

## SECTION 16130 - RACEWAYS

### PART 1 - GENERAL

#### SUMMARY

Section Includes: Raceways for electrical wiring.

Types of raceways in this Section include the following:

1. Electrical metallic tubing (EMT).
2. Flexible metal conduit.
3. Intermediate metal conduit.
4. Liquidtight flexible conduit.
5. Underground plastic utilities duct.
6. Rigid metal conduit.
7. Rigid nonmetallic conduit.
8. Surface raceways.
9. PVC externally coated rigid metal conduit.
10. Fiberglass reinforced conduit.
11. Electrical nonmetallic tubing.
12. Wireway.
13. Conduit bodies.

#### SUBMITTALS

Shop Drawings: Submittals shall include product data for the following products:

1. Surface raceway and fittings.
2. Wireway and fittings.
3. Conduit.
4. Conduit bodies.

#### QUALITY ASSURANCE

Codes and Standards:

1. NEMA Compliance: Comply with applicable requirements of NEMA standards pertaining to raceways.
2. UL Compliance and Labeling: Comply with applicable requirements of UL standards pertaining to electrical raceway systems. Provide raceway products and components listed and labeled by UL, ETL, or CSA.

### PART 2 - PRODUCTS

#### MANUFACTURERS

Subject to compliance with requirements, manufacturers offering products which may be incorporated in Work include:

1. Conduit:
  - a. Allied Tube.
  - b. Carlon.
  - c. General Electric Co.
  - d. Johns Mansville.
  - e. Occidental Coatings.
  - f. Orangeburg.
  - g. Perma-Cote Industries.
  - h. Republic Steel.
  - i. Robroy Industries.
  - j. Steelduct Co.
  - k. Triangle Conduit.
  - l. Wheatland Tube.
  - m. Youngstown Sheet and Tube.
2. Liquidtight Conduit:
  - a. Anamet, Inc.
  - b. Carlon.
  - c. Electric-Flex.
  - d. Thomas and Betts.
3. Conduit Bodies:
  - a. Adalet-PLM.
  - b. American Electric.
  - c. Appleton Electric Co.
  - d. Carlon.
  - e. Crouse-Hinds Division, Cooper Industries, Inc.
  - f. Delta Industrial Products.
  - g. Killark Electric Mfg. Co.
  - h. Kraloy Products Co.
  - i. O-Z/Gedney Co.
  - j. Perma-Cote Industries.
  - k. Robroy Industries.
  - l. Spring City Electrical Mfg. Co.
4. Conduit Thread Paint:
  - a. CRC Chemicals, USA.
  - b. Sherwin Williams.
  - c. ZRC Chemical Products Co.
5. Wireway:
  - a. Alrey-Thompson Co.
  - b. Anchor Electric Co.
  - c. Hoffman Engineering Co.
  - d. Keystone/Rees, Inc.
  - e. Robroy Industries, Inc.
  - f. Square D Company.
6. Surface Metal Raceway:
  - a. Allied Tube & Conduit.
  - b. B-Line Systems, Inc.
  - c. Butler Mfg. Co.
  - d. Hoffman Engineering Co.
  - e. Isoduct Energy Systems.
  - f. Isotrol Systems.

- g. Keystone/Rees, Inc.
- h. Square D Company.
- i. The Wiremold Co.
- 7. Surface Nonmetallic Raceway:
  - a. Anixter Brothers, Inc.
  - b. Hoffman Engineering Co.
  - c. Hubbell, Inc.
  - d. Panduit Corp.
  - e. Premier Telecom Products, Inc.
  - f. Thermotools Co.
  - g. The Wiremold Co.

## METAL CONDUIT AND TUBING

Rigid Metal Conduit: ANSI C 80.1, hot-dip galvanized.

Intermediate Metal Conduit: UL 1242, hot-dip galvanized.

PVC Externally Coated Rigid Metal Conduit and Fittings: ANSI C 80.1 and NEMA RN 1., Type 40, 40 mil nominal coating and thickness. The bond of the PVC to the substrate shall be stronger than the tensile strength of the PVC.

Electrical Metallic Tubing and Fittings: ANSI C 80.3.

Flexible Metal Conduit: UL 1, zinc-coated metal.

Liquidtight Flexible Metal Conduit and Fittings: UL 360. Fittings shall be specifically approved for use with this raceway.

## NONMETALLIC CONDUIT AND DUCTS

Rigid Nonmetallic Conduit (RNC): NEMA TC 2 and UL 651, Schedule 40 or 80 PVC.

PVC Conduit and Tubing Fittings: NEMA TC 3; match to conduit or conduit/tubing type and material.

Underground PVC and ABS Plastic Utilities Duct: NEMA TC 6, Type I for encased burial in concrete, Type II for direct burial.

PVC and ABS Plastic Utilities Duct Fittings: NEMA TC 9; match to duct type and material.

Liquidtight Flexible Nonmetallic Conduit and Fittings: UL 1660. Fittings shall be specifically approved for use with this raceway.

Fiberglass-Reinforced Conduit and Fittings: CSA B196.1 and B1089 A.

## CONDUIT BODIES

Provide matching gasketed covers secured with corrosion-resistant screws. Use cast covers in NEMA 4 areas and stamped steel covers in NEMA 1 and 12 areas. Use nonmetallic covers in NEMA 4X areas and threaded, ground joint covers in NEMA 7 and NEMA 9 areas.

Metallic Conduit and Tubing: Use metallic conduit bodies as follows:

1. Rigid Metal Conduit: Use cast or malleable iron conduit bodies with zinc electroplating, aluminum enamel or lacquer finish, and threaded hubs.
2. Intermediate Metal Conduit: Use cast or malleable iron conduit bodies with zinc electroplating, aluminum enamel or lacquer finish, and threaded hubs.
3. Electrical Metallic Tubing: Use cast or malleable iron conduit bodies with zinc electroplating, aluminum enamel or lacquer finish, and compression type or setscrew connectors.
4. PVC Externally Coated Rigid Metal Conduit: Use hot-dipped galvanized or cadmium-plated cast or malleable iron conduit bodies with threaded hubs factory PVC-coated. Field application of PVC coating to conduit bodies is not acceptable. Secure covers using PVC encapsulated or stainless steel screws.
5. Nonmetallic Conduit and Tubing: Use nonmetallic conduit bodies conforming to UL 514 B.
6. NEMA 7 and NEMA 9 Areas: Use materials conforming to UL standards for the area.

## WIREWAYS

Fittings and accessories including but not limited to couplings, offsets, elbows, expansion joints, adapters, hold-down straps, and end caps shall match and mate with wireway as required for complete system. Where features are not indicated, select to fulfill wiring requirements and comply with applicable provisions of NEC.

Wireway covers shall be hinged type.

## SURFACE RACEWAYS

Sizes and channels as indicated. Provide fittings that match and mate with raceway.

Surface Metal Raceway: Construct of galvanized steel with snap-on covers, with 1/8-inch mounting screw knockouts in base approximately 8 inches o.c. Finish with manufacturer's standard prime coating suitable for painting. Provide raceways of types suitable for each application required.

Surface Nonmetallic Raceway: Two-piece construction, manufactured of rigid PVC compound with matte texture and manufacturer's standard color. Raceway and system components shall meet UL 94 requirements for nonflammable, self-extinguishing characteristics.

## PART 3 - EXECUTION

NOT USED

END OF SECTION 16130