SECTION 104413 - FIRE EXTINGUISHER CABINETS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Fire protection cabinets for the following:

a. Portable fire extinguishers.
b. Fire hose valves.
c. Fire hoses and racks.

B. Related Sections:

1. Division 09 painting Sections for field painting fire protection cabinets.
2. Division 10 Section "Signage" for directional signage to out-of-sight fire extinguishers and cabinets.
3. Division 10 Section "Fire Extinguishers."
4. Division 21 Section "Water-Based Fire-Suppression Systems" for hose systems, racks, and valves.
5. Division 26 Sections for low-voltage wiring for fire protection cabinet alarms.
6. Division 26 Section "Interior Lighting" for fire extinguisher location lights.

1.3 UNIT PRICES

A. Work of this Section is affected by <**Insert name of unit price**>.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for fire protection cabinets.

1. Fire Protection Cabinets: Include roughing-in dimensions, details showing mounting methods, relationships of box and trim to surrounding construction, door hardware, cabinet type, trim style, and panel style.
2. Show location of knockouts for hose valves.

B. Shop Drawings: For fire protection cabinets. Include plans, elevations, sections, details, and attachments to other work.

C. Samples for Initial Selection: For each type of fire protection cabinet indicated.

D. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below:

1. Size: 150 by 150 mm (6 by 6 inches) square.

E. Product Schedule: For fire protection cabinets. Coordinate final fire protection cabinet schedule with fire extinguisher schedule to ensure proper fit and function.[**Use same designations indicated on Drawings.**]

F. Maintenance Data: For fire protection cabinets to include in maintenance manuals.

1.5 QUALITY ASSURANCE

A. Fire-Rated, Fire Protection Cabinets: Listed and labeled to comply with requirements in ASTM E 814 for fire-resistance rating of walls where they are installed.

B. 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.

C. Preinstallation Conference: Conduct conference at [**Project site**] <**Insert location**>.

1. Review methods and procedures related to fire protection cabinets including, but not limited to, the following:

a. Schedules and coordination requirements.

1.6 COORDINATION

A. Size of fire protection cabinets: interior shall be a minimum of 686 mm (27 in.) high by 305 mm (12 in.) wide by 203 mm (8 in.) deep.

B. Coordinate size of fire protection cabinets to ensure that hose valves, where indicated, are accommodated along with the fire extinguisher.

C. Coordinate sizes and locations of fire protection cabinets with wall depths.

1.7 SEQUENCING

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

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B.

B. Aluminum: Alloy and temper recommended by aluminum producer and manufacturer for type of use and finish indicated, and as follows:

1. Sheet: ASTM B 209 (ASTM B 209M).
2. Extruded Shapes: ASTM B 221 (ASTM B 221M).

C. Stainless-Steel Sheet: ASTM A 666, Type 304.

D. Copper-Alloy Brass Sheet: ASTM B 36/B 36M, alloy UNS No. C26000 (cartridge brass, 70 percent copper).

E. Copper-Alloy Bronze Sheet: ASTM B 36/B 36M, alloy UNS No. C28000 (muntz metal, 60 percent copper).

F. Clear Float Glass: ASTM C 1036, Type I, Class 1, Quality q3, [**3**] [**6**] mm thick.

G. Tempered Float Glass: ASTM C 1048, Kind FT, Condition A, Type I, Quality q3, 3 mm thick, [**Class 1 (clear)**] [**Class 2 (tinted, heat absorbing, and light reducing), bronze tint**].

H. Wire Glass: ASTM C 1036, Type II, Class 1, Form 1, Quality q8, Mesh m1 (diamond), 6 mm thick.

I. Transparent Acrylic Sheet: ASTM D 4802, Category A-1 (cell-cast sheet), [**1.5**] [**3**] [**6**] mm thick, with [**Finish 1 (smooth or polished)**] [**Finish 2 (patterned, textured)**].

