

# **SPECIFICATIONS**

## **Section 02825 - Ornamental Fences and Gates**

### **Part 1 GENERAL**

This specification covers Aluminum Ornamental Fence as manufactured by Ultra Aluminum Mfg., Inc., including sections, posts, gates and accessories.

### **Part 2 PRODUCTS**

#### **2.01 MANUFACTURER**

The fencing system shall be Residential, Ultra, Commercial, Industrial strength as manufactured by Ultra Aluminum Mfg., Inc. The fence shall be Ultra's styles 200, 201, 250, 251, 100, 101, 150, 151, 300, 301, 350, 351, 400. The color of the fence system shall be black, white, bronze, beige, green.

#### **2.02 MATERIALS**

- A. ALUMINUM EXTRUSIONS: The structural components of the fence system shall be extruded from 6005-T5 with a minimum ultimate strength of 35,000 psi.
- B. FASTENERS: All fasteners shall be stainless steel. Phillips head screws shall be used to attach the pickets to the rails while self-drilling, self-tapping screws shall be used to connect the rails to the posts. All screw heads shall be painted to match the finish of the fence.
- C. ACCESSORIES: All castings used for post caps, finials, scrolls and latches shall be made from aluminum. Only stainless steel fasteners may be used with these accessories.

#### **2.03 FINISH**

- A. PRETREATMENT: A three-stage non-chromate pretreatment shall be applied. The first step shall be a chemical cleaning, followed by a water rinse. The final stage shall be a dry-in-place activator which produces a uniform chemical conversion coating for superior adhesion. Screws shall be plated with zinc dichromate to ensure corrosion resistance.
- B. COATING: Fence materials shall be coated with a TGIC polyester powder-coat finish system. The finish shall have a cured film thickness of at least 2.0 mils. In addition, the screw heads shall be painted to match the color of the fence.
- B. TESTS: The cured powder coat finish shall meet the following:

- 1) Humidity resistance of 1,000 hours using ASTM D2247.
- 2) Salt spray resistance of 1,000 hours using ASTM B117.
- 3) Accelerated weathering for 500 hours under Method 6152 of Federal Test Method 141 shall show no adhesion loss, with only slight fading, chalking and water staining.
- 4) Outdoor weathering shall show no adhesion loss, checking or crazing, with only slight fade and chalk when exposed for one year in Florida facing south at a 45° angle.
- 5) Minimum hardness of 2h using ASTM D3363.

## **2.04 CONSTRUCTION**

- A. **HORIZONTAL RAILS:** Rails are specially designed C Channels. Square holes are punched in the top of the rails to allow the pickets to pass through. Because aluminum extrusions allow metal to be placed where it is needed most, the top has been designed for additional strength as well as additional reinforcements in the interior of the rail. Rail sizes and thicknesses shall be as follows: Residential & Ultra grade rails are 1 1/8" x 1" with .082 side wall thickness and .062 top wall thickness; Commercial grade rails are 1 3/8" x 1 1/4" with .088 side wall thickness and .065 top wall thickness; Industrial rails are 1 5/8" x 1 5/8" with .100 side wall thickness and .070 top wall thickness; Heavy industrial rails are 1 5/8" x 1 5/8" with side wall thickness of .100 and top wall thickness of .070 which snaps into the top rail allowing all screws to be enclosed inside of the rail.
- B. **PICKETS:** Pickets shall be fastened to the rails using painted stainless steel screws. Screws shall be used on only one side of the rail, leaving the other side with a clean appearance. Residential grade pickets shall be 5/8" square with a .050 wall thickness; Ultra grade pickets shall be 1" x 5/8" with a .062 wall thickness, Commercial grade pickets shall be 3/4" square with a .055 wall thickness; Industrial and heavy industrial pickets are 1" square with a .062 wall thickness. Welding the pickets to the rails is not permitted.
- C. **POSTS:** Residential and Ultra grade posts shall be 2" square with a wall thickness of .060, .080, and .125; 2 1/2" square with a wall thickness of .100; Commercial grade posts shall be 2" square with wall thicknesses of .080 and .125; 2 1/2" square with a wall thickness of .100; 3" square with a wall thickness of .125. Industrial and heavy Industrial grade posts shall be 2 1/2" square with a wall thickness of .100, and 3" square with a wall thickness of .125. Gate posts are available in 4" square with a wall thickness of .125, 4" x 6" with a wall thickness of .250, 6" x 6" with a wall thickness of .188. A gate requires a post on both sides. A cast aluminum post cap comes standard with all posts.
- D. **GATES:** Swing gates, Rolled Channel gates and Cantilever gates shall be fabricated according to the manufacturer's standard methods.

E. STRENGTH: Residential & Ultra grade assembled sections must be able to support a minimum of 300 pounds of vertical load at the midpoint of any horizontal rail. Commercial grade assembled sections must be able to support a minimum load of 500 pounds of vertical load at the midpoint of any horizontal rail. Industrial and Heavy Industrial grade assembled sections must be able to support a minimum of 1,000 pounds of vertical load at the midpoint of any horizontal rail.

## **2.05 WARRANTY**

The entire fence system shall have a written Lifetime Warranty against defects in workmanship and materials, while the powder coat finish must also carry a lifetime warranty against cracking, chipping or peeling.

## **Part 3 EXECUTION**

### **3.01 INSTALLATION**

All material must be inspected upon receipt prior to installation to check for any damage that may have occurred during shipping. Fence system shall be installed in accordance with manufacturer's standard installation procedures. Materials shall be handled and stored in a safe and dry environment.