



**Section 32 31 00  
Aluminized Fabric on Galvanized Framework  
Chain Link Fence**

**Part 1 General**

**1.01 Section Includes**

- A. Aluminum coated chain link fencing and accessories for (commercial and industrial) use.

**1.02 Gates and Related Sections**

- |    |                     |   |
|----|---------------------|---|
| A. | Section 32 31 13    | Chain Link Fences and Gates               |
| B. | Section 32 31 13.23 | Recreational Court Fences and Gates       |
| C. | Section 32 31 13.26 | Tennis Court Fence and Gates              |
| D. | Section 32 31 13.33 | Chain Link Backstops                      |
| E. | Section 32 31 13.53 | High Security Chain Link Fences and Gates |
| F. | Section 32 10 00    | Paving and Surfacing                      |
| H. | Section 03 30 00    | Cast in Place Concrete                    |
| I. | Section 04 20 00    | Unit Masonry                              |

**1.03 Submittals**

- A. Change in specifications may not be made after the bid date.
- B. Shop drawings: Layout of fence and gates with dimensions details and finishes of components, accessories, and post foundations.
- C. Product Data: Manufacture's catalog cuts indicating material compliance and specified options.
- D. Samples: If requested, samples of materials (e.g. fabric, wire and accessories).

**Part 2 Products**

**2.01 Manufacturer**

- A. Products from qualified manufactures having a minimum of five years experience manufacturing aluminum coated chain link fencing will be acceptable by the architect as equal, if approved in writing ten days prior to bidding, and if they meet the following specifications for design, size gauge of metal parts and fabrication.
- B. Obtain link fence gates, including accessories, fittings and fasteners, from a single source.

Approved Manufacturer: Iron World Manufacturing  
9390 Davis Ave  
Laurel, MD 20723  
301-776-7448  
301-776-7449 fax  
ironworldfencing.com

## 2.02 Chain Link Fence Fabric

- A. Aluminized wire: Aluminum coated wire, ASTM A 491- 6 & 9 ga., 4 oz/sf (wire spec A817-83) 11 gauge, .35 oz/sf.
- B. Size: Helically wound and woven to height of \_\_\_\_ feet (\_\_\_\_ mm) (as indicated on drawings) with \_\_\_\_” (\_\_\_\_ mm) diamond mesh, \_\_\_\_ gauge, with a wire diameter of \_\_\_\_” (\_\_\_\_ mm) and a break load of \_\_\_\_ lbf (\_\_\_\_ N).
- C. Selvage of fabric \_\_\_\_ at top and \_\_\_\_ bottom.

## 2.03 Steel Fence Framing

- A. Steel pipe – Type I ASTM F 1083, standard weight schedule 40, minimum yield strength of 30,000 psi (205MPa) sizes as indicated. Hot dipped galvanized with minimum average 1.8 oz/ft<sup>2</sup> (550 g/m<sup>2</sup>) of coated surface area.
- B. Steel pipe – Type II: Cold formed and welded steel pipe complying with ASTM F 1043, group IC, with minimum yield strength of 50,000 psi (344 MPa) sizes as indicated. Protective coating per ASTM F 1043, external coating Type B, zinc with organic overcoat, 0.9 oz/ft<sup>2</sup> (270 g/m<sup>2</sup>) minimum zinc coating with chromate conversion coating and verifiable polymer film. Internal coating Type B, minimum 0.9 oz/ft<sup>2</sup> (270 g/m<sup>2</sup>) zinc or Type D, zinc pigmented, 81% nominal coating, minimum 3 mils (0.08 mm) thick.
- C. Formed steel (C) sections: Roll formed steel shapes complying with ASTM F 1043, Group II, 45,000 psi (310 MPa) minimum yield strength steel; sizes as indicated. External coating per ASTM F 1043, Type A minimum average 2.0 oz/ft<sup>2</sup> (610g/m<sup>2</sup>) of zinc per ASTM A 123, or 4.0 oz/ft<sup>2</sup> (1220 g/m<sup>2</sup>) per ASTM A 525.
- D. Steel square sections: ASTM A 500 Grade B steel having minimum yield strength of 40,000 psi (275 MPa) sizes as indicated. Hot dipped galvanized with minimum 1.8 oz/ft<sup>2</sup> (550g/m<sup>2</sup>) of coated surface area.
- E. End and Corner Post \_\_\_\_ od (\_\_\_\_ mm) \_\_\_\_ lbs/ft (\_\_\_\_ kg/m)  
End and Corner Post \_\_\_\_ sq” (\_\_\_\_ mm) \_\_\_\_ lbs/ft (\_\_\_\_ kg/m)  
Line (intermediate) Post \_\_\_\_ od (\_\_\_\_ mm) \_\_\_\_ lbs/ft (\_\_\_\_ kg/m)  
OR  
\_\_\_\_”C” (\_\_\_\_ mm) \_\_\_\_ lbs/ft (\_\_\_\_ kg/m)  
Rail and Braces \_\_\_\_ od (\_\_\_\_ mm) \_\_\_\_ lbs/ft (\_\_\_\_ kg/m)

## 2.04 Accessories

- A. Chain link fence accessories: (ASTM F 626) Provide items required to complete fence system. Galvanize each ferrous metal item and finish to match framing.
- B. Post Caps: Formed steel cast malleable iron or aluminum alloy weather tight closure cap for tubular posts. Provide one cap for each post. Cap to have provision for barbed wire when necessary. “C” shaped line post without top rail or barbed wire supporting arms do not require post caps. (Where top rail is used, provide tops to permit passage of top rail).

