



Equipment Specification
Document No.: 4350.207
Item No.: 038-83150
Asset Suite: 83150
Originating Department: Distribution Engineering



Steel Pipe Security Posts (Bollards) for Traffic Impact Protection

1. Introduction

This is a general specification that covers the minimum requirements for steel pipe security post for traffic impact protection to be used in the distribution system in Puerto Rico. Further information will be provided by LUMA Energy at the time of order placement and will provide information on site specific conditions, quantity, and other requirements. This document includes the general mechanical characteristics of the material.

2. Special Requirements

Samples shall be furnished as requested by LUMA Energy. Vendors that have supplied this material to LUMA on previous orders, will not have to furnish samples at bid opening. The material will be received at the LUMA's general warehouse (011) at Palo Seco, Puerto Rico. Shipping will include transportation and unloading at the indicated warehouse.

3. Quantity/Literature

Descriptive and technical literature must be supplied by vendor at time of bidding. This literature may include, but is not limited to details of material, drawings, documented testing, and instructions for use and installation. Failure to submit documents on time will cause bidder disqualification. For products described in this specification as requiring qualification, awards will be made only for such products that, prior to the time for opening of bids, had been tested and/or approved by LUMA. Evidence of LUMA Energy's approval of the equipment or material shall be supplied by vendor if requested by LUMA Energy.

4. Markings

- 4.1. Containers shall be marked outside with LUMA Energy's purchase order and item number.
- 4.2. Packaging labels and tags shall be waterproof.

5. Equal or Approved Equal to

- 5.1. Idealshield – Steel Pipe Bollard 6 in (15.24 cm) ϕ , sch 40, 7 ft (2.13 m) L, galvanize steel
- 5.2. Reliance Foundry – R 1007 06

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6. Packaging

All material and equipment shall be packaged and marked in such a way as to facilitate handling and protection from damage and that the receiving warehouse can readily identify it and send it, in one complete unit, to a field location without opening crates or boxes to sort items and/or parts.

7. Number Per Package (Logistics)

- a. As requested by LUMA Energy.
- b. One (1) bundle contain: five (5) bollards in a row.
- c. Minimum order quantity: five (5) bollards.
- d. One bollard weight: 133 lbs. (60.295 kg)
- e. One (1) bundle weight: 665 lbs. (301.48 kg)

8. Acceptance Criteria

- 8.1. Test required: certified by external laboratories.
- 8.2. Latest applicable codes, standards, and other regulations:
 - a. ANSI B36.10 – Properties of welded and seamless pipe.
 - b. ASTM A500B – Standard specification for structural grade steel
 - c. ASTM A536 – Standard specification for ductile iron casting
 - d. ASTM A53 - Standard specification for pipe, steel, black and hot-dipped, zinc-coated, welded, and seamless.

9. Description

- 9.1. Steel pipe security posts, also known as bollard, are structural grade steel pipe to be embedded in ground, reinforced with concrete to provide impact protection to electrical equipment such as switching units, pad mounted transformers, and others.
- 9.2. Bollard must consist of a pipe or conduit 6 in. (15.24 cm) nominal diameter, sch 40, outside diameter 6.625 in. (16.83 cm), 7 ft (2.13 m) in length, and galvanized steel pipe with yellow 1/8 in. (3.18 mm) bollard cover for exterior finish.
- 9.3. When installed, bollard must have 42 in. (1.07 m) above finish grade filled with concrete, and mound top cap.

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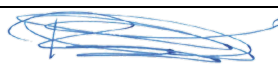

- 9.4. Installer must embed the bollard 42 in. (106.7 cm) below finish grade level in a 24 in. (60.96 cm) diameter hole with 6 in. (15.24 cm) thick punch pad at the bottom of it. The hole must be backfilled with three thousand (3,000) PSI concrete.
- 9.5. Yellow powder coat or two-part epoxy paint are accepted for exterior finish.
- 9.6. As an alternate option, the contractor or installer must opt for onsite construction of the traffic impact protection bollards following the detail provided with this specification.

10 Inspection

The acceptance of any material or equipment shall in no way relieve the vendor from his responsibility to meet all the requirements of this specification, and it would not prevent subsequent rejection if such materials were found later to be defective.

— End of Specification —

Document History

Version	1	
Date	3/10/2022	
Author	Alex J. Rodríguez	_____
Reviewer	Rafael Torres	 _____
Approver Manager	Ricardo Castro	 _____

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Appendix

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Appendix 1: Table of Compliance

Line	Criteria	Description	Pass/Fail (P / F)	Comments
1	Specification	The Proponent complies with the corresponding specification document (4350.207).		
2	Industry Standards	The Proponent complies with the industry standards established in the specification document. (ANSI/ASTM)		
3	Description	Consist of a pipe or conduit 6 in. (15.24 cm) nominal diameter, sch 40, outside diameter 6.625 in. (16.83 cm), 7 ft (2.13 m) in length, and galvanized steel pipe with yellow 1/8 in. (3.18 mm) bollard cover for exterior finish.		
4	Installed	Bollard must have 42 in. (1.07 m) above finish grade filled with concrete, and mound top cap.		
5	Embed	42 in. (106.7 cm) below finish grade level in a 24 in. (60.96 cm) diameter hole with 6 in. (15.24 cm) thick punch pad at the bottom of it. The hole must be backfilled with three thousand (3,000) PSI concrete.		
6	Exterior Finish	Yellow powder coat or two-part epoxy paint		