



Document Title:
Crossarm U-Bolt Assembly

Document Type:
Specification

Engineering Type
Material Specification

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4752.316

Department:

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Transmission Engineering

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Guillermo Nieves (Nov 25, 2024 10:56 AST)

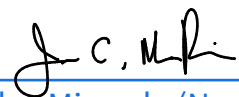
Reviewer 1

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Leonardo Montes Sanchez (Nov 26, 2024 15:38 AST)

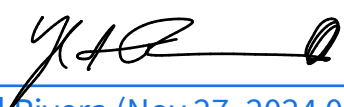
Reviewer 2

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Juan Carlos Miranda (Nov 26, 2024 15:39 AST)

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Yamil Rivera (Nov 27, 2024 08:10 AST)

Management Approval (If apply)

Approver

Name
Position

Signature and Date

Related/Referenced Documents

Include the applicable document, section, or reference "[add link here](#)".

Version	Date	Revision
00	Mar 14, 2023	First Issue
01	Nov 27, 2024	Changed cover page and document to new format. Modified section 4. Equal or approved to changed to Compatible with. Added a table of compliance. Number per packaged merged with marking and packaging.

1. General

1.1. Overview

- 1.1.1. This is a general specification that covers the minimum requirements for a galvanized steel crossarm shelf gain to be used in the transmission system in Puerto Rico.
- 1.1.2. Further information will be provided by LUMA Energy at the time of order placement and will provide information on site conditions, quantity, and other requirements.
- 1.1.3. This document includes the general mechanical and fabrication characteristics of the material.

2. Specific Name

- 2.1. Crossarm U-Bolt Assembly.

3. Basic Use

- 3.1. For insulator hardware attachment to a W10x22 steel crossarm for tangent h-frame structures.

4. Specific Requirements

- 4.1. Samples shall be furnished to LUMA.
- 4.2. LUMA requires One (1) unit properly labeled for testing and analysis.
- 4.3. Descriptive and technical literature shall be supplied to LUMA.
- 4.4. They shall be required to show evidence of LUMA's approval of the equipment.

5. Acceptance Criteria

- 5.1. Latest applicable codes, standards and other regulations: ANSI/ASTM.
- 5.2. Damage to galvanizing or bolt threads will be rejected.

6. Description

- 6.1. U-Bolt used to attach conductor hardware (anchor shackle and insulator) to the steel crossarm.
 - 6.1.1. Minimum ultimate strength of 36,000 lbs.
 - 6.1.2. Made of ASTM A572 Grade 50 or equivalent (manufacturer to provide proposed steel composition).
 - 6.1.3. Hot-dip galvanized per ASTM A153.
 - 6.1.4. Manufacturer's identification to be clearly and permanently marked on U-Bolt in a manner that does not reduce bolt strength. Marking shall be clear and legible after galvanizing.
- 6.2. U-Bolt Assembly Package List:
 - 6.2.1. Qty 1: U-Bolt, 3/4"x3"x5-1/2", thread 3/4-10 UNC-2A
 - 6.2.2. Qty 2: Palnuts, thread 3/4-10 UNC-2B.

- 6.2.3. Qty 4: Hex nuts, thread 3/4-10 UNC-2B
- 6.2.4. Qty 2: Single coil split lock washers, 3/4".

7. Markings and Packaging

- 7.1. Containers/pallets or package shall be marked outside with LUMA’S purchase order number and code number.
- 7.2. Vendor shall prepare material and equipment for shipment in such manner as to facilitate handling and protection for damage.
- 7.3. All material should be packaged and marked in such a way that the receiving warehouse can readily identify and send in one (1) complete unit to a field location without opening crates or boxes to sort items and / or parts.
- 7.4. Number per package: As per LUMA’s needs.

8. Compatible with:

- 8.1. Hughes Brothers catalog No. 1331-CPT
- 8.2. This model is an example of the equipment/material described in this document and do not represent a preference. LUMA will evaluate equally any model not listed here during any acquisition event.

9. Proposal Information

- 9.1. Submitted proposals must include:
 - a. Technical Information
 - b. Table of Compliance completed by the bidder with reference

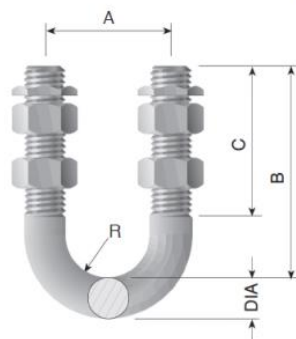
10. Inspection

- 10.1. 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 shall not prevent subsequent rejection if such material is found to be defective later

11. Drawings

U-Bolts

Hughes Brothers U-Bolts are used primarily on steel angle H-frame cross ties.



Stock No.	Bolt Dia.	A	B	C	R	Weight 100 Pcs.	Ult. Strength
U-Bolt with 4 nuts and 2 locknuts							
1327-CPT**	5/8"	3"	3-1/2"	2"	1-3/16"	114 lbs.	25,000 lbs.
1331-CPT**	3/4"	3"	4-1/2"	3"	1-1/8"	200 lbs.	36,000 lbs.
1327-A-CPT**	5/8"	3"	4-1/2"	3"	1-3/16"	132 lbs.	25,000 lbs.
1328-A-CPT	1/2"	1-1/2"	2-1/2"	1-1/2"	1/2"	116 lbs.	16,000 lbs.
1329-A-CPT*	5/8"	2"	3-1/8"	2"	11/16"	116 lbs.	25,000 lbs.
1330-A-CPT	5/8"	1-1/2"	3"	2"	7/16"	96 lbs.	25,000 lbs.
1328-B-CPT	1/2"	1-1/2"	2-1/2"	1-3/4"	1/2"	116 lbs.	16,000 lbs.

*Uses square nuts.

**Also includes 2 single coil split lockwashers.



Warehouse ID	002-84427
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— End of Specification —

Appendix

Appendix 1. Table of Compliance

Line	Criteria	Description	Pass/Fail (P / F)	Comments
1	Specification	The Proponent complies with the corresponding specification document (4752.316)		
2	Industry Standards	The Proponent complies with the industry standards established in the specification document (ANSI, ASTM).		
3	Material	<p>U-Bolt used to attach conductor hardware (anchor shackle and insulator).</p> <ul style="list-style-type: none"> • Minimum ultimate strength of 36,000 lbs. • Made of ASTM A572 Grade 50 or equivalent • Hot-dip galvanized per ASTM A153. <p>U-Bolt Assembly Package List</p> <ul style="list-style-type: none"> • Qty 1: U-Bolt, 3/4"x3"x5-1/2", thread 3/4-10 UNC-2A • Qty 2: Palnuts, thread 3/4-10 UNC-2B. • Qty 4: Hex nuts, thread 3/4-10 UNC-2B • Qty 2: Single coil split lock washers, 3/4". 		
4	Requirements	<ul style="list-style-type: none"> • Samples shall be furnished to LUMA. • LUMA requires One (1) unit properly labeled for testing and analysis. • Descriptive and technical literature shall be supplied to LUMA. Vendors that have supplied this material to PREPA in previous orders, will not have to furnish samples at bid opening. • They shall be required to show evidence of LUMA's approval of the equipment. 		












4752.316 Crossarm U-Bolt Assembly

Final Audit Report

2024-11-27

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