SECTION 104413 - FIRE PROTECTION CABINETS

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:

Fire-protection cabinets for the following:

Portable fire extinguisher.

Portable fire extinguisher and fire-hose valve.

Portable fire extinguisher, fire hose, rack, and fire-hose valve.

Fire-hose valve.

Fire hose, rack, and fire-hose valve.

* + - * 1. Related Requirements:

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

Section 104416 "Fire Extinguishers" for portable, hand-carried fire extinguishers accommodated by fire-protection cabinets.

Section 211200 "Fire-Suppression Standpipes" for fire-hose connections.

* + - 1. PREINSTALLATION CONFERENCE

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-protection cabinets, 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.

Show door hardware, cabinet type, trim style, and panel style. Include roughing-in dimensions and details showing recessed-, semirecessed-, or surface-mounting method and relationships of box and trim to surrounding construction.

Retain Subparagraph below for cabinet-mounted hose valves.

Show location of knockouts for hose valves.

* + - * 1. Shop Drawings: For fire-protection cabinets.

Include plans, elevations, sections, details, and attachments to other work.

Retain "Samples" Paragraph below for single-stage Samples, with a subordinate list if applicable. Retain "Samples for Initial Selection" and "Samples for Verification" Paragraphs for two-stage Samples.

* + - * 1. Samples: For each type of exposed finish required.
				2. Samples for Initial Selection: For each type of exposed finish required.
				3. Samples for Verification: For each type of exposed finish required, prepared on samples 6 by 6 inches square.
				4. Product Schedule: For fire-protection cabinets. Indicate whether recessed, semirecessed, or surface mounted. Coordinate final fire-protection cabinet schedule with fire-extinguisher schedule to ensure proper fit and function.[**Use same designations indicated on Drawings.**]
			1. CLOSEOUT SUBMITTALS
				1. Maintenance Data: For fire-protection cabinets to include in maintenance manuals.
			2. COORDINATION

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

* + - * 1. Coordinate size of fire-protection cabinets to ensure that type and capacity of [**fire extinguishers**] [**fire hoses, hose valves, and hose racks**] indicated are accommodated.

Requirement in Paragraph below applies only to recessed and semirecessed cabinets.

* + - * 1. Coordinate sizes and locations of fire-protection cabinets with wall depths.
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. MANUFACTURERS

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

* + - * 1. Source Limitations: Obtain fire-protection cabinets, accessories, and fire extinguishers from single source from single manufacturer.
			1. PERFORMANCE REQUIREMENTS

Requirement in "Fire-Rated Fire-Protection Cabinets" Paragraph below applies only to recessed and semirecessed cabinets.

* + - * 1. Fire-Rated Fire-Protection Cabinets: Listed and labeled to comply with requirements in ASTM E814 for fire-resistance rating of walls where they are installed.

Retain "Electrical Components, Devices, and Accessories" Paragraph below if wired alarms are specified for fire-protection cabinets.

* + - * 1. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
			1. FIRE-PROTECTION CABINET <**Insert drawing designation**>

See the table at the end of the Evaluations for a list of manufacturers' products. Use this table 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. Cabinet Type: Suitable for fire [**extinguisher**] [**extinguisher and hose valve**] [**hose, rack, valve, and extinguisher**] [**hose, rack, and valve**] [**-hose valve**].

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.

Second and third options in "Cabinet Construction" Paragraph below are available only for recessed and semirecessed cabinets.

* + - * 1. Cabinet Construction: [**Nonrated**] [**One-hour fire rated**] [**Two-hour fire rated**].

Retain "Fire-Rated Cabinets" Subparagraph below for fire-rated cabinets. Modern Metal constructs its cabinets to allow gypsum board to be added in the field. Revise below if required.

Fire-Rated Cabinets: Construct fire-rated cabinets with double walls fabricated from 0.043-inch (18 ga)- thick cold-rolled steel sheet lined with minimum 5/8-inch- thick fire-barrier material. Provide factory-drilled mounting holes.

Steel is typical material for fire-protection cabinets and is required for fire-rated types. Surface-mounted cabinets can be fabricated to match door and trim materials.

* + - * 1. Cabinet Material: [**Cold-rolled steel sheet**] [**Aluminum sheet**] [**Stainless steel sheet**].

Retain "Shelf" Subparagraph below if required for combination fire-extinguisher/hose-valve cabinets.

