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**SECTION 104416 - FIRE EXTINGUISHERS**

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

**This Section uses the term "Contracting Officer." Change this term to match that used to identify the design professional as defined in the General and Supplementary Conditions.**

**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**

Retain or delete this article in all Sections of Project Manual.

* + - * 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
			1. **SUMMARY**
				1. Section includes portable, [**hand-carried**] [**wheeled**] fire extinguishers[**and mounting brackets for fire extinguishers**] installed as part of the project. This specification does not address Contractor-supplied fire extinguishers used during the construction period but the Contractor shall not used already installed Government-owned fire extinguishers to meet construction (hot work) requirements.
				2. NIH-Furnished Material: [**Hand-carried**] [**Wheeled**] fire extinguishers.
				3. Related Sections:

Retain Sections in subparagraphs below that contain requirements Contractor might expect to find in this Section but are specified in other Sections.

Division 10 Section "Fire Extinguisher Cabinets."

Division 21 Section "Water-Based Fire-Suppression Systems" for hose systems, racks, and valves.

Division 23 Section "Commercial-Kitchen Hoods" for fire extinguishing systems provided as part of commercial-kitchen exhaust hoods.

* + - 1. **UNIT PRICES**

Retain products and work included in this Section that are covered by unit prices. Do not include amounts. Insert descriptions of items in Part 2 or 3 to provide information affecting the cost of the Work that is not included under the unit price.

* + - * 1. Work of this Section is affected by <**Insert name of unit price**>.
			1. **SUBMITTALS**

First two paragraphs below are defined in Division 01 Section "Submittal Procedures" as "Action Submittals."

* + - * 1. Product Data: For each type of product indicated. Include rating and classification, material descriptions, dimensions of individual components and profiles, and finishes for fire extinguisher[**and mounting brackets**].
				2. 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.**]
				3. Remaining paragraphs are defined in Division 01 Section "Submittal Procedures" as "Informational Submittals."Operation and Maintenance Data: For fire extinguishers to include in maintenance manuals.
				4. Warranty: Sample of special warranty.
			1. **QUALITY ASSURANCE**
				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.

Retain subparagraph below if required for insurance purposes; verify availability with manufacturers selected because not all products comply.

Provide fire extinguishers approved, listed, and labeled by FMG.

Retain paragraph below if Work of this Section is extensive or complex enough to justify a preinstallation conference.

* + - * 1. Fire extinguisher submittals shall be reviewed and approved by the NIH Division of the Fire Marshal before purchase of the extinguishers.

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. **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.
				2. Coordinate fire extinguisher model with the spare parts maintained by the NIH Fire Department for extinguisher testing, recharge and maintenance.
			1. **WARRANTY**

When warranties are required, verify with NIH's counsel that special warranties stated in this article are not less than remedies available to NIH under prevailing local laws.

* + - * 1. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace fire extinguishers that fail in materials or workmanship within specified warranty period.

Failures include, but are not limited to, the following:

Hydrostatic test in first subparagraph below is required every 5 years for water, AFFF, FFFP, dry-chemical-in-stainless-steel-shell, carbon dioxide, and wet-chemical fire extinguishers; every 12 years for other dry-chemical, dry-powder, and halogenated-agent fire extinguishers.

Failure of hydrostatic test according to NFPA 10.

Faulty operation of valves or release levers.

Verify available warranties and warranty periods for fire extinguishers with manufacturers listed in Part 2 articles. NFPA 10 requires that stored-pressure, portable fire extinguishers subject to hydrostatic tests every 12 years be subject to NFPA 10's maintenance procedures.

Warranty Period: [**Six**] <**Insert number**> years from date of Substantial Completion.

1. **PRODUCTS**
	* + 1. **PORTABLE, HAND-CARRIED FIRE EXTINGUISHERS**

Refer to the tables at the end of the Evaluations in Division 10 Section "Fire Protection Specialties" 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**] [**mounting bracket**] [**fire protection cabinet and mounting bracket**] indicated.

See Editing Instruction No. 1 in the Evaluations in Division 10 Section "Fire Protection Specialties" for cautions about naming manufacturers. Retain one of first two subparagraphs and list of manufacturers below. See Division 01 Section "Product Requirements."

