SECTION 104416 - FIRE EXTINGUISHERS

Revise this Section by deleting and inserting text to meet Project-specific requirements.

Verify that Section titles referenced in this Section are correct for this Project's Specifications; Section titles may have changed.

1. GENERAL
	* + 1. RELATED DOCUMENTS
				1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
			2. SUMMARY
				1. Section includes portable, [**hand-carried**] [**wheeled**] fire extinguishers[**and mounting brackets for fire extinguishers**].
				2. State-Furnished Material: [**Hand-carried**] [**Wheeled**] fire extinguishers.
				3. Related Requirements:

Retain Subparagraphs below to cross-reference requirements Contractor might expect to find in this Section but are specified in other Sections.

Section 104413 "Fire Protection Cabinets."

Section 233813 "Commercial-Kitchen Hoods" for fire-extinguishing systems provided as part of commercial-kitchen exhaust hoods.

* + - 1. PREINSTALLATION MEETINGS

Retain "Preinstallation Conference" Paragraph below if Work of this Section is extensive or complex enough to justify a preinstallation conference.

* + - * 1. Preinstallation Conference: Conduct conference at Project site.

Retain Subparagraph below if additional requirements are necessary; include information about conference.

Review methods and procedures related to fire extinguishers including, but not limited to, the following:

Schedules and coordination requirements.

* + - 1. SUBMITTALS
				1. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.
				2. Manufacturer’s installation instructions shall be provided along with product data.
				3. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).
				4. Product Data: For each type of product. Include rating and classification, material descriptions, dimensions of individual components and profiles, and finishes for fire extinguisher[**and mounting brackets**].
				5. Product Schedule: For fire extinguishers. Coordinate final fire-extinguisher schedule with fire-protection cabinet schedule to ensure proper fit and function.[**Use same designations indicated on Drawings.**]
				6. Warranty: Sample of special warranty.
			2. CLOSEOUT SUBMITTALS
				1. Operation and Maintenance Data: For fire extinguishers to include in maintenance manuals.
			3. COORDINATION

Consider retaining this article if fire-protection cabinets are specified by series only or for complex projects.

* + - * 1. Coordinate type and capacity of fire extinguishers with fire-protection cabinets to ensure fit and function.
1. PRODUCTS

Manufacturers and products listed in SpecAgent and MasterWorks Paragraph Builder are neither recommended nor endorsed by the AIA or Deltek. Before inserting names, verify that manufacturers and products listed there comply with requirements retained or revised in descriptions and are both available and suitable for the intended applications.

* + - 1. PERFORMANCE REQUIREMENTS
				1. NFPA Compliance: Fabricate and label fire extinguishers to comply with NFPA 10, "Portable Fire Extinguishers."
				2. Fire Extinguishers: Listed and labeled for type, rating, and classification by an independent testing agency acceptable to authorities having jurisdiction.
			2. PORTABLE, HAND-CARRIED FIRE EXTINGUISHERS

See the tables at the end of the Evaluations for a list of manufacturers' products. Use these tables in combination with manufacturers' catalogs or product data to insert series, type, model, and designations of other characteristics.

* + - * 1. Fire Extinguishers: Type, size, and capacity for each fire-protection cabinet and mounting bracket indicated.

Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

Fire End & Croker Corporation.

MOON American.

Strike First Corporation of America (The).

Approved equivalent.

Retain "Source Limitations" Paragraph below if requiring fire extinguishers and fire-protection cabinets to be from same manufacturer. Verify availability with manufacturers.

Source Limitations: Obtain fire extinguishers, fire-protection cabinets, and accessories, from single source from single manufacturer.

Retain "Valves," "Handles and Levers," and "Instruction Labels" Subparagraphs below if required. Aluminum valves, handles, and levers are sometimes used for small- and medium-size fire extinguishers.

Valves: Manufacturer's standard.

Handles and Levers: Manufacturer's standard.

Instruction Labels: Include pictorial marking system complying with NFPA 10, Appendix B, and bar coding for documenting fire-extinguisher location, inspections, maintenance, and recharging.

In remaining Paragraphs, the letter A, B, C, D, or K indicates the class of fire on which an extinguisher is effective. Class A and Class B are preceded by a rating numeral indicating the extinguisher's relative extinguishing effectiveness. Extinguishers for Class C, Class D, and Class K fires are not required to have a rating numeral. See the Evaluations for fire classifications and numerical rating explanation.

