



SECTION 32 31 19
HIGH SECURITY FENCES
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PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Rackable, steel pale, high security fence system.

1.2 RELATED SECTIONS

- A. Section 03 30 00 - Cast-in-Place Concrete.
- B. Section 31 20 00 - Earth Moving.

1.3 REFERENCES

- A. ASTM International (ASTM):
 1. ASTM A123 - Standard Specification For Zinc, Hot-Dip Galvanized, Coatings On Iron And Steel Products.
 2. ASTM A500 - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.
 3. ASTM F2408 - Standard Specification for Ornamental Fences.
- B. American Welding Society (AWS).

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 30 00.
- B. Product Data:
 1. Manufacturer's data sheets on each product to be used.
 2. Preparation instructions and recommendations.
 3. Storage and handling requirements and recommendations.
 4. Typical installation methods.
- C. Verification Samples: Two representative units of each type, size, pattern and color.
- D. Shop Drawings: Include details of materials, construction and finish. Include relationship with adjacent construction.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with a minimum five years documented experience.
- B. Installer Qualifications: Company specializing in performing Work of this section with minimum two years documented experience with projects of similar scope and complexity.

- C. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.
- D. Mock-Up: Construct a mock-up with actual materials in sufficient time for Architect's review and to not delay construction progress. Locate mock-up as acceptable to Architect and provide temporary foundations and support.
 - 1. Intent of mock-up is to demonstrate quality of workmanship and visual appearance.
 - 2. If mock-up is not acceptable, rebuild mock-up until satisfactory results are achieved.
 - 3. Retain mock-up during construction as a standard for comparison with completed work.
 - 4. Do not alter or remove mock-up until work is completed or removal is authorized.

1.6 PRE-INSTALLATION CONFERENCE

- A. Convene a conference approximately two weeks before scheduled commencement of the Work. Attendees shall include Architect, Contractor and trades involved. Agenda shall include schedule, responsibilities, critical path items and approvals.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store and handle in strict compliance with manufacturer's written instructions and recommendations.
- B. Protect from damage due to weather, and construction operations.

1.8 WARRANTY

- A. Manufacturer's Warranty: Provide manufacturer's standard 20-year limited warranty, from the date of purchase, for defects in material and workmanship, including protection against cracking, peeling, blistering and corrosion. Refer to Manufacturer's warranty for details.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Fortress Building Products, which is located at: 1720 North 1st Street; Garland, TX 75040; Toll Free Tel: 866-323-4766; Email:specifications@fortressbp.com; Web:<https://www.fortressbp.com/fencing/ares>
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00.

2.2 COMPONENTS

- A. Material: Grade A cold rolled 50,000 psi (345 MPa) steel. Conforming to ASTM A500 with G-90 zinc coating, inside and outside surfaces in accordance with ASTM A123 hot dipped electroplating process.
- B. Rails, C-Channel: 2.83 x 2.84 inch (71.9 x 72.1 mm), 11 gauge formed U-Channel.
- C. Pale: 2.75 x 1 inch (69.9 x 25 mm), 12 gauge welded and formed steel tubing.
- D. I-Beam: 2.68 x 3.94 inch (68.1 x 100 mm), 12 gauge solid steel with powder coated factory finish.
- E. I-Beam: 3 inch (76 mm) square, 12 gauge formed and welded steel tubing with powder

coated factory finish.

- F. Swing Gate:
 - 1. Upright: 3 inch (76 mm) square tube, 12 gauge.
 - 2. Pale: 2.75 x 1 inch (69.9 x 25 mm), 12 gauge.
 - 3. Gate Leaf Size, WxH: _____.
 - a. Gate Post Size: _____.

