NFPA 10, "Standard for Portable Fire Extinguishers, 2018 Edition" REVIEW SUMMARY

1) NFPA 25 REVISION SUMMARY

The 2018 edition incorporates clarifications on a wide array of topics, including electronic monitoring, obsolete extinguishers, extinguishers installed in areas containing oxidizers, extinguisher signs, and extinguisher mounting equipment and cabinets. A new requirement regarding maintenance of hose stations that are used in lieu of extinguishers has been added. The fire classification marking system is expanded to include markings for extinguishers rated for Class AC and Class AK. The annexes have also been updated to address current extinguisher types and ratings, while removing information on obsolete equipment.

2) CHANGES NOTED

NFPA 10 2013 Edition	NFPA 10 2018 Edition
Chapter 3 Definitions	
3.2.7 Standard. A document, the main text of which contains only mandatory provisions using the word "shall" to indicate requirements and which is in a form generally suitable for mandatory reference by another standard or code or for adoption into law. Nonmandatory provisions are not to be considered a part of the requirements of a standard and shall be located in an appendix, annex, footnote, informational note, or other means as permitted in the *Manual of Style for NFPA Technical Committee Documents*.	**3.2.7 Standard.** An NFPA Standard, the main text of which contains only mandatory provisions using the word "shall" to indicate requirements and that is in a form generally suitable for mandatory reference by another standard or code or for adoption into law. Nonmandatory provisions are not to be considered a part of the requirements of a standard and shall be located in an appendix, annex, footnote, informational note, or other means as permitted in the NFPA Manuals of Style. When used in a generic sense, such as in the phrase " standards development process" or "standards development activities," the term "standards" includes all NFPA Standards, including Codes, Standards, Recommended Practices, and Guides.
3.3.1 ANSI. American National Standards Institute. [**52,** 2013]	**3.3.1 ANSI.** American National Standards Institute. [**52,** 2016]
3.3.4.1* *Dry Chemical.* A powder composed of very small particles, usually sodium bicarbonate-, potassium bicarbonate-, or ammonium phosphate-based with added particulate material supplemented by special treatment to provide resistance to packing, resistance to moisture absorption (caking), and the proper flow capabilities. [**17,** 2013]	**3.3.4.1* *Dry Chemical.*** A powder composed of very small particles, usually sodium bicarbonate-, potassium bicarbonate-, or ammonium phosphate-based with added particulate material supplemented by special treatment to provide resistance to packing, resistance to moisture absorption (caking), and the proper flow capabilities. [**17,** 2017]
3.3.4.2* *Wet Chemical.* Normally an aqueous solution of organic or inorganic salts or a combination thereof that forms an extinguishing agent. [**17A,** 2013]	**3.3.4.2* *Wet Chemical.*** Normally an aqueous solution of organic or inorganic salts or a combination thereof that forms an extinguishing agent. [**17A,** 2017]
3.3.8 DOT. U.S. Department of Transportation. [**52**, 2013]	**3.3.8 DOT.** U.S. Department of Transportation. [**52,** 2016]
3.3.10* Electronic Monitoring. A method of electronic communication (data transmission) between an in-place fire extinguisher and an electronic monitoring device/system.	**3.3.10* Electronic Monitoring.** Either a local alarm device to indicate when an extinguisher is removed from its designated location or a method of electronic communication (data transmission) between an in-place fire extinguisher and an electronic monitoring device/system
3.3.16* Film-Forming Foam Agents. Aqueous film forming foam (AFFF) and film-forming fluoroprotein foam (FFFP).	**3.3.16* Film-Forming Foam.** A solution that will form an aqueous film on liquid fuels. **3.3.16.1* *Aqueous Film-Forming Foam (AFFF).*** A solution based on fluorinated surfactants plus foam stabilizers to produce a fluid aqueous film for suppressing liquid fuel vapors.

