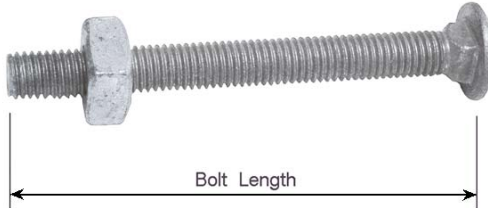


**CARRIAGE BOLT WITH NUT**



**1. Foreword**

**1.1 Scope**

This material standard covers the requirements for zinc-coated carriage bolts, each provided with one square (or hex) nut.

**1.2 Application**

Carriage bolts and nuts are for general use.

**1.3 Industry Standards**

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

**ASME B18.5-1990 (R2003)** - Round Head Bolts (Inch Series)

**ASME B18.2.2-1987 (R1999)** - Square and Hex Nuts (Inch Series)

**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

**ASTM B695-2004** – Standard Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel

**2. Fabrication**

**2.1 Common Requirements – Bolts**

	<b>Requirements</b>	<b>Reference</b>
<b>Product Name</b>	round head square neck bolt	ASME B18.12, Section 3.1.1.6.5
<b>Material</b>	steel	ASME B18.5, Section 2.8.1
<b>Dimensions</b>	per reference	ASME B18.5, Table 2
<b>Minimum Thread Length</b>	per reference	ASME B18.5, Section 2.6.2
<b>Corrosion Protection</b>	per reference	ASTM A153 or ASTM B695

**2.2 Common Requirements - Nuts**

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

	<b>Requirements</b>	<b>Reference</b>
<b>Product Name</b>	square nut	ASME B18.12, Section 3.2.1.29
	hexagon nut	ASME B18.12, Section 3.2.1.14.
<b>Material</b>	steel	ASME B18.2.2, Table 1, General Note (f)
<b>Dimensions</b>	square nuts	ASME B18.2.2, Table 1
	hexagon nuts	ASME B18.2.2, Table 3
<b>Corrosion Protection</b>	per reference	ASTM A153 or ASTM B695

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**MATERIAL STANDARD**

Carriage Bolt with Nut

STANDARD NUMBER: **7804.1**

PAGE: 2 of 2

SUPERSEDING: November 6, 2002

EFFECTIVE DATE: June 29, 2006

**2.3 Marking**

Bolt heads shall bear the manufacturer's symbol or identification mark.

**2.4 Detailed Requirements**

Nominal Size, in.	Threads per in.	Minimum Thread Length, in.	Bolt Length, in.	Stock Number
<b>1/4</b>	20	3/4	1-1/2	780434
			2	780436
			2-1/2	780438
			3	780440
			3-1/2	780441
			4	780442
<b>5/16</b>	18	7/8	2-1/2	780468
			3-1/2	780471
<b>3/8</b>	16	1	1	780492
			1-1/2	780494
			2	780496
			2-1/2	780498
			3	780500
			3-1/2	780501
			4	780502
			4-1/2	780503
			5	780504
			5-1/2	780505
			6	780506
	1-1/4	6-1/2	780507	
		8	780510	
<b>1/2</b>	13	1-1/4	1-1/2	780524
			3	780530
			4-1/2	780533
			5	780534

**3. Packaging****3.1 Quantity**

Standard package quantity shall not exceed 100 per box.

**3.2 Weight**

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 Shipping Container**

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**

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

Seattle City Light Material Control personnel may identify and approve distributors, and hence manufacturers, for 5/16 and smaller hardware.