WIREWORKS ANTI-CLIMB® | CONSTRUCTION SPECIFICATION 32 31 00
HIGH SECURITY WELDED WIRE ARCHITECTURAL FENCE SYSTEM

PART 1 - GENERAL

1.01 WORK INCLUDED
The contractor shall provide all labor, materials and appurtenances necessary for installation of the commercial welded wire architectural fence system defined herein at (specify project site).

1.02 RELATED WORK
Section ____ ____ - Earthwork
Section ____ ____ - Concrete

1.03 SYSTEM DESCRIPTION
The manufacturer shall supply a total commercial welded wire architectural fence system of the Ameristar® WireWorks Anti Climb® design. The system shall include all components (i.e., panels, brackets, posts, gates and hardware) required.

1.04 QUALITY ASSURANCE
The contractor shall provide laborers and supervisors who are thoroughly familiar with the type of construction involved and materials and techniques specified.

1.05 REFERENCES
• ASTM A653/A653M – Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process
• ASTM B117 – Practice for Operating Salt-Spray (Fog) Apparatus
• ASTM D523 – Test Method for Specular Gloss
• ASTM D714 – Test Method for Evaluating Degree of Blistering in Paint
• ASTM D1654 – Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments
• ASTM D2244 – Test Method for Calculation of Color Differences from Instrumentally Measured Color Coordinates
• ASTM D3359 – Test Method for Measuring Adhesion by Tape Test
• ASTM D6695 – Standard Practice for Xenon-Arc Exposures of Paint and Related Coatings
• ASTM F2453/F 2453M – Standard Specification for Welded Wire Mesh Fence Fabric

1.06 SUBMITTAL
The manufacturer’s submittal package shall be provided prior to installation.

1.07 PRODUCT HANDLING AND STORAGE
Upon receipt at the job site, all materials shall be checked to ensure that no damages occurred during shipping or handling. Materials shall be stored in such a manner to ensure proper ventilation and drainage, and to protect against damage, weather, vandalism and theft.

PART 2 - MATERIALS

2.01 MANUFACTURER
The fence system shall conform to Ameristar WireWorks Anti-Climb design by Ameristar Fence Products, Inc. in Tulsa, Oklahoma.

2.02 MATERIAL
A. Steel material for fence posts and rails shall be galvanized prior to forming in accordance with the requirements of ASTM A653/A653M, with minimum yield strength of 45,000 psi (310 MPa). The steel shall be hot-dip galvanized to meet the requirements of ASTM A653/A653M with a minimum zinc coating weight of 0.90 oz/ft². Coating Designation G-90. Fence posts and gate posts shall meet the minimum size requirements of Table 1.

B. Steel wire mesh fence panels shall be welded by resistance welding per ASTM A185 using pre-galvanized steel wire, welded at each crossing to form rectangles. Vertical 10.5ga. (0.128 inches) wires shall be spaced at 3 inches; horizontal 10.5ga. (0.128 inches) wires shall be spaced at .5 inches. Vertical 8ga. (0.162 inches) wires shall be spaced at 3 inches; horizontal 8ga. (0.162 inches) wires shall be spaced at .5 inches. The cold rolled wire shall have a tensile strength of at least 74,000 psi and 68,000 psi shear strength. Wire strand shall be galvanized before welded (GBW). .050 ounces per square foot zinc coating conforming to the ASTM A641.

C. The cross-sectional shape of the rails shall conform to the manufacturer’s Impasse II™ C-rail design, a nominal 2” x 2” x 11 Ga. Tamperproof fasteners shall be used to fasten each wire mesh retaining bracket to rail at intervals not exceeding 18 inches. Posts shall conform to the manufacturer’s Impasse II I-Beam design with a nominal 3” x 2.75” x 12ga for 8’ and 4” x 2.75” x 12ga for 10’

2.03 FABRICATION
A. Wire mesh panels and posts shall be precut to specified lengths. Panel width shall be no greater than 96” wide.

B. The manufactured fence system (i.e., panels, brackets, posts, gates and hardware) shall be subjected to the PermaCoat® thermal stratification coating process
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(high-temperature, in-line, multi-stage, multi-layer) including, as a minimum, a six-stage pretreatment/wash, an electrostatic spray application of an epoxy base, and a separate electrostatic spray application of a polyester finish. The base coat shall be a thermosetting epoxy powder coating (gray in color) with a minimum thickness of 2 mils (0.0508mm). The topcoat shall be a “no-mar” TGIC polyester powder coat finish with a minimum thickness of 2 mils (0.0508mm). The color shall be (specify Black, Bronze, White, Desert Sand, Green, or Brown). The stratification-coated framework shall be capable of meeting the performance requirements for each quality characteristic shown in Table 2.