	3.3.16.2* *Film-Forming Fluoroprotein Foam (FFFP).* A protein-foam solution that uses fluorinated surfactants to produce a fluid aqueous film for suppressing liquid fuel vapors.
3.3.28 Wetting Agent. A concentrate which, when added to water reduces the surface tension and increases its ability to penetrate and spread. [**18,** 2011]	**3.3.28 Wetting Agent.** A concentrate that, when added to water, reduces the surface tension and increases its ability to penetrate and spread. [**18,** 2017]
Chapter 4 – General Requirements	
4.1 Listing and Labeling. **4.1.1*** Portable fire extinguishers used to comply with this standard shall be listed and labeled and shall meet or exceed all the requirements of one of the following fire test standards and one of the following applicable performance standards: (1) Fire test standards: ANSI/UL 711, CAN/ULC-S508, *Standard for Rating and Fire Testing of Fire Extinguishers* (2) Performance standards: (a) Carbon dioxide types: ANSI/UL 154, CAN/ULC-S508, *Standard for Carbon Dioxide Fire Extinguishers* (b) Dry chemical types: ANSI/UL 299, CAN/ULC S504, *Standard for Dry Chemical Fire Extinguishers* (c) Water types: ANSI/UL 626, CAN/ULC-S507, *Standard for Water Fire Extinguishers* (d) Halon types: CAN/ULC-S512, *Standard for Halogenated Agent Hand and Wheeled Fire Extinguishers* (e) Film-forming foam types: ANSI/UL 8, CAN/ULCS554, *Water Based Agent Fire Extinguishers* (f) Halocarbon types: ANSI/UL 2129, CAN/ULC-S566, *Standard for Halocarbon Clean Agent Fire Extinguishers*	**4.1 Listing and Labeling.** **4.1.1*** Portable fire extinguishers used to comply with this standard shall be listed and labeled and shall meet or exceed all the requirements of ANSI/UL 711, CAN/ULC-S508, *Standard for Rating and Fire Testing of Fire Extinguishers,* and one of the following applicable performance standards: (1) Carbon dioxide types: ANSI/UL 154, CAN/ULC S503, *Standard for Carbon- Dioxide Fire Extinguishers* (2) Dry chemical types: ANSI/UL 299, CAN/ULC S504, *Standard for Dry Chemical Fire Extinguishers* (3) Water types: ANSI/UL 626, CAN/ULC-S507, *Standard for Water Fire Extinguishers* (4) Halon types: CAN/ULC-S512, *Standard for Halogenated Agent Hand and Wheeled Fire Extinguishers* (5) Film-forming foam types: ANSI/UL 8, CAN/ULC S554, *Water Based Agent Fire Extinguishers* (6) Halocarbon types: ANSI/UL 2129, CAN/ULC-S566, *Standard for Halocarbon Clean Agent Fire Extinguishers*
4.1.4.1 In addition to successfully meeting the requirements of ANSI/UL 711, CAN/ULC-S508, water-based agents shall be tested in accordance with ASTM D 5391, *Standard Test for Electrical Conductivity and Resistivity of a Flowing High Purity Water Sample*.	**4.1.4.1** In addition to successfully meeting the requirements of ANSI/UL 711, CAN/ULC-S508, water-based agents that are listed for the Class C rating shall be tested in accordance with ASTM D5391, *Standard Test for Electrical Conductivity and Resistivity of a Flowing High Purity Water Sample*.
4.2* Identification of Contents. A fire extinguisher shall have a label, tag, or stencil attached to it providing the following information: (1) The content's product name as it appears on the manufacturer's Material Safety Data Sheet (MSDS) (2) Listing of the hazardous material identification in accordance with *Hazardous Materials Identification System (HMIS), Implementational Manual* [in Canada, *Workplace Hazardous Materials Identification System (WHMIS) Reference Manual*] developed by the National Paint and Coatings Association (3) List of any hazardous materials that are in excess of 1.0 percent of the contents (4) List of each chemical in excess of 5.0 percent of the contents (5) Information as to what is hazardous about the agent in accordance with the MSDS (6) Manufacturer's or service agency's name, mailing address, and phone number	**Δ 4.2* Identification of Contents.** A fire extinguisher shall have a label, tag, or stencil attached to it providing the following information: (1) The content's product name as it appears on the manufacturer's Material Safety Data Sheet (MSDS) (2) Listing of the hazardous material identification in accordance with *Hazardous Materials Identification System (HMIS), Implementational Manual* [in Canada, *Globally Harmonized System of Classification and Labeling of Chemicals (GHS)*] (3) List of any hazardous materials that are in excess of 1.0 percent of the contents (4) List of each chemical in excess of 5.0 percent of the contents (5) Information as to what is hazardous about the agent in accordance with the MSDS (6) Manufacturer's or service agency's name, mailing address, and phone number

