

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Removable bollards and base (ground sleeve) units for traffic control.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product literature, including color charts and installation details.
- B. USGBC LEED Materials and Resources Credit MR 4 - Recycled Content: For projects seeking LEED certification, submit manufacturer's documentation of recycled content for steel for products provided under this specification section.
- C. Buy American Requirements: For projects subject to Buy American 49 CFR Part 661 requirements, submit manufacturer's documentation that iron, steel, and manufactured products provided under this specification section are produced in the United States.
- D. ARRA Requirements: For projects subject to the US American Recovery and Reinvestment Act (ARRA), submit manufacturer's documentation that products provided under this specification section are produced in the United States.

1.3 QUALITY ASSURANCE

- A. Performance: Bollard shall remove completely from the base unit. The bollard body shall be no more than eight (8) inches below grade to allow for minimal lifting efforts (excludes ASTM and DOS units).
- B. Manufacturer: Bollard units of all types must be supplied by a single manufacturer having the resources to provide consistent quality in appearance and physical properties.
- C. Materials: Steel shall be US domestic mill certified steel. The main body of the product must be constructed from ASTM A500 steel and be accompanied with steel mill certifications/test reports for the steel being used to ensure the durability and performance of the product. Secondary and non-ASTM steel may not be substituted.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Package units appropriately to protect finish. Inspect materials to ensure that specified materials have been received.
- B. Store units to avoid damage from moisture, abrasion, and other construction activities.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Acceptable Manufacturer: Blue Ember Technologies, LLC MaxiForce Bollards line of products, Sykesville, MD 21784, Tel 410-552-9888, Fax 410-552-9939, Website: <http://www.maxiforcebollards.com>

2.2 REMOVABLE BOLLARDS

- A. Removable Bollards: Provide MaxiForce Removable Bollards by Blue Ember Technologies.
 - 1. Body Style:
 - a. MRSW Standard (rectangular) Style, Wrench Operated.
 - b. MRRW Round Style, Wrench Operated.
 - c. MRSP Standard (rectangular) Style, Padlock Operated.
 - d. MRRP Round Style, Padlock Operated.
 - e. MRHP Heavy Duty, Padlock Operated.
 - 2. Head Style: Removable and interchangeable.
 - a. SS1 - Standard Style 1 Head for Standard Body Style.
 - b. SS2 - Standard Style 2 Head for Standard Body Style.
 - c. SS3 - Standard Style 3 Head for Standard Body Style.

To learn more about our products visit www.maxiforcebollards.com

MaxiForce Bollards | Blue Ember Technologies - 7560 Main Street - Sykesville, MD 21784

Phone: 410-552-9888 Fax: 410-552-9939 Email: sales@maxiforcebollards.com



- d. RS1 - Round Style 1 Head for Round or HD Body Style.
- e. RS2 - Round Style 2 Head for Round or HD Body Style.
3. Base Type: As required for installation.
 - a. U - Universal Base.
 - b. R - Removable.
 - c. HD - Heavy Duty (only for HD Units).
 - d. HDH – Heavy Duty Hinge Top (only for HD units). Cover plate replaceable without the use of tools. Cover plate and locking pin constructed of stainless steel for corrosion resistance.
4. Wrench Operated Unit (without padlock operation): Unit released by applying torque to a fire hydrant type nut releasing the locking mechanism allowing the bollard unit to be removed. Bollard may be returned to its original locked position without the use of any tools or other devices.
 - a. Hydrant Nut Type: P-180 Standard 5-sided AWWA Hydrant Nut with a 1-3/8 inch face (standard).
 - b. Hydrant Nut Type: P-181 Standard 5-sided AWWA Hydrant Nut with a 1-1/8 inch face.
 - c. Hydrant Nut Type: P-182 3-sided Philadelphia Style triangular Hydrant Nut.
 - d. Hydrant Nut Type: P-183 4-sided Kennedy Square Hydrant Nut.
5. Padlock Operated Unit (without wrench operation): Unlock and remove the padlock to allow the bollard to be removed. Reverse the sequence to return bollard to its original and locked position. Bollard may be returned to its original locked position without the use of any tools or other devices.
6. Materials: Free from surface blemishes and defects where exposed to view in the finished installation.
 - a. Steel Plate: A36; ASTM A36/A36M.
 - b. Steel Tube: A500; ASTM A500.
 - c. Stainless components: Series 300 Stainless Steel
 - d. Fasteners: Series 300 Stainless Steel.
7. Finish: Factory applied after surface imperfections removed and exposed faces of welded joints dressed smooth.
 - a. Powder Coat Finish (Standard): Factory applied TIGER Drylac Powder Coatings Essentials Chart color or equivalent.
 - b. Powder Coat Finish (Option): DRYZINC zinc rich undercoated primer and factory applied TIGER Drylac Powder Coatings Essentials Chart color or equivalent.
 - c. Galvanizing (Option): Hot Dipped galvanized.
 - d. Galvanizing and Powder Coat Finish (Option): Hot Dipped galvanized and powder coated.
 - e. Base (Ground Sleeve) Units: Powder coated with a black textured powder coating to help reduce slippery surfaces when the bollard units are removed.
 - f. Factory Applied Reflective Tape (Option): Manufacturer's standard tape, color, size and configuration unless custom application is required.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Comply with manufacturer's recommendations for installation and approved submittals and the following:
 1. Install bollards level and true and in proper relation to adjacent surfaces.
 2. Install base units with top plate flush with the finished surface to avoid tripping hazard.
 3. Insert bollard into base unit after the base is leveled and cured.
 4. Test for proper operation and adjust if necessary.
- B. Protect bollards from damage during construction operations.

To learn more about our products visit www.maxiforcebollards.com

MaxiForce Bollards | Blue Ember Technologies - 7560 Main Street - Sykesville, MD 21784

Phone: 410-552-9888 Fax: 410-552-9939 Email: sales@maxiforcebollards.com

