

SECTION 02820
POLYOLEFIN COATED CHAIN LINK FENCING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes:
 - 1. Polyolefin coated chain link fencing and accessories for commercial and industrial use.
- B. Related sections:
 - 1. Section 03310 "Concrete Work" for post concrete fill.

1.2 SUBMITTALS

- A. Shop drawings: Layout of fences with dimensions, details, and finishes of components, accessories, and post foundations.
- B. Product data: Manufacturer's catalog cuts indicating material compliance and specified options.
- C. Samples: Color selection for polyolefin finishes. If requested, samples of materials (e.g., fabric, wires, and accessories).

1.3 QUALITY ASSURANCE

- A. Mockups: Build mockups to verify selections made under sample submittals and to set quality standards for fabrication and installation.
 - 1. Include 10-foot length of fence complying with requirements.
 - 2. Approved mockup may become part of the completed Work if undisturbed at time of Final Acceptance.
- B. Pre-installation conference: Conduct conference at Project site.

1.4 WARRANTY

- A. Provide Manufacturer's 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 Final Acceptance. See Manufacturer's Warranty for full details.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Products from qualified manufacturers having a minimum of five years experience manufacturing thermally fused chain link fencing will be acceptable by the Engineer 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 chain link fences, including accessories, fittings, and fastenings, from a single source.
- C. Acceptable product: Must be approved by Engineer.

2.2 CHAIN LINK FENCE FABRIC

- A. Polyolefin elastomeric coating, 6 mil to 10 mil thickness, thermally fused to zinc-coated steel core wire: Per ASTM F668 Class 2b. Minimum core wire tensile strength of 75,000 psi (517 MPa).
- B. Size: Helically wound and woven with 2-inch diamond mesh, 9 gauge, with a core wire diameter of .148-inch and a minimum breaking strength of 1290 lbf (5740 N).
- C. Height: See Plans for locations of different heights of fencing.
 - 1. 4 feet
 - 2. 6 feet
- D. Color: Per ASTM F 934. See Materials Schedule on Plans for color selection at specific stations where fencing is specified.
- E. Selvage of fabric: Knuckled at top and bottom.

2.3 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. Polyolefin coated finish: In accordance with ASTM F1043, apply supplemental color coating of minimum 10 mils of thermally fused polyolefin. Color to match fabric.
- C. End and corner post: 2.375 inches O.D., 3.65 lbs/ft (13.6 kg/m). See Plans for spacing of posts.
- D. Line post: 1.9 inches O.D., 2.72 lbs/ft (3.65 kg/m).
- E. Rails and braces: 1.66 inches O.D., 2.27 lbs/ft (3.4 kg/m).

2.4 POLYOLEFIN COATED ACCESSORIES

- A. Chain link fence accessories: Provide items required to complete fence system per ASTM F 626. Galvanize each ferrous metal item and finish to match framing. Fittings should match these specifications.
 - 1. Post caps: Formed steel, cast malleable iron, or weather tight closure cap for tubular posts. Provide one cap for each post. Tops to permit passage of top rail.
 - 2. Top and bottom rail and rail ends: Pressed steel per ASTM F626, for connection of rail and brace to terminal posts.

3. Top and bottom rail joint sleeves: 7 inch expansion sleeve with a minimum .137 inch wire diameter and 1.80 inch length spring, allowing for expansion and contraction of top rail.
4. Wire ties: 9 gauge galvanized steel wire for attachment of fabric to line posts. Double wrap 13 gauge for rails and braces. Hog ring ties of 12-1/2 gauge for attachment of fabric to tension wire.
5. Brace and tension (stretcher bar) bands: Pressed steel, minimum 300 degree profile curvature for secure fence post attachment.
6. Tension (stretcher) bars: One piece lengths equal to 2 inches less than full height of fabric with a minimum cross-section of 3/16 inch by 3/4 inch. Provide tension (stretcher) bars where chain link fabric meets terminal posts.
7. Tension wire: Thermally fused polyolefin applied to zinc coated steel wire: Per ASTM F 1664 Class 2 b, 6 gauge, 0.192 inch diameter core wire with tensile strength of 75,000 psi (517 MPa).
8. Truss rods and tightener: Steel rods with minimum diameter of 5/16 inch. Capable of withstanding a tension of minimum 2,000 lbs.
9. Nuts and bolts to be galvanized but not polyolefin coated. Manufacturer to provide cans of touch up paint to coat nuts and bolts.

2.5 MISCELLANEOUS MATERIALS

- A. Concrete: Normal-weight, air entrained, ready-mix concrete complying with requirements of Section 03310, "Concrete Work", of this Technical Special Provision with a minimum 28-day compressive strength of 3000 psi, 3-inch slump, and 1-inch maximum aggregate size.
- B. Non-shrink grout: Factory-packaged, non-staining, non-corrosive, non-gaseous grout complying with ASTM C 1107 and specifically recommended by manufacturer for exterior applications.

2.6 WARRANTY

- A. Manufacturer's standard limited warranty that its fence is free from color coat flaking and peeling and other defects in materials and workmanship.
 1. Warranty period: 15 years from the date Final Acceptance

PART 3 - EXECUTION

3.1 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.

3.2 CHAIN LINK FENCE FRAMING INSTALLATION

- A. Verify measurements at site. 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 feet and 10 feet on center. See Plans for locations of different line post spacing.
- D. Concrete set terminal and line posts per Plans.
 - 1. Posts for 4 foot fence to be set permanently.
 - 2. Posts for 6 foot fence to be set permanently.
 - 3. Posts for Inter Track Fence to be removable. Refer to Inter Track Detail for sleeves set into concrete footing.
- 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 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. Install tension wire before stretching fabric and attach to each post with ties. Secure tension wire to fabric with 12-1/2 gauge hog rings 24 inches on center.
- H. Top rail: Install lengths, 21 feet. Connect joints with top rail joint sleeves for rigid connections for expansion/contraction.
- I. Bottom rails: Install bottom rails between posts with fittings and accessories.

3.3 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 2 inches between finish grade and bottom selvage. Attach fabric with wire ties to line posts at 15 inches on center and to rails, braces, and tension wire at 24 inches 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 inches on center.

3.4 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.

3.5 CLEANING

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

END OF SECTION 02820