4.4 Obsolete Fire Extinguishers. The following types of fire extinguishers are considered obsolete and shall be removed from service: (1) Soda acid (2) Chemical foam (excluding film-forming agents) (3) Vaporizing liquid (e.g., carbon tetrachloride) **Content Added** (4) Cartridge-operated water (5) Cartridge-operated loaded stream (6) Copper or brass shell (excluding pump tanks) joined by soft solder or rivets (7) Carbon dioxide extinguishers with metal horns (8) Solid charge–type AFFF extinguishers (paper cartridge) (9) Pressurized water fire extinguishers manufactured prior to 1971 (10) Any extinguisher that needs to be inverted to operate (11) Any stored pressure extinguisher manufactured prior to 1955 (12) Any extinguishers with 4B, 6B, 8B, 12B, and 16B fire ratings (13) Stored-pressure water extinguishers with fiberglass shells (pre-1976)	**4.4 Obsolete Fire Extinguishers.** The following types of fire extinguishers are considered obsolete and shall be removed from service: (1) Soda acid (2) Chemical foam (excluding film-forming agents) (3) Carbon tetrachloride, methyl bromide, and chlorobromomethane (CBM) (4) Cartridge-operated water (5) Cartridge-operated loaded stream (6) Copper or brass shell (excluding pump tanks) joined by soft solder or rivets (7) Carbon dioxide extinguishers with metal horns (8) Solid charge–type AFFF extinguishers (paper cartridge) (9) Pressurized water fire extinguishers manufactured prior to 1971 (10) Any extinguisher that needs to be inverted to operate (11) Any extinguisher manufactured prior to 1955 (12) Any extinguishers with 4B, 6B, 8B, 12B, and 16B fire ratings (13) Stored-pressure water extinguishers with fiberglass shells (pre-1976)
4.4.1* Dry chemical stored-pressure extinguishers manufactured prior to October 1984 shall be removed from service at the next 6-year maintenance interval or the next hydrotest, whichever comes first.	**4.4.1*** Dry chemical stored-pressure extinguishers with an indicated manufacturing date of 1984 or prior shall be removed from service.
Chapter 5 – Selection of Portable Fire Extinguishers	
5.5.1 Class B Fires. **5.5.1.1* Extinguishers for Pressurized Flammable Liquids and Pressurized Gas Fires.** **5.5.1.1.1** Selection of fire extinguishers for this type of hazard shall be made on the basis of recommendations by manufacturers of this specialized equipment. **5.5.1.1.2*** Large-capacity dry chemical extinguishers of 10 lb (4.54 kg) or greater and a discharge rate of 1 lb/sec (0.45 kg/sec) or more shall be used to protect these hazards.	**5.5.1 Class B Fires.** **5.5.1.1* Extinguishers for Pressurized Flammable Liquids and Pressurized Gas Fires.** **Content Removed** Large-capacity dry chemical extinguishers of 10 lb (4.54 kg) or greater and a discharge rate of 1 lb/sec (0.45 kg/sec) or more shall be used to protect these hazards.
5.5.7 Areas Containing Oxidizers. **5.5.7.1** Only water-type extinguishers shall be installed in areas containing oxidizers, such as pool chemicals. **5.5.7.2*** Multipurpose dry chemical fire extinguishers shall not be installed in areas containing oxidizers, such as pool chemicals. **Content Added**	**5.5.7* Areas Containing Oxidizers.** **5.5.7.1** Only water or foam extinguishers shall be installed in areas where pool chemicals containing chlorine or bromine are stored. **5.5.7.2** Multipurpose dry chemical fire extinguishers shall not be installed in areas where pool chemicals containing chlorine or bromine are stored. **5.5.7.3** Fire extinguishers intended for use where oxidizers are stored or used shall be selected and installed based on the specific recommendations contained within the material's safety data sheet (SDS) for the oxidizer, surrounding conditions, and NFPA 400.

