Fe 26 IRON Industries, INC.

EMMEGI ARCHITECTURAL FENCING
MASTER SPECIFICATION

SECTION 05720

METAL FENCING, GATES & RAILING SYSTEM

PART 1 GENERAL

EMMEGI ARCHITECTURAL FENCING is a high quality steel fencing system comprised of a hybrid steel bar grating that has been uniquely designed to be used vertically, for fencing, railings, infill panels or privacy screening. EMMEGI grating panels are considerably lighter than traditional steel bar (sidewalk) grating. The bar grating panel makes EMMEGI panels superior in strength to chain link, woven wire mesh and cable rail. EMMEGI panel open grid patterns make EMMEGI panels BOCA compliant with the 4 inch rule.

1.1 SCOPE OF WORK

A. The contractor shall provide all labor, materials, tools, and equipment necessary for fabricating, delivering and installing custom EMMEGI Architectural metal fencing and railing system consisting of open steel grating panels with steel support posts and framing.

B. Related Work Specified Elsewhere:

1. Concrete Work: Section _____
2. Site work: Section _____
3. Painting: Section _____
4. Hardware: Section _____
5. Earthwork: Section _____
6. Structural Steel: Section _____

1.2 PERFORMANCE CHARACTERISTICS

A. Structural Performance Requirements:
   1. Metal fencing and railing assemblies, including supports and Anchorage components, shall be capable of withstanding a minimum, concentrated load of 200 pounds applied in any direction.

1.3 CODE OF STANDARDS

A. American Society for Testing Materials (ASTM)
   1. ASTM A 36 - Std. for Carbon Steel
   2. ASTM A 500 - Std. for Carbon Steel Tubing
   3. ASTM A 123 - Std. for Hot-Dip Galvanizing
   4. ASTM B 117 - Std. for Salt Spray Resistance of Powder Coatings
   5. ASTM D 822 - Std. for Weatherability of Powder Coatings

B. American Welding Society (AWS)
   1. AWS D1.1 Specifications for Structural Welding Code

C. Society for Protective Coatings (SSPC)
   1. SSPC - SP2 - Hand Tool Cleaning
   2. SSPC - SP7 - Commercial Blast Cleaning

1.4 SUBMITTALS

A. Shop Drawings: Submit shop drawings for approval for metal railing system including plan layout, elevations, railing panel types heights, quantities, shapes, sizes, locations, erection marks, supports, hardware, anchorage and attachment details.
   1. Show all locations, markings, quantities, materials, sizes and shapes.
   2. Indicate all methods of connecting, anchoring, fastening, bracing, and / or attaching to the work of other trades.
   3. Fabrication will commence upon approval of shop drawings.

4. Indicate materials and component finishes.

B. Product Data: Submit manufacturer's technical data for metal fencing and railing system.

C. Samples: For each fence and railing panel type selected, submit one representative sample approximately 8 inches by 10 inches, showing the fabrication and workmanship and selected coating color. Submit one 12 inch long section of top rail showing its configuration and finish.

1.5 QUALITY ASSURANCE

A. All work shall be fabricated and delivered in the best manor and according to the best rules and usage of the trade.

B. Salt spray resistance according to ASTM B 117 shall show no undercutting, rusting or blistering after 500 hours in 5% salt Spray at 95 degrees F and 95% relative humidity and after 1000 Hours less than 3/16” (5mm) undercutting.

PART 2 PRODUCTS

2.1 MANUFACTURER

A. Products specified herein are components of the EMMEGI Architectural Fencing System, and are produced by Fe Industries, Inc. of Mount Vernon, NY 10552, 914-668-4500. www.feindustriesny.com

2.2 MATERIALS

A. Steel Bar Stock: shall conform to ASTM A36.

B. Steel Tubing: Shall conform to ASTM A500, Grade B.

2.3 FABRICATION

A. Fabrication: Metal fencing panel components shall be manufactured using the electro-fused welding process for complete penetration and fusing of cross members.

B. Configuration: Metal fencing panels and support components shall be fabricated to the sizes, shapes and configurations shown on the contract drawings.

1. Curved panels: Bend metal fencing panels and other horizontal components to desired radius.
2. Pattern-Cut Panels: Metal panels for stairs and ramps shall be fabricated in trapezoidal patterns with the main bars being vertical and the cross bars being horizontal. The diagonal edges at the top and bottom of the panel are to be framed with a steel bar closure welded to the vertical main bars.

