



Document Title:  
**Reinforced Steel Rebar**

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**Distribution**

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**Related/Referenced Documents**

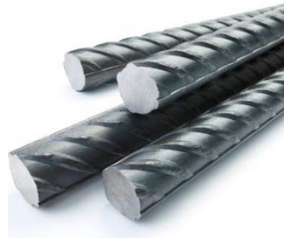
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| Version | Date          | Revision Comments  |
|---------|---------------|--|
| 1       | Mar. 3, 2023  | Initial Release  |
| 2       | May 11, 2023  | Modification Section 9.3, 12, and Warehouse Catalog and Appendix 1. Items 002-84214, 002-84215, and 002-84216 added. |
| 3       | Jul. 22, 2024 | General format modifications, TOC updated, Section 4 modified, and sections order rearranged.                        |



## Item Version History

| Warehouse Catalog # | Asset Suite # | Version | Date      |
|---------------------|---------------|---------|-----------|
| 002-52816           | 52816         | 3       | 7/25/2024 |
| 002-52815           | 52815         | 3       | 7/25/2024 |
| 002-52817           | 52817         | 3       | 7/25/2024 |
| 002-52818           | 52818         | 3       | 7/25/2024 |
| 002-84214           | 84214         | 2       | 7/25/2024 |
| 002-84215           | 84215         | 2       | 7/25/2024 |
| 002-84216           | 84216         | 2       | 7/25/2024 |



## 1. Introduction

This is a general specification that covers the minimum requirements for reinforced steel rebar 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

Steel Services & Supplies Inc., Juncos Steel, and Steel and Pipes. 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)**

Each manufacturer shall define the number of reinforced steel rebar per quintals in each package depending on the shipping containers and platforms for delivery 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. ASTM A615 Grade 60
  - b. Weldable STD ASTM A 706
  - c. Epoxy covered ASTM A775.
- 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. Steel reinforced bar, or rebar, to be used as a tension device in reinforced concrete and reinforced masonry structures to strengthen and aid the concrete under tension.
- 9.2. All rebar shall have a length of 20 ft.
- 9.3. Minimum yield strength shall be 60 KSI/60,000 PSI.

9.4. **Table 1:** Rebar Size Chart and Characteristics

| Imperial bar size | Metric bar size (soft) | Weight per unit length | Mass per unit length | Nominal diameter (Approx.) |        | Nominal area       |                    |
|-------------------|------------------------|------------------------|----------------------|----------------------------|--------|--------------------|--------------------|
|                   |                        | (lb/ft)                | (kg/m)               | (in)                       | (mm)   | (in <sup>2</sup> ) | (mm <sup>2</sup> ) |
| #3                | No.10                  | 0.376                  | 0.560                | 3/8                        | 9.525  | 0.11               | 71                 |
| #4                | No.13                  | 0.668                  | 0.994                | 1/2                        | 12.7   | 0.20               | 129                |
| #5                | No.16                  | 1.043                  | 1.552                | 5/8                        | 15.875 | 0.31               | 200                |
| #6                | No.19                  | 1.502                  | 2.235                | 3/4                        | 19.05  | 0.44               | 284                |
| #7                | No.22                  | 2.044                  | 3.049                | 7/8                        | 22.225 | 0.6                | 387                |
| #8                | No.25                  | 2.67                   | 3.982                | 1.00                       | 25.4   | 0.79               | 509                |
| #9                | No.29                  | 3.4                    | 5.071                | 1 1/8                      | 28.65  | 1                  | 645                |

**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 2: Warehouse and Asset Suite Identification Number**

| Bar Size | Warehouse # | Asset Suite # | Nominal Diameter (in) |
|----------|-------------|---------------|-----------------------|
| #3       | 002-52816   | 52816         | 3/8                   |
| #4       | 002-52815   | 52815         | 1/2                   |
| #5       | 002-52817   | 52817         | 5/8                   |
| #6       | 002-52818   | 52818         | 3/4                   |
| #7       | 002-84214   | 84214         | 7/8                   |
| #8       | 002-84215   | 84215         | 1                     |
| #9       | 002-84216   | 84216         | 1 1/8                 |

— End of Specification —

# Appendix

## Appendix 1: Table of Compliance

| Line | Criteria               | Description   | Pass/Fail (P/F) | Comments |
|------|------------------------|---|-----------------|----------|
| 1    | Specification          | The Proponent complies with the specification document 4350.255.  |                 |          |
| 2    | Industry Standards     | The Proponent complies with the industry standards established in the specification document. (ASTM A615 Grade 60, Weldable STD ASTM A 706, Epoxy covered ASTM A775)  |                 |          |
| 3    | Supporting Documents   | Tech. info., tests, and drawings provided.  |                 |          |
| 3    | Standard Length        | 20 ft.  |                 |          |
| 4    | Material               | Steel   |                 |          |
| 5    | Minimum Yield Strength | 60 KSI/60,000 PSI   |                 |          |
| 6    | Nominal diameter       | <ul style="list-style-type: none"> <li>• #3, 3/8 in.</li> <li>• #4, 1/2 in.</li> <li>• #5, 5/8 in.</li> <li>• #6, 3/4 in.</li> <li>• #7, 7/8 in.</li> <li>• #8, 1.00 in.</li> <li>• #9, 1 1/8 in.</li> </ul>  |                 |          |
| 7    | Nominal Area           | <ul style="list-style-type: none"> <li>• #3, 0.11 in<sup>2</sup></li> <li>• #4, 0.20 in<sup>2</sup></li> <li>• #5, 0.31 in<sup>2</sup></li> <li>• #6, 0.44 in<sup>2</sup></li> <li>• #7, 0.6 in<sup>2</sup></li> <li>• #8, 0.79 in<sup>2</sup></li> <li>• #9, 1 in<sup>2</sup></li> </ul> |                 |          |

**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.











# 4350.255 Reinforced Steel Rebar (7-25-2024)

Final Audit Report

2024-07-25

|                 |   |
|-----------------|---|
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