In retained Paragraphs below, insert drawing designation. Use these designations on Drawings to identify each product.

* + - * 1. Stored-Pressure Water-Mist Type <**Insert drawing designation**>: UL-rated 2-A:C, 2.5-gal. nominal capacity, with water in enameled-steel container; with pressure-indicating gage.
				2. Pressurized, AFFF-Foam Type <**Insert drawing designation**>: UL-rated [**2-A:10-B, 1.6-gal.**] [**3-A:20-B, 2.5-gal.**] nominal capacity, with AFFF foam in stainless-steel container; with pressure-indicating gage.
				3. Pressurized, FFFP-Foam Type <**Insert drawing designation**>: UL-rated 3-A:20-B, 2.5-gal. nominal capacity, with FFFP foam in stainless-steel container; with pressure-indicating gage.
				4. Wet-Chemical Type <**Insert drawing designation**>: UL-rated 2-A:1-B:C:K, [**1.6-gal.**] [**2.5-gal.**] nominal capacity, with potassium [**acetate**] [**citrate**] [**carbonate**]-based chemical in stainless-steel container; with pressure-indicating gage.

Retain one or more of first four Paragraphs below for regular dry-chemical-type extinguishers.

* + - * 1. Regular Dry-Chemical Type <**Insert drawing designation**>: UL-rated <**Insert capacity**> nominal capacity, with sodium bicarbonate-based dry chemical in manufacturer's standard enameled container.
				2. Regular Dry-Chemical Type in Steel Container <**Insert drawing designation**>: UL-rated [**2-B:C, 1-lb**] [**10-B:C, 2.5-lb**] [**10-B:C, 5-lb**] [**40-B:C, 5.5-lb**] [**40-B:C, 6-lb**] [**60-B:C, 10-lb**] [**120-B:C, 20-lb**] nominal capacity, with sodium bicarbonate-based dry chemical in enameled-steel container.
				3. Regular Dry-Chemical Type in Aluminum Container <**Insert drawing designation**>: UL-rated [**2-B:C, 1-lb**] [**10-B:C, 2.5-lb**] [**10-B:C, 5-lb**] [**40-B:C, 5.5-lb**] [**60-B:C, 10-lb**] [**120-B:C, 20-lb**] nominal capacity, with sodium bicarbonate-based dry chemical in enameled-aluminum container.
				4. Regular Dry-Chemical Type in Brass Container <**Insert drawing designation**>: UL-rated [**40-B:C, 6-lb**] [**60-B:C, 10-lb**] [**120-B:C, 20-lb**] nominal capacity, with sodium bicarbonate-based dry chemical in chrome-plated-brass container.

Retain one or more of first four Paragraphs below for multipurpose dry-chemical-type extinguishers. These type of fire extinguishers are suitable for most buildings.

* + - * 1. Multipurpose Dry-Chemical Type <**Insert drawing designation**>: UL-rated <**Insert capacity**> nominal capacity, with monoammonium phosphate-based dry chemical in manufacturer's standard enameled container.
				2. Multipurpose Dry-Chemical Type in Steel Container <**Insert drawing designation**>: UL-rated [**1-A:10-B:C, 2.5-lb**] [**2-A:10-B:C, 5-lb**] [**3-A:40-B:C, 5-lb**] [**3-A:40-B:C, 6-lb**] [**4-A:60-B:C, 10-lb**] [**10-A:120-B:C, 20-lb**] nominal capacity, with monoammonium phosphate-based dry chemical in enameled-steel container.
				3. Multipurpose Dry-Chemical Type in Aluminum Container <**Insert drawing designation**>: UL-rated [**1-A:10-B:C, 2.5-lb**] [**2-A:10-B:C, 5-lb**] [**3-A:40-B:C, 5-lb**] [**3-A:40-B:C, 6-lb**] [**4-A:60-B:C, 10-lb**] [**10-A:120-B:C, 20-lb**] nominal capacity, with monoammonium phosphate-based dry chemical in enameled-aluminum container.
				4. Multipurpose Dry-Chemical Type in Brass Container <**Insert drawing designation**>: UL-rated [**2-A:10-B:C, 5-lb**] [**3-A:40-B:C, 6-lb**] [**4-A:60-B:C, 10-lb**] [**4-A:80-B:C, 10-lb**] [**10-A:120-B:C, 20-lb**] nominal capacity, with monoammonium phosphate-based dry chemical in chrome-plated-brass container.

