

SECTION 16133

CABLE TRAYS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes cable trays

1.2 REFERENCES

- A. ASTM A 123 - Specifications for Zinc (Hot-Galvanized) Coatings on Products Fabricated from rolled, pressed, and forged steel shapes, plates, bars and strip.
- B. ASTM A 525 – General Requirements to steel sheet, zinc-coated galvanized by the hot-dip process.
- C. NEMA FG 1 (National Electrical Manufacturers Association) – Fiberglass Cable Tray Systems.
- D. NEMA VE 1 – Metallic Cable Tray Systems.
- E. NEMA VE 2 – Metallic Cable Tray Installation Guidelines.

1.3 SUBMITTALS

- A. Shop Drawings: Indicate tray type, dimensions, support points, and finishes.
- B. Product Data: Submit fittings and accessories.
- C. Manufacturer's Installation Instructions: Submit application conditions and limitations of use stipulated by Product testing agency specified under Regulatory Requirements. Include instructions for storage, handling, protection, examination, preparation, and installation of Product.

1.4 CLOSEOUT SUBMITTALS

- B. Project Record Documents
 - 1. Record actual routing of cable tray and locations of supports.

1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.

1.6 DELIVERY, STORAGE & HANDLING

- B. Materials: Materials shall be new and shall be delivered to the job site in the original packaging.

1.7 PRE-INSTALLATION MEETING

- A. Convene minimum one week prior to commencing work of this section.

PART 2 - PRODUCTS

2.1 METAL LADDER TYPE CABLE TRAY

- A. Product Description: NEMA VE 1, Class 20C ladder type tray.
- B. Material: Steel
- C. Finish: ASTM A 123, hot dipped galvanized after fabrication ASTM A 525, mill-galvanized before fabrication if design requires paint epoxy on PVC coated.
- D. Inside Width: As indicated.
- E. Inside Depth: As indicated
- F. Straight Section Rung Spacing: As indicated.
- G. Inside Radius of Fittings: As indicated.
- H. Provide manufacturer's standard clamps, hangers, brackets, splice plates, reducer plates, blind ends, barrier strips, connectors, and grounding straps.
- I. Covers: Flanged, Non-flanged, solid, ventilated, flush or raised cover as required by design.

2.2 METAL TROUGH-TYPE CABLE TRAY

- A. Product Description: NEMA VE 1, Class 20C ventilated trough-type cable tray.
- B. Material: Steel or Aluminum

- C. Finish: ASTM A 123 hot dipped galvanized after fabrication or ASTM A 525, mill-galvanized before fabrication if design requires paint epoxy on PVC coated.
- D. Inside Width: As indicated
- E. Inside Depth: As indicated
- F. Inside Radius of Fittings: As indicated
- G. Provide manufacturer's standard clamps hangers, brackets, splice plates, reducer plates, blind ends, barrier strips connectors, and grounding straps.
- H. Covers: Flanged, Non-flanged, solid ventilated flush or raised cover.

2.3 METAL SOLID-BOTTOM-TYPE CABLE TRAY

- A. Product Description: NEMA VE 1, Class 20C solid-bottom cable tray
- B. Material: Steel
- B. Finish: ATSM A 123, hot dipped galvanized after fabrication ASTM A 525, mill-galvanized before fabrication. If design requires painted epoxy on PVC coated.
- C. Inside Width: As indicated.
- D. Inside Depth: As indicated
- E. Inside Radius of Fittings: As indicated
- F. Provide manufacturer's standard clamps hangers, brackets, splice plates, reducer plates, blind ends, barrier strips, connectors, and grounding straps
- G. Covers: Flanged, Non-flanged, solid ventilated flush or raised cover

2.4 METAL CHANNEL-TYPE CABLE TRAY

- A. Product Description: NEMA VE 1, Class 20C, solid bottom or ventilated bottom channel-type cable tray.
- B. Material: Steel
- C. Finish: ATSM A 123, hot dipped galvanized after fabrication ASTM A 525, mill-galvanized before fabrication. If design requires painted epoxy on PVC coated.
- D. Inside Width: As indicated.

