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 the requirements of ASTM F-1083 Schedule 40 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.

Fence materials shall be melted and manufactured in the USA. Pipe materials shall be from approved sources, shall be galvanized, straight, one piece free of welded sections and free of any defects. End finish shall have square cut and shall be plain. Zinc coating shall be in accordance with the requirements of ASTM A 123 / A 123M (hot dip method) Grade 45 or 50 and shall be uniform, free of voids or excessive roughness. Posts shall be galvanized inside and outside.

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.
- 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.
- Fabric for chain-link fence 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.

- 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 (Schedule 40). 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.^{2} (550 g/m^2). Posts shall be straight and free of defects. All burrs at the end of the pipe shall be removed. (Article 4154.10)

2. Rail - (horizontal member of the fence), shall be galvanized standard weight (schedule 40) pipe, meeting the requirements of ASTM F-1083 (Schedule 40). NOTE: Rails may be top, bottom, intermediate or brace rail. (Article 4154.10)

3. Braces for chain link fence shall be galvanized and shall meet the requirements of ASTM F 1083 (Schedule 40) (Article 4154.10)

4. 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^2 (61 og / m^2) 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. (Article 4154.03)

5. Aluminum Coated Fabric - shall be Type I coating. The weight of Aluminum coating shall not be less than 0.40 oz/ft ^{2} (122 g/m^2) for the specified diameter. (ASTM A.491). (Article 4154.03)

6. 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).

7. Field Fence Fabric - shall meet the requirements of ASTM A 116 Type Z, Class 3 coating or ASTM A 584. Note: Type Z is made from Zinc Coated Wire

8. 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.

9. 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.

10. 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: Pipe weight, wall thickness, and diameter shall meet the requirement of table 1 of ASTM F 1083 (Schedule 40).

PRODUCT APPROVAL OF ALTERNATE MATERIALS

Alternate materials shall be accepted on the following basis:

- Application made writing to the Office of Materials.
- Certification from fabricator and / or supplier
- Test data for bending and stiffness
- A 2.0 foot sample
- Salt spray testing of coating or other than zinc or aluminum coating.

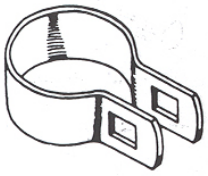
ASTM F 1043 can be accepted as an alternate material for use in chain link fence framework on the following basis:

- Materials shall be of either Group 1A (round steel pipe) or Group 1C (round steel pipe electric resistance welded pipe).
- Post materials shall be galvanized steel of the standard weight – schedule 40 and of the nominal sizes listed in ASTM F 1083.
- Minimum yield strength for Type 1A shall be 30,000 psi (205 MPA) and for Type 1C shall be 50,000 psi (344 MPA)
- All other dimensional requirements (outside diameter, radius, thickness) shall be in accordance with ASTM F 1043.

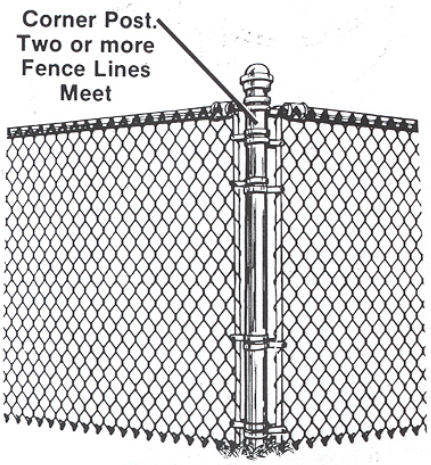
- The weight of zinc coating for exterior and interior coating 1.8 oz/ft^2 (550 g/m^2), Type A zinc for group 1A pipe and for group 1C shall have a minimum of 81% nominal zinc pigmented coating.

- Zinc coating shall be in accordance with the requirements of ASTM A 123 / A 123M (Hot Dip methods) Grade 45 or 50.

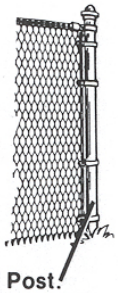
Note: Maximum allowable heights of frame work and post spacing are to be based on chain link fence fabric mesh size, gage, and specified wind loads. (Post spacing are not to exceed 10 ft).



Brace Band

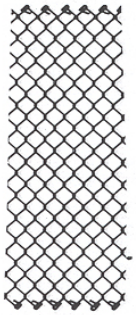


Corner Post



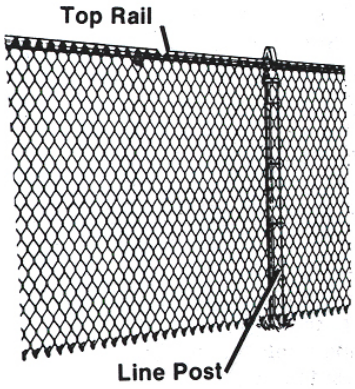
End Post

Diamond Count



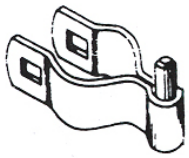
Chain Link Fence Fabric

Knuckle



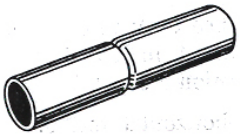
Line Post

Line Post Cap

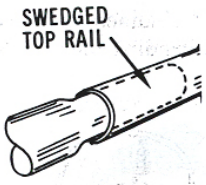


Post Hinge

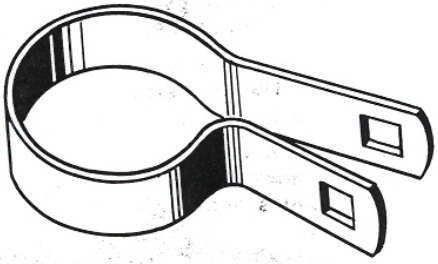
Rail End



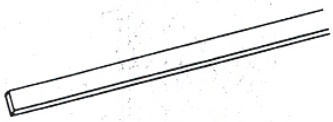
Toprail Sleeve



Swedge



Tension Band



Tension Bar