Retain one or both of first two Paragraphs below for Purple-K dry-chemical-type extinguishers.

* + - * 1. Purple-K Dry-Chemical Type in Aluminum Container <**Insert drawing designation**>: UL-rated [**10-B:C, 2.5-lb**] [**30-B:C, 5-lb**] [**120-B:C, 20-lb**] nominal capacity, with potassium bicarbonate-based dry chemical in enameled-aluminum container.
				2. Purple-K Dry-Chemical Type in Brass Container <**Insert drawing designation**>: UL-rated [**80-B:C, 10-lb**] [**120-B:C, 20-lb**] nominal capacity, with potassium bicarbonate-based dry chemical in chrome-plated-brass container.
				3. Carbon Dioxide Type <**Insert drawing designation**>: UL-rated [**5-B:C, 5-lb**] [**10-B:C, 10-lb**] [**10-B:C, 15-lb**] [**10-B:C, 20-lb**] nominal capacity, with carbon dioxide in [**manufacturer's standard enameled-metal**] [**enameled-steel**] [**enameled-aluminum**] container.
				4. Dry-Powder Type <**Insert drawing designation**>: [**FM approved,**]UL-rated Class D, 30-lb nominal capacity, with [**sodium chloride**] [**copper**]-based powder in enameled-steel container; with pressure-indicating gage.

Retain one or more of three Paragraphs below.

First two Paragraphs below describe fire extinguishers using Halotron I clean agent as an alternative to halon. See the Evaluations.

* + - * 1. Clean-Agent Type in Aluminum Container <**Insert drawing designation**>: UL-rated [**1-B:C, 1.4-lb**] [**2-B:C, 2.5-lb**] [**5-B:C, 5-lb**] nominal capacity, with HCFC Blend B agent and inert material in enameled-aluminum container; with pressure-indicating gage.
				2. Clean-Agent Type in Brass Container <**Insert drawing designation**>: UL-rated [**1-A:10-B:C, 11-lb**] [**2-A:10-B:C, 15.5-lb**] nominal capacity, with HCFC Blend B agent and inert material in chrome-plated-brass container; with pressure-indicating gage.

"Clean-Agent Type in Steel Container" Paragraph below describes Ansul's fire extinguishers using FE-36 clean agent as an alternative to halon. See the Evaluations.

* + - * 1. Clean-Agent Type in Steel Container <**Insert drawing designation**>: UL-rated [**5-B:C, 4.75-lb**] [**1-A:10-B:C, 10-lb**] [**2-A:10-B:C, 14-lb**] nominal capacity, with HFC blend agent and inert material in enameled-steel container; with pressure-indicating gage.

Insert other types and capacities to suit Project.

* + - 1. MOUNTING BRACKETS <**Insert drawing designation**>

Retain this article if mounting brackets separate from fire-protection cabinets are required.

Copy this article and re-edit for each product.

Insert drawing designation. Use these designations on Drawings to identify each product.

* + - * 1. Mounting Brackets: Manufacturer's standard[**galvanized**] steel, designed to secure fire extinguisher to wall or structure, of sizes required for types and capacities of fire extinguishers indicated, with plated or [**red**] [**black**] baked-enamel finish.

Retain "Source Limitations" Paragraph below if requiring mounting brackets and fire extinguishers to be from same manufacturer. Verify availability with manufacturers.

Source Limitations: Obtain mounting brackets and fire extinguishers from single source from single manufacturer.

* + - * 1. Identification: Lettering complying with authorities having jurisdiction for letter style, size, spacing, and location. Locate as indicated by Architect.

Identify bracket-mounted fire extinguishers with the words "FIRE EXTINGUISHER" in red letter decals applied to mounting surface.

If more than one orientation is required, indicate location of each on Drawings.

Orientation: [**Vertical**] [**Horizontal**].

* + - 1. WHEELED FIRE EXTINGUISHERS <**Insert drawing designation**>

See the tables at the end of the Evaluations for a list of manufacturers' products. Use these tables in combination with manufacturers' catalogs or product data to insert series, type, model, and designations of other characteristics.

Copy this article and re-edit for each product.

Insert drawing designation. Use these designations on Drawings to identify each product.

* + - * 1. Wheeled Fire Extinguishers: Type, size, and capacity for locations indicated, complete with carriage.

Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

Amerex Corporation.

Ansul by Johnson Controls Company.

