

Section 32 31 00
Polyolefin Coated Chain Link Fencing

Part 1 General

1.01 Section Includes

- A. Polyolefin coated chain fencing and accessories for commercial and industrial use.

1.02 Related Sections

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| 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 Fences and Gates |
| D. | Section 32 31 13.33 | Chain Link Backstops |
| E. | Section 32 31 53 | High-Security Chain Link Fence and Gates |
| F. | Section 32 10 00 | Paving and Surfacing |
| G. | Section 32 30 00 | Cast in place concrete |
| H. | Section 04 20 00 | Unit Masonry |

1.03 Submittals

- A. Changes in specifications may not be made after the bid date.
- B. Shop drawing: Layout of fences and gates with dimensions, details and finishes of components, accessories and post foundations.
- C. Product data: Manufactures catalog cuts indicating material compliance and specified options.
- D. Samples: Color selection for polyolefin finishes. If requested, samples of materials (e. g. fabric, wires and accessories).

1.04 Special Warranty

- A. Provide manufactures standard limited warranty that its Polyolefin coated chain link fence is free from color coating, flaking and peeling and other defects in material or workmanship for a period of 15 years from the date of purchase.

Part 2 Products

2.01 Manufacturer

- A. Products from qualified manufacturers having a minimum of five years experience manufacturing 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.

Approved Manufacturer: Iron World Fencing
9390 Davis Ave
Howard County, MD 20723
Toll Free 866-310-2747 Fax 301-776-7449
www.ironworldfencing.com

- B. Obtain chain link fences and gates, including accessories, fittings and fastenings from a single source.

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2.02 Chain Link Fence Fabric

- A. Polyolefin coating, 6 mil (0.15mm) to 10 mil (0.25mm) thickness, thermally fused to zinc-coated steel core wire Per ASTM F668 Class 2b. Minimum core wire tensile strength of 75,000 psi.
- B. Size: Helically wound and woven to height of _____ feet (_____ mm) (as indicated on drawings) with _____ (_____ mm) diamond mesh, _____ gauge, with a core wire diameter of _____ (_____ mm) and a minimum breaking strength of _____ lbf (_____ N). Color _____ ASTM F 934. Choose color (Forest Green, Olive Green, Black, Tan or Brown).
- C. Selvage of fabric _____ at top and _____ at 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 (205 MPa), sizes as indicated. Hot-dipped galvanized with minimum average 1.8 oz/ft² (550 g/m²) 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, sizes as indicated. Protective coating per ASTM F 1043 external coating Type B, zinc with organic overcoat, 0.9 oz/ft² (270 g/m²) minimum zinc coating with chromate conversion coating and verifiable polymer film. Internal coating Type B, minimum 0.9 oz/ft² (270 g/m²) zinc or type D, zinc pigmented, 81% nominal coating, minimum 3 mils (0.8 mm) thick.
- C. Polyolefin coated finish: In accordance with ASTM F 1043, apply supplemental color coating of minimum 10 mils (0.254mm) of thermally fused polyolefin in _____ color to match fabric.
- D. End and Corner Post _____ od (_____ mm) _____ lbs/ft (_____ kg/m)
Line (Intermediate) Post _____ od (_____ mm) _____ lbs/ft (_____ kg/m)
Rail and Braces _____ od (_____ mm) _____ lbs/ft (_____ kg/m)

2.04 Polyolefin Coated 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: Cast malleable iron, formed steel or weather tight closure cap for tubular posts. Provide one cap for each post. Cap to have provision for barded wire when necessary. 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" (178 mm) 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") (3.78 mm) galvanized steel wire for attachment of fabric to line posts. Double wrap 13 gauge (0.092") (2.324 mm) for rail and braces. Hog ring ties of 12 ½ gauge (0.0985") (2.502 mm) for attachment of fabric to tension wire.

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- F. Brace and tension bands: Pressed steel, minimum 300 degree profile curvature for secure fence post attachment. At square post provide tension bar clips.
- G. Tension bars: One piece lengths equal to 2 inches (50 mm) 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 bars where chain link fabric meets terminal posts.
- H. Tension wire: Thermally fused polyolefin applied to zinc coated steel wire: Per ASTM F 1664 Class 2b, 6 gauge 0.192" (4.88 mm) diameter core wire with tensile strength of 75,000 psi.
- I. Truss rods: Steel rods with minimum diameter of 5/16" (7.9 mm), Capable of withstanding a tension of minimum 2,000 lbs.
- J. Barbed wire: Thermally fused polyolefin coated per ASTM F 1665 Class 2b steel wire double-strand, 13 3/4 gauge 0.083 (2.10 mm) twisted line wire with galvanized steel, 4 point barbs (without polyolefin finish) spaced approximately 3" (76.2 mm) on center.
- K. Barbed wire supporting arms: Pressed steel arms with provision for attaching 3 rows of barbed wire. Arms shall withstand 250 lb (113.5 kg) download put at 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 but not polyolefin coated. Cans of touch up paint are available to color coat nuts and bolts if desired.

2.05 Setting Materials

- A. Concrete: Minimum 28 days compressive strength of 3,000 psi

Part 3 Execution

3.01 Examination

- A. Verify areas to receive fencing are finished to final grade and elevations.
- B. Ensure property lines and 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 manufactures instructions.
- B. Space line posts uniformly at (8' on center) or (10' on center).
- C. 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" deeper than post bottom. Excavate as required for adequate support in soft and loose soils and for posts with heavy lateral loads. Set post bottom 36" 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 post area.
- D. Drive Anchor post: With protective cap, drive post 36" into ground. Slightly below ground level install drive anchor shoe fitting. Install 2 diagonal drive anchors and tighten in the shoe.

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- E. Check each post for vertical and top alignment, and maintain in position during placement and finishing operations.
- F. Bracing: Install horizontal pipe brace at mid-height for fences 6' 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.
- G. 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 attached to each post with ties. Secure tension wire to fabric with 12 ½ gauge (0.0985") (2.502mm) hog rings 24" (610mm) oc.
- H. Top Rail: Install lengths 21" (6400mm). Connect joints with sleeves for rigid connection for expansion/contraction.
- I. Center rails (for fabric height 12' and over). Install mid rails between posts with fittings and accessories.
- J. Bottom Rails: Install bottom rails between post with fittings and accessories.

3.03 Chain Link Fabric Installation

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

3.05 Cleaning

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

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