2.2 FIRE PROTECTION CABINET <**Insert drawing designation**>

A. Cabinet Type: Suitable for fire [**extinguisher**] [**extinguisher and hose valve**] [**hose valve**].

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

a. Fire End & Croker Corporation; <**Insert product name or designation**>.
b. J. L. Industries, Inc., a division of Activar Construction Products Group; <**Insert product name or designation**>.
c. Kidde Residential and Commercial Division, Subsidiary of Kidde plc; <**Insert product name or designation**>.
d. Larsen's Manufacturing Company; <**Insert product name or designation**>.
e. Modern Metal Products, Division of Technico Inc.; <**Insert product name or designation**>.
f. Moon-American; <**Insert product name or designation**>.
g. Potter Roemer LLC; <**Insert product name or designation**>.

h. Watrous Division, American Specialties, Inc.; <**Insert product name or designation**>.
i. <**Insert manufacturer's name; product name or designation**>.

B. Cabinet Construction: [**Nonrated**] [**1-hour fire rated**] [**2-hour fire rated**].

1. Fire-Rated Cabinets: Construct fire-rated cabinets with double walls fabricated from 1.1 mm- (0.0428-inch-) thick, cold-rolled steel sheet lined with minimum 16 mm- (5/8-inch-) thick, fire-barrier material. Provide factory-drilled mounting holes.

C. Cabinet Material: [**Steel**] [**Aluminum**] [**Stainless-steel**] sheet.

1. Shelf: Same metal and finish as cabinet.

D. Recessed Cabinet: Cabinet box recessed in walls of sufficient depth to suit style of trim indicated.

1. 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**].
2. 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.
3. 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).

E. Semirecessed Cabinet: Cabinet box partially recessed in walls of sufficient depth to suit style of trim indicated; with one-piece combination trim and perimeter door frame overlapping surrounding wall surface with exposed trim face and wall return at outer edge (backbend). Provide where walls are of insufficient depth for recessed cabinets but are of sufficient depth to accommodate semirecessed cabinet installation.

1. Square-Edge Trim: 32- to 38-mm (1-1/4- to 1-1/2-inch) backbend depth.
2. Rolled-Edge Trim: [**64-mm (2-1/2-inch)**] [**102-mm (4-inch)**] [**114-mm (4-1/2-inch)**] <**Insert dimension**> backbend depth.

F. Surface-Mounted Cabinet: Cabinet box fully exposed and mounted directly on wall with no trim. Provide where walls are of insufficient depth for semirecessed cabinet installation.

G. Cabinet Trim Material: [**Steel sheet**] [**Aluminum sheet**] [**Extruded-aluminum shapes**] [**Stainless-steel sheet**] [**Copper-alloy brass sheet**] [**Copper-alloy bronze sheet**] [**Same material and finish as door**].

H. Door Material: [**Steel sheet**] [**Aluminum sheet**] [**Extruded-aluminum shapes**] [**Stainless-steel sheet**] [**Copper-alloy brass sheet**] [**Copper-alloy bronze sheet**].

I. Door Style: [**Fully glazed, frameless, backless, acrylic panel**] [**Fully glazed panel with frame**] [**Full bubble, frameless**] [**Full bubble with frame**] [**Full 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**].

J. Door Glazing: [**Clear float glass**] [**Tempered float glass (clear)**] [**Tempered float glass (bronze tint)**] [**Wire glass**] [**Acrylic sheet**].

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

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

1. Provide [**projecting lever handle with cam-action latch**] [**projecting door pull and friction latch**] [**recessed door pull and friction latch**] [**manufacturer's standard**].
2. Provide [**continuous hinge, of same material and finish as trim,**] [**concealed hinge**] [**pivot hinge**] [**manufacturer's standard hinge**] permitting door to open 180 degrees.

L. Accessories:

1. 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.
2. Lettered Door Handle: One-piece, cast-iron door handle with the word "FIRE" embossed into face.
3. Identification: Lettering complying with authorities having jurisdiction for letter style, size, spacing, and location. Locate [**as indicated**] [**as directed by Contracting Officer**] <**Insert location**>.

    a. Identify fire extinguisher in fire protection cabinet with the words "[**FIRE EXTINGUISHER**] <**Insert identification**>."

