SECTION 10 4413 – FIRE PROTECTION CABINETS

Maintain Section format, including the UH Master spec designation and version date in bold in the center columns in the header and footer. Complete the header and footer with Project information

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

This Section uses the term "Architect" or “Engineer.” 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.

Delete hidden text after this Section has been edited for the Project.

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.

B. The Contractor's attention is specifically directed, but not limited, to the following documents for additional requirements:

1. The current version of the *Uniform General Conditions for Construction Contracts*, State of Texas, available on the web site of the Texas Facilities Commission.
2. The University of Houston’s *Supplemental General Conditions and Special Conditions for Construction.*

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.

1.3 ACTION 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 rough-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.

Retain paragraph and associated subparagraphs below if Project is to be LEED v4 certified.

B. LEED Action Submittals (Projects authorized for LEED certification only)

1. Building Product Disclosure and Optimization - Sourcing of Raw Materials:

a. Leadership Extraction Practices

1) Extended Producer Responsibility (EPR): Submit documentation indicating that manufacturers have a take back or recycling program for the product purchased.
2) Bio-Based Materials: Meeting the sustainable Agriculture Network's Sustainable Agriculture Standard and tested per ASTM D6866.
3) Wood Products: Certified by Forest Stewardship Council or USGBC approved equivalent.
4) Recycled Content: For products having recycled content, indicate percentages by weight of post-consumer and pre-consumer recycled content.
a) Include statement indicating costs for each product having recycled content.

b. Sourcing of Raw Materials: For products that are required to comply with requirements for regional materials, indicating location of material manufacturer and point of extraction, harvest, or recovery for each raw material.

1) Include statement indicating distance to Project, cost for each regional material and the fraction by weight that is considered regional.

2. Indoor Environmental Quality, Low Emitting Materials: Building Products must be tested and compliant with the California Department of Public-Health (CDPH) Standard Method V1.1-2010, using the applicable exposure scenario.

c. Paints, and Coatings: For wet applied on site products, include printed statement of VOC content, showing compliance with the applicable VOC limits of the California Air Resources Board (CARB) 2007, Suggested Control Measure (SCM) for Architectural Coatings, or the South Coast Air Quality Management District (SCAQMD) Rule 1113, effective June 3,-2011.
d. Adhesives and Sealants: For wet applied on site products, submit printed statement showing compliance with the applicable chemical content requirements of SCAQMD Rule 1168, effective July 1, 2005 and rule amendment date of January 7, 2005.
e. Alternative tests for VOC above include ASTM D2369-10; ISO 11890 part 1; ASTM D6886-03; or ISO 11890-2.

f. Methylene Chloride and perchloroethylene may not be added to paints, coating, adhesive or sealants.
g. Composite Wood: Submit documentation showing that wood used in the project has low formaldehyde emissions that meet the California Air Resources Board ATCM for formaldehyde requirements for ultra-low emitting formaldehyde (ULEF) resins or no added formaldehyde resins.
h. Provide General Emissions Evaluation certificates for adhesives, sealants showing compliance with California Department of Public Health v1.1 emissions testing or equivalent.

C. Laboratory Test Reports: For installation adhesives indicating compliance with requirements f or low-emitting materials.

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

E. Samples for Verification: For each type of exposed finish required, prepared on 6 by 6 inches square samples.

F. Product Schedule: For fire protection cabinets. Coordinate final fire protection cabinet schedule with fire extinguisher schedule to ensure proper fit and function.

1.4 INFORMATIONAL SUBMITTALS

Retain paragraph and associated subparagraphs below if Project is to be LEED v4 certified.

A. LEED Informational Submittals:

1. Building Product Disclosure and Optimization - Sourcing of Raw Materials:

a. Raw Material Sources and Extraction Reporting: Submit Raw materials supplier corporate Sustainability Reports (CSRs); documenting responsible extraction; including extraction locations, long term ecologically responsible land use, commitment to reducing environmental harms from extraction and manufacturing processes, and a commitment to meeting applicable standards or programs that address responsible sourcing criteria

1) Submit manufacturers' self-declared reports
2) Submit third party verified corporate sustainability reports (CSR) using one of the following frameworks"

a) Global Reporting Initiative (GRI) Sustainability Report
b) Organization for Economic Co-operation and Development (OECD)
c) Guidelines for Multinational Enterprises
d) UN Global Compact
e) ISO 26000
f) USGBC approved program.

2. Building Product Disclosure and Optimization - Material Ingredients

a. Material Ingredient Optimization: Submit manufacturer's Environmental Product Declaration (EPD) or at least one of the following:

1) GreenScreen V1.2 Benchmark: Third party report prepared by a licensed GreenScreen List Translator, or a full GreenScreen Assessment.
2) Cradle to Cradle: Manufacturer's published literature for the product bearing the Cradle to Cradle logo.
3) International Alternative Compliance Path - REACH Optimization
4) Declare: Manufacturer's completed Product Declaration Form
5) Other programs approved by USGBC

b. Product Manufacturer Supply Chain Optimization: Submit documentation from manufacturers for products that go beyond material ingredient optimization as follows:

1) Are sourced from product manufacturers who engage in validated and robust safety, health, hazard, and risk programs which at a minimum document at least 99 percent (by weight) of the ingredients used to make the building product or building material, and
2) Are sourced from product manufacturers with independent third party verification of their supply chain that at a minimum verifies:

a) Processes are in place to communicate and transparently prioritize chemical ingredients along the supply chain according to available hazard, exposure and use information to identify those that require more detailed evaluation
b) Processes are in place to identify, document, and communicate information on health, safety and environmental characteristics of chemical ingredients
c) Processes are in place to implement measures to manage the health, safety and environmental hazard and risk of chemical ingredients
d) Processes are in place to optimize health, safety and environmental impacts when designing and improving chemical ingredients
e) Processes are in place to communicate, receive and evaluate chemical ingredient safety and stewardship information along the supply chain
f) Safety and stewardship information about the chemical ingredients is publicly available from all points along the supply chain.

