



Document Title:
Suspension Clamps

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Related/Referenced Documents

N/A

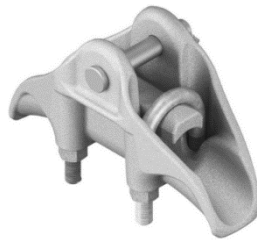
Version History

Version	Date	Revision Comments
1	Dec. 02, 2021	PREPA to LUMA Format for Items 002-03059 and 002-08579.
2	Mar. 28, 2022	General Format modified (sections 3, 4, and 7) and Table of Compliance (TOC) added.
3	Jun. 03, 2022	Item 002-83039 created and signature format modified.
4	Jan. 18, 2023	Cover Page added, General Format and TOC modified. Item 002-84095 created.
5	Jul. 19, 2024	General format modifications, TOC updated, Section 4 modified, and sections order rearranged.



Item Version History

Warehouse Catalog #	Asset Suite #	Version	Date
002-03059	58155	9	7/19/2024
002-08579	54258	10	7/19/2024
002-83039	83039	3	7/19/2024
002-84095	84095	2	7/19/2024



1. Introduction

This is a general specification that covers the minimum requirements for suspension clamps 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 electrical and mechanical characteristics of the equipment/material.

2. Special Requirements

Samples shall be furnished as requested by LUMA Energy. Vendors that have supplied this equipment/material to LUMA on previous orders, will not have to furnish samples at bid opening. The equipment/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. Literature

Descriptive and technical literature must be supplied by the 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. If required by LUMA, final drawings shall be submitted by the vendor before the manufacturing and shipping process for approval.

4. Compatible with

For compatible manufacturers and models, see Table 1. These models are examples of the equipment/materials described in this document and do not represent a preference. LUMA will evaluate equally any models not listed here during any acquisition event.

5. Markings

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

6. Packaging

All equipment/material 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)

Twenty-five (25) units for each item or as requested by LUMA.

8. Acceptance Criteria

- 8.1. Test required: certified by external laboratories.
- 8.2. Product shall be manufactured in accordance with the latest issue below (section 8.3). When conflicts occur between purchaser's specifications and the latest issue below, the purchaser's specification shall prevail.
- 8.3. Latest applicable codes, standards, and other regulations:
 - a. ASTM A36: For carbon structural steel used in the manufacture of welded and bolted metal structures.
 - b. ASTM A47: For ferritic malleable castings for general engineering usage at temperatures from normal ambient to approximately 750°F.
 - c. ASTM A153: For hot dip galvanized.
- 8.4. If any other standard different from the ones indicated in this document are used, the supplier must provide information showing compatibility with the required ones.

9. Description

- 9.1. Used for clamping on copper, ACSR, aluminum, and all composite conductors. On Table 1, item 1 will be used for copper and composite conductors. Items 2 to 4 will be used for ACSR or aluminum conductors using straight, tapered, or preformed armor rods.
- 9.2. These suspension clamps shall have the following characteristics:
 - a. Clamping Range: see Table 1.
 - b. Material:
 1. The socket, U-bolts, and hardware shall be hot dip galvanized as per ASTM A153.
 2. The cotter keys and clevis pin shall be stainless-steel.
 3. The body and keeper for item 1 (Table 1) shall be hot dip galvanized high steel strength, as per ANSI/ASTM A153, or ductile iron.
 4. The body and keeper for items 2 to 4 (Table 1) shall be aluminum alloy.
 - c. Socket type connector for ANSI Class 52-3 & 52-5 shall be included with the clamp.
 - d. The keeper shall be attached to the U-bolts to prevent falling during installation.

9.3. Clamping range and ultimate strength information shall be stamped on the clamp body.

10. Inspection

The acceptance of any equipment/material 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 equipment/materials were found later to be defective.

11. Proposal Information

11.1. Submitted proposals must include:

- a. Technical information, tests, and drawings.
- b. Table of Compliance completed by the bidder with reference (see Appendix 1).

12. Table 1: Warehouse and Asset Suite Identification Number

Item	Warehouse Catalog #	Asset Suite #	Material (Conductor)	Clamping Range, Including Armor Rod except for Item 1	Minimum Ultimate Strength	Approx. Length	Approx Weight	Suggested Manufacturer & Model
1	002-03059	58155	Hot Dip Galvanized (CU)	4 AWG - 250 MCM 0.20" - 0.60" (5.1 - 15.2 mm)	16,000 lbf (71.2 kN)	6.8" (17.3 cm)	2.5 lbs. (1.1 kg)	MacLean (FSC-60-S) Hubbell (MS60S)
2	002-08579	54258	Aluminum (ACSR)	2 AWG - 266 MCM 0.40" - 1.05" (10.2 - 26.7 mm)	25,000 lbf (111.2 kN)	7.5" (19.1 cm)	2.7 lbs. (1.2 kg)	MacLean (LS-2-S) Preformed Line Products
3	002-83039	83039	Aluminum (ACSR)	4/0 AWG - 336 MCM 0.87" - 1.37" (2.2 - 3.5 cm)	25,000 lbf (111.2 kN)	7.9" (20.1 cm)	3.5 lbs. (1.6 kg)	MacLean (LS-4-S) Preformed Line Products
4	002-84095	84095	Aluminum (ACSR)	556 - 795 MCM 1.25" - 1.92" (3.2 - 4.9cm)	25,000 lbf (111.2 kN)	9.9" (25.1 cm)	4.9 lbs. (2.2 kg)	MacLean (LS-8-S) Preformed Line Products

— End of Specification —



Appendix

Appendix 1: Table of Compliance

Line	Description	Pass/Fail (P / F)	Comments
1	The Proponent complies with the specification document 4350.083.		
2	The Proponent complies with the industry standards established in the specification document. (ANSI/ASTM)		
3	Tech. info., tests & drawings provided.		
4	Body & Keeper <ul style="list-style-type: none"> • 002-03059: Ductil Iron, Hot Dip Galvanized • 002-08579: Aluminum Alloy • 002-83039: Aluminum Alloy • 002-84095: Aluminum Alloy 		
5	Min. Ultimate Strength <ul style="list-style-type: none"> • 002-03059: 16,000 lbf • 002-08579: 25,000 lbf • 002-83039: 25,000 lbf • 002-84095: 25,000 lbf 		
6	Clamping Range <ul style="list-style-type: none"> • 002-03059: 0.20" - 0.60" • 002-08579: 0.40" - 1.05" • 002-83039: 0.87" - 1.37" • 002-84095: 1.25" - 1.92" 		
7	Approx. Measures & Weight <ul style="list-style-type: none"> • 002-03059: 6.8" long and 2.5 lbs. • 002-08579: 7.5" long and 2.7 lbs. • 002-83039: 7.9" long and 3.5 lbs. • 002-84095: 9.9" long and 4.9 lbs. 		

NOTE: This table is only a checklist for reference. The compliance shall be with the complete document. Marking a PASS in the table won't be accepted as a compliance without the technical information required to certify it.











4350.083 Suspension Clamp (7-19-24)

Final Audit Report

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