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**\*\*\*GENERAL REWRITE - PLEASE READ CAREFULLY.\*\*\***

## **CHAIN-LINK FENCE AND FIELD FENCE**

### **GENERAL REQUIREMENT**

All fence material shall be new and shall comply with the requirements of the standard specifications (Article 4154) and shall be of the size and type specified in the contract document. Statement of conformance shall be included with each shipment to each project.

All fence materials shall be melted and manufactured in the USA. All pipe materials shall be from approved sources, shall be galvanized, straight, and free of any defects. End finish shall have square cut and shall be plain. Zinc coating shall be uniform, free of voids or excessive roughness. Posts and rails shall be one piece free of welded sections.

### **ACCEPTANCE**

Acceptance of posts, braces, rails and fabric for chain link and field fence shall be on the basis of certification from approved sources and on the basis of satisfactory test results. A minimum of one sample per source per year shall be required.

- Steel posts, braces and rails for chain link fence shall meet the requirements of Article 4154.10 of the Standard Specifications. Zinc coating shall meet the requirements of ASTM A 123 Grade 45 or 50.
- Steel line posts for field fence shall meet the requirements of Article 4154.09.
- Fabric used in field fence shall meet the requirements of Article 4154.02, ASTM A 116 Class 3A coating or ASTM A 484.
- Chain link fabric shall meet the requirements of Article 4154.03 of the Standard Specifications.
- Brace wire, Tie wire and tension wire shall meet the requirements of Article 4154.05 of the standard specifications.
- Barbed wire shall meet the requirements of Article 4154.04.
- Staples used to attach fence to wood posts shall be plain, class 3 zinc-coated meeting the requirements of Article 4154.06
- Special fittings for chain link fence/braces, diagonal tension rods, round steel roads, lock devices) shall meet the requirements of Article 4154.11 of the Standard Specifications.

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- Wood fence posts shall be pine posts meeting the requirements of section 4154.07 and 4164 and shall be treated wood posts.
  - Braces for field fence shall meet the requirements of Article 4154.08.
  - Gates for chain link fence shall meet the requirements of Article 4154.12 of the Standard Specifications.
  - Pipe furnished to this specification shall have minimum tensile strength of 48,000 psi (330 mpa) and a minimum yield strength of 30,000 psi (205 mpa).
1. Posts - shall be galvanized standard weight meeting schedule 40 of ASTM F-1083. Posts shall be furnished with an approved cap. For 3-inch and 4-inch posts. Cap shall make a driving fit over the upper 1/2-inch of the post or shall have other approved means for holding the cap securely in place. The average weight of zinc coating shall not be less than 1.8 oz./ft.<sup>2</sup> (550 g/m<sup>2</sup>). Posts shall be straight and free of defects. All burrs at the end of the pipe shall be removed.
  2. Rail - (horizontal member of the fence), shall be galvanized standard weight (schedule 40) pipe, meeting the requirements of ASTM F-1083. NOTE: Rails may be top, bottom, intermediate or brace rail.
  3. Chain Link Fence Fabric – unless otherwise specified on the plans, fabric can either be zinc coated fabric meeting the requirements of ASTM A 392, class 2 coating (minimum 2 oz / ft<sup>2</sup> (61 og / m<sup>2</sup>) or aluminum coated fabric meeting the requirements of ASTM 491. Unless otherwise specified, fabric shall be 72 inch (1.8 m) high and fabricated from No. 9 (0.148 inch) (3.76 mm) diameter wires. Fabric for chain link fence shall have the salvaged knuckled top and bottom unless is specified differently and / or as indicated on the plans.
  4. Aluminum Coated Fabric - shall be Type I coating. The weight of Aluminum coating shall not be less than 0.40 oz/ft<sup>2</sup> (122 g/m<sup>2</sup>) for the specified diameter. (ASTM A.491).
  5. Breaking Strength - Wire constituting the fabric shall meet the requirements of ASTM A491 and A817 for No. 9 wire, 0.148 in. (3.76 mm) diameter, minimum breaking strength 1290 lbf (5740N). The required minimum breaking strength requirements shall include both the Type I Aluminum coated (Aluminized) and the Type II Zinc coated (Galvanized).
  6. Material Certification - from producer or supplier shall be required on a project-by-project basis stating that the materials supplied meet the requirements of these specifications.
  7. Samples - Test samples from a project shall be a minimum of 36” – 48” (915 - 1220-mm) in length and shall represent posts, top rail and brace material of the same lot. Samples shall be tested for tensile, yield strength, and for coating thickness.