5.6.1* Where portable fire extinguishers are required to be installed, the following documents shall be reviewed for the occupancies outlined in their respective scopes: (11) NFPA 52, *Vehicular Gaseous Fuel Systems Code*	**5.6.1*** Where portable fire extinguishers are required to be installed, the following documents shall be reviewed for the occupancies outlined in their respective scopes: (11) NFPA 52, *Vehicular Natural Gas Fuel Systems Code*
Chapter 6 – Installation of Portable Fire Extinguishers	
6.1.1.2 Additional extinguishers shall be permitted to be installed to provide more protection as necessary. (Deleted text)	**6.1.1.2** Additional extinguishers shall be permitted to be installed to provide more protection.
6.1.1.3 Fire extinguishers having ratings less than those specified in Table 6.2.1.1 and Table 6.3.1.1 shall be permitted to be installed, provided they are not used in fulfilling the minimum protective requirements of this chapter, except as modified in 6.2.1.3.1, 6.2.1.4, and 6.3.1.1.	**6.1.1.3** Fire extinguishers having ratings less than those specified in Table 6.2.1.1 and Table 6.3.1.1 shall be permitted to be installed, provided they are not used in fulfilling the minimum protective requirements of this chapter, except as modified in 6.2.1.3.1, 6.2.1.4, and 6.3.1.1.1.
6.1.3.3 Visual Obstructions. **6.1.3.3.1** Fire extinguishers shall not be obstructed or obscured from view. **6.1.3.3.2*** In large rooms and in certain locations where visual obstructions cannot be completely avoided, means shall be provided to indicate the extinguisher location. **6.1.3.3.3** Where signs are used to indicate fire extinguisher location, the signs shall comply with the following: (1) They shall be located in close proximity to the extinguisher. (2) They shall be visible from the normal path of travel. **6.1.3.4*** Portable fire extinguishers other than wheeled extinguishers shall be installed using any of the following means: (1) Securely on a hanger intended for the extinguisher (2) In the bracket supplied by the extinguisher manufacturer (3) In a listed bracket approved for such purpose (4) In cabinets or wall recesses	**6.1.3.3 Visual Obstructions.** **6.1.3.3.1** Fire extinguishers shall be installed in locations where they are visible except as permitted by 6.1.3.3.2. **Δ 6.1.3.3.2*** In rooms and in locations where visual obstructions cannot be avoided, signs or other means shall be provided to indicate the extinguisher location. **6.1.3.3.3** Signs or other means used to indicate fire extinguisher location shall be located in close proximity to the extinguisher. ***N* 6.1.3.3.4** Signs or other means used to indicate fire extinguisher location shall be visible from the normal path of travel. **6.1.3.4*** Portable fire extinguishers other than wheeled extinguishers shall be installed using any of the following means: (1)* Securely on a hanger intended for the extinguisher (2) In a bracket incorporating releasing straps or bands supplied by the extinguisher manufacturer (3) In a listed bracket incorporating releasing straps or bands approved for such purpose (4) In approved cabinets or wall recesses ***N* 6.1.3.4.1** Hangers and brackets shall not be fabricated in the field.
6.1.3.7 Fire extinguishers installed under conditions where they are subject to physical damage (e.g., from impact, vibration, the environment) shall be protected against damage.	**6.1.3.7*** Fire extinguishers installed under conditions or in locations where they are subject to physical damage (e.g., from impact, vibration, the environment) shall be protected against such damage.
Content Added	***N* 6.1.3.10.6*** For fire resistance–rated walls, only surface mounted cabinets or listed fire-rated cabinets shall be installed. ***N* 6.1.3.10.6.1** The provisions of 6.1.3.10.6 shall not apply to existing installations.

