



Document Title:

Hex Head Bolt, 316 Stainless Steel

Document Type:

Material Specifications

Document No.:

4350.209

Originating Department:

Distribution Standards & Materials

Version:

2

Effective Date:

Aug 17, 2023

Shared documents: T&S T&D T&TM D&TM Luma Engineering

Author Rodolfo A. Flores Ortiz, PE General Engineer, Distribution Standards & Materials	Signature 	Date Aug 14, 2023
Reviewer Rene Maldonado, PE Supervisor, Line Engineering Standards	Signature  <small>Rene Maldonado (Aug 16, 2023 10:51 EDT)</small>	Date Aug 16, 2023
Reviewer Rafael Torres Martinez, PE Supervisor, Distribution Standards & Materials	Signature 	Date Aug 16, 2023
Approver Ricardo Castro Gómez, PE Manager, Distribution Standards & Materials	Signature 	Date Aug 17, 2023

Version History

Date	Revision Comments
Mar. 16, 2022	Initial Release for items 038-83218 and 038-83212.
Jul. 21, 2022	Format corrections
Sep. 08, 2022	Added new items. Modified general description to include new items.
Aug. 10, 2023	General format, Table 1, and TOC modifications. Document changed as shared between T&D for Item 038-83218.

Warehouse Catalog	Item Version	Date
*038-83218	5	08/10/2022
038-83212	3	08/10/2022
038-83413	2	08/10/2022



Document No.: 4350.209

Originating Department: Distribution Engineering



Hex Head Bolt, 316 Stainless Steel

1. Introduction

This is a general specification that covers the minimum requirements for stainless steel 316 hex head bolts to be used in the distribution and 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 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 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. 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/material shall be supplied by the 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. Compatible with

- 5.1. For compatible manufacturers and models see Table 1.
- 5.2. 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.



Document No.: 4350.209

Originating Department: Distribution Engineering

Hex Head Bolt, 316 Stainless Steel

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)

Standard package: 10 bolts per package or as requested by LUMA Energy.

8. Acceptance Criteria

8.1. Test required: certified by external laboratories.

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

- a. ASME B18.2.1: for general and dimensional data for inch series threaded rods.
- b. ASME B1.1: for the thread form, series, class, allowance, tolerance, and designation for unified screw threads.
- c. ASTM F593: for stainless steel bolts, hex cap screws, and studs.
- d. ASME B1.1: for the thread form, series, class, allowance, tolerance, and designation for unified screw threads.
- e. ASTM A380/A380M: for cleaning, descaling, and passivation of stainless-steel parts, equipment, and systems.

9. Description

- 9.1. Used for general purpose mechanical connections. Commonly used to attach aluminum and copper terminal lugs to equipment connection plates.
- 9.2. Hexagonal head bolts with common thread.
- 9.3. Head with six-sided tops without indentation.
- 9.4. Bolt's head must have permanent mark indicating standard to which the bolt was made.
- 9.5. Bolt must have chamfered point.
- 9.6. Material: Stainless Steel 316.



Document No.: 4350.209

Originating Department: Distribution Engineering

Hex Head Bolt, 316 Stainless Steel

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/material were found later to be defective.

11. Proposal Information

11.1. Submitted proposals must include:

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

12. Table 1: Warehouse and Asset Suite Identification Number

Warehouse Catalog #	Asset Suite #	Diameter and Thread Size	Length	Minimum Thread Length	Weight	Suggested Manufacturer & Model
*038-83218	83218	1/2" diameter – 13 TPI	1-1/2" (3.81 cm)	Full Thread	0.1172 lbs. (53.16 g)	Coastal Line Products- 60674014 Fastenal - 77209
038-83212	83212	1/2" diameter – 13 TPI	2" (5.08 cm)	1"	0.1451 lbs. (65.82 g)	Coastal Line Products- 60674020 Fastenal - 77211
038-83413	83413	3/8" diameter – 16 TPI	1" (2.54 cm)	Full Thread	0.0422 lbs. (19.14 g)	Fastenal - 77105

* Item 038-83218 is also used in the 38kV transmission system.