Fabric Test samples shall represent a cross section of a minimum of 12-in. x 72-in. (305-mm wide x 1830-mm high) of the same lot. Samples shall be tested for breaking strength.

**NOTE:** Height may be variable and/or as required by contract document.

8. **Identifications** - samples identifications are required and shall state the source, origin, manufacturer and whether they are zinc or aluminum-coated. Copy of the mill certification shall be included along with the sample identifications.

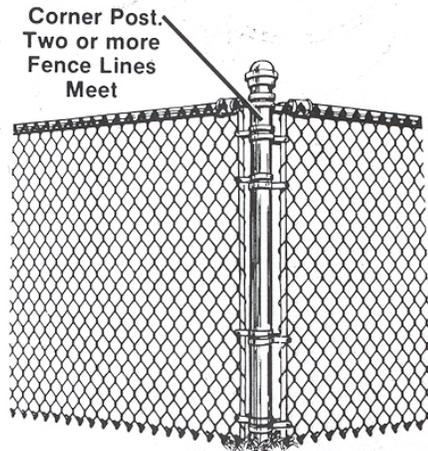
Note: Weight – the weight of the pipe covered by Table 1 of ASTM F1083 Shall not vary by more than 10% from that listed.

### **PRODUCT APPROVAL OF ALTERNATE MATERIALS**

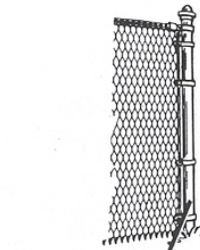
- Applications for product approval of alternate materials shall be made, in writing, to the Office of Materials in Ames, Iowa. The application shall include a certification from fabricator or supplier stating compliance with ASTM requirements. A complete and detailed product description along with test data from appropriate bending tests to demonstrate compliance with strength and stiffness requirements performed by a certified and independent laboratory. A sample of the material at least 2.0 ft. (610 mm) in length shall accompany the application.
- Product approval will be based on compliance with the requirements of Section 4154 of the Standard Specifications and with strength, stiffness, thickness, coating requirements and all applicable ASTM requirements.
- Protective coating other than zinc or aluminum shall be tested by comparison in salt spray exposure and by other tests such as accelerated weathering that are deemed proper for evaluating the material in question.



Brace Band



Corner Post

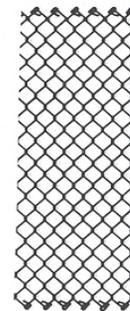


End Post. Fence Line Ends

End Post



Diamond Count



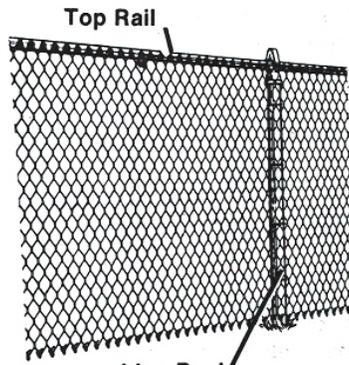
Chain Link Fence Fabric



Knuckle

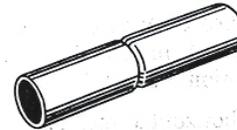


Rail End

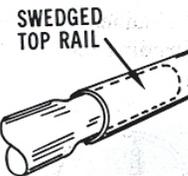


Top Rail

Line Post



Toprail Sleeve

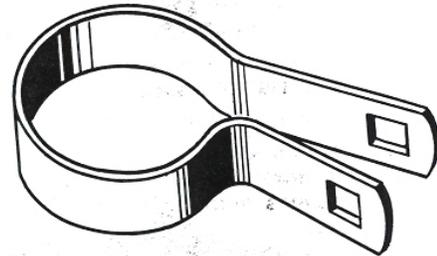


SWEDGED  
TOP RAIL

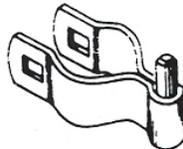
Swedge



Line Post Cap



Tension Band



Post Hinge



Tension Bar