IDEAL ALUMINUM PRODUCTS
ALUMINUM ORNAMENTAL FENCES AND GATES
SECTION 02825

Part 1-General

1.01 Description:
A. Furnish and install industrial grade aluminum ornamental fence and accessory materials as manufactured by IDEAL Aluminum Products and as indicated on the drawings and as specified. The work includes, but is not necessarily limited to, the following:
1. Fence, gates and related hardware
B. Related Sections:
1. Section 0220-Earthwork
2. Section 03300-Cast-in-place concrete

1.02 Quality Assurance:
Tests:
- AAMA-2603- salt spray resistance of 3000 hours.
- Accelerated weathering for 500 hours under Method 6152 of Federal Test Method 141 shall show no adhesion loss, with only slight fading and water staining.
- Outdoor weathering shall show no checking or crazing, with only slight fade when exposed for one year in Florida facing south at a 45° angle.
- Minimum hardness of 2H using ASTM D3363.
- Average coating thickness of 3 mils

1.02.1 References
- ASTM B117 - Practice for Operating Salt-Spray (Fog) Apparatus.
- ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles and Tubes.
- ASTM D523 - Test Method for Specular Gloss.
- ASTM D822 - Practice for Conducting Tests on Paint and Related Coatings and Materials using Filtered Open-Flame Carbon-Arc Light and Water Exposure Apparatus.
- 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 D2794 - Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
- ASTM D3359 - Test Method for Measuring Adhesion by Tape Test.
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1.03 Submittals:
1. Manufacturer's product literature and certification.
2. Shop drawings in sufficient detail to show fabrication, anchorage, and interface of the work.

1.04 Warranty:
The entire fence system shall have a limited lifetime warranty against defects in workmanship and material while the finish must also carry a limited lifetime warranty against cracking, chipping or peeling.

Part 2-Products

2.01 Manufacturers:
A. Ideal Aluminum Products 2000 Brunswick Lane, Deland FL 32724 386-736-1700

2.02 Materials:

A. Aluminum Extrusions: All components shall be extruded from 6063-T5 in accordance with ASTM B221 having a minimum yield strength of 35,000 psi.

B. Fasteners: All fasteners shall be stainless steel with a zinc dichromate coating for enhanced corrosion resistance. Phillips head screws shall be used to attach the pickets to the rails while self-drilling, self-tapping hex head screws shall be used to connect the rails to the posts. All screws shall be painted to match the finish of the fence.

C. Accessories: All castings used for post caps, finials, scrolls, rings, floor and wall attachments shall be made from zinc or aluminum. Hinges and latches shall be fabricated from aluminum extrusion. Only stainless steel fasteners may be used with these accessories. All accessories will be painted to match the finish of the fence.

2.03 Spraylat Polyester thermal set:

A. Pretreatment: Before the finish is applied, a five-stage acidic pretreatment must be applied to assure maximum adhesion and corrosion resistance.

Stage 1: Phosphoric acid and Complex Organic Phosphate cleaner to prepare the surface

Stage 2: Water rinse

Stage 3: Acid based metal cleaner and oxide remover which conditions the aluminum surfaces for excepting coatings where consistent uniformity is required.

Stage 4: Deionized water rinse

Stage 5: Chrome free, non-phosphate liquid coating chemical used to produce on aluminum and zinc alloys, a clear nearly colorless chemical Dried-In-Place (DIP) coating. The coating, when properly applied, has excellent paint bonding properties and affords under film protection.

B. Coating: The fence system shall have an electrostatically applied TGIC polyester powder coated finish that meets or exceeds industry standard tests.

Color: The color to be selected by the architect from manufacturer's standard color selections

2.04.1 Residential Construction

A. Horizontal Rails: Rails shall be 1-1/16" x 1" "U" channels. Pickets shall pass through holes punched in the top rail. The rails shall have a top wall thickness of .062" and a sidewall thickness of .072". The number of rails shall vary according to manufacturer's specifications.

B. Pickets: Pickets shall be fastened to the rails using zinc-coated stainless steel screws painted to match the color of the fence. Screws shall be used on only one side of the rail leaving the other side with a clean appearance. Pickets shall be 5/8" square with a .050" wall thickness.