1.5 CLOSE-OUT SUBMITTALS

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

1.6 QUALITY ASSURANCE

A. Source Limitations: Obtain each type of fire extinguisher cabinet through one source from a single manufacturer.

B. 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.

Retain first paragraph below if wired alarms are specified for fire extinguisher cabinets.

C. 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.

1.7 COORDINATION

A. Coordinate size of fire protection cabinets to ensure that type and capacity of fire extinguishers indicated are accommodated.

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

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

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

A. 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.

2.2 MATERIALS

A. Tempered Break Glass: ASTM C 1048, Kind FT, Condition A, Type I, Quality q3, 1.5 mm thick.

B. Cold-Rolled Steel: ASTM A1008/A1008M, Commercial Steel (CS), Type B.

C. Stainless Steel: ASTM A240/A240M or ASTM A666, Type 304.

D. Molded Glass-Fiber-Reinforced Resin: Made by placing glass-fiber strands that have been saturated with thermosetting plastic resin in molds in alternating directions to form interlocking bars without voids and with a high resin content.

2.3 FIRE PROTECTION CABINET (Typical Installation <**Insert drawing designation**>)

A. Cabinet Type: Suitable for fire extinguisher.

1. Basis of Design: Subject to compliance with requirements, provide [**fully**][**semi-**] recessed, stainless steel, solid door, Architectural Series, fire extinguisher cabinets by Larsen's Manufacturing Company, www.larsensmfg.com, or comparable product by the following:
   a. J. L. Industries, Inc., a Division of Activar Construction Products Group; Cosmopolitan Series
   b. Substitutions: See Section 01 2500 “Substitution Procedures.”

B. Cabinet Construction [**Nonrated**] [**One-hour fire rated**] [**Two-hour fire rated**].

C. Cabinet Material: Cold-rolled steel sheet

Retain subparagraph below if required for combination fire extinguisher/hose-valve cabinets.

1. Shelf: Same metal and finish as cabinet.

Retain one of first two paragraphs below.

D. Recessed Cabinet: Cabinet box recessed in walls of sufficient depth to suit style of trim indicated.
   1. 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. Semi-recessed 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 semi-recessed cabinet installation.

F. Cabinet Trim Material: Same material and finish as door.

G. Door Material: Stainless steel sheet

H. Door Style: Solid opaque panel with frame.

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

   1. Provide manufacturer's standard.
   2. Provide continuous hinge, of same material and finish as trim, permitting door to open 180 degrees.

J. Accessories:

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

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

        1) Location: Applied to cabinet door.
        2) Application Process: Pressure-sensitive vinyl letters.
        3) Lettering Color: Black.
        4) Orientation: Vertical.

K. Finishes:

1. Cold-Rolled Steel Sheet: Manufacturer's standard Baked enamel, TGIC polyester powder coat or HAA polyester powder coat for the following:

    a. Interior of cabinet.
2. Stainless Steel: ASTM A480/A480M No. 4 directional satin finish.

2.4 FIRE PROTECTION CABINETS (Areas exposed to the elements and/or chemicals <**Insert drawing designation**>)

A. Cabinet Type: Suitable for fire extinguisher.

1. Basis of Design: Subject to compliance with requirements, provide the following
    a. Fiberglass cabinets manufactured by Thomas Products.
    b. Substitutions: See Section 01 2500 “Substitution Procedures.”

B. Cabinet Construction: Nonrated.

C. Cabinet Material: Molded fiberglass.

Retain one of first two paragraphs below.

D. Semi-recessed 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 semi-recessed cabinet installation.

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

F. Cabinet Trim Material: Same material and finish as door.

G. Door Material: Same material as cabinet.

H. Door Style: Center glass panel with frame.

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

J. Accessories:

Delete first subparagraph below if not required for types of fire protection cabinets and extinguishers specified.

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. Identification: Lettering complying with authorities having jurisdiction for letter style, size, spacing, and location. Locate as directed by Architect.
    a. Identify fire extinguisher in fire protection cabinet with the words "FIRE EXTINGUISHER."
        1) Location: Applied to cabinet door.
        2) Application Process: Silk-screened.
        3) Lettering Color: White.
        4) Orientation: Horizontal.

K. Finishes:

1. Manufacturer's standard gloss red integral color.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine walls and partitions for suitable framing depth and blocking where recessed and semi recessed cabinets will be installed.

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

3.2 PREPARATION

A. Prepare recesses for recessed 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:

1. Fire Protection Cabinets: 54 inches 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 semi-recessed fire protection cabinets.
2. Fasten mounting brackets to inside surface of fire protection cabinets, square and plumb.

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 10 4413