

SECTION 16126
CONTACT RAIL ANCHOR ASSEMBLY FOR TRACTION POWER

PART 1 - GENERAL

1.01 SUMMARY

- A. This section specifies fabricating, testing and furnishing contact rail cable connector assemblies, as shown.
- B. Related Sections:
 - 1. Section 16122 - Contact Rail Cable Connector Assemblies For Traction Power
 - 2. Section 16123 - Contact Rail Insulator Assembly for Traction Power
 - 3. Section 16124 - Contact Rail Protection Cover Assembly for Traction Power
 - 4. Section 16126 - Contact Rail System Installation for Traction Power
 - 5. Section 16128 - Wire and Cable for Traction Power

1.02 REFERENCES

- A. Codes, Regulations, Standards and Specifications:
 - 1. Society of Automotive Engineers (SAE):
 - a. SAE G18.
 - 2. American Society for Testing and Materials (ASTM):
 - a. ASTM A27.
 - b. ASTM A36.
 - c. ASTM A47.
 - d. ASTM A48.
 - e. ASTM A123.
 - f. ASTM A153.
 - g. ASTM A283.
 - h. ASTM A325.
 - i. ASTM A489.
 - j. ASTM A681.
 - k. ASTM B134.
 - l. ASTM B633.
 - m. ASTM D570.
 - n. ASTM D638.
 - 3. American National Standards Institutes (ANSI):
 - a. ANSI B4.1.
 - b. ANSI B46.1.
 - c. ANSI B18.8.1.
 - d. ANSI B18.21.1.

ATTACHMENT D

4. Steel Structures Painting Council (SSPC):
 - a. SSPC-SP-6.

1.03 SUBMITTALS

- A. Submit the following for approval:
 1. Shop Drawings
 - a. The Contractor shall submit shop drawings to be used for fabrication of the of the contact rail anchors, including their components and assemblies.
 2. Certification
 - a. Contractor must certify that contact rail anchor assemblies furnished meet or exceed specified requirements and are compatible with the contact rail.
 - b. Certified test reports must be provided for specified factory testing.

1.04 QUALITY ASSURANCE

- A. Testing
 1. Production Testing
 - a. Prior to delivery, two anchor assemblies of each production lot shall be randomly selected to be used as test specimens.
 - b. Perform the tests in the following sequence in accordance with the referenced codes and standards.
 - (1) Tension test:
 - (a) Tension test shall be in accordance with ASTM D638 using a temperature range of plus 40C to minus 17C.
 - b) The minimum acceptable tensile strength shall be 60,000 psi.
 - (2) The impact-resistance test:
 - (a) The impact-resistance test shall be conducted within the temperature range of plus 21C to minus 17C.
 - (b) The strain insulator rod shall be mounted as a simple beam with 21 inches between supports.
 - (c) A 50-pound weight shall be dropped from a height of 12 inches so that it impacts at a midpoint on the rod. Repeat the test three times. No fractures shall occur on the rod.
 - (3) Water-absorption test:
 - (a) Water-absorption tests shall be performed in accordance with ASTM D570 over a 48-hour period using a temperature range of 20C to 40C.
 - (b) Weight gain shall not exceed 0.15 percent of the original weight.
 - (4) DC-resistance test:
 - (a) Following the specified water-absorption test, one eighth- inch length of 5/8-inch diameter strain insulator

rod shall undergo a dc-resistance test. The rod shall show a resistance of not less than eight megohms measured between the end surfaces of the rod.

- (5) Dielectric test:
 - a) A dielectric test shall be performed on the same rod used in the resistance test.
 - b) The strain insulator rod shall be capable of withstanding an ac potential of 15,000 volts, 60 Hertz applied to the rod surface for three minutes without insulation breakdown or damage.
 - c) If one test specimen of a lot fails to meet specified test requirements, the entire production lot shall be rejected.
- 6) Strain Insulator Rod Testing
 - a) After the rods are assembled to the clevis ends using a resin compound or similar approved adhesive and allowed to cure for 24 hours, proof load test each assembly to 15,000 pounds. No physical damage shall be allowed at the conclusion of testing.

B. For Codes, Regulation, References, Standards and Specifications, refer to Article 1.02.

PART 2 - PRODUCTS

2.01 COMPONENTS

- A. Contact Rail Anchors
 1. Cast Parts
 - a. The contact rail anchor cast parts shall be free of cracks, blemishes, scales, machining flaws, excessive shrinkage or other defects rendering them unsuitable for their intended purpose. They shall be finished to a true and homogeneous surface and if necessary, ground to ensure an accurate fit with contiguous parts.
 - b. Steel used in the fabrication shall be medium steel manufactured by the open-hearth, basic-oxygen or electric furnace process, ASTM A27, Grade 65-35, fully annealed and tempered. Malleable iron shall be ASTM-A47, Grade 32510 and gray iron shall be ASTM A48 Class 40C.
 2. Rolled Steel Parts
 - a. Rolled steel parts shall be manufactured by the open-hearth, basic-oxygen or electric-furnace process and shall be in accordance with ASTM A36, ASTM A681 and ASTM A283, Grade C.
 - b. Parts shall be free from cracks, flaws, seams, blisters, imperfect edges and other defects rendering them unsuitable for their intended purpose. . The surface roughness shall not exceed 125 micro inches as prescribed by ANSI B46.1
 3. Tolerances
 - a. All tolerances shall be in accordance with ANSI B4.1.
 4. Galvanizing
 - a. Parts to be galvanized shall be prepared by first pickling in diluted sulfuric acid and cleaning in cold running water. The parts shall then be shot

blasted in accordance with SSPC - SP6, maximum grit size SAE G18, followed by immersion in a solution of zinc chloride or hydrochloric acid. After drying, hot-dip galvanize the parts in accordance with ASTM A123, unless otherwise specified. Nuts, bolts, washers, clevis pins and eye bolts shall be galvanized in accordance with ASTM A153 or ASTM B633 Type I SC-2.

5. Strain Insulator Rods

- a. The strain insulator rods shall be fabricated from 5/8-inch diameter reinforced plastic consisting of 60 to 65-percent glass fiber uniformly impregnated with 35 to 40-percent thermosetting polymers.

6. Miscellaneous Hardware

- a. Nuts, bolts and miscellaneous hardware shall be of the type, material and dimensions as shown. The parts shall be galvanized as specified and manufactured as follow:
- b. Nuts, bolts and flat washers: ASTM A325.
 - (1) Spring washers: ANSI B18.21.1.
 - (2) Cotter pins: ASTM B134 and ANSI B18.8.1.
 - (3) Eye bolts: ASTM A489.

END OF SECTION