C. Swing gates shall be fabricated using 2” x 12ga square rails and gate ends. Gates that exceed 6’ in width will have a 2” x 4” x 12ga. intermediate upright. All rail and upright intersections shall be joined by welding. All rail, upright, and gate end intersections shall also be joined by welding. Steel gussets (1/4” x 2”) shall be welded at each rail to gate end and rail to intermediate intersections. Gusset shall be punched to accept gate trussing cable and turnbuckle.

PART 3 - EXECUTION

3.01 PREPARATION
All new installation shall be laid out by the contractor in accordance with the construction plans.

3.02 FENCE INSTALLATION
Fence post shall be spaced according to Table 3, plus or minus 1/4”. Fence panels shall be attached to the line and end posts with fasteners supplied by the manufacturer. Attachment to corner post shall be made using brackets and fasteners supplied by the manufacturer (See Figure 1). Posts shall be set in concrete footers having a minimum depth of 36” (Note: In some cases, local restrictions of freezing weather conditions may require a greater depth). The “Earthwork” and “Concrete” sections of this specification shall govern material requirements for the concrete footer. Posts setting by other methods such as plated posts or grouted core-drilled footers are permissible only if shown by engineering analysis to be sufficient in strength for the intended application.

3.03 FENCE INSTALLATION MAINTENANCE
When cutting/drilling rails or posts adhere to the following steps to seal the exposed steel surfaces; 1) Remove all metal shavings from cut area. 2) Apply zinc-rich primer to thoroughly cover cut edge and/or drilled hole; let dry. 3) Apply 2 coats of custom finish paint matching fence color. Failure to seal exposed surfaces per steps 1-3 above will negate warranty. Ameristar spray cans or paint pens shall be used to prime and finish exposed surfaces; it is recommended that paint pens be used to prevent overspray. Use of non-Ameristar parts or components will negate the manufacturers’ warranty.

3.04 GATE INSTALLATION
Gate posts shall be spaced according to the manufacturers’ gate drawings, dependent on standard out-to-out gate leaf dimensions and gate hardware selected. Type and quantity of gate hinges shall be based on the application; weight, height, and number of gate cycles. The manufacturers’ gate drawings shall identify the necessary gate hardware required for the application. Gate hardware shall be provided by the manufacture of the gate and shall be installed per manufacturer’s recommendations.

3.05 CLEANING
The contractor shall clean the jobsite of excess materials; post-hole excavations shall be scattered uniformly away from posts.
TABLE 1

<table>
<thead>
<tr>
<th>SPAN</th>
<th>POST SIZE</th>
<th>POST SETTINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>8’ Nominal (95” rail)</td>
<td>3” x 2¾” x 12 ga. I-Beam</td>
<td>95.75 +/- .25”</td>
</tr>
</tbody>
</table>

TABLE 2

<table>
<thead>
<tr>
<th>QUALITY CHARACTERISTICS</th>
<th>ASTM TEST METHOD</th>
<th>PERFORMANCE REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adhesion</td>
<td>D3359 – METHOD B</td>
<td>Adhesion (retention of coating) over 90% of test area (tape and knife test).</td>
</tr>
<tr>
<td>Corrosion Resistance</td>
<td>B117, D714, D1654</td>
<td>Corrosion resistance over 3,500 hours (scribed per D1654; failure mode is accumulation of 1/8” coating loss from scribe or medium #8 blisters)</td>
</tr>
<tr>
<td>Impact Resistance</td>
<td>D2794</td>
<td>Impact resistance over 60” lb. (forward impact using 0.625” ball).</td>
</tr>
<tr>
<td>Weathering Resistance</td>
<td>D822 D2244, D523 (60° method)</td>
<td>Weathering resistance over 1,000 hours (failure mode is 60% loss of gloss or color variance of more than 3 delta-E color units).</td>
</tr>
</tbody>
</table>

TABLE 3

<table>
<thead>
<tr>
<th>GATE HEIGHT</th>
<th>GATE LEAF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over 9’ to 10’</td>
<td>up to &amp; including 6’</td>
</tr>
<tr>
<td>Over 10’ to 12’</td>
<td>6’ x ¾”</td>
</tr>
<tr>
<td>Over 12’ to 14’</td>
<td>6’ x ¾”</td>
</tr>
</tbody>
</table>

TABLE 4

<table>
<thead>
<tr>
<th>BRACKET TYPE</th>
<th>SPACING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line Step</td>
<td>96.75 +/- .25”</td>
</tr>
<tr>
<td>Corner Step</td>
<td>96.75 +/- .25”</td>
</tr>
</tbody>
</table>