C. Posts: Posts shall be 2" square with a .062" wall thickness. Gate posts shall be either 2" square with a .125" wall thickness or a 4" square with a .125 wall thickness. A gate requires a gate post on both sides. A cast aluminum cap is to be used on all posts.

D. Gates: Swing gates shall be fabricated to manufacturer's standard methods. Standard hardware should be used.

2.04.2 Commercial Construction

A. Horizontal Rails: Rails shall be 1-1/16" x 1-1/2 "U" channels. Pickets shall pass through holes punched in the top rail. The rails shall have a top wall thickness of .062" and a sidewall thickness of .72". The number of rails shall vary according to manufacturer's specifications.

B. Pickets: Pickets shall be fastened to the rails using zinc-coated stainless steel screws painted to match the color of the fence. Screws shall be used on only one side of the rail leaving the other side with a clean appearance. Pickets shall be 3/4" square with a .060" wall thickness.

C. Posts: Posts shall be 2" square with a .062" wall thickness. Gate posts shall be either 2" square with a .125" wall thickness or a 6" square with a .125 wall thickness. A gate requires a gate post on both sides. A cast aluminum cap is to be used on all posts.

D. Gates: Swing gates shall be fabricated to manufacturer's standard methods. Standard hardware should be used.

2.04 .3 Industrial Construction

A. Horizontal Rails: Rails shall be 1 5/8" square "U" channels. Pickets shall pass through holes punched in the top rail. The rails shall have a top wall thickness of .075" and a sidewall thickness of .100". The number of rails shall vary according to manufacturer's specifications.

B. Pickets: Pickets shall be fastened to the rails using zinc-coated stainless steel screws painted to match the color of the fence. Screws shall be used on only one side of the rail leaving the other side with a clean appearance. Pickets shall be 1" square with a .065" wall thickness.

C. Posts: Posts shall be 2 1/2" square with a .075" wall thickness. Gate posts shall be either 4" square with a .125" wall thickness or a 6" square with a .125 wall thickness. A gate requires a gate post on both sides. A cast aluminum cap is to be used on all posts.

D. Gates: Swing gates shall be fabricated to manufacturer's standard methods. Standard hardware should be used.

2.05 Concrete:

A. Comply with requirements specified in Section 03300- Cast-in-place concrete

Part 3- Execution

3.01 Surface Conditions:

A. Examine the areas and conditions under which work of this section will be performed. Correct conditions detrimental to timely and proper completion of work. Do not proceed until unsatisfactory conditions are corrected.

3.02 Installation:

A. Follow manufacturer's instructions for the installation of all gates and fencing.

Installation: All material must be checked upon receipt at the job site prior to installation to check for any damage that may have occurred during transport. The aluminum fence system must be stored in a safe and dry environment so as to protect it from any potential damage. This aluminum ornamental fence system must be installed with manufacturer's standard procedures.

3.02.1 Fence Installation Maintenance

When cutting/drilling rails or posts adhere to the following steps to seal the exposed surfaces; 1) Remove all metal shavings from cut area. 2) Apply custom finish paint matching fence color. Failure to seal exposed surfaces per steps 1 & 2 above will negate warranty. Ideal Aluminum Products spray cans shall be used to finish exposed surfaces. Use of non-Ideal Aluminum Products parts or components will negate the manufactures' warranty.

3.03 Excavating:

A. Drill holes for post footings in firm, undisturbed or compacted soil, strictly adhering to the dimensions and spacing shown.

3.04 Setting Posts:

A. Remove loose and foreign materials from sides and bottoms of holes, prior to pouring concrete. Center and align posts in holes. Insert notched stringers into pre-punched post and fasten with tech screws. Place concrete around posts in a continuous pour and vibrate or tamp for consolidation.

B. Check each post for vertical and top alignment. Hold in position during placement and finishing operation. Make any corrections before concrete hardens.

3.05 Installing Gates:

A. Install gates, plum, level, and secure for full opening without interference. Install ground-set Items in concrete for anchorage in accordance with manufacturer's recommendations as approved by the architect. Adjust hardware for smooth operation.

3.06 Cleaning:

A. Contractor shall clean jobsite of excess material; post hole excavations shall be scattered uniformly away from post. Mortar should be removed from exposed posts and other fencing material using a 10% solution of muriatic acid followed immediately by several clean water rinse. Clean aluminum fence with a mild household detergent and clean water rinse well.