

**ANCHOR SHACKLES, ROUND PIN**



**1. Scope**

This material standard covers the requirements for Class 1 anchor shackles with round pins.

This material standard applies to the following Seattle City Light Stock Numbers:

Stock Number	Body Diameter, Nominal, in	Ultimate Strength, Minimum, lbs
696603	1/2	20,000
696604	5/8	32,500
696605	3/4 (wide bow)	47,500
696618	3/4	47,500

Class 2 anchor shackles with screw pins and Class 3 safety anchor shackles are outside the scope of this standard.

Anchor shackles used for rigging are specified in Material Standard 6966.17.

**2. Application**

Anchor shackles with round pins are for constructing permanent assemblies, such as attaching a high-voltage insulator to a steel tower.

Anchor shackles with round pins can be used in tie down, towing, suspension or lifting applications where the load is strictly applied in-line. Round pin shackles should never be used in rigging applications to gather multiple sling legs, or where side loading conditions may occur.

Working load limit (WWL) values are calculated by dividing a shackle's ultimate strength (also known as breaking load rating) by a safety factor. Working load limit is also known as safe working load (SWL).

Seattle City Light transmission line engineers commonly employ a safety factor of four. Federal Specification RR-C-271D calculates working load limits based on a safety factor of five.

If a shackle is marked with a working load limit (WWL) or safe working load (SWL) value, the ultimate strength or breaking load is (probably) five times higher. If a shackle is marked with an ultimate strength, the working load limit is calculated as either four or five times less, depending on the user's choice of safety factor.

An anchor shackle should never be applied above its working load limit.

**3. Industry Standard**

Anchor shackles shall be manufactured according to the following industry standards:

**Federal Specification RR-C-271D**; "Chains and Attachments, Welded and Weldless"; September 25, 1990

**Federal Specification RR-C-271D**, "Chains and Attachments, Welded and Weldless," Amendment 1, November 29, 1995

**ASTM A153-2005** "Standard Specification for Zinc Coating (Hot Dip) on Iron and Steel Hardware," 2005

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**MATERIAL STANDARD**

Anchor Shackles, Round Pin

standard number: **6966.15**

superseding: new  
 effective date: October 1, 2010  
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**4. Requirements and Attributes**

Anchor shackles shall meet the requirements of Federal Specification RR-C-271D as clarified below:

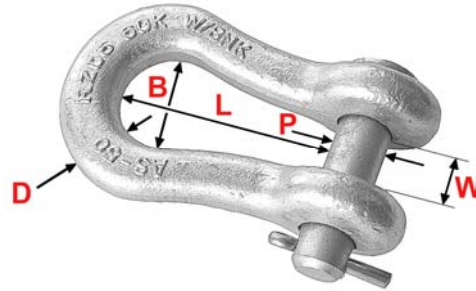
Anchor shackles shall be Type IVA, Grade A, regular and shall be Class 1.

Anchor shackles and pins shall be hot-dipped galvanized according to ASTM A153.

Cotter pins shall be bronze or stainless steel.

Cotter pins shall be of humped design.

Anchor shackles shall be provided with round and cotter pins installed.



Stock number	Body diameter, nominal, in	Pin diameter, nominal, in	Width between eyes, nominal, in	Length inside, nominal, in	Bow width, min., in	Weight per 100 shackles, approx., lb	Ultimate strength min., lb
	<b>D</b>	<b>P</b>	<b>W</b>	<b>L</b>	<b>B</b>		
696603	1/2	5/8	13/16	1-7/8	1-3/16	74	20,000
696604	5/8	3/4	1-1/16	2-13/32	1-1/2	144	32,500
696605	3/4	7/8	1-1/2	2-27/32	1-3/4	216	47,500
696618	3/4	3/4	1-3/4	3-1/8	1-1/2	216	47,500

**5. Testing**

Test data that establishes compliance with the requirements of Federal Specification RR-C-271D shall be provided upon request.

**6. Marking**

Each anchor shackle body shall be permanently and legibly marked in raised or stamped letters on the side of the shackle bow according to the requirements of Federal Specification RR-C-271D, Section 3.5.3.1.6. Marking shall include but not be limited to the following information:

- Manufacturer's name or symbol
- Size (body diameter)
- Working load limit (WLL), safe working load (SWL), or ultimate strength

**7. Packaging**

Anchor shackles shall be packaged to prevent damage during shipping, handling and storage.

Individual packages shall be legibly marked with:

- Manufacturer's name
- Manufacturer's catalog number
- Product description
- Seattle City Light's Stock Number

Shipping containers shall be legibly marked with:

- Seattle City Light's Purchase Order Number
- Seattle City Light's Stock Number

**8. Issuance**

**Stock Unit:** EA

**9. Approved Manufacturers**

Stock Number	Body Diameter, Nominal, in	Catalog numbers	
		Hubbell Power Systems/Anderson	MacLean Power Systems
696603	1/2	AS-25	ASH-45
696604	5/8	AS-35	ASH-56
696605	3/4 (wide bow)	AS-50-W	ASH-67
696618	3/4	AS-50	ASH-66A

**10. References**

**6966.1;** "Shackles – Anchor and Chain" (canceled); Material Standard; SCL

**6966.17;** "Anchor Shackles, Screw Pin"; Material Standard; SCL

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