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Insulator, ANSI Class 53-5 Spool-Type Low Voltage

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Material Specification

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Related/Referenced Documents

N/A

Version History

Version	Date	Revision
04	Dec. 15, 2021	PREPA to LUMA format revision.
05	Apr. 13, 2022	General revision. Signature format added. Table of compliance added.
06	Jul. 17, 2025	General format revision. The document is shared with Substation Engineering and supersedes doc. 4802.051

Item Version History

Warehouse Catalog #	Asset Suite #	Version	Date
014-00696	37118	6	7/17/2025



1. Introduction

This is a general specification that covers the minimum requirements for the ANSI class 53-5 spool-type, low voltage insulator 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 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 LUMA's general warehouse (011) at Palo Seco, Puerto Rico. Shipping will include transportation and unloading at the indicated warehouse.

3. Literature

- 3.1. Descriptive and technical literature must be supplied by the vendor at time of bidding. This literature must include, but is not limited to, details of material, drawings, documented testing, and instructions for use and installation. **The literature must be an official document from and certified by the manufacturer.** Failure to submit documents on time and duly certified by the manufacturer will cause bidder disqualification.
- 3.2. If required by LUMA, final drawings and documentation shall be submitted by the vendor before the manufacturing and shipping process for approval.

4. Compatible with

For compatible manufacturer and model see Table 1. These models are examples 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.

5. Markings

- 5.1. Containers shall be marked outside with LUMA Energy's purchase order and item number.
- 5.2. Individual package(s) shall be clearly marked with manufacturer name and item information (part number, serial number, quantity, etc.).
- 5.3. Packaging labels and tags shall be waterproof.

6. Packaging

- 6.1. 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.
- 6.2. A list of all parts included in the container and/or package must be provided at the time of delivery so that the receiving personnel can verify that everything requested is present, avoiding any delay in the receiving process.

7. Number Per Package (Logistics)

Standard package: One unit per box or as requested by LUMA.

8. Acceptance Criteria

- 8.1. Test required: certified by external qualified 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. ANSI C29.1: Test Methods for Electrical Power Insulators
 - b. ANSI C29.3: Wet-Process Porcelain Insulators - Spool Type

8.4. If any other standard different from the ones indicated in this document is used, the supplier must provide information showing compatibility with the required ones.

9. Description

9.1. ANSI class 53-5 spool-type low voltage, radio-free, wet-process porcelain insulator. Shall be designed as per ANSI C29.1, C29.3, and NEMA PUB HV1-Part 3.

9.2. Transverse strength: 6,000 lbs (26.7 kN)

9.3. Average flashover low frequency voltage:

- a. Dry: 35 kV
- b. Wet (Horizontal): 25 kV
- c. Wet (Vertical): 18 kV

9.4. Dimensions:

- a. Diameter: 4 in. (10.16 cm)
- b. Length: 4-1/8 in. (10.48 cm)
- c. Hole diameter (at center): 11/16 in. (1.75 cm)
- d. Hole diameter (at edges): 13/16 in. (2.06 cm)
- e. Conductor groove: 7/16 in. (1.11 cm)
- f. Conductor groove diameter: 2-3/4 in. (6.99 cm)

10. Inspection

10.1. Upon inspection of incoming equipment/material, the purchaser reserves the right to refuse product shipments and to determine the acceptability or rejection of the product received. The supplier shall be liable for all costs incurred for a product that is rejected.

10.2. 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, drawings, and tests.

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 #	Compatible Manufacturer & Model
ANSI Class 53-5 Spool-Type Low Voltage Insulator	014-00696	37118	Hubbell C9091035
			Power Line Hardware P53-5G

—End of Specification —

Appendix

Appendix 1: Table of Compliance

Line	Description	Pass/Fail	Comments
1	Industry Standards: ANSI C29.1 and ANSI C29.3.		
2	Tech. info., drawings, and tests provided.		
3	Material: <ul style="list-style-type: none"> • Porcelain • Gray color 		
4	Average Flashover Low Frequency Voltage: <ul style="list-style-type: none"> • Dry: 35 kV • Wet (horizontal): 25 kV • Wet (vertical): 18 kV 		
5	Measurements <ul style="list-style-type: none"> • Diameter: 4 in. • Overall Length: 4-1/8 in. • Hole Diameter at center: 11/16 in. • Hole Diameter at edges: 13/16 in. • Conductor Groove Radius: 7/16 in. • Conductor Groove Diameter: 2-3/4 in. 		
6	Transverse strength: 6,000 lbf		

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












4350.098 4 in Spool Type Insulator (7-17-2025)

Final Audit Report

2025-07-17


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