Manufacturers: Subject to compliance with requirements, provide products which utilize the following spare parts maintained by the NIH Fire Department to allow their testing, recharge and maintenance.

Stored-Pressure Water Type extinguisher

Amerex Pull Pin

Amerex Tamper seal

Amerex 532A chain for Pin

Amerex G100WS gauge - 100

Amerex 5240A Collar O-ring

Amerex 14878A – valve stem assembly

Amerex 5243A – valve stem O-ring

Amerex 383A – spring

Amerex 6978 – hose gasket O-ring

Multipurpose Dry-Chemical Type extinguisher in Steel Container

Amerex Pull Pin

Amerex Tamper seal

Amerex 532A chain for Pin

Amerex G195 gauge - 195

Amerex 5241A Collar O-ring

Amerex 6092A – valve stem assembly

Amerex 1074A - spring

Amerex 1532A – hose gasket O-ring

Retain three subparagraphs below if required. Aluminum valves, handles, and levers are sometimes used for small- and medium-size fire extinguishers.

Valves: [**Manufacturer's standard**] [**Nickel-plated, polished brass body**].

Handles and Levers: [**Manufacturer's standard**] [**Stainless steel**].

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 in Division 10 Section "Fire Protection Specialties" for fire classifications and numerical rating explanation.

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

Retain one or more of first three paragraphs below for water-type extinguishers. Potential for freezing exists with all types. Retain second paragraph if freeze potential is high.

* + - * 1. Stored-Pressure Water Type <**Insert drawing designation**>: UL-rated 2-A, 9.5-L (2.5-gal.) nominal capacity, with water in stainless-steel container; with pressure-indicating gage.
				2. Wet-Chemical Type <**Insert drawing designation**>: UL-rated 2-A:1-B:C:K, [**6-L (1.6-gal.)**] [**9.5-L (2.5-gal.)**] nominal capacity, with potassium [**acetate**] [**citrate**] [**carbonate**]-based chemical in stainless-steel container; with pressure-indicating gage.
				3. Multipurpose Dry-Chemical Type in Steel Container: UL-rated 4-A:60-B:C, 4.5-kg (10-lb)nominal capacity, with monoammonium phosphate-based dry chemical in enameled-steel container.
				4. Multipurpose Dry-Chemical Type in Aluminum Container **4.5-kg (10-lb)**] nominal capacity, with monoammonium phosphate-based dry chemical in enameled-aluminum container.

**Carbon Dioxide Type <Insert drawing designation>: UL-rated [5-B:C, 2.3-kg (5-lb)] [10-B:C, 4.5-kg (10-lb)] [10-B:C, 6.8-kg (15-lb)] [10-B:C, 9.1-kg (20-lb)] nominal capacity, with carbon dioxide in [manufacturer's standard enameled-metal] [enameled-steel] [enameled-aluminum] container.**

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

Delete this article if mounting brackets separate from fire protection cabinets are not required.

Copy this article and re-edit for each product.

Insert number to complete 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.

See Editing Instruction No. 1 in the Evaluations in Division 10 Section "Fire Protection Specialties" for cautions about naming manufacturers. Retain one of two subparagraphs and list of manufacturers below. See Division 01 Section "Product Requirements."

Manufacturers: Subject to compliance with requirements, [**provide products by one of the following**] [**available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following**]:

Basis-of-Design Product: Subject to compliance with requirements, provide [**product indicated on Drawings**] <**Insert manufacturer's name; product name or designation**> or comparable product by one of the following:

Amerex Corporation.

Ansul Incorporated; Tyco International Ltd.

Badger Fire Protection; a Kidde company.

Buckeye Fire Equipment Company.

Fire End & Croker Corporation.

J. L. Industries, Inc.; a division of Activar Construction Products Group.

Larsen's Manufacturing Company.

Potter Roemer LLC.

<**Insert manufacturer's name**>.

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

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. **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.

According to NFPA 10, maximum mounting height for fire extinguishers weighing 40 lb (18 kg) or less is 1524 mm (60 in.); for those weighing more, it is 1067 mm (42 in.).

Mounting Brackets: [**1372 mm (54 in.)**] <**Insert dimension**> above finished floor to top of fire extinguisher.

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

END OF SECTION 104416