C. Commencement: Fabrication can commence only upon the return of approved shop drawings.

2.4 METAL FENCING PANELS

[Architect / Specifier select the applicable fencing panels from the following paragraphs.]

A. Sevia Design:

Main bars 31/32” x ⅛” @ 2-7/16” c c

Cross bars 3/16” dia @ 5-3/16” c c

B. Daunia Design:

Main bars 31/32” x ⅛” @ 2- 7/16” c c
Cross bars 3/16” dia @ 2-19/32” c c

C. Egnatia Design:

Main bars 31/32” x ⅛” @ 4- 7/8 c c
Cross bars 3/16” dia @ 5-3/16 c c

D. 42 x 132

Main bars 31/32” x ⅛” @ 1-21/32” c c
Cross bars 3/16” dia @ 5-3/16 c c

E. 42 X 44

Main bars 31/32” x 5/64” @ 1-21/32” c c
Cross bars 3/16” dia @ 2- 3/4 c c

F. Square Mesh Design:

Main bars 31/32” @ 1” c c
Cross bars 3/16 dia @ 1” c c

2.5 METAL FENCING SUPPORTS

A. Post-Supported:

1. Posts to be anchored in Cast-in Sleeves or Core-Drilled Holes in existing concrete.
2. Posts Expansion Bolted to existing concrete.
3. Posts Side / Bracket-Mounted to Edge of Slab.

B. Framed Panels Spanning Between Vertical and Horizontal Supports:

1. Individual or multiple panels welded or bolted to horizontal steel tubes, angles or flat bars at the top and bottom of the panel.
2. Panels attached to vertical supports at each end of the panel.

2.6 TOP RAILS

[Architect / Specifier please note: Channels, tubes, pipe, and flat bars are available as separate top rails, apart from panels.]

2.7 FINISHING

A. Hot-Dip Galvanizing:
All steel material to be hot-dip galvanized after fabrication to ensure product encapsulation in accordance with ASTM A123.

B. Commercial Brush Blast:
Brush Blast all galvanized members to ensure inter-coat paint adhesion in accordance with SSPC SP7.

C. Electro-Static Powder Top Coat:
Apply Thermo-Set Polyester Powder at 3-5 mills (DFT) at 400 Degree Fahrenheit for 20-25 minutes in accordance with ASTM B117 and ASTM D822.

D. Paint color to be specified.

2.8 PACKAGING and DELIVERY

A. All material to be wrapped and packaged to prevent damage to the steel finish during shipment.

B. All packages to be clearly labeled as to the contents, so as not to need opening to determine contents.

PART 3 EXECUTION

3.1 INSPECTION

A. Verify all field conditions prior to the start of work.

B. Notify the General Contractor or Owner immediately of any errors, omissions or other conditions interfering with the proper installation of the steel fencing and railings.

C. Notify the General Contractor or Owner if the layout or dimensions vary from approved shop drawings.

D. All dimensions to be Verified In Field prior to fabrication.

E. No work can begin until all issues of non-conformance have been rectified.

3.2 ACCEPTANCE

All fencing and components to be inspected upon delivery to site, prior to instillation.

Immediately notify Fe Industries, Inc. of any damaged or missing components.

Failure to do so indicates acceptance of all materials.

3.3 INSTALLATION

A. Posts: All fence posts in core drilled holes or sleeves to be set plumb and square using non-shrink grout.

   Exercise care not to damage finished materials.

B. Fence Panels: Fence / Railing Panels to be set plumb and level and parallel to grade.

   Sloped, beveled or inclined panels shall be installed so that their vertical members are plumb and parallel to the posts, and horizontal members are level.

C. Hardware: All bolts and expansion anchors to be Stainless Steel type A 304.

D. No field cutting or field welding of finished fencing or railing components will be permitted.

E. Any damaged or lost fencing or railing components to be replaced at contractor's expense.

PART 4 WARRANTY

Fe Industries, INC. certifies that its EMMEGI steel fencing and railing systems are free from defects in materials and workmanship for five (5) years from date of substantial completion.

Our Limited Warranty guarantees our hot dipped galvanizing, metalizing and finished paint system is free from cracks, peels or blisters, and guaranteed not to crack, blister or peel for a period of 7 years.

Accidental damages resulting from improper installation and damages from vandalism are not included in this warranty.

Warrantee is limited to a prorated value of the coating, not to exceed the original value of the finishing.