



Equipment Specification

Document No.: 4350.201

Originating Department: Distribution Engineering



## **Curved Square Washer, Stainless-Steel, and Thermal Diffusion Galvanized (TDG)**

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### **1. Introduction**

This is a general specification that covers the minimum requirements for stainless steel and thermal diffusion galvanized curved square washers 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 mechanical characteristics of the material.

### **2. Special Requirements**

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

Descriptive and technical literature must be supplied by 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. For products described in this specification as requiring qualification, awards will be made only for such products that, prior to the time for opening of bids, had been tested and/or approved by LUMA. Evidence of PREPA's and/or LUMA Energy's approval of the equipment or material shall be supplied by vendor if requested by LUMA Energy.

### **4. Markings**

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

### **5. Equal or Approved Equal to**

For suggested manufacturer and model see Table 1.

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### **6. Packaging**

All material and equipment 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)**

See Table 1 or as requested by LUMA Energy.

### **8. Acceptance Criteria**

8.1. Test required: certified by external qualified laboratories.

8.2. Latest applicable codes, standards, and other regulations:

- a. ASME B18.2.2 - Standard for the complete general and dimensional data for the various types of inch series square and hex nuts, including machine screw nuts and coupling nuts
- b. ASTM A276/A276M - Standard specification for stainless steel bars and shapes.
- c. ASTM A380/A380M – Standard practice for cleaning, descaling, and passivation of stainless-steel parts, equipment, and systems.
- d. ASTM A29/A29M-16 - Standard specification for general requirements for steel bars, carbon, and alloy hot-wrought.
- e. IEEE C135.1 – Standard for Zinc-Coated Steel Bolts and Nuts for Overhead Line Construction
- f. ASTM A1059 - Standard specification for zinc alloy thermo-diffusion coatings (TDC) on steel fasteners, hardware, and other products.

### **9. Description**

9.1. stainless steel and thermal diffusion galvanized curved square washers are used in highly corrosive environments in conjunction with machine, double arming, and eye bolts on poles with round surface.

9.2. Material must be 304 or 316 stainless steel conforming to ASTM A240/A240M, or thermal diffusing galvanized low carbon steel conforming to ASTM A29/A29M and ASTM A-1059.

9.3. For sizes (length X width X thickness) and hole diameter see Table 1.

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9.4. Table 1 - Stainless Steel and Thermal Diffusion Galvanized Curved Square Washer:

Item	Hole	Warehouse Catalog #	Asset Suite #	Package (lbs.) per 100 pcs.	Suggested Manufacturer & Model
2-1/4" x 2-1/4" x 3/16" (5.7 x 5.7 x 0.5 cm)	11/16" (1.7 cm)	002-82658	82658	23 (10.4 kg)	<u>Stainless Steel</u> Coastal Line Products, Catalog # 60662002  <u>Thermal Diffusion</u> MacLean Power Systems J6822-T
3" x 3" x 1/4" (10.2 x 10.2 x 0.6 cm)	13/16" (2.1 cm)	002-82659	82659	56 (25.4 cm)	<u>Stainless Steel</u> Coastal Line Products, Catalog # 60662003  <u>Thermal Diffusion</u> MacLean Power Systems J6823-T Hubbell Power System 682212TDG

**10. Inspection**

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 would not prevent subsequent rejection if such materials were found later to be defective.

— End of Specification —

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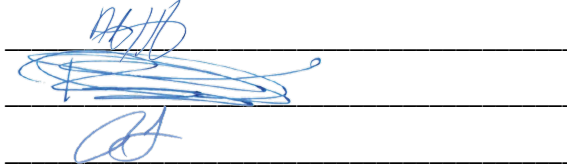
Date: 04/13/2022

Version: 1 (2), 2 (2)

Author: Alex J. Rodriguez

Reviewer: Rafael Torres

Approver: Ricardo Castro



Three horizontal lines with handwritten signatures in blue ink. The first line has a signature that appears to be 'AJR'. The second line has a signature that appears to be 'RT'. The third line has a signature that appears to be 'RC'.

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**Appendix**

## Curved Square Washer, Stainless-Steel, and Thermal Diffusion Galvanized (TDG)

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### Appendix 1: Table of Compliance

Line	Criteria	Description	Pass/Fail (P / F)	Comments
1	Specification	The Proponent complies with the corresponding specification document (4350.201).		
2	Industry Standards	The Proponent complies with the industry standards established in the specification document. (ANSI/ASTM, ASME, IEEE)		
3	Material	<ul style="list-style-type: none"><li>• Stainless Steel 304 or 316 as per ASTM A240/A240M</li><li>• Thermal Diffusion Galvanized Low Carbon Steel as per ASTM A29/A29M and ASTM A-1059</li></ul>		
4	Shape	Curved		
5	Measurements (Length X Width X Thickness)	<ul style="list-style-type: none"><li>• 002-82658: (2-1/4 x 2-1/4 x 3/16) in.; (11/16 in. Hole)</li><li>• 002-82659: (3 x 3 x 1/4) in.; (13/16 in. Hole)</li></ul>		