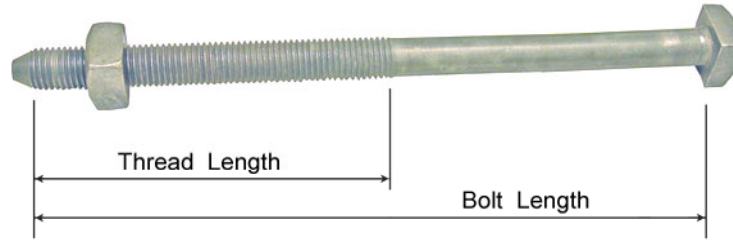


SQUARE HEAD MACHINE BOLT WITH SQUARE NUT



1. Foreword

1.1 Scope

This material standard covers the requirements for zinc-coated, square head, steel machine bolts, each provided with one square nut.

1.2 Application

Machine bolts and nuts are used in overhead line construction and where the applied load is primarily a tensile load. Refer to IEEE C135.1, Table 10 for minimum tensile strength values.

1.3 Industry Standards

Machine bolts and nuts shall meet the applicable requirements of the following industry standards:

IEEE C135.1-1999 - Standard for Zinc-Coated Steel Bolts and Nuts for Overhead Line Construction

ASME B18.12-2001 - Glossary of Terms for Mechanical Fasteners

ASTM A153/A153M-2004 - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware

2. Fabrication

2.1 Common Requirements – Bolts

	Requirements	Reference
Product Name	square head bolt	ASME B18.12, Section 3.1.1.39
Material	steel	IEEE C135.1, Section 3.1.
Dimensions	per reference	IEEE C135.1, Tables 1, 6, 7 & 9
Minimum Thread Length	product length 4 in. or greater	IEEE C135.1, Section 5.5.
	product length 4 in. or less	ASME B18.2.1, Table 1
Corrosion Protection	zinc-coated	IEEE C135.1, Section 8

Machine bolt threads shall be machine-rolled; cut threads are not acceptable. This requirement is a clarification to IEEE C135.1, Section 5.1.

2.2 Common Requirements – Nuts

	Requirements	Reference
Product Name	square nut	ASME B18.12, Section 3.2.1.29
Material	steel	IEEE C135.1, Section 3.2.
Dimensions	per reference	IEEE C135.1, Tables 4 & 8
Corrosion Protection	zinc-coated	IEEE C135.1, Section 8

Nuts shall be provided installed on bolts, one nut per bolt.

STANDARDS COORDINATOR

STANDARDS SUPERVISOR

UNIT DIRECTOR

John Shipek *John Shipek*

John Skinner *John Skinner*

Hardev Jui *Hardev Jui*

MATERIAL STANDARD

Square Head Machine Bolt with Square Nut

2.3 Marking

Bolt heads shall bear the manufacturer's symbol or identification mark according to IEEE C135.1, Section 10.

2.4 Detailed Requirements

Nominal Size, in.	Thread per in.	Minimum Thread Length in.	Product Length in.	Stock Number			
1/2	13	1-1/4	1-1/2	780794			
			2	780796			
			3	780800			
		3	4-1/2	780803			
			5	780804			
			5-1/2	780805			
			6	780806			
			7	780808			
			8	780810			
		4	9	780812			
			10	780814			
			6	12	780815		
				14	780816		
				16	780817		
				18	780818		
		5/8		11	1-1/2	2	780827
						2-1/2	780828
			3-1/2			780831	
3	5		780834				
	6		780836				
	7		780838				
4	8		780840				
	10		780844				
	6		12		780845		
14		780846					
16		780847					
18		780848					
20		780849					
22		780850					
			24	781040			
			30	781046			

MATERIAL STANDARD

Square Head Machine Bolt with Square Nut

2.4 Detailed Requirements (continued)

Nominal Size, in.	Thread per in.	Minimum Thread Length in.	Product Length in.	Stock Number
3/4	10	6	12	780875
			14	780876
			16	780877
			18	780878
			20	780879
			22	780880
			24	781070
			26	781072
			7/8	9
14	012637			
16	012638			
18	012639			
20	012640			
22	012643			
24	012641			
			26	012642

3. Packaging

3.1 Quantity: Detailed Standard package quantity shall not exceed 100 per box.

3.2 Weight: Detailed Standard package weight shall not exceed 50 pounds.

3.3 Package Marking: Each standard package shall be legibly marked with the following information:

- Manufacturer's identification
- Product description
- Seattle City Light's Stock Number
- Quantity contained

3.4 Container Marking: Each shipping container shall be legibly marked with the following information:

- Manufacturer's identification
- Country of origin
- Product description
- Seattle City Light's Purchase Order Number
- Seattle City Light's Stock Number

4. Shipping

4.1 Shipping containers shall be delivered on open flatbed trucks suitable for side unloading by forklift.

4.2 Product shall be shipped to the address specified on the Purchase Order.

5. Issuance

Stock Unit: EA

6. Approved Manufacturers

A. B. Chance (Hubbell Power Systems)

Hughes Brothers, Inc., Seward NE

Joslyn Manufacturing (MacLean Power Systems)

Kortick, Hayward, CA

Portland Bolt, Portland, OR