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Aluminum Conductor Steel Supported (ACSS) High-Strength

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Related/Referenced Documents

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Version History

Version	Date	Revision
01	Oct. 13, 2025	Initial release for Items 042-87801, 042-87802, and 042-87803.

Item Version History

Warehouse Catalog #	Asset Suite #	Version	Date
042-87801	87801	1	10/13/2025
042-87802	87802	1	10/13/2025
042-87803	87803	1	10/13/2025

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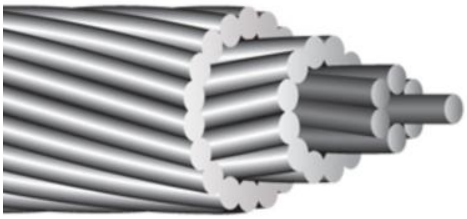

1. Introduction

This is a general specification that covers the minimum requirements for aluminum conductors steel supported (ACSS) to be used in the transmission 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 product.

2. Special Requirements

Samples shall be furnished as requested by LUMA Energy. Vendors that have supplied this product to LUMA on previous orders will not have to furnish samples at bid opening. The product will be received at LUMA's general warehouse (017) 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 product 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. Cable reels shall be marked outside with LUMA Energy's purchase order, item number, description of wire & specification date, code name, net length & size, net & gross weights, and manufacturer's name & lot/production number.

5.2. Packaging labels and tags shall be waterproof.

6. Packaging

6.1. All products 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. The conductors shall be shipped in non-returnable new steel reels of continuous conductor. Conductors won't be accepted by sections.

6.3. Steel reels shall consist of a high-pressure hot phosphate wash and bonding agent finish, zinc chromate-iron oxide primer, and a final enamel coat to provide the necessary extra durability.

6.4. The reels shall have a minimum arbor hole diameter of 2.5" (6.35 cm).

6.5. Each end of the conductor shall be firmly and properly secured to reel.

6.6. The reels shall be protected against damage in ordinary handling and shipping.

6.7. Manufacturers shall protect the upper layers with pieces of wood along the transverse section of the reel for conductor protection NEMA level 2 wrapping of protective material.

6.8. Manufacturers shall protect conductor ends from water entrance or damage by means of an adequate seal.

7. Number Per Package (Logistics)

Approximately 2,700 lbs ± 10% (1,225 kg) per reel or as requested by LUMA. See Table 1 for details.

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. ASTM B609: For aluminum 1350-O round wire, annealed and intermediate tempers, for electrical purposes.

b. ASTM B803: For high-strength zinc-5% aluminum mischmetal (Zn-5Al-MM) alloy-coated steel core wire for use in overhead electrical conductors.

c. ASTM B856: For concentric-lay-stranded aluminum conductors, coated steel supported (ACSS).

d. NEMA WC 26: Binational wire and cable packaging standard.

8.4. If any other standards 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. Aluminum conductor steel supported (ACSS) used for special purposes in overhead transmission power line constructions and maintenance where high current rating and high temperatures are needed while keeping high resistant to corrosion. In addition, it provides reduced sag and self-damping.

9.2. The ACSS shall consist of a composite concentric lay stranded soft or annealed 1350-O aluminum bare wires, as per ASTM B856 and ASTM B609, around a center steel core coated with zink-5% aluminum-mischmetal alloy, as per ASTM B803, for high strength.

9.3. Shall be rated high strength.

9.4. Shall be designed for high operating temperatures (up to 250°C = 482°F).

9.5. See Table 1 for size, code word, strands, overall diameter, ampacity rating, strength, and weight.

10. Inspection

10.1. Upon inspection of incoming products, the purchaser reserves the right to refuse their 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 product 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 products were found later to be defective or out of compliance.

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. Warranty

The conductor/cable shall be designed and manufactured to provide a minimum life expectancy of 40 years. The supplier/manufacturer shall guarantee that each part of the finished cable has been manufactured in accordance with the requirements of the referenced specifications and standards. The supplier/manufacturer shall agree to replace any length of conductor for two years after the date of delivery if defective material or workmanship is found during installation or if the cable fails from normal use during its first year of service free of cost for the purchaser. In either case, the supplier/manufacturer shall be given a reasonable opportunity to inspect such defects or failures. A technical report detailing the cause(s) of the defect and the corrective measures implemented to prevent recurrence shall be provided upon request of the purchaser.

13. Table 1: Warehouse and Asset Suite Identification Number

Warehouse Catalog #	Asset Suit #	Item Size (MCM)	Code Word	Strands	Overall Diameter	Ampacity Rating	Rated High Strength	Approx. Weight lbs./1k ft	Package (ft/reel)	Compatible Manufacturer
042-87801	87801	266.8	Partridge ACSS/HS *	26/7	0.642" (1.6 cm)	812	9,730 lbf (43.3 kN)	366.8 (547 kg/km)	4,000	Southwire Viakon
042-87802	87802	556.5	Parakeet ACSS/HS *	24/7	0.914" (2.3 cm)	1306	16,600 lbf (73.8 kN)	716 (1,068 kg/km)	4,000	Southwire Viakon
042-87803	87803	795	Drake ACSS/HS *	26/7	1.108" (2.8 cm)	1662	28.000 lbf (124.5 kN)	1,093 (1,630 kg/km)	2,500	Southwire Viakon

* HS denotes high strength.

- End of Specification -

Appendix

Appendix 1: Table of Compliance

Line	Description	Pass/Fail (P / F)	Comments
1	Compliance with the document 4751.50.007		
2	Industry standards: ASTM (B609, B803 & 856). If different ones are used, information showing compatibility is required.		
3	Tech. info. and drawings provided.		
4	ACSS - High Strength		
5	Size & Code Word: as per Table 1.		
6	Operating Temperature: 250°C		
7	External Layers: Composite concentric lay stranded soft or annealed 1350-O aluminum bare wires as per ASTM (B856 & B609).		
8	Core: steel coated with zink-5% aluminum-mischmetal alloy, as per ASTM B803, for high strength.		
9	Strands: as per Table 1.		
10	OD: as per Table 1.		
11	Ampacity: as per Table 1.		
12	Strength: as per Table 1.		
13	Weight: as per Table 1.		
14	Reel Material: Steel		
15	Package: as per Table 1.		

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.

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