

Rope, 12-Strand, Class 1, Red/Black



1. Scope

This standard covers the requirements for red/black, Class 1, 12-strand rope.

This standard applies to the following Seattle City Light (SCL) stock numbers:

Stock No.	Size (in)
014786	3/8
014785	1/2

2. Application

Red/black, Class 1, 12-strand rope is for use on aerial trucks, jibs, winches, and material handlers.

12-strand, Class 1 rope offers high strength with low stretch, outstanding abrasion resistance, and easy splicing. Product is coated to enhance wear life and snag resistance.

Two-color rope provides visual twist indication.

The improper use of rope may be dangerous. Rope will fail if worn-out, overloaded, misused, damaged, or improperly maintained or abused. Rope failure may cause death, serious injury, or property damage.

This rope should be secured to the drum with a minimum of four wraps.

Standard Coordinator
Chad Rehahn

Standards Engineering Supervisor
Brett Hanson

Division Director
Bob Risch

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Handwritten signature of Brett Hanson in black ink.

Handwritten signature of Bob Risch in black ink.

3. Industry Standards

Rope shall meet the applicable requirements of the latest revisions of the following industry standards:

Cordage Institute International Standard CI 1500; "Test Methods for Fiber Rope"

ISO 2307 (en); "Fibre Ropes; Determination of Certain Physical and Mechanical Properties"

OSHA 29 CFR 1910.184; Slings

OSHA 29 CFR 1926.251; Rigging equipment for material handling

4. Requirements

Rope shall meet the requirements of Tables 4.1a–c.

Table 4a. General Requirements

Fiber	Polyester
Color	Red/black
Class	1
Construction	12-strand
Coating	Coated and UV-resistant
Lay	None

Table 4b. 3/8-Inch Size Requirements

Diameter, nominal (in)	3/8
Breaking strength, average (lