halls, bars, or similar occupancies (defined as A-2 or A-3 by the *Building Code*).

65.3.5 Add:
65.3.5 The use of pyrotechnic special effects indoor in entertainment venues (defined as A-3 by the *Building Code*) and theatres (defined as A-1 by the *Building Code*) shall be permitted provided the facility is protected throughout with automatic sprinklers.

65.3.6 Add:
65.3.6 Approval of the use of pyrotechnic special effects shall be subject to such terms and conditions as the Head of the Fire Department may require.

65.3.7 Add:
65.3.7 No bombs, salutes, roman candles, skyrockets, firecrackers, torpedoes, or similar pyrotechnic shall be used before a proximate audience unless specifically approved in writing by the State Fire Marshal.

65.3.8 Add:
65.3.8 The theatre, auditorium, or similar facility shall certify that the proscenium protection is in compliance with the *Building Code*.

65.3.9 Add:
65.3.9 Electrical firing panels shall comply with *Sections 65.2.12* and *65.2.13*. A performer shall not be required to comply with *Section 65.2.12*, if firing a single special effect.

65.4.1.1 Add:
65.4.1.1 The use of flame effects indoors is prohibited in nightclubs, discotheques, dance halls, bars, or similar occupancies. The use of flame effects indoors, in entertainment venues (defined as A-3 by the *Building Code*) and theatres (defined as A-1 by the *Building Code)*, shall be permitted provided the facility is protected throughout with automatic sprinklers.

65.5.1 Replace with the following:
65.5.1 The manufacture, transportation, or storage of fireworks shall comply with NFPA 1124 Chapters 1 through 5 and Chapter 8.

65.5.3 Add:
65.5.3 No person shall manufacture fireworks except in accordance with this Code. The manufacture of any fireworks, as defined in this Code, shall be prohibited unless it is authorized by federal license or permit, and a license issued by the local licensing authority and a permit issued by the State Fire Marshal.

65.5.3 Add:
65.5.3 No person shall manufacture fireworks except in accordance with this *Code*. The manufacture of any fireworks, as defined in this *Code*, shall be prohibited unless it is authorized by federal license or permit, and a license issued by the local licensing authority and a permit issued by the State Fire Marshal.

65.6.1 Add:
65.6.1 Permit. Permits, where required, shall comply with *Section 1.12.*

65.7.2 Delete.

65.9.1 Replace with the following:

1.05: continued

65.9.1 The manufacture, transportation, storage, sale, and use of explosive materials shall comply with NFPA 495: *Explosive Materials Code, including appendix A, C, D and E*, and NFPA 498, *Standard for Safe Havens and Interchange Lots for Vehicles Transporting Explosives*.

65.9.1.1 Add:
65.9.1.1 All magazines containing explosive materials shall be opened and inspected at maximum intervals of seven days to determine whether there has been unauthorized or attempted entry into the magazines or whether there has been unauthorized removal of the magazines or their contents.

65.9.1.2 Add:

65.9.1.2 Terms. As used in Chapter 65, additional terms are defined in *65.1.4*.

65.9.3 Add:
65.9.3 Reserved

65.9.4 Add:
65.9.4 Storage of Explosives on Water

65.9.4.1 No person shall store any explosives on the waters of the Commonwealth unless a permit for such storage has been secured from the State Fire Marshal, and unless the explosives are stored in accordance with the following requirements:

(1) Such explosives shall be stored in a magazine located on a boat or vessel used exclusively for the purpose, and such boat or vessel shall be securely moored or anchored according to the direction of the harbor master. The storage magazines shall be subject to the requirements of Chapter 65;

(2) No detonators shall be stored or transported on a boat or vessel on which any explosives are kept or stored, except in accordance with the applicable provisions of Chapter 65;

(3) No explosives shall be delivered or removed from a boat or vessel during foggy weather;

(4) In the loading or unloading of any explosive, care shall be taken in the handling of same and it shall be so placed or stowed as to prevent displacement during transit;

(5) No explosives shall be carried or transported on the waters of the Commonwealth on any vessel which is carrying passengers;

(6) Any vessel containing explosives in transit on any of the waters of the Commonwealth shall display on a suitable staff an international Code Flag B (a red flag) readily discernible from a distance of not less than 1,000 feet by day and which shall be properly illuminated at night;

(7) No smoking shall be allowed on any vessel containing explosives;

(8) All such boats and vessels shall display the word "EXPLOSIVES" in a conspicuous manner so that it shall be permitted to be seen by day from all sides at a distance of not less than 200 feet, and shall be properly illuminated at night.

65.9.5 Add:
65.9.5 Magazines. The requirements of *Section 65.9* shall be in addition to applicable U.S. Department of Transportation (U.S. Coast Guard) Regulations, 33 CFR 126, and 46 CFR 194.

65.9.5.1 Magazine Alteration. No alteration changing the constructed storage capacity of a magazine shall be made without notifying the State Fire Marshal and the Head of the Fire Department in writing and then receiving written acknowledgment of receipt of the notification from the State Fire Marshal and the Head of the Fire Department.

65.9.5.2 Equivalent Alternate Construction Standards. Alternate storage facilities for explosive materials shall be permitted to be approved by the State Fire Marshal when it is shown that such alternate facilities are or will be constructed in a manner substantially equivalent to the standards of construction contained in Chapter 65 and such construction has been approved in accordance with 27 CFR 201(b).

65.9.5.3 Magazines shall be sequentially numbered by a minimum of two inch block numbers plainly visible on the outside.

65.9.5.3.1 This number shall correspond to those drawn on a storage facility site diagram, drawn to scale, clearly indicating the separation distances between magazines, inhabited buildings, railways, highways, and other magazines.

65.9.5.4 The owner shall plainly post on the interior side of the magazine door the current Table of Distance storage capacity.

1.05: continued

65.9.5.5 Each magazine shall at all times be under the control of a competent person.

65.9.5.5.1 This shall mean that any penetration of the magazine or magazine area shall be protected by the continuous surveillance of an individual or by an electronic sensing device which shall upon such penetration notify either the police or fire department, as the Head of the Fire Department may direct.

65.9.6 Add:
65.9.6 Operational Procedure Manual for Storage of Explosives. A Magazine Facility Operational Procedure Manual shall be maintained on the storage facility which shall include the following:

(1) facility emergency policy and procedures;
(2) administrative and emergency notification procedures;
(3) scaled plot plan of the storage facility site;
(4) showing magazines, inhabited buildings railways and highways within 2,000 feet of the closest magazine, Explosive Material Manufacturers Safety Data Sheets (SDS) for all explosive materials and SARA Title III Hazardous Materials on the site.

65.9.6.1 This manual shall be kept current and a copy provided upon request to the Head of the Fire Department and the State Fire Marshal or their designees.

65.9.6.2 A magazine facility containing 10,000 or less pounds of explosive materials shall be exempt from this requirement.

65.9.6.3 Delivery of explosives shall only be made to persons displaying proper permits and licenses and shall be delivered into magazines or temporary storage or handling areas as authorized by this *Code*.

65.9.6.4 No person shall deliver explosive materials to any magazine, building or structure that is not permitted by the State Fire Marshal.

65.9.6.5 Any person who delivers explosive materials shall keep a record of the delivery transaction.

65.9.6.5.1 The record shall contain the permit number assigned by the State Fire Marshal to the magazine, building or structure where said materials are to be stored.

65.9.7 Add:
65.9.7 Explosives shall be transported in accordance with 29 CFR 1926.903.

65.9.8 through **65.9.8.4.3** Add:
65.9.8 Blast Analysis. Before conducting a blast, the blaster shall conduct a blast analysis of the overall factors affecting the blasting operations. This analysis shall consider;

(1) adjacent area structure(s), building(s), building foundations, utilities, including gas and water supply lines, septic systems and swimming pools,
(2) area geology within 250 ft. (76.2 m) of the center of the blast site,
(3) the identification of commercial equipment such as computers, electron microscopes, laser equipment, relays *etc*., which are sensitive to vibrations,
(4) other underground objects that might be damaged by the effects of a blast.

65.9.8.1 A blast analysis shall be compared to the blast design plan to establish a sound relationship between the blast design and the effects of blasting upon the neighborhood within the blast area.

65.9.8.1.1 The blast analysis shall contain a discussion of plan factors to be used which protect the public and meet the applicable airblast, flyrock, and ground vibration standards.

65.9.8.2 The area of the blast analysis shall be within 250 ft. (76.2 m) from the closest borehole.

65.9.8.3 Blast Plan. When blasting is done in a congested area or within 250 ft. (76.2 m) of a building, structure, railway, or highway, or any other installation that may be affected, precautions shall be taken by the blaster in the design of the blast plan to prevent damage and to minimize adverse effects including ground vibrations, air overpressure and flyrock.

1.05: continued

65.9.8.3.1 Such precautions shall include but not be limited to, review of each shot variable or dimension to ensure a blast design plan which establishes sound relationships between current industry standards and the allowable limits of the effects of blasting.

65.9.8.3.2 A blast design plan shall describe as a minimum, the amount of material to be removed, benches and lifts, sketches of proposed drill patterns, spacings, free face, borehole size, depth, and angle, stemming, decking, weight of explosive material per delay, delay periods, initiation techniques, the amount of explosive material to be used, critical dimensions, location and descriptions of building(s) and structure(s) to be protected, their number, and the placement of seismographs.

65.9.8.3.3 All shots shall be designed using the most current industry standards, to prevent excessive air overpressure, ground vibration, and flyrock.

65.9.8.4 Blasting Precautions. Blasting mats shall be required if the material to be blasted lies within 100 feet of a highway, an inhabited building or structure not under the control of the project.

65.9.8.4.1 A blaster authorized to prepare explosive charges or to conduct blasting operations shall use every reasonable precaution, including but not limited to warning signals, flags, barricades, or other equally effective means to ensure the safety of the general public and workers.

65.9.8.4.1.1 A code of blasting signals shall be posted on one or more conspicuous places at the operation.

65.9.8.4.1.2 All employees shall be required to familiarize themselves with the blasting signal code. The code shall be:

(1) WARNING SIGNAL: Three long blasts five minutes prior to blast signal.
(2) BLAST SIGNAL: Two blasts one minute prior to the shot.
(3) ALL CLEAR SIGNAL: A prolonged blast following the inspection of the blast area.

65.9.8.4.2 Blast signals shall be clearly audible for a distance of 250 ft. (76.2 m) of the blast site.

65.9.8.4.3 No person shall fire a blast in any blasting operation on Sunday or between the hours of sunset and sunrise unless otherwise authorized in writing by the State Fire Marshal or the Head of the Fire Department, but in any case the authority of the State Fire Marshal shall prevail.

65.9.9 Reserved

65.9.10 Add:
65.9.10 No blast shall be fired without a positive signal from the blaster-in-charge and only the blaster-in-charge shall fire the blast.

65.9.11 Reserved

65.9.12 Add:
65.9.12 Whenever quarry blasting is conducted within 500 ft. (152.4 m) of building(s) used for human habitation a series of durable warning signs shall be erected along the entire perimeter of any rock face more than six feet high.

65.9.12.1 They shall be spaced not more than 75 ft. (22.86 m) apart and set back a reasonable distance from the face.

65.9.12.2 Each sign shall contain the words "WARNING BLASTING AREA DANGER" in letters at least two inches in height. *(See* St. 2014, c. 149, § 7: *An Act Relative to Natural Gas Leaks*.)

65.9.13 Add:
65.9.13 Alternative Allowable Vibration Levels. Alternative limits of the effect of blasting shall permitted to be adopted for quarry operations located adjacent to inner city areas as a local municipal regulation adopted in accordance with M.G.L. c. 148, § 9.

65.9.14 through **65.9.14.4.5** Add:

65.9.14 Blaster's Log.

65.9.14.1 A blaster who performs blasting operations shall maintain a blaster's log on a form approved by the State Fire Marshal recording each blast.

1.01: continued

65.9.14.1.1 The blaster's log shall be completed within 6 hours of a blast and retained for a minimum of three years from the date of the blast.

65.9.14.1.2 Blasters' logs shall be made readily available to the State Fire Marshal, the Head of the Fire Department or their designees.

65.9.14.1.3 The blaster's log shall contain:

(1) Name, signature, and Certificate of Competency Number of the blaster in charge;
(2) Blast location, address, city, description;
(2) Date and time of blast;
(4) Type of material blasted;
(5) Distance, in feet, to the nearest inhabited building or structure, neither owned or leased by holder or holder client of the Explosives User Certificate;
(6) Scaled distance or alternative option used to determine blast design;
(7) Type of matting or cover over blast if applicable;
(8) Weather conditions, including temperature, cloud cover, and wind direction;
(9) Blast plan and sketch showing blast hole diameter, delay, delay pattern and types of detonators, spacing, depth of blast hole, hole pattern, and number of holes;
(10) Explosive material type, size, total weights of each explosive by hole;
(11) Type of initiation system (methods of firing and type of circuit);
(12) Feet of over burden, depth, and type of stemming;
(13) Maximum charge per delay;
(14) The seismograph(s) location(s), including distance and direction from the seismograph to the closest borehole, and from the seismograph to the closest structure;
(15) Seismograph readings, including peak particle velocity, frequency, and airblast;
(16) Type of seismograph, instrument make, model serial number, calibration date, and sensitivity settings;
(17) Name of person taking the seismograph reading. The name and firm analyzing the seismograph record if applicable; and
(18) Complaints or comments following the blast.

65.9.14.2 Blasts that exceed the maximum allowable peak particle velocity frequency or decibel levels established by Chapter 65 or are known by the blaster in charge to have produced flyrock, shall be reported to the Head of the Fire Department within 24 hours and a written report shall be provided within five days.

65.9.14.3 Seismograph Placement. The seismograph shall be placed at the nearest inhabited building adjacent to the blast area that is not owned, leased, or controlled by the blasting operation.

65.9.14.3.1 If there is no suitable location for seismograph placement within ten feet of the structure that is mutually agreed upon by the blaster and the Head of the Fire Department or his designee, the condition which made it unsuitable to place to seismograph within ten feet of the structure and the alternative location agreed upon by the Head of the Fire Department or his designee shall be noted, in writing, in the blast plan.

65.9.14.3.2 If the person in control of said nearest structure refuses to grant permission for seismograph placement as required by this *Code* the Head of the Fire Department shall be immediately notified.

65.9.14.3.2.1 Such refusal shall be further documented in writing by the blaster and be placed in the blasting record.

65.9.14.3.2.2 Placement of the seismograph shall then be at a location mutually agreed upon by the blaster and the Head of the Fire Department or his or her designee.

65.9.14.3.3 In the case of underground pipelines, bridges, roadways, steel construction, and other heavy construction, where prescribed vibration or airblast levels would be overly restrictive in relation to the nature of the project, vibrations and airblast levels in excess of the tables listed above shall be allowable when authorized in writing by the owner or representative of the owner of adjacent inhabited building(s) or structure(s) within the blast area.

65.9.14.3.4 Seismograph monitoring shall be required for all blasting operations.

65.9.15 Add:
65.9.15 Pre-blast Inspection Surveys.

1.05: continued

65.9.15.1 The intent of a pre-blast survey is to provide documentation of the existing physical condition of buildings and structures within the blasting area with the dimensions of each observed defect clearly noted.

65.9.15.1.1 With the approval of the AHJ, requirements for pre-blast survey may be suspended if the blaster adheres to a Scaled Distance 50 [Allowed Charge Weight per Delay = ((distance to structure)/50)^2], and a peak particle velocity limit of 0.5in/s. If this option is selected, the blaster named on the Use and Handling Permit shall sign a statement of compliance on a form approved by the Marshal to adhere to a Scaled Distance 50.

65.9.15.1.2 When blasting within 250 ft. (76.2 m) of a structure, as measured from the closest borehole to the structure, or structures, not owned or controlled by the project, a pre-blast inspection survey shall be offered.

65.9.15.1.3 It shall be the responsibility of the blaster to notify structure owners of the survey.

65.9.15.1.4 Surveys in excess of the above shall be permitted to be conducted at the discretion of the blaster.

65.9.15.1.5 If the owner or occupant request surveys in excess of the above, the cost of the survey(s) shall be paid by the owner or occupant of the structure.

65.9.15.1.6 The pre-blast survey shall document the existing visual conditions of the interior and exterior of the structure including improvements to the property and other physical factors that could reasonably be affected by the blasting.

65.9.15.1.7 Structures such as pipelines, cables, transmission lines, cisterns, wells, and other water systems warrant special attention; however the assessment of these structures shall be permitted to be limited to surface conditions and other readily available data.

65.9.15.1.8 The survey shall accurately record deficiencies by means of written notes, sketches, photographs, video tape, cassette tape narrative, or any other format or combination that sufficiently depicts the pre-existing conditions prior to the blasting.

65.9.15.1.9 If the owner refuses the survey the inspector shall request that he sign a waiver of the survey.

65.9.15.1.10 A pre-blast survey waiver shall be made on a form approved by the State Fire Marshal.

65.9.15.1.11 If the owner or occupant refuses to sign a waiver, the inspector shall sign the waiver attesting to the refusal.

65.9.15.1.12 Three attempts shall be made to contact the owner to offer the survey.

65.9.15.1.12.1 If no response is made after the second attempt, or the owner refuses to sign a survey waiver, a notice offering the survey shall be sent via any carrier capable of providing a receipt of delivery.

65.9.15.1.12.2 A receipt of delivery shall satisfy this requirement.

65.9.15.1.13 Surveys shall be conducted by technicians familiar with construction methods and materials, familiar with blasting procedures, and this *Code*.

65.9.15.1.14 When a blast inspection is made, the results of that inspection shall be permitted to only be made available to the Head of the Fire Department, the State Fire Marshal or their designees upon request with the written consent of the occupant of the structure.

65.9.15.1.14.1 The blast inspection shall be made available to the owner of the inspected property within a reasonable time after request is made in writing.

65.9.15.1.14.2 Failure to provide a blast inspection report within 30 days of such request shall be grounds for revocation of a Use and Handling Permit.

65.9.16 Underwater blasting shall be conducted in accordance with 29 CFR 1926.912.

65.9.17 Charge Activated Device. The use of charge activated devices shall comply with the following:

(1) Use and Handling Permits shall be obtained as required in *Section 1.12.*

1.05: continued

(2) The charge activated device shall be exempt from the following, blast analysis and the use of a seismograph. However, the blast design plan is required.
(3) A blaster's log shall be maintained.
(4) Matting of sufficient size and strength shall be utilized during all detonations.
(5) All holes must be drilled to the manufacturer's specifications and no hole shall be re-drilled.

65.9.18 Blasting Regulatory Review.

65.9.18.1 Any person or firm alleging damage as a result of blasting operations shall make a complaint on a "Blasting Regulatory Review" form approved by the State Fire Marshal and obtained from the fire department of the city or town where damage occurred.

65.9.18.1.1 The Blasting Regulatory Review Form shall contain a signed certification.

65.9.18.1.2 Completed forms shall be returned within 30 days of the blasting incident to the Head of the Fire Department.

65.9.18.2 The Head of the Fire Department upon receiving a Blasting Regulatory Review Form shall cause the holder of the "Explosives Users Certificate" and the blaster in charge, to report to the fire department with copies of pertinent blasters' logs for the dates in question and to provide copies of the blaster's log for the dates alleged.

65.9.18.2.1 The blaster in charge shall be interviewed and blast logs examined to determine any violations of this *Code.*

65.9.18.2.2 The fire department authority shall record the results of his or her inquiry on the Blasting Regulatory Review Form.

65.9.18.3 The Head of the Fire Department shall retain the original of the Blasting Regulatory Review Form and forward a copy to the State Fire Marshal's Office.

65.9.18.4 The holder of the Explosives Users Certificate shall receive a copy of the complaint form and acknowledge receipt by signature and date in the space provided on the complaint form.

65.9.18.5 The holder of the Explosives Users Certificate or the holder's insurance carrier shall respond to the claimant within 30 days after the date that the holder received the complaint form.

65.9.19 Add:
65.9.19 Manufacture of Explosive.

65.9.19.1 General.

65.9.19.1.2 A manufacturer of explosives shall mean any person licensed in accordance with 27 CFR Part 55, and engaged in the business of manufacturing explosives for the purpose of sale or distribution.

65.9.19.1.2.1 A federal manufacturer license is required when a binary system is used and the components are mixed in the course of a trade or business to create an explosive material.

65.9.19.1.2.2 In the case of binary systems, the supplier of pre-weighted or pre-measured ingredients, not the person mixing the ingredients, is considered the manufacturer of any pyrotechnic materials created from binary components.

65.9.19.1.2.3 The person loading binary materials into devices supplied by the manufacturer of binary systems shall not be considered a manufacturer when such loading is performed according to the instructions of the manufacturer.

65.9.19.2 Add:
65.9.19.2 Explosives Manufactories.

65.9.19.2.1 All explosives manufactories shall be supplied with some means of direct communication with the Head of the Fire Department, such as radio, telephone or fire alarm boxes, for immediate notice in case of fire.

65.9.19.2.2 There shall be a competent watchman on guard at all explosive manufactories except when the same are in actual operation.

65.9.19.2.3 No dry vegetation or combustible rubbish shall be allowed to accumulate within 50 feet of any building connected with such manufactories.

1.07: continued

65.9.19.2.4 Persons younger than 18 years old shall not be employed in an explosive manufactory and shall not be permitted to enter such manufactory unless accompanied at all times by a responsible adult person.

65.9.20 Add:
65.9.20 Explosives Transaction Records.

65.9.20.1 All persons keeping, storing, using, selling, manufacturing, handling, or transporting explosive material shall maintain records so that the quantity and location of such explosive materials are readily available for inspection by the Head of the Fire Department, the State Fire Marshal, their designees, or a police officer.

65.9.20.1.1 Quantity and location records shall be delivered to the State Fire Marshal forthwith upon demand.

65.9.20.2 Daily Summary of Magazine Transactions:

65.9.20.2.1 In taking the inventory required by Chapter 65, a licensee or permitee shall enter the inventory in a record of daily transactions which shall be kept for each magazine on a storage facility.

65.9.20.2.2 These records shall be permitted to be kept at one central location on the business premises if separate records of daily transactions are kept for each magazine.

65.9.20.2.3 Not later than the close of the next business day, each licensee or permitee shall record by the manufacturer's name or brand name, the total quantity received in and removed from each magazine during the day, and the total quantity remaining on hand at the end of the day.

65.9.20.2.4 Any discrepancy which might indicate a theft or loss of explosive materials shall be reported to the State Fire Marshal immediately.

65.9.21 Add:
65.9.21 Discontinuance of Business. Where an explosive materials business or operation is discontinued or succeeded by a new licensee or registrant, the records prescribed by Chapter 65 shall appropriately reflect such facts and shall be delivered to the successor.

65.9.21.1 Where discontinuance of the business or operation is absolute, copies of the records required shall be delivered to the State Fire Marshal within 30 days following the business or operation discontinuance.

65.9.22 Any person who transports or delivers explosive materials to any magazine, building or structure shall keep a record of the permit number assigned to said magazine, building, or structure by the State Fire Marshal in accordance with Chapter 65.

65.9.23 Theft. The loss or theft of any explosives shall be immediately reported to the State Fire Marshal and confirmed in writing within 24 hours.

65.9.24 The State Fire Marshal or his or her designee shall be permitted, in his or her discretion, upon discovering a violation of this *Code* or upon determination of a fire or explosion hazard, require the removal of any explosive material or that a watchman be placed continuously in charge of it.

65.9.24.1 The expense of said removal or watchman shall be the responsibility of the person in whose possession the explosive material is found.

65.9.25 Any explosion, fire, or collision occurring in connection with the keeping, storage, manufacture, sale, transportation or use of explosive material causing loss of life or injury to any person or damage to property shall be reported immediately to the State Fire Marshal and the Head of the Fire Department, giving an account of the same, and then confirmed giving a detailed account in writing within 24 hours.

65.9.26 Any person, firm, or corporation in the Commonwealth who keeps, uses, sells, transports, or stores any explosive shall keep a record of the disposition of such explosive by recording the batch number, if any, from the case from which individual explosive has been removed, if sold in less than case lots, or the number of cases with their batch numbers if sold in case lots.

1.05: continued

65.9.26.1 The person to whom such explosive has been transferred shall record the transaction and such records shall be maintained for ready inspection by the State Fire Marshal, the Head of the Fire Department, or the Head of the Police Department, or their designees, for a period of three years.

65.9.27 Laboratories. Industrial laboratories, laboratories of technical institutes, colleges, universities, and similar institutions shall be permitted to keep, store, and use explosives or blasting agents when confined to the purpose of scientific or technical instruction or research, provided the storage and use of explosives or blasting agents is conducted or supervised by a person holding a Certificate of Competency and not more than 50 lbs. of explosive are kept on hand at any time in such laboratories.

65.9.27.1 Such Certificate of Competency can be issued by the State Fire Marshal without testing, providing a curriculum vitae is provided.

65.10 Add:
65.10 The possession and use of consumer fireworks is prohibited in the Commonwealth unless part of a display firework show in accordance with *Section 65.2* or part of a Pyrotechnics Before a Proximate Audience in conformance with *Section 65.3.*

65.11 Add:
65.11 Cannon or Mortar Firing.

65.11.1 The firing of muzzle-loading cannons during patriotic celebrations and reenactments, including all such cannons ranging from pre-Revolutionary War vintage to present day facsimiles shall comply with *Section 65.11.*

65.11.1.1 This Section shall not apply to any cannon exhibit in which explosives are not being used.

65.11.1.2 This Section shall not apply to the storage of ammunition for any cannon and shall be subject to all the applicable requirements in *Section 65.9.*

65.11.2 Permits. Permits, where required, shall comply with *Section 1.12.*

65.11.3 Add:
65.11.3 Terms. As used in Chapter 65, the enclosed terms shall have the following meaning assigned to them.

65.11.3.1 through **65.11.3.6** Add:
65.11.3.1 Blank-fire. The supervised discharge of a cannon or mortar without projectile.

65.11.3.2 Cannon. Any gun designed to be fired from a carriage resting on the ground and which is loaded from the muzzle with rigid noncombustible black powder cartridge.

65.11.3.3 Display. The supervised discharge of cannon or mortar, whether blank-fire without projectile or live-fire with projectile.

65.11.3.4 Live-fire. The supervised discharge of cannon or mortar with projectile.

65.11.3.5 Mortar. Any cannon whose length is less than six times its bore diameter, or any cannon fired at an elevation of 45° or more from the horizontal.

65.11.3.6 Range. An area designated for the discharge of various weapons, having a minimum unobstructed length of 100 yards (99.44 m), a minimum unobstructed width of 25 yards (22.86 m), equipped with a natural or manmade down range barrier a minimum of ten feet in height.

65.11.4 Add:
65.11.4 Range Conditions and Other Pre-firing Requirements.

65.11.4.1 A cannon be only be fired with ball, shot or projectile on ranges approved by the AHJ.
65.11.4.1.1 Such ranges shall be clear and unobstructed between discharge point and target area and for a safe distance to the rear of target in event of an overshoot.

65.11.4.1.2 The target area shall not exceed 250 yards (228.6 m) from the point of discharge.

65.11.4.2 There shall be no permanent building, public highway, railroad, or other public way within the forward sector of a 180E arc having a radius of 100 ft. (30.48 m) from the muzzle of the cannon.

1.05: continued

65.11.4.2.1 A similar sector of 180E directed toward the rear 75 ft. (22.86 m) in radius shall be clear of all public ways, permanent buildings, or other obstructions.

65.11.4.3 The firing of the cannon shall comply with the following:

(1) No cannon shall be discharged during any windstorm in which the direction and velocity of the wind renders the display dangerous to the public safety and/or surrounding property.

(2) There shall be no discharging of cannon between the hours of sunset and sunrise without prior written approval from the Head of the Fire Department.

(3) The Head of the Fire Department shall designate the location and type of fire extinguishing equipment as may be required.

(4) No firing of any cannon shall be conducted unless the crew is present in adequate numbers for the particular cannon or mortar.

(5) The competent operator shall be responsible to ensure that all members of the crew have been fully trained in the safe operation of the cannon or mortar.

(6) No member of the gun crew shall be younger than 18 years old.

(7) Smoking shall be prohibited in the discharge area.

(8) No member of the audience shall be allowed in the forward or flank zone of the muzzle of a cannon firing a projectile within a forward sector of 180E having a radius of 150% of the estimated range of the piece.

(9) The audience at a supervised firing of cannon shall be restrained behind lines 60 ft. (18.29 m) on the flank area back of the muzzle and 60 ft. (18.29 m) to the rear of the gun.

(10) Unless otherwise allowed by the State Fire Marshal, no piece shall be discharged with blank ammunition, unless all spectators are at a safe distance from the front of the piece and at least 60 ft. (18.29 m) to the rear or flank. Adjacent pieces shall be at a safe interval.

65.11.5 Add:
65.11.5 Magazines and Powder.

65.11.5.1 All ammunition and powder shall comply with the following:

(1) All ammunition for cannon shall be transported and temporarily stored at the firing location in the finished state in a portable magazine.

(2) Such magazine shall be constructed of at least 24-gauge sheet metal lined with a minimum of ¾ inch marine plywood or other non-sparking material, and shall be of sturdy sealed construction held together with non-sparking fastenings. A suitable lock and hasp of non-sparking material shall be provided.

(3) In the discharge area, a ready-service box constructed of wood with non-sparking fastenings and cover designed to be self-closing shall be positioned at ground level approximately 25 ft. (7.62 m) to the rear of the piece being served with the hinges toward the piece.

(4) All magazines and ready-service boxes shall be closed prior to the loading of each cartridge of the piece being served and adjacent pieces.

(5) Ready-service boxes for each gun shall contain the minimum number of cartridges required for the gun during that particular display.

(6) Magazines and ready-service boxes shall at all times be under the control of a competent member of the gun crew.

(7) No loose or bulk powder other than priming powder in quantities not exceeding ½ ounce shall be used in the firing of any cannon, and no loose or bulk powder shall be transported or stored in any portable magazine with cartridges.

(8) Blank artillery cartridges shall be made up of black powder only, not to exceed four ounces per inch of largest bore diameter.

(9) Cartridges must have a minimum of three wraps of heavy-duty aluminum foil and be packed to a firm consistency.

(10) Only cannon grade, 1F, or 2Fg black powder will be used.

(11) Powder grades cannot be mixed.

(12) No artillery cartridges shall be constructed at the event site.

(13) No wadding of any kind is permitted in blank firing.

(14) The amount of black powder used in each cartridge shall be such as to not present an undue hazard to persons, property, or the piece itself.

(15) Powder cartridges for cannons shall not exceed four ounces of powder per inch of bore diameter.

(16) Powder cartridges for mortars shall not exceed four ounces of powder per inch of chamber diameter.

1.05: continued

(17) No torch shall be used to ignite any cartridge to be fired from cannon.
(18) All cannons used to fire a projectile shall be provided with an instant source of ignition such as an electrical squib, or bridge wire or percussion cap, or other approved instant firing device. Exception to the foregoing shall apply to the use of fuses for the firing of mortars.
(19) No firing of any steel or iron cannon or mortar shall be conducted unless the weapon contains a seamless steel safety sleeve with breech plug, designed for such firing and have had a boroscope inspection conducted by a qualified person.
(20) Original guns and bronze guns shall permitted to be used without a safety sleeve, provided that they have had a boroscope inspection conducted by a qualified person. Pits, scratches, or other defects more than 3/16 inch deep shall render the cannon unusable.
(21) Cannons and mortars used for live-firing shall have a boroscope inspection conducted at least once every five years.
(22) Cannons and mortars used exclusively for blank-firing shall have a boroscope inspection conducted at least once every 10 years.
(23) Projectiles shall not be so constructed as to develop any unsafe pressures; and no combustible, explosive, or pyrotechnic projectiles shall be used.
(24) Reloading shall not commence until the worming and wet sponging have been completed after firing.
(25) The piece shall be wormed and wet sponged between shots and the vent stopped from the time the worm enters the muzzle until the rammer is removed from the bore after the cartridge is rammed in blank-firing, or the projectile is rammed in live-firing.
(26) At no time shall any cannon be left unattended while loaded or during a misfire until the piece has been cleared.
(27) In the event of a misfire, the competent operator shall take the following steps:
(a) The gunner shall give an audible warning.
(b) No personnel shall approach the front of the muzzle.
(c) A mandatory three minute cooling off period shall be observed.
(d) The piece shall be re-primed from a safe position and a repeated attempt made to fire the piece.
(e) If the attempt to re-fire the piece is unsuccessful, the piece shall be flooded with water through the vent and allowed to soak for a period of at least one hour unless the water or compressed gas can be used to flush the cartridge out of the muzzle.
(f) The projectile and/or cartridge shall be removed through the muzzle.
(28) If, after a display, the competent operator has reason to believe that there are any unignited charges or remnants thereof containing explosives in the area, he shall make a thorough search of the area for such explosives. The responsibility for disposition of it shall be assumed by the certificate holder.
(29) Any explosion, fire, or other accident occurring in connection with the keeping, storage, manufacture, handling, transportation, supervised display, or other disposition of ammunition for cannon causing loss of life or injury to any person or damage to property, shall be immediately reported to the State Fire Marshal by the competent operator, giving a detailed account of same and confirmed in writing.