- E. Inside Depth: As indicated
- F. Inside Radius of Fittings: As indicated
- G. Provide manufacturer's standard clamps hangers, brackets, splice plates, reducer plates, blind ends, barrier strips, connectors, and grounding straps
- H. Covers: Flanged, Non-flanged, solid ventilated flush or raised cover

2.5 FIBERGLASS LADDER-TYPE CABLE TRAY

- A. Product Description: NEMA FG 1, Class ladder type tray
- B. Material: Fiberglass
- C. Inside Width: As indicated.
- D. Inside Depth: As indicated
- E. Straight Section Rung Spacing: 6" on center
- F. Inside Radius of Fittings: As indicated
- G. Provide manufacturer's standard clamps hangers, brackets, splice plates, reducer plates, blind ends, barrier strips, and connectors.
- H. Covers: Flanged, Non-flanged, solid ventilated flush or raised cover

2.6 FIBERGLASS TROUGH-TYPE CABLE TRAY

- A. Product Description: NEMA FG 1, Class 20C ventilated trough-type tray.
- B. Finish: Fiberglass
- C. Inside Width: As indicated.
- D. Inside Depth: As indicated
- E. Inside Radius of Fittings: As indicated
- F. Provide manufacturer's standard clamps hangers, brackets, splice plates, reducer plates, blind ends, barrier strips, and connectors.
- G. Covers: Flanged, Non-flanged, solid ventilated flush or raised cover

2.7 FIBERGLASS SOLID-BOTTOM-TYPE CABLE TRAY

- A. Product Description: NEMA FG 1, Class 20C solid bottom cable tray
- B. Material: Fiberglass
- C. Inside Width: As indicated.
- D. Outside Depth: As indicated
- E. Inside Radius of Fittings: As indicated
- F. Provide manufacturer's standard clamps hangers, brackets, splice plates, reducer plates, blind ends, barrier strips, and connectors.
- G. Covers: Flanged, Non-flanged, solid ventilated flush or raised cover

2.8 FIBERGLASS CHANNEL-TYPE CABLE TRAY

- A. Product Description: NEMA FG 1, Class 20C solid bottom or ventilated channel type cable tray.
- B. Material: Fiberglass
- C. Inside Width: As indicated.
- D. Outside Depth: As indicated
- E. Inside Radius of Fittings: As indicated
- F. Provide manufacturer's standard clamps hangers, brackets, splice plates, reducer plates, blind ends, barrier strips, and connectors.
- G. Covers: Flanged, Non-flanged, solid ventilated flush or raised cover

2.9 WARNING SIGNS (WHERE APPLICABLE)

- A. Engraved Nameplates: ½ inch black letters on yellow laminated plastic nameplate, engraved with following wording:

WARNING! DO NOT USE CABLE TRAY AS WALKWAY, LADDER, OR SUPPORT. USE ONLY AS MECHANICAL SUPPORT FOR CABLES AND TUBING!

PART 3 – EXECUTION

3.1 INSTALLATION

- A. Install metal cable tray in accordance with NEMA VE 2.
- B. Install fiberglass cable tray in accordance with NEMA FG 1.
- C. Support trays and fasten to structure and finishes in accordance with Section 16050.
Provide supports at each connection point, at the end of each run, and at other points to maintain spacing between supports.
- D. Use expansion connectors where required.
- E. Provide fire-stopping under provisions of Section 07840 to sustain ratings when passing cable tray through fire-rated elements
- F. Ground and bond metal cable tray under provisions of Section 16050.
 - 1. Provide continuity between tray components.
 - 2. Use anti-oxidant compound to prepare aluminum contact surfaces before assembly.
 - 3. Provide bare copper equipment-grounding conductor through entire length of tray; bond to each component, as design requires for size.
 - 4. Connections to tray may be made using mechanical, compression or exothermic connectors.
- G. Install warning signs at 20 feet centers along cable tray, located to be visible.

END OF SECTION