AMERISTAR FENCE PRODUCTS

Montage Plus® - Commercial Weight
CONSTRUCTION SPECIFICATION
SECTION 32 31 00 - WELDED ORNAMENTAL FENCE SYSTEM

PART 1 - GENERAL

1.01 WORK INCLUDED

The contractor shall provide all labor, materials and appurtenances necessary for installation of the welded ornamental steel 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 fence system of (specify Montage Plus ATF® standard picket space or Montage Plus® Pool, Pet & Play® 3" air space) Welded Ornamental Steel (for standard picket space, specify Invincible®, Classic™, Majestic™, or Genesis™; for 3" air space, specify Classic™, Majestic™, or Genesis™) design. The system shall include all components (i.e., panels, 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 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.

1.06 SUBMITTAL

The manufacturer's literature shall be submitted prior to installation.

1.07 PRODUCT HANDLING AND STORAGE

Upon receipt at the job site, all materials shall be checked to ensure that no damage 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 (specify Montage Plus ATF standard picket space or Montage Plus Pool, Pet & Play 3" air space) Welded Ornamental Steel, (for standard picket space, specify Invincible, Classic, Majestic, or Genesis; for 3" air space, specify Classic, Majestic, or Genesis) design, (specify extended picket or flush) bottom rail treatment, (specify 2-Rail, 3-Rail or 4-Rail or 3-Rail or 4-Rail with Coronas) style manufactured by Ameristar Fence Products, Inc., in Tulsa, Oklahoma.

2.02 MATERIAL

A. Steel material for fence panels and posts shall conform to the requirements of ASTM A653/A653M, with a minimum yield strength of 50,000 psi (344 MPa) and a minimum zinc (hot-dip galvanized) coating weight of 0.60 oz/ft^2 (184 g/m^2), Coating Designation G-60.

B. For fence systems up to and including 6 feet tall, material for pickets shall be ¾" square x 16 Ga. tubing. For fence systems 7 feet and 8 feet tall, material for pickets shall be ¾" square x 14 Ga. tubing. The rails shall be steel channel, 1.5" x 1.4375" x 14 Ga. Picket holes in the rail shall be spaced (specify 4.675" o.c. for standard picket space or 3.500" o.c. for 3" air space). For fence systems up to and including 6 feet tall, posts shall be a minimum of 2-1/2" square x 16 Ga. For fence systems 7 feet and 8 feet tall, posts shall be a minimum of 2-1/2" square x 14 Ga. Gate posts shall meet the minimum requirements of Table 1.

2.03 FABRICATION

A. Pickets, rails and posts shall be pre-cut to specified lengths. Rails shall be pre-punched to accept pickets.

B. Pickets shall be inserted into the pre-punched holes in the rails and shall be aligned to standard spacing using a specially calibrated alignment fixture. The aligned pickets and rails shall be joined at each picket-to-rail intersection by Ameristar's proprietary fusion welding process, thus completing the rigid panel assembly (Note: The process produces a virtually seamless, spatter-free good-neighbor appearance, equally attractive from either side of the panel).

C. The manufactured panels and posts shall be subjected to an inline electrode position coating (E-Coat) process consisting of a multi-stage pretreatment/wash (with zinc phosphate), followed by a duplex application of an epoxy primer and an acrylic topcoat. The minimum cumulative coating thickness of epoxy and acrylic shall be 2 mils (0.058 mm). The color shall be (specify Black, Bronze or Desert Sand). The coated panels and posts shall be capable of meeting the performance requirements for each quality characteristic shown in Table 2.

D. Gates shall be fabricated using welded ornamental panel material and gate ends having a 1-3/4" square cross-sectional size. All rail and upright intersections shall be joined by welding. All picket and rail intersections shall also be joined by welding.

PART 3 - EXECUTION

3.01 PREPARATION

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

3.02 INSTALLATION

Fence posts shall be set according to Table 3, plus or minus ½". Fence panels shall be attached to posts with brackets supplied by the manufacturer. Gate posts shall be spaced according to the gate openings specified in the construction plans. The "Earthwork" and "Concrete" sections of this specification shall govern post base material requirements.

3.03 CLEANING

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

Table 1 – Minimum Sizes for Montage Plus Gate Posts

Gate Opening	Gate Height		
	Up To & Including 4'	Over 4', Up To & Including 6'	Over 6', Up To & Including 8'
Up To & Including 4'	2-1/2" x 14 Ga.	3" x 12 Ga.	3" x 12 Ga.
Over 4', Up To & Including 6'	3" x 12 Ga.	3" x 12 Ga.	4" x 12 Ga.
Over 6', Up To & Including 8'	3" x 12 Ga.	4" x 12 Ga.	6" x 12 Ga.

Table 2 – Coating Performance Requirements

Quality Characteristics	ASTM Test Method	Performance Requirements
Adhesion	D3359 – Method B	Adhesion (Retention of Coating) over 90% of test area (Tape and knife test).
Corrosion Resistance	B117, D714 & D1654	Corrosion Resistance over 1,500 hours (Scribed per D1654; failure mode is accumulation of 1/8" coating loss from scribe or medium #8 blisters).
Impact Resistance	D2794	Impact Resistance over 60 inch lb. (Forward impact using 0.625" ball).
Weathering Resistance	D822, D2244, D523 (60° Method)	Weathering Resistance over 1,000 hours (Failure mode is 60% loss of gloss or color variance of more than 3 delta-E color units)

Table 3 – Montage Plus - Post Spacing By Bracket Type

Span	For INVINCIBLE® 8' Nominal (90.445" Rail)		For CLASSIC, GENESIS & MAJESTIC 8' Nominal (91.95" Rail)					
Post Size	2-1/2"	3"	2-1/2"	2-1/2"	2-1/2"	3"	2-1/2"	3"
Bracket Type	Montage Plus Invincible Flat Mount (BB118)		Montage Plus Universal (BB112)	Montage Plus Line Boule-vard (BB114)	Montage Plus Flat Mount (BB111)		Montage Plus Swivel (BB113)*	
Post Settings ± ½" O.C.	94"	94-1/2"	95-1/2"	95-1/2"	95-1/2"	96"	95-1/2"	96"

* Note: When using BB113 swivel brackets on either or both ends of a panel installation, care must be taken to ensure the spacing between post and adjoining pickets meets applicable codes. This will require trimming one or both ends of the panel.