Chapter 66 Flammable and Combustible Liquids.

66.1.1 Replace with the following:
66.1.1 * The storage, handling, and use of flammable and combustible liquids, including waste liquids, as herein defined and classified, shall comply with this chapter; NFPA 30, *Flammable and Combustible Liquids Code*; *Sections 60.1* through *60.4* of this *Code*; and NFPA 35: *Standards for the Manufacture of Organic Coatings*, as applicable.

66.1.4 Replace as follows:
66.1.4 Installations made in accordance with the applicable requirements of the following standards shall be deemed to be in compliance with this *Code* except that the maximum allowable quantities of hazardous materials are limited to the quantities listed in the *Building Code* and Table 60.4.2.1.1.3 of this *Code*:

66.4.1.1.1.1 Add:

1.05: continued

66.4.1.1.1.1 For the purposes of this classification if an accurate boiling point is unavailable for the material in question or if a mixture does not have a constant boiling point, the 20% evaporated point of a distillation performed in accordance with ASTM D 86: *Standard Test Method for Distillation of Petroleum Products at Atmospheric Pressure* shall be used as the boiling point of the liquid.

66.21.4.1.6 Add:
66.21.4.1.6 Pre-fabricated Tanks and Dikes.

(1) Pre-fabricated tanks and dikes shall provide 110% containment.

(2) If a rain shield is provided, it shall have provisions that an overfill of the tank will go directly into the dike.

66.21.5.2.1(2) Delete.

66.21.6.4 Add:
66.21.6.4 Automotive Lubrication Service Centers.

66.21.6.4.1 Tanks shall be located in a separate room from the main work area by a 2 hour fire rated enclosure.

66.21.6.4.2 The storage room shall be equipped with a fixed fire suppression system designed and installed in accordance with *Section 13.8.*

66.21.6.4.3 The storage room shall have an area not less than 110% of the largest tank capacity plus 10% of the aggregate amount of all other tanks in that room.

66.21.6.4.3.1 If water is utilized for suppression the containment area shall comply with the *Building Code*.

66.21.7.4 Replace with the following:
66.21.7.4 Removal from Service of Storage Tanks.

66.21.7.4.1 Add**:**
66.21.7.4.1 Closure of Aboveground Storage Tanks.
Aboveground tanks taken out of service or abandoned shall be emptied of liquid, rendered vapor-free, and safeguarded against trespassing in accordance with NFPA 326, *Standard for the Safeguarding of Tanks and Containers for Entry, Cleaning, or Repair*, or in accordance with the requirements of the AHJ.

66.21.7.4.2 Reuse of Aboveground Storage Tanks.
Aboveground tanks shall be permitted to be reused for flammable or combustible liquids service provided they comply with applicable sections of this *Code* and are approved.

66.21.7.4.3 Removal from Service of Underground Storage Tanks.

66.21.7.4.3.1 General. Underground tanks taken out of service shall comply with 310 CMR 80.00: *Underground Storage Tank (UST) Systems* and be emptied of liquid and residuals, rendered vapor-free, and safeguarded against trespassing in accordance with this section and in accordance with NFPA 326 or in accordance with the requirements of the AHJ. The procedures outlined in this section shall be followed when taking underground tanks temporarily out of service, closing them in place permanently, or removing them.

66.21.7.4.3.2 Temporary Closure. Underground tanks shall comply with 310 CMR 80.00: *Underground Storage Tank (UST) Systems* and be rendered temporarily out of service only when it is planned that they will be returned to active service, closed in place permanently, or removed within an approved period not exceeding five years. The following requirements shall be met:

(1) Corrosion protection and release detection systems shall be maintained in operation.

(2) The vent line shall be left open and functioning.

(3) The tank shall be secured against tampering.

(4) All other lines shall be capped or plugged.

66.21.7.4.3.2.1 Tanks remaining temporarily out of service for more than five years shall be permanently closed in place or removed in accordance with *Section 66.21.7.4.3.3* or *66.21.7.4.3.4,* as applicable.

1.05: continued

66.21.7.4.3.3 Replace with the following:
66.21.7.4.3.3 Permanent Closure in Place. Underground tanks shall be permitted to be permanently closed in place if approved by the AHJ and in accordance with 310 CMR 80.00: *Underground Storage Tank (UST) Systems*. All of the following requirements shall be met:

(1) All applicable AHJs shall be notified.
(2) A safe workplace shall be maintained throughout the prescribed activities.
(3) All flammable and combustible liquids and residues shall be removed from the tank, appurtenances, and piping and shall be disposed of in accordance with regulatory requirements and industry practices, using a written procedure.
(4) The tank, appurtenances, and piping shall be made safe by either purging them of flammable vapors or inerting the potential explosive atmosphere. Confirmation that the atmosphere in the tank is safe shall be by testing of the atmosphere using a combustible gas indicator if purging, or an oxygen meter if inerting, at intervals in accordance with written procedures.
(5) Access to the tank shall be made by careful excavation to the top of the tank.
(6) All exposed piping, gauging and tank fixtures, and other appurtenances, except the vent, shall be disconnected and removed.
(7) The tank shall be completely filled with an inert solid material.
(8) The tank vent and remaining underground piping shall be capped or removed. Underground steel storage tanks used for the storage of flammable liquids shall be disposed of at a Tank Dismantling Yard approved by the State Fire Marshal.
(9) The tank excavation shall be backfilled.

66.21.7.4.3.4 Add
66.21.7.4.3.4 Removal and Disposal. Underground tanks and piping shall be removed in accordance with the following requirements:

(1) The steps described in *66.21.7.4.3.3(1)* through *66.21.7.4.3.3(5)* shall be followed.
(2) All exposed piping, gauging and tank fixtures, and other appurtenances, including the vent, shall be disconnected and removed.
(3) All openings shall be plugged, leaving a ¼ in. (6 mm) opening to avoid buildup of pressure in the tank.
(4) The tank shall be removed from the excavated site and shall be secured against movement.
(5) Any corrosion holes shall be plugged.
(6) The tank shall be labeled with its former contents, present vapor state, vapor-freeing method, and a warning against reuse.
(7) The tank shall be removed from the site as authorized by the AHJ, preferably the same day.

66.21.7.4.3.5 Temporary Storage of Removed Tanks. If it is necessary to temporarily store an underground tank that has been removed, it shall be placed in a secure area where public access is restricted. A ¼ in. (6 mm) opening shall be maintained to avoid buildup of pressure in the tank.

66.21.7.4.3.6 Disposal of Tanks. Disposal of underground tanks shall meet the following requirements:

(1) Before a tank is cut up for scrap or landfill, the atmosphere in the tank shall be tested in accordance with *66.21.7.4.3.3(4)* to ensure that it is safe.
(2) The tank shall be made unfit for further use by cutting holes in the tank heads and shell.

66.21.7.4.3.7 Documentation. All necessary documentation shall be prepared and maintained in accordance with all federal, state, and local rules and regulations.

66.21.7.5 Add:
66.21.7.5 Reserved.

66.21.7.6 Add:
66.21.7.6 Application for Approval of Tank Dismantling Yards.

66.21.7.6.1 Underground steel storage tanks used for the storage of flammable liquids shall only be disposed of at tank dismantling yards approved by the State Fire Marshal.

1.05: continued

66.21.7.6.2 Application for approval of a tank dismantling yard small shall be made on a form approved by the State Fire Marshal (Form FP-295). Completed applications shall be submitted to: Department of Fire Services, Division of Fire Safety, P.O. Box 1025, 1 State Road, Stow, MA 01775.

66.21.7.7 Tank Dismantling Yard.

66.21.7.7.1 Each tank dismantling yard shall hold valid licenses or permits from any and all local city and town Boards, Agencies, Departments, where necessary to conduct operation for underground steel storage tank dismantling and storage.

66.21.7.7.2 Each tank dismantling yard shall comply with all the provisions of regulation and be approved by the State Fire Marshal and endorsed by the Head of the Fire Department.

66.21.7.8 Operation of Tank Dismantling Yards.
No person at a tank dismantling yard shall accept an underground steel storage tank that in any way would be used for reuse or resale purposes.

66.21.7.8.1 Each approved tank dismantling yard shall maintain a written ledger listing all underground steel storage tanks received, a receipt of disposition thereof and any other data required by the Marshal.

66.21.7.8.2 All underground steel storage tanks shall be pumped out dry before transported to a tank dismantling yard.

66.21.7.8.3 The vapors in an underground steel storage tank may be made inert. Solid carbon dioxide (dry ice) crushed and distributed evenly over the greatest possible area in the amount of 1.5 (lbs) pounds per 100 gallons of tank capacity may be used to inert the tank.

66.21.7.8.4 The cleaning and residue of the underground steel storage tank must be treated as a hazardous waste and removed by a licensed hazardous waste or waste oil transporter, as required by the 310 CMR: Department of Environmental Protection. The hazardous waste manifest number shall be recorded on the fire department permit.

66.21.7.8.5 The underground steel storage tank shall be purged with an inert gas, such as nitrogen or carbon dioxide, while all connecting lines to the tank including the vent, shall be removed.

66.21.7.8.6 Holes or openings shall be drilled or made in the tank when received at the tank disposal yard.

66.21.7.8.7 Each tank dismantling yard shall have a device capable of measuring flammable vapors. The device shall be properly calibrated, and employees shall be trained in its use.

66.21.7.8.8 No tank dismantling yard shall accept any tank that has not been purged of product and inerted.

66.21.7.8.9 All tanks shall be stored on the secured premises of an approved dismantling yard where they can be safeguarded from the general public.

66.21.7.8.10 If a tank yard finds product in a tank, such as sludge or other contaminated waste, the material shall be treated as a hazardous waste and removed by a hazardous waste or waste oil transporter in accordance with 310 CMR: Department of Environmental Protection.

66.21.7.8.11 All underground steel storage tanks accepted at approved tank yards must be dismantled within two working days of the date of acceptance. No tanks shall be stored in excess of 72 hours without approval of the Head of the Fire Department.

66.21.9 Add:
66.21.9 Storage tanks that undergo a change of stored liquid that represents a change in liquid classification, as defined in *Section 66.4.2*, or change in physical properties, shall be re-evaluated for compliance with *Sections 66.21* through *66.25*, as applicable.

66.21.9.1 Where a storage tank does not comply with *Sections 66.21* through *66.25* and was legally constructed in accordance with the applicable fire code at the time of its construction or where a requirement was waived by the applicable AHJ, a hazard analysis shall be completed in accordance with *Section 66.6* and the following:

1.05: continued

1. The hazard analysis shall be prepared and certified by a Massachusetts Registered Professional Engineer.
2. The analysis shall demonstrate that the change in liquid classification does not constitute an increase in fire or explosion hazards or risks to life and property.

66.21.9.2 The AHJ may require additional measures of protection.

Chapter 67 Flammable Solids

(No amendments)

Chapter 68 Highly Toxic and Toxic Solids and Liquids

(No amendments)

Chapter 69 Liquified Petroleum Gases and Liquified Natural Gases

69.1.1.1 Replace with the following:
69.1.1.1 The storage, use, and handling of liquefied petroleum gases (LP-gas) upstream from the outlet of the first stage regulator shall comply with the requirements of this chapter; NFPA 58, Liquefied Petroleum Gas Code; and *Sections 60.1* through *60.4* of this *Code*.

69.1.1.4 Add:
69.1.1.4 Certificates. Certificates of completion, where required, shall comply with *Section 1.12.8.51* and *Section 1.13* as applicable.

69.1.3 Add:
69.1.3 Terms. As used in Chapter 69, the enclosed terms shall have the following meaning assigned to them.

69.1.3.1 Abandoned. Any container which has not been used either for filling or draw off of LP-gas for a continuous period in excess of 12 months.

69.1.4 LP-container, Filling, Shipment, Odorization, and Testing Requirements. If odorization is required, as provided in NFPA 58: *Liquefied Petroleum Gas Code*, *Section 4.2.1*, one of the testing thresholds required in *Section 69.1.4.2(2)* shall be completed and documented. The presence of the odorant shall be permitted thereafter by sniff testing each time the propane changes in the distribution network. If the amount of odorant in the propane is questionable by sniff testing or the records are not accepted by or made available to the AHJ as required in *Section 69.1.4.3.1*, the testing as prescribed in accordance with the Section 69.1.4.2(2) shall be repeated. If necessary, thresholds shall be met by adding additional odorant to obtain proper odorized propane levels as prescribed in *Section 69.1.4.2(1)* or 69.1.4.2(2). In such situations where the propane odorant is questionable, immediate verbal notification shall be given to the AHJ, which shall be followed by written notification within 24 hours documenting the date, time, and location of discovery and status of such event.