— End of Specification —



Document No.: 4350.209

Originating Department: Distribution Engineering

Hex Head Bolt, 316 Stainless Steel

Appendix



Document No.: 4350.209

Originating Department: Distribution Engineering

Hex Head Bolt, 316 Stainless Steel

Appendix 1: Table of Compliance

Line	Criteria	Description	Pass/Fail (P/F)	Comments
1	Specification	The Proponent complies with the corresponding specification document.		
2	Industry Standards	The Proponent complies with the industry standards established in the specification document. (ASTM, ASME)		
3	Length	<ul style="list-style-type: none">• 038-83218: 1-1/2"• 038-83212: 2"• 3/8": 1"		
	Thread Min. Length	<ul style="list-style-type: none">• 038-83218: Full Thread• 038-83212: 1"• 3/8": Full Threaded		
4	Diameter	<ul style="list-style-type: none">• 1/2"• 3/8"		
5	Material	Stainless Steel 316.		
6	Threads per inch	<ul style="list-style-type: none">• 1/2": 13• 3/8": 16		
7	Construction	<ul style="list-style-type: none">• Head with six-sided tops without indentation.• Bolt's head must have permanent mark indicating standard to which the bolt was made.		











4350.209 Hex Head Bolts SS (8-10-23)


Final Audit Report


2023-08-17


Created:	2023-08-10
By:	Wanda Ocasio (wanda.ocasio@lumapr.com)
Status:	Signed
Transaction ID:	CBJCHBCAABAARLrxr0g5ooUOwGeStHysDcoaPXNCz7UN

"4350.209 Hex Head Bolts SS (8-10-23)" History

-  Document created by Wanda Ocasio (wanda.ocasio@lumapr.com)
2023-08-10 - 7:02:33 PM GMT
-  Document emailed to Rodolfo Flores (rodolfo.floresortiz@lumapr.com) for signature
2023-08-10 - 7:05:48 PM GMT
-  Document e-signed by Rodolfo Flores (rodolfo.floresortiz@lumapr.com)
E-signature obtained using URL retrieved through the Adobe Acrobat Sign API
Signature Date: 2023-08-14 - 7:07:28 PM GMT - Time Source: server
-  Document emailed to Rene Maldonado (rene.maldonado@lumapr.com) for signature
2023-08-14 - 7:07:29 PM GMT
-  Document e-signed by Rene Maldonado (rene.maldonado@lumapr.com)
E-signature obtained using URL retrieved through the Adobe Acrobat Sign API
Signature Date: 2023-08-16 - 2:51:46 PM GMT - Time Source: server
-  Document emailed to Rafael Torres-Martinez (rafael.torresm@lumapr.com) for signature
2023-08-16 - 2:51:47 PM GMT
-  Email viewed by Rafael Torres-Martinez (rafael.torresm@lumapr.com)
2023-08-16 - 6:28:14 PM GMT
-  Document e-signed by Rafael Torres-Martinez (rafael.torresm@lumapr.com)
Signature Date: 2023-08-16 - 6:28:28 PM GMT - Time Source: server
-  Document emailed to ricardo.castro@lumapr.com for signature
2023-08-16 - 6:28:29 PM GMT
-  Email viewed by ricardo.castro@lumapr.com
2023-08-17 - 5:36:02 PM GMT

 Signer ricardo.castro@lumapr.com entered name at signing as Ricardo Castro Gómez
2023-08-17 - 5:36:23 PM GMT

 Document e-signed by Ricardo Castro Gómez (ricardo.castro@lumapr.com)
Signature Date: 2023-08-17 - 5:36:25 PM GMT - Time Source: server

 Agreement completed.
2023-08-17 - 5:36:25 PM GMT