Fire End & Croker Corporation.

Approved equivalent.

Retain "Source Limitations" Paragraph below if requiring wheeled fire extinguishers and fire extinguishers to be from same manufacturer. Verify availability with manufacturers.

* + - * 1. Source Limitations: Obtain wheeled fire extinguishers and fire extinguishers from single source from single manufacturer.

Carriage: Fabricated from enameled-steel pipe, complete with hanger assembly, long-range nozzle, hose, and [**semipneumatic solid-rubber tires**] [**wide-rim wheels**].

Hose: [**15 feet**] [**50 feet**] [**100 feet**].

In remaining Paragraphs, the letter A, B, C, or D indicates the class of fire on which an extinguisher is effective. Class A and Class B are preceded by a rating numeral indicating the extinguisher's relative extinguishing effectiveness. Extinguishers for Class C and Class D fires are not required to have a rating numeral. See the Evaluations for fire classifications and numerical rating explanation.

* + - * 1. Pressurized, FFFP-Foam Type: UL-rated 20-A:160-B, 33-gal. nominal capacity, with FFFP foam in stainless-steel container.
				2. Regular Dry-Chemical Type: UL-rated [**160-B:C, 50-lb**] [**240-B:C, 150-lb**] [**160-B:C, 250-lb**] nominal capacity, with sodium bicarbonate-based dry chemical in [**regulated**] [**stored**] [**direct**]-pressure, enameled-steel container.

Verify availability of enameled-aluminum containers in "Multipurpose Dry-Chemical Type" Paragraph below with manufacturers.

* + - * 1. Multipurpose Dry-Chemical Type: UL-rated [**20-A:160-B:C, 30-lb**] [**30-A:160-B:C, 50-lb**] [**40-A:240-B:C, 125-lb**] [**40-A:160-B:C, 250-lb**] nominal capacity, with monoammonium phosphate-based dry chemical in [**regulated**] [**stored**] [**direct**]-pressure, enameled-[**steel**] [**aluminum**] [**steel or -aluminum**] container.
				2. Purple-K Dry-Chemical Type: UL-rated [**160-B:C, 50-lb**] [**320-B:C, 125-lb**] [**160-B:C, 250-lb**] nominal capacity, with potassium bicarbonate-based dry chemical in [**regulated**] [**stored**] [**direct**]-pressure, enameled-steel container.

Verify availability of enameled-aluminum containers in "Carbon Dioxide Type" Paragraph below with manufacturers.

* + - * 1. Carbon Dioxide Type: UL-rated [**20-B:C, 50-lb**] [**20-B:C, 100-lb**] nominal capacity, with carbon dioxide in [**manufacturer's standard enameled-metal**] [**enameled-steel**] [**enameled-aluminum**] container.
				2. Dry-Powder Type: [**FM approved,**]UL-rated Class D, [**sodium chloride-based powder, 150-lb**] [**copper-based powder, 250-lb**] nominal capacity, in regulated-pressure, enameled-steel container; with pressure-indicating gage.
				3. Clean-Agent Type: UL-rated [**4-A:40-B:C, 65-lb**] [**10-A:80-B:C, 150-lb**] nominal capacity, with HCFC Blend B agent and inert material in stored-pressure, enameled-steel container; with pressure-indicating gage.

Insert other types and capacities to suit Project.

1. EXECUTION
	* + 1. EXAMINATION
				1. Examine fire extinguishers for proper charging and tagging.

Remove and replace damaged, defective, or undercharged fire extinguishers.

* + - * 1. Proceed with installation only after unsatisfactory conditions have been corrected.
			1. INSTALLATION
				1. General: Install fire extinguishers and mounting brackets in locations indicated and in compliance with requirements of authorities having jurisdiction.

Retain "Mounting Brackets" Subparagraph below if retaining option in "General" Paragraph above. If more than one height is required, indicate locations for each height. According to NFPA 10, maximum mounting height for fire extinguishers weighing 40 lb or less is 60 inches from finished floor to top of extinguisher; for those weighing more, it is 42 inches from finished floor to top of extinguisher. In rooms required to comply with ADA-ABA Guidelines, mounting height for fire extinguishers is not to exceed 48 inches to the handle.

Mounting Brackets: Top of fire extinguisher to be at 42 inches above finished floor.

* + - * 1. Mounting Brackets: Fasten mounting brackets to surfaces, square and plumb, at locations indicated.

END OF SECTION 104416