Shelf: Same metal and finish as cabinet.

Retain "Recessed Cabinet," "Semirecessed Cabinet," or "Surface-Mounted Cabinet" Paragraph below.

* + - * 1. Recessed Cabinet:

Trimless with Concealed Flange: Surface of surrounding wall finishes flush with exterior finished surface of cabinet frame and door, without overlapping trim attached to cabinet. Provide recessed flange, of same material as box, attached to box, to act as [**plaster stop**] [**drywall bead**].

Trimless with Hidden Flange: Flange of same metal and finish as box overlaps surrounding wall finish and is concealed from view by an overlapping door.

Exposed Flat Trim: One-piece combination trim and perimeter door frame overlapping surrounding wall surface, with exposed trim face and wall return at outer edge (backbend).

* + - * 1. Semirecessed Cabinet: One-piece combination trim and perimeter door frame overlapping surrounding wall surface, with exposed trim face and wall return at outer edge (backbend).

Square-Edge Trim: 1-1/4- to 1-1/2-inch backbend depth.

Rolled-Edge Trim: [**2-1/2-inch**] [**4-inch**] [**4-1/2-inch**] backbend depth.

* + - * 1. Surface-Mounted Cabinet: Cabinet box fully exposed and mounted directly on wall with no trim.

Coordinate cabinet trim material in "Cabinet Trim Material" Paragraph below with door construction. These materials are available for both nonrated and fire-rated cabinets. Delete below if not using trim.

* + - * 1. Cabinet Trim Material: Same material and finish as door.
				2. Door Material: [**Steel sheet**] [**Aluminum sheet**] [**Extruded-aluminum shapes**] [**Stainless steel sheet**] [**Copper-alloy brass sheet**] [**Copper-alloy bronze sheet**].
				3. Door Style: [**Fully glazed, frameless, backless, acrylic panel**] [**Fully glazed panel with frame**] [**Full acrylic bubble, frameless**] [**Full acrylic bubble with frame**] [**Full acrylic bubble with frameless, rotating turntable**] [**Horizontal duo panel with frame**] [**Vertical duo panel with frame**] [**Center glass panel with frame**] [**Solid opaque panel with frame**] [**Flush opaque panel, frameless, with no exposed hinges**].

Delete "Door Glazing" Paragraph below if retaining only solid opaque panel in "Door Style" Paragraph above.

* + - * 1. Door Glazing: [**Clear float glass**] [**Tempered float glass (clear)**] [**Tempered float glass (bronze tint)**] [**Break glass**] [**Tempered break glass**] [**Wire glass**] [**Acrylic sheet**] [**Break acrylic bubble**] [**Molded acrylic bubble**].

Retain one of two "Acrylic Sheet Color" Subparagraphs below if retaining acrylic sheet in "Door Glazing" Paragraph above.

Acrylic Sheet Color: [**Clear**] [**Bronze**] transparent acrylic sheet.

Acrylic Sheet Color: Clear transparent acrylic sheet painted [**white**] [**red**] [**black**] on unexposed side.

Retain "Acrylic Bubble Color" Subparagraph below if retaining acrylic bubble in "Door Glazing" Paragraph above.

Acrylic Bubble Color: [**Clear**] [**Bronze**] [**Red**], transparent.

* + - * 1. Door Hardware: Manufacturer's standard door-operating hardware of proper type for cabinet type, trim style, and door material and style indicated.

Provide [**projecting lever handle with cam-action latch**] [**projecting door pull and friction latch**] [**recessed door pull and friction latch**] [**manufacturer's standard**].

Continuous hinges in Subparagraph below are most common. Concealed hinges are used for flush panel doors. Pivots are sometimes used for fully glazed, frameless acrylic doors; verify availability with manufacturers.

Provide manufacturer's standard hinge, permitting door to open 180 degrees.

* + - * 1. Accessories:

Retain "Mounting Bracket" Subparagraph below if required for types of fire-protection cabinets and extinguishers specified.

Mounting Bracket: Manufacturer's standard steel, designed to secure fire extinguisher to fire-protection cabinet, of sizes required for types and capacities of fire extinguishers indicated, with plated or baked-enamel finish.

Lettered Door Handle: One-piece, cast-iron door handle with the word "FIRE" embossed into face.

First option in "Door Lock" Subparagraph below is only available from a few manufacturers.