        1) Location: Applied to [**cabinet door**] [**cabinet glazing**] [**location indicated on Drawings**].
        2) Application Process: [**Silk-screened**] [**Engraved**] [**Etched**] [**Decals**] [**Pressure-sensitive vinyl letters**].
        3) Lettering Color: [**Red**] [**Black**] [**White**].
        4) Orientation: [**Vertical**] [**Horizontal**] [**As indicated on Drawings**].

M. Finishes:

1. Manufacturer's standard baked-enamel paint for the following:

    a. Exterior of cabinet [**door**] [**trim**] [**, door, and trim**] except for those surfaces indicated to receive another finish.
    b. Interior of cabinet[**and door**].

2. Aluminum: [**Clear anodic**] [**Color anodic**] [**Baked enamel or powder coat**].
3. Steel: [**Factory primed for field painting**] [**Baked enamel or powder coat**].
4. Stainless Steel: [**No. 2B**] [**No. 4**] [**No. 6**] [**No. 7**] [**No. 8**].

5. Copper Alloy, Brass: [**Buffed**] [**Hand rubbed**] [**Hand rubbed, lacquered**] [**Medium satin**] [**Fine matte**] [**Statuary conversion**] [**Patina conversion**].
6. Copper Alloy, Bronze: [**Buffed**] [**Hand rubbed**] [**Hand rubbed, lacquered**] [**Medium satin**] [**Fine matte**] [**Statuary conversion**] [**Patina conversion**].

2.3 FABRICATION

A. 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.

1. Weld joints and grind smooth.
2. Provide factory-drilled mounting holes.
3. Prepare doors and frames to receive locks.
4. Install door locks at factory.

B. Cabinet Doors: Fabricate doors according to manufacturer's standards, from materials indicated and coordinated with cabinet types and trim styles selected.

1. Fabricate door frames with tubular stiles and rails and hollow-metal design, minimum 13 mm (1/2 in.) thick.
2. Fabricate door frames of one-piece construction with edges flanged.
3. Miter and weld perimeter door frames.

C. Cabinet Trim: Fabricate cabinet trim in one piece with corners mitered, welded, and ground smooth.

2.4 GENERAL FINISH REQUIREMENTS

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Protect mechanical finishes on exposed surfaces of fire protection cabinets from damage by applying a strippable, temporary protective covering before shipping.

C. Finish fire protection cabinets after assembly.

D. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. 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.

2.5 ALUMINUM FINISHES

A. Clear Anodic Finish: AAMA 611, [**AA-M12C22A41, Class I, 0.018 mm**] [**AA-M12C22A31, Class II, 0.010 mm**] or thicker.

B. Color Anodic Finish: AAMA 611, [**AA-M12C22A42/A44, Class I, 0.018 mm**] [**AA-M12C22A32/A34, Class II, 0.010 mm**] or thicker.

1. Color: [**Light bronze**] [**Medium bronze**] [**Dark bronze**] [**Black**] <**Insert color**>.

2. Color: [**Match Contracting Officer's sample**] [**As selected by Contracting Officer from full range of industry colors and color densities**].

C. Baked-Enamel or Powder-Coat Finish: AAMA 2603 except with a minimum dry film thickness of 0.04 mm (1.5 mils). Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.

1. Color and Gloss: [**As indicated by manufacturer's designations**] [**Match Contracting Officer's sample**] [**As selected by Contracting Officer from manufacturer's full range**] <**Insert color and gloss**>.

2.6 STEEL FINISHES

A. Surface Preparation: Remove mill scale and rust, if present, from uncoated steel, complying with [**SSPC-SP 5/NACE No. 1, "White Metal Blast Cleaning"**] [**or**] [**SSPC-SP 8, "Pickling"**] <**Insert surface preparation method**>.[**After cleaning, apply a conversion coating suited to the organic coating to be applied over it.**]

B. Factory Prime Finish: Apply manufacturer's standard, fast-curing, lead- and chromate-free, universal primer immediately after surface preparation and pretreatment.

C. Baked-Enamel or Powder-Coat Finish: Immediately after cleaning and pretreating, apply manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat. Comply with coating manufacturer's written instructions for applying and baking to achieve a minimum dry film thickness of 0.05 mm (2 mils).