2.3 FENCES

- A. Basis of Design: ARES High Security; as manufactured by Fortress Fence Products, a division of The Fortress Company.
 - 1. Style: Citadel, curved top, palisade.
 - 2. Style: Scorpio.
 - 3. Style: Spartan.
 - 4. Rail Style: 2 rail style.
 - 5. Rail Style: 3 rail style.
 - 6. Air Space: 3 inch (76 mm) air space between pales.
 - 7. Rail Length: 90-1/2 inch (2300 mm).
 - 8. Post Size: 3 inch (76 mm).
 - 9. Post Size: 4 inch (102 mm).
 - 10. Post Size: 6 inch (152 mm).
 - 11. Post Size: 8 inch (203 mm).
 - 12. Picket Height: 70 inches (1780 mm).
 - 13. Picket Height: 82 inches (2080 mm).
 - 14. Picket Height: 94 inches (2390 mm).
 - 15. Picket Height: 106 inches (2690 mm).
 - 16. Picket Height: 118 inches (3000 mm).
 - 17. Picket Height: 130 inches (3300 mm).
 - 18. Picket Height: 142 inches (3610 mm).

2.4 FABRICATION

- A. Fence panels shall be fully assembled and comply with requirements indicated for materials, thickness, design and details of construction.
- B. Pales shall be mechanically attached to the rail thru the Slide Lock Technology.
- C. All welded connections shall comply with AWS standards for recommended practice in shop welding.
- D. All components shall be accurately cut and drilled to receive hardware, fasteners and accessories.
- E. Panels shall be capable of meeting the vertical load, horizontal load, and infill performance requirements for Industrial weight fence under ASTM F2408.
- F. Panels shall be rackable/adjustable to a 12 inch (305 mm) change in grade.

2.5 FINISH

- A. Materials shall be coated with the FortressShield process including galvanization, nano ceramic coating, electrodeposition or E-coat, and architectural grade powder coat.
- B. Metal parts shall be assembled and finished individually prior to shipment.
- C. Color: Black Sand.

- D. Color: Gloss Black.
- E. Color: Green Sand.
- F. Color: Gloss Green.
- G. Color: To be selected by Architect. Provide RAL information for colors other than manufacturer's standard.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly constructed and prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect in writing of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Stake layout showing locations of all gates and posts.
 - 1. VERIFY UNDERGROUND UTILITY LOCATIONS PRIOR TO BEGINNING ANY EXCAVATION WORK, CONTACT LOCAL OR STATE AUTHORITIES HAVING JURISDICTION FOR PROPER PROCESS.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions, approved submittals, and authorities having jurisdiction, and in proper relationship with adjacent construction.
- B. Concrete Set Posts:
 - 1. I-beam holes will be a minimum of 36 inches (914 mm) deep, environmental conditions or local codes may require a greater depth.
 - 2. I-beam shall be spaced as indicated in manufacturer's literature for I-beam size and bracket type indicated.
 - 3. For non-level installations, the on-center post spacing must be measured along the grade.
- C. Installation is to conform to requirements of related sections listed in Part 1 of this specification.
- D. Install Fortress brackets onto fence section and posts as indicated in printed instructions for specific fence style. Attach fence sections to brackets with approved fasteners and techniques to ensure that fence sections are parallel to grade within 1/4 inch (6.4 mm) in 12 inches (3660 mm).
- E. Gate Installation: Install in accordance with current printed instructions.
 - 1. Do not mount gate from wall of a structure.
 - 2. Provide gate post on both sides of a gate.
 - 3. For double drive gate installation, provide concrete center drop to foundation depth and drop rod retainers at center.
 - 4. Lubricate to ensure smooth operation and verify proper latch operation.

3.4 FIELD QUALITY CONTROL

- A. Field Inspection: Coordinate field inspection in accordance with appropriate sections in Division 01.
- B. Manufacturer's Services: Coordinate manufacturer's services in accordance with appropriate sections in Division 01.

3.5 CLEANING AND PROTECTION

- A. Clean products in accordance with the manufacturer's recommendations.
- B. Touch-up, repair or replace damaged products before Substantial Completion.
 - 1. Repair scratches and other installation-incurred damage.
 - 2. Using a spray paint of the appropriate color that includes a zinc additive, repaint and seal any scratches or holes drilled in the fencing, post, brackets, or additions to prevent rust from forming.
- C. Remove all cutting and drilling chips that are attached to the fencing, post, brackets or additions to prevent corrosion.
- D. Clean up debris and unused material and remove from site.

END OF SECTION