Door Lock: [**Cam lock that allows door to be opened during emergency by pulling sharply on door handle**] [**Cylinder lock, keyed alike to other cabinets**].

Identification: Lettering complying with authorities having jurisdiction for letter style, size, spacing, and location. Locate [**as indicated**] [**as directed by Director’s Representative**].

Identify fire extinguisher in fire-protection cabinet with the words "FIRE EXTINGUISHER."

Location: Applied to [**cabinet door**] [**cabinet glazing**] [**location indicated on Drawings**].

Application Process: [**Silk-screened**] [**Engraved**] [**Etched**] [**Decals**] [**Pressure-sensitive vinyl letters**].

Lettering Color: [**Red**] [**Black**] [**White**].

Orientation: [**Vertical**] [**Horizontal**] [**As indicated on Drawings**].

Alarm: Manufacturer's standard alarm that actuates when fire-protection cabinet door is opened and that is powered by [**batteries**] [**low voltage, complete with transformer**].

* + - * 1. Materials:

Cold-Rolled Steel: ASTM A1008, Commercial Steel (CS), Type B.

Finish: [**Factory primed for field painting**] [**Baked enamel, TGIC polyester powder coat, HAA polyester powder coat, epoxy powder coat, or polyester/epoxy hybrid powder coat, complying with AAMA 2603**].

Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

Color: [**Match Director’s Representative's sample**] [**As selected by Director’s Representative from manufacturer's full range**].

Aluminum: ASTM B221 for extruded shapes and aluminum sheet, with strength and durability characteristics of not less than Alloy 6063-T5 for aluminum sheet.

Finish: [**Clear anodic**] [**Color anodic**] [**Baked enamel or powder coat**].

Color: [**Light bronze**] [**Medium bronze**] [**Dark bronze**] [**Match Director’s Representative's sample**] [**As selected by Director’s Representative from full range of industry colors and color densities**].

Stainless Steel: ASTM A240 or ASTM A666, Type 304.

Finish: [**ASTM A480 No. 4 directional satin finish,**] [**ASTM A480 No. 8 mirrorlike reflective, nondirectional polish**].

Copper Alloy, Brass: ASTM B36 alloy [**as standard with manufacturer**].

Finish: [**Polished**] [**Satin**] [**As selected by Director’s Representative from full range of industry finishes**].

Copper Alloy, Bronze: ASTM B36 alloy [**as standard with manufacturer**].

Finish: [**Mirror polish**] [**Satin polish**] [**Satin oxidized oil rub**] [**Clear baked enamel**] [**Match Director’s Representative's sample**] [**As selected by Director’s Representative from full range of industry finishes**].

Clear Float Glass: ASTM C1036, Type I, Class 1, Quality q3, [**3**] [**6**] mm thick.

Tempered Float Glass: ASTM C1048, Kind FT, Condition A, Type I, Quality q3, 3 mm thick, [**Class 1 (clear)**] [**Class 2 (tinted, heat absorbing, and light reducing), bronze tint**].

Break Glass: Clear annealed float glass, ASTM C1036, Type I, Class 1, Quality q3, 1.5 mm thick, single strength.

Tempered Break Glass: ASTM C1048, Kind FT, Condition A, Type I, Quality q3, 1.5 mm thick.

Wire Glass: ASTM C1036, Type II, Class 1, Form 1, Quality q8, Mesh m1 (diamond), 6 mm thick.

Transparent Acrylic Sheet: ASTM D4802, Category A-1 (cell-cast sheet), [**1.5**] [**3**] [**6**] mm thick, with [**Finish 1 (smooth or polished)**] [**Finish 2 (patterned, textured)**].

* + - 1. SECURITY FIRE-PROTECTION CABINET <**Insert drawing designation**>

See the table at the end of the Evaluations for a list of manufacturers' products. Use this table 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. Cabinet Type: Suitable for fire [**extinguisher**] [**extinguisher and hose valve**] [**hose, rack, valve, and extinguisher**] [**hose, rack, and valve**] [**hose valve**].

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:

Activar Construction Products Group, Inc. - JL Industries.

Fire End & Croker Corporation.

Nystrom.

Approved equivalent.

Second and third options in "Cabinet Construction" Paragraph below are available only for recessed and semirecessed cabinets.

* + - * 1. Cabinet Construction: [**Nonrated**] [**One-hour fire rated**] [**Two-hour fire rated**].

Retain "Fire-Rated Cabinets" Subparagraph below for fire-rated cabinets.