- C. Top rail and rail ends: Pressed steel per ASTM F626 for connection of rail and brace to terminal posts.
- D. Top rail sleeves: 7" (178mm) expansion sleeve with a minimum .137" wire diameter and 1.80: length spring, allowing for expansion and contraction of top rail.
- E. Wire ties: 9 gauge [0.148" (3.76mm)] galvanized steel wire for attachment of fabric to line posts. Double wrap 13 gauge [0.092" (2.324mm)] for rails and braces. Hog rings ties of 12 ½ gauge ( 0.0985 2.502mm) for attachment of fabric to tension wire.
- F. Brace and tension (stretcher bar) bands: Pressed steel, minimum 300 degree profile curvature for secure fence post attachment. At square post provide tension bar clips.
- G. Tension (stretcher) bars: One piece lengths equal to 2 inches (50mm) less than full height of fabric with a minimum cross-section of 3/16" x 3/4" (4.76 mm x 19 mm). Provide tension (stretcher) bars where chain link fabric meets terminal posts.
- H. Tension wire: Aluminum coated steel wire, 7 gauge, [0.177" (4.5 mm)] diameter core wire with tensile strength of 75,000 psi (517 MPa)
- I. Truss rods & tightener: Steel rods with minimum diameter of 5/16" (7.9 mm). Capable of withstanding of tension of minimum of 2,000 lbs.
- J. Barbed wire: zinc coated steel wire double-strand, 13 ¾" gauge [0,083 (2.10 mm)] twisted line wire with galvanized steel, 4 point barbs spaced approximately 3" (76.2 mm) on center.
- K. Barbed wire supporting arms: Pressed steel arms with provisions for attaching 3 rows of barbed wire. Arms shall withstand 250 lb. (113.5kg) downward pull at outermost end of arm without failure.
  - 1. Provide (45°) 3 strands, single arm and 6 strands double "V" arms
  - 2. Provide intermediate arms with hole for passage of top rail.
- L. Nuts and bolts are galvanized

## **2.05 Setting Materials**

- A. Concrete: Minimum 28 day compressive strength of 3,000 psi ( 20MPa)  
OR
- B. Drive anchors: Galvanized angles, ASTM A 36 steel 1" x 1" x 30" (25mm x 25mm x 762mm) galvanized shoe clamps to secure angles to posts.

## **Part 3 Execution**

### **3.01 Examination**

- A. Verify areas to receive fencing are completed to final grades and elevations.
- B. Ensure property lines and legal boundaries of work are clearly established.

### **3.02 Chain Link Fence Framing Installation**

- A. Install chain link fence in accordance with ASTM F 567 and manufacturer's instructions.
- B. Locate terminal post at each fence termination and change in horizontal or vertical direction of 30° or more.
- C. Space line posts uniformly [at 8' (2438 mm)] on center or [ at 10' (3048 mm on center)].
- D. Concrete set terminal and gate posts: Drill holes in firm undisturbed or compacted soil. Holes shall have diameter 4 times greater than outside dimension of post, and depths approximately 6" (152 mm) deeper than post bottom. Excavate deeper as required for adequate support in soft and loose soils, and for posts with heavy lateral loads. Set post bottom 36" (914 mm) below surface when in firm, undisturbed soil. Place concrete around posts in a continuous pour. Trowel finish around post. Slope to direct water away from posts.
- E. Drive anchor (line) post: With protective cap, drive post 36" (94 mm) into ground. Slightly below ground level install drive anchor shoe fitting. Install 2 diagonal drive anchors and tighten in the shoe.
- F. Check each post for vertical and top alignment, and maintain in position during placement and finishing operations.
- G. Bracing: Install horizontal pipe brace at mid-height for fences 6' (1829 mm) and over, on each side of terminal posts. Firmly attach with fittings. Install diagonal truss rods at these points. Adjust truss rod, ensuring posts remain plumb.
- H. Tension wire: Provide tension wire at bottom of fabric ( and at top, if top rail is not specified). Install tension wire before stretching fabric and attach to each post with ties. Secure tension wire to fabric with 12 ½ gauge [0.0985" (2.502 mm)] hog rings 24" (610 mm).
- I. Top rail: Install lengths 21" (6400 mm). Connect joints with sleeves for rigid connections for expansion/contraction.
- J. Center Rails (for fabric height 12' 3658 mm and over). Install mid rails between posts with fittings and accessories.
- K. Bottom Rails: Install bottom rails between posts with fittings and accessories.

### **3.03 Chain Link Installation**

- A. Fabric: Install fabric on security side and attach so that fabric remains in tension pulling force is released. Leave approximately 2" (50 mm) between finish grade and bottom selvage. Attach fabric with wire ties to line posts at 15" (381 mm) on center and to rails, braces and tension wire at 24" (600 mm) on center.
- B. Tension (stretcher) bars: Pull fabric taut; thread tension bar through fabric and attach to terminal posts with bands or clips spaced maximum of 15" ( 381 mm) on center.

### **3.04 Accessories**

- A. Tie wires: Bend ends of wire to minimize hazard to persons and clothing.
- B. Fasteners: Install nuts on side of fence opposite fabric side for added security.
- C. Barbed Wire: Uniformly space parallel rows of barded wire on security side of fence. Pull wire taut and attach in clips or slots of each extension.
- D. Slats: Install slats in accordance with manufacture's instructions.

### **3.05 Cleaning**

- A. Clean up debris and unused material, and remove from the site.