1. Color and Gloss: [**As indicated by manufacturer's designations**] [**Match Contracting Officer's sample**] [**As selected by Contracting Officer from manufacturer's full range**] <**Insert color and gloss**>.

2.7 STAINLESS-STEEL FINISHES

A. Surface Preparation: Remove tool and die marks and stretch lines, or blend into finish.

B. Polished Finishes: Grind and polish surfaces to produce uniform finish, free of cross scratches.

1. Run grain of directional finishes with long dimension of each piece.
2. When polishing is completed, passivate and rinse surfaces. Remove embedded foreign matter and leave surfaces chemically clean.
3. Directional Satin Finish: No. 4.
4. Dull Satin Finish: No. 6.
5. Reflective, Directional Polish: No. 7.
6. Mirrorlike Reflective, Nondirectional Polish: No. 8.

C. Bright, Cold-Rolled, Unpolished Finish: No. 2B.

2.8 COPPER-ALLOY FINISHES

A. Buffed Finish, Lacquered: M21-O6x (Mechanical Finish: buffed, smooth specular; Coating: clear organic, air drying, as specified below).

1. Clear, Organic Coating: Lacquer specified for copper alloys, applied by air spray in 2 coats per manufacturer's written instructions, with interim drying, to a total thickness of 0.025 mm (1 mil).

B. Hand-Rubbed Finish, Lacquered: M31-M34-O6x (Mechanical Finish: directionally textured, fine satin; Mechanical Finish: directionally textured, hand rubbed; Coating: clear organic, air drying, as specified below).

1. Clear, Organic Coating: Lacquer specified for copper alloys, applied by air spray in 2 coats per manufacturer's written instructions, with interim drying, to a total thickness of 0.025 mm (1 mil).

C. Statuary Conversion Coating over Satin Finish: M31-C55 (Mechanical Finish: directionally textured, fine satin; Chemical Finish: conversion coating, sulfide).

1. Color: Match Contracting Officer's sample.

D. Patina Conversion Coating: CDA-M36-C12-C52 (Mechanical Finish: directionally textured, uniform; Chemical Finish: nonetched cleaned, degreased; Chemical Finish: conversion coating, ammonium sulfate).

1. Color: Match Contracting Officer's sample.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine roughing-in for hose valves and cabinets to verify actual locations of piping connections before cabinet installation.

B. Examine walls and partitions for suitable framing depth and blocking where [**recessed**] [**semirecessed**] [**recessed and semirecessed**] cabinets will be installed.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Prepare recesses for [**recessed**] [**and**] [**semirecessed**] fire protection cabinets as required by type and size of cabinet and trim style.

3.3 INSTALLATION

A. General: Install fire protection cabinets in locations and at mounting heights indicated[**or, if not indicated, at heights indicated below:**] [**or, if not indicated, at heights acceptable to authorities having jurisdiction.**]

1. Fire Protection Cabinets: [**1372 mm (54 in.)**] <**Insert dimension**> above finished floor to top of cabinet.

B. Fire Protection Cabinets: Fasten cabinets to structure, square and plumb.

1. Unless otherwise indicated, provide recessed fire protection cabinets. If wall thickness is not adequate for recessed cabinets, provide semirecessed fire protection cabinets.
2. Provide inside latch and lock for break-glass panels.
3. Fasten mounting brackets to inside surface of fire protection cabinets, square and plumb.
4. Fire-Rated, [**Hose and Valve**] [**Hose-Valve**] Cabinets:

a. Install cabinet with not more than 1.6-mm (1/16-in.) tolerance between pipe OD and knockout OD. Center pipe within knockout.
b. Seal through penetrations with firestopping sealant as specified in Division 07 Section "Penetration Firestopping."

C. Identification: Apply [**decals**] [**vinyl lettering**] at locations indicated.

3.4 ADJUSTING AND CLEANING

A. Remove temporary protective coverings and strippable films, if any, as fire protection cabinets are installed unless otherwise indicated in manufacturer's written installation instructions.

B. Adjust fire protection cabinet doors to operate easily without binding. Verify that integral locking devices operate properly.

C. On completion of fire protection cabinet installation, clean interior and exterior surfaces as recommended by manufacturer.

D. 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.

E. 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