Fire-Rated Cabinets: Construct fire-rated cabinets with double walls lined with minimum 5/8-inch- thick fire-barrier material.

* + - * 1. Cabinet Material: [**0.068-inch (14 ga) - thick steel sheet**] [**0.097-inch (12 ga)- thick steel sheet**] [**0.078-inch (14 ga)- thick stainless steel sheet**].

Retain "Shelf" Subparagraph below if required for combination fire-extinguisher/hose-valve cabinets.

Shelf: Same metal and finish as cabinet.

Retain "Recessed Cabinet," "Semirecessed Cabinet," or "Surface-Mounted Cabinet" Paragraph below.

* + - * 1. Recessed Cabinet:

Exposed Flat Trim: One-piece combination trim and perimeter door frame overlapping surrounding wall surface, with exposed trim face and wall return at outer edge (backbend).

* + - * 1. Semirecessed Cabinet: One-piece combination trim and perimeter door frame overlapping surrounding wall surface, with exposed trim face and wall return at outer edge (backbend).

Square-Edge Trim: 1-1/4- to 1-1/2-inch backbend depth.

Rolled-Edge Trim: 2-1/2-inch backbend depth.

* + - * 1. Surface-Mounted Cabinet: Cabinet box fully exposed and mounted directly on wall with no trim.

Coordinate cabinet trim material in "Cabinet Trim Material" Paragraph below with door construction. These materials are available for both nonrated and fire-rated cabinets.

* + - * 1. Cabinet Trim Material: [**Steel sheet**] [**Stainless steel sheet**] [**Same material and finish as door**].
				2. Door Material: [**0.097-inch (12 ga)- thick steel**] [**0.078-inch (14 ga)- thick stainless steel**] [**0.109-inch (12 ga)- thick stainless steel**] sheet.
				3. Door Style: Solid opaque panel with frame.
				4. Door Hardware: Manufacturer's standard door-operating hardware of proper type for cabinet type, trim style, and door material and style indicated, and as follows:

Recessed door pull.

Continuous Hinge: Same material and finish as trim, permitting door to open 180 degrees.

Retain one of two "Mechanical Deadlock" or one of two "Mechanical Snaplatch" Subparagraphs below.

Mechanical Deadlock: Lockbolt retracted and extended by five-tumbler [**paracentric**] [**mogul**] cylinder; keyed one side.

Lockbolt: 1-1/2 inches high by 3/4 inch thick; 5/8-inch throw.

Mechanical Deadlock: As specified in Section 087163 "Detention Door Hardware."

Mechanical Snaplatch: Automatic snaplatch when closed; latchbolt retracted by five-tumbler [**paracentric**] [**mogul**] cylinder; keyed one side.

Lockbolt: 1 inch high by 7/16 inch thick; 5/16-inch throw.

Mechanical Snaplatch: As specified in Section 087163 "Detention Door Hardware."

* + - * 1. Accessories:

Retain "Mounting Bracket" Subparagraph below if required for types of fire-protection cabinets and extinguishers specified.

Mounting Bracket: Manufacturer's standard steel, designed to secure fire extinguisher to security fire-protection cabinet, of sizes required for types and capacities of fire extinguishers indicated, with plated or baked-enamel finish.

Identification: Lettering complying with authorities having jurisdiction for letter style, size, spacing, and location. Locate [**as indicated**] [**as directed by Director’s Representative**].

Identify fire extinguisher in security fire-protection cabinet with the words "FIRE EXTINGUISHER."

Location: Applied to [**cabinet door**] [**location indicated on Drawings**].

Application Process: [**Silk-screened**] [**Engraved**] [**Etched**] [**Decals**] [**Pressure-sensitive vinyl letters**].

Lettering Color: [**Red**] [**Black**] [**White**].

Orientation: [**Vertical**] [**Horizontal**] [**As indicated on Drawings**].

Keys: Three per door lock.

* + - * 1. Materials:

Cold-Rolled Steel: ASTM A1008, Commercial Steel (CS), Type B.

Finish: [**Factory primed for field painting**] [**Baked enamel or powder coat**].

Color: [**Match Director’s Representative's sample**] [**As selected by Director’s Representative from full range of industry colors**].

Stainless Steel: ASTM A240 or ASTM A666, Type 304.

Finish: [**ASTM A480 No. 4 directional satin finish**] [**ASTM A480 No. 8 mirrorlike reflective, nondirectional polish**].