6.2.1.6 The protection requirements shall be permitted to be fulfilled with fire extinguishers of higher rating, provided the travel distance to such larger fire extinguishers does not exceed 75 ft (22.9 m).	**6.2.1.6** The protection requirements shall be permitted to be fulfilled with fire extinguishers of higher rating, provided the travel distance to such larger fire extinguishers does not exceed 75 ft (22.9 m) and the maximum floor area per unit of A is not exceeded.
Chapter 7 – Inspection, Maintenance, and Recharging	
7.2.2 Inspection Procedures. Periodic inspection or electronic monitoring of fire extinguishers shall include a check of at least the following items: (1) Location in designated place (2) No obstruction to access or visibility (3) Pressure gauge reading or indicator in the operable range or position (4) Fullness determined by weighing or hefting (5) Condition of tires, wheels, carriage, hose, and nozzle for wheeled extinguishers (6) Indicator for nonrechargeable extinguishers using pushto-test pressure indicators	**7.2.2 Inspection Procedures.** Periodic inspection or electronic monitoring of fire extinguishers shall include a check of at least the following items: (1) Location in designated place (2) Visibility of the extinguisher or means of indicating the extinguisher location (3) Access to the extinguisher (4) Pressure gauge reading or indicator in the operable range or position (5) Fullness determined by weighing or hefting (6) Condition of tires, wheels, carriage, hose, and nozzle for wheeled extinguishers (7) Indicator for nonrechargeable extinguishers using pushto-test pressure indicators
7.2.2.1* In addition to 7.2.2, fire extinguishers shall be visually inspected in accordance with 7.2.2.2 if they are located where any of the following conditions exists: (1) High frequency of fires in the past (2) Severe hazards (3) Locations that make fire extinguishers susceptible to mechanical injury or physical damage (4) Exposure to abnormal temperatures or corrosive atmospheres	***N* 7.2.2.1** The owner or the owner's agent shall determine the method of extinguisher inspection such as manual inspection, electronic monitoring, or any combination of the two.
7.2.2.2 Where required by 7.2.2.1, the following inspection procedures shall be in addition to those addressed in 7.2.2: (1) Verify that operating instructions on nameplates are legible and face outward (2) Check for broken or missing safety seals and tamper indicators (3) Examine for obvious physical damage, corrosion, leakage, or clogged nozzle	***N* 7.2.2.2** Any method(s) of inspection other than manual inspection shall require the approval of the authority having jurisdiction.
7.2.2.3 Inspection Procedure for Containers of Class D Extinguishing Agent. Periodic inspection of containers of Class D extinguishing agent used to protect Class D hazards shall include verification of at least the following: (1) Located in designated place (2) No obstruction to access or visibility (3) Lid is sealed (4) Fullness by hefting or weighing (5) No obvious physical damage to container	**7.2.2.5 Inspection Procedure for Containers of Class D Extinguishing Agent.** Periodic inspection of containers of Class D extinguishing agent used to protect Class D hazards shall include verification of at least the following: (1) Located in designated place (2) Visibility of the container or means of indicating the container location (3) Access to the container (4) Lid is sealed (5) Fullness by hefting or weighing (6) No obvious physical damage to container
7.2.3.1 Rechargeable Fire Extinguishers. When an inspection of any rechargeable fire extinguisher reveals a deficiency in any of the conditions in 7.2.2(3), 7.2.2(4), 7.2.2(5), or 7.2.2.2(1) through 7.2.2.2(3), the extinguisher shall be subjected to applicable maintenance procedures.	**7.2.3.1 Rechargeable Fire Extinguishers.** When an inspection of any rechargeable fire extinguisher reveals a deficiency in any of the conditions in 7.2.2(4), 7.2.2(5), 7.2.2(7), or 7.2.2.4(1) through 7.2.2.4(3), the extinguisher shall be subjected to applicable maintenance procedures.
7.2.3.2 Nonrechargeable Dry Chemical Fire Extinguisher. When an inspection of any nonrechargeable dry chemical fire extinguisher reveals a deficiency in any of the conditions listed in 7.2.2(3), 7.2.2(4), 7.2.2(6), or 7.2.2.2(1) through 7.2.2.2(3), the	**7.2.3.2 Nonrechargeable Dry Chemical Fire Extinguisher.** When an inspection of any nonrechargeable dry chemical fire extinguisher reveals a deficiency in any of the conditions listed in 7.2.2(4), 7.2.2(5), 7.2.2(7), or 7.2.2.4(1) through 7.2.2.4(3), the