69.1.4.1 Railcar Shipments. Each railcar shipment of LP-gas intended for distribution within Massachusetts shall comply with the provisions in *Section 69.1.4.2(1)*. Each railcar shipment delivered for distribution shall be tested for odorization using one of the tests prescribed in *Section 69.1.4.2(2)* and *Sub-sections (a), (b), (c)*.

69.1.4.2 Odorization Thresholds, Testing and Filling of Containers:
(1) If ethyl mercaptan is used for odorization purposes, it shall be injected at a minimum rate of one lb per 10,000 gallons of propane.
(2) For testing purposes one of the following tests listed in (a), (b) or (c) shall be required to determine adequate ethyl mercaptan odorant levels equivalent to 1 lb per 10,000 gallons of propane.

1.05: continued

(a) Vapor Test using stain tubes resulting in a minimum of five ppm of ethyl mercaptan utilizing ASTM D 5305: *Standard Test Method for Determination of Ethyl Mercaption in LP-gas Vapor.*

(b) Flash Vapor Test using stain tubes resulting in a minimum of 17 ppm of ethyl mercaptan utilizing ASTM D 5305: *Standard Test Method for Determination of Ethyl Mercaption in LP-gas Vapor.*

(c) Liquid Test for analysis of volatile sulfurs using gas chromatography resulting in a minimum of 17 ppm of ethyl mercaptan utilizing ASTM D1265: *Standard Practice for Sampling Liquefied Petroleum (LP) Gases, Manual Method.*

(3) Newly filled tanks and containers shall be purged according to manufacturer's instructions.

(4) Newly installed tanks greater than 125 gallons shall comply with the following:

(a) Within two business days of the tank installation approval by the AHJ, such tank shall be filled with LP-gas and;

(b) If the tank is not placed into service within 30 days of the tank installation approval date, such tank shall be tested by the LP-gas company in accordance with *Section 69.1.4.2(2)*, prior to being placed into service and;

(c) Maintain records in accordance with *Section 69.1.4.3* and report findings, if applicable, in accordance with *Section 69.1.4.*

69.1.4.3 Records. Records of all testing required by this Code shall be maintained. The results shall be kept by both the shipper and user for a minimum of 3 years from the date of delivery.

69.1.4.3.1 Test results shall be made available to the AHJ upon request.

69.1.4.4 Each person handling LP-gas shall be trained, at applicable level, in accordance with the "Dispensing Propane Safely" program published by the Propane Education and Research Council or other education programs acceptable to the State Fire Marshal.

69.1.4.4.1 Certificates of completion shall be maintained by the employer for three years and a copy of said certificate shall be given to the trainee at the completion of each program.

69.1.4.4.2 Certificates of completion shall include the date of completion, the course name, and be signed by the instructor or provider. Such certificates shall be submitted to the AHJ upon request.

69.1.4.5 Field Equipment Identification. All LP-gas installations of 125 gallons or greater shall be provided with a sign identifying the responsible party for the installation and maintenance of the LP-gas installation.

69.1.4.5.1 The sign shall be installed in a plainly visible location.

69.1.4.5.2 Such sign shall include the name and telephone number of the LP-gas supplier, plant installer, owner, or operator.

69.1.4.6 Emergency and Reporting Procedure. In situations where a gas leak results in imminent danger, immediate verbal notification shall be given to the 911 dispatch center.

69.1.4.6.1 The AHJ shall receive written notification within 24 hours of said notification documenting the date, time, and location of discovery, status, and remediation of such event.

69.1.4.6.2 In situations where the AHJ has directed an LP-gas provider to take corrective action, the provider shall immediately respond verbally to the AHJ, as directed, such provider's response shall be followed by written notification, if requested, within 24 hours after resolution, documenting the date, time, and the location of discovery and status of the LP-gas installation.

69.3.5.4.3 Replace with the following:
69.3.5.4.3 The distance measured with a 3 ft arc from the point of discharge of a container pressure relief valve to any building opening below the level of such discharge shall be in accordance with Table 69.3.5.4.3.

69.3.14.6.3 Add:
69.3.14.6.3 The owner of the storage equipment shall be responsible for the installation of the LP-gas facility and for maintaining it in a safe operating condition.

63.3.14.6.4 Add:
69.3.14.6.4 No person shall install, remove, connect, disconnect, fill, or refill any LP-gas container without permission of the owner of the container.

1.05: continued

69.3.14.6.4.1 In the event that the container owner denies permission and a homeowner wishes to have the container on their property disconnected and removed, the homeowner or an authorized representative acting on their behalf shall make a written demand to the container owner to disconnect and remove the tank within 30 days of receipt of said demand. If the owner of the container cannot or will not disconnect and remove the tank within 30 days of receiving said demand, the homeowner may have any trained individual, complying with *Section 69.1.4.4,* disconnect and remove the container and which shall be collected by the container owner forthwith.

69.3.14.6.5 Only a trained individual complying with *Section 69.1.4.4* shall install, remove, connect, disconnect, sell, fill, refill, deliver or permit to be delivered, or operate any LP-gas system utilizing containers of over 42 lbs (10 gallons) product capacity.

69.3.14.6.6 The State Fire Marshal shall be permitted to order the user of a system in writing to meet requirements:

(1) Where unusual conditions exist;
(2) When it is necessary for the protection of life and property;
(3) Provided the requirements are within the intent and purpose of this *Code*.

69.3.15.4.4 Add:
69.3.15.4.4 "NO SMOKING" and "STOP ENGINE WHEN REFUELING" signs shall be displayed on the front and rear of each dispenser at the filling station. The signs shall have block letters at least 1 inch high with either red letters on a white background or white letters on a red background.

69.5.2.1.6 Add:
69.5.2.1.6 Areas used for the storage of containers or cylinders awaiting use or resale shall post a readily accessible and clearly visible warning sign stating "NO SMOKING" and "FLAMMABLE GAS" or otherwise indicate the contents of such containers or cylinders, such as "FLAMMABLE GAS PROPANE" or "FLAMMABLE GAS BUTANE".

Chapter 70 Oxidizer Solids and Liquids
(No amendments)

Chapter 71 Pyrophoric Solids and Liquids
(No amendments)

Chapter 72 Unstable (Reactive) Solids and Liquids
(No amendments)

Chapter 73 Water-Reactive Solids and Liquids
(No amendments)

Chapter 74 - Ammonium Nitrate
(No amendments)

1.05: continued

Chapter 75 Organic Peroxide Solids and Liquids
(No amendments)

Regulatory Authority:

527 CMR 1.00: M.G.L. c. 22D, § 4, c. 148, §§ 9, 9A, 10, 13, 25A, 25C, 25D, 26C, 26F1/2, 28, 28B, 35, 39 A, 40, 46 and 58.