* + - 1. FABRICATION
				1. Fire-Protection Cabinets: Provide manufacturer's standard box (tub) with trim, frame, door, and hardware to suit cabinet type, trim style, and door style indicated.

Weld joints and grind smooth.

Miter corners and grind smooth.

Provide factory-drilled mounting holes.

Prepare doors and frames to receive locks.

Retain Subparagraph below if installation is not specified with other door hardware.

Install door locks at factory.

* + - * 1. Cabinet Doors: Fabricate doors according to manufacturer's standards, from materials indicated and coordinated with cabinet types and trim styles.

Retain first Subparagraph below for standard fire-protection cabinets; retain second Subparagraph for security fire-protection cabinets.

Fabricate door frames with tubular stiles and rails and hollow-metal design, minimum 1/2 inch thick.

Fabricate door frames of one-piece construction with edges flanged.

Miter and weld perimeter door frames and grind smooth.

* + - * 1. Cabinet Trim: Fabricate cabinet trim in one piece with corners mitered, welded, and ground smooth.
			1. GENERAL FINISH REQUIREMENTS
				1. Comply with NAAMM's AMP 500, "Metal Finishes Manual for Architectural and Metal Products," for recommendations for applying and designating finishes.
				2. Protect mechanical finishes on exposed surfaces of fire-protection cabinets from damage by applying a strippable, temporary protective covering before shipping.
				3. Finish fire-protection cabinets after assembly.
				4. Appearance of Finished Work: Noticeable variations in same piece are unacceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
1. EXECUTION
	* + 1. EXAMINATION
				1. Examine roughing-in for hose [**valves**] [**racks**] and cabinets to verify actual locations of piping connections before cabinet installation.
				2. Examine walls and partitions for suitable framing depth and blocking where [**recessed**] [**and**] [**semirecessed**] cabinets will be installed.
				3. Proceed with installation only after unsatisfactory conditions have been corrected.
			2. PREPARATION

Retain this article if Project includes recessed or semirecessed cabinets.

* + - * 1. Prepare recesses for [**recessed**] [**and**] [**semirecessed**] fire-protection cabinets as required by type and size of cabinet and trim style.
			1. INSTALLATION
				1. General: Install fire-protection cabinets in locations and at mounting heights indicated[**or, if not indicated, at height indicated below:**][**or, if not indicated, at heights acceptable to authorities having jurisdiction.**]

Retain "Fire-Protection Cabinets" Subparagraph below if retaining first 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.

Fire-Protection Cabinets: 42 inches above finished floor to top of fire extinguisher.

* + - * 1. Fire-Protection Cabinets: Fasten cabinets to structure, square and plumb.

Retain first Subparagraph below if default requirement suits Project.

Unless otherwise indicated, provide recessed fire-protection cabinets. If wall thickness is inadequate for recessed cabinets, provide semirecessed fire-protection cabinets.

Provide inside latch and lock for break-glass panels.

Fasten mounting brackets to inside surface of fire-protection cabinets, square and plumb.

Retain Subparagraph below if Project includes fire-rated hose and valve cabinets or hose-valve cabinets.

Fire-Rated [**Hose and Valve**] [**Hose-Valve**] Cabinets:

Install cabinet with not more than 1/16-inch tolerance between pipe OD and knockout OD. Center pipe within knockout.

Seal through penetrations with firestopping sealant as specified in Section 078413 "Penetration Firestopping."

Retain this article if decals or vinyl lettering is required.

* + - * 1. Identification:

Apply [**decals**] [**vinyl lettering**] at locations indicated.

Apply [**decals**] [**vinyl lettering**] on field-painted fire-protection cabinets after painting is complete.

* + - 1. ADJUSTING AND CLEANING
				1. Remove temporary protective coverings and strippable films, if any, as fire-protection cabinets are installed unless otherwise indicated in manufacturer's written installation instructions.
				2. Adjust fire-protection cabinet doors to operate easily without binding. Verify that integral locking devices operate properly.
				3. On completion of fire-protection cabinet installation, clean interior and exterior surfaces as recommended by manufacturer.
				4. Touch up marred finishes, or replace fire-protection cabinets that cannot be restored to factory-finished appearance. Use only materials and procedures recommended or furnished by fire-protection cabinet and mounting bracket manufacturers.
				5. Replace fire-protection cabinets that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 104413