extinguisher shall be removed from further use, discharged and destroyed at the direction of the owner or returned to the manufacturer.	extinguisher shall be removed from further use, discharged, and destroyed at the direction of the owner or returned to the manufacturer.
7.2.3.3 Nonrechargeable Halon Agent Fire Extinguisher. When an inspection of any nonrechargeable fire extinguisher containing a halon agent reveals a deficiency in any of the conditions listed in 7.2.2(3), 7.2.2(4), 7.2.2(6), or 7.2.2.2(1) through 7.2.2.2(3), the extinguisher shall be removed from service, shall not be discharged, and shall be returned to the manufacturer, a fire equipment dealer, or a distributor to permit recovery of the halon.	**7.2.3.3 Nonrechargeable Halon Agent Fire Extinguisher.** When an inspection of any nonrechargeable fire extinguisher containing a halon agent reveals a deficiency in any of the conditions listed in 7.2.2(4), 7.2.2(5), 7.2.2(7), or 7.2.2.4(1) through 7.2.2.4(3), the extinguisher shall be removed from service, shall not be discharged, and shall be returned to the manufacturer, a fire equipment dealer, or a distributor to permit recovery of the halon.
Content Added	***N* 7.3.1.1** Fire extinguishers shall be subjected to maintenance at intervals of not more than 1 year, at the time of hydrostatic test, or when specifically indicated by an inspection discrepancy or electronic notification.
7.3.4.3 Verification-of-Service Collar (Maintenance or Recharging).	***Content Deleted***
Content Added	***N* 7.5 Hose Station Maintenance.** Where hose stations are installed to comply with 6.2.1.4, they shall be maintained in accordance with NFPA 1962.
7.7 Extinguisher Recharging and Extinguishing Agents. **7.7.1* General.**	**7.7 Maintenance of Wheeled Extinguisher Hoses and Regulators.** **7.7.1 Wheeled Unit Hoses.** Discharge hoses on wheeled-type fire extinguishers shall be completely uncoiled and examined for damage annually. ****(Section 7.7 added. Old section 7.7 transferred to section 7.8)****
7.7.1.3.5 In no case shall an extinguisher be recharged if it is beyond its specified hydrostatic test date.	**7.8.1.3.5** In no case shall an extinguisher be recharged without hydrostatic testing if it is beyond its specified hydrostatic test date.
Chapter 8 Hydrostatic Testing	
8.2.3 Test Equipment for High-Pressure Cylinders. The equipment for hydrostatic testing of high-pressure cylinders and cartridges (DOT 3 series) shall meet the specifications of CGA C-1, *Methods of Hydrostatic Testing of Compressed Gas Cylinders*.	**8.2.3 Test Equipment for High-Pressure Cylinders.** The equipment for hydrostatic testing of high-pressure cylinders and cartridges (DOT 3 series) shall meet the specifications of CGA C-1, *Methods for Pressure Testing Compressed Gas Cylinders*.

3) RESULTS IN A FUNDING ISSUE (Do Not Adopt Until Resolved)?

No.

4) FIRE PROTECTION PROGRAM CHANGE REQUIRED (Changes Required During Implementation After Adoption)?

No.

5) IMPORTANT INFORMATION FOR FIELD ENGINEERS?

Yes.

Section 4.4.1 states dry chemical stored-pressure extinguishers with an indicated manufacturing date of 1984 or prior shall be removed from service instead of being able to wait until the next 6-year maintenance interval or next hydrotest.
6.1.3.4 States all portable fire extinguishers other than wheeled extinguishers shall be installed in a bracket incorporating releasing straps or bands supplied by the extinguisher manufacturer.
6.1.3.4.1 States hangers and brackets shall not be fabricated in the field.

Reviewed By:	**Date:**
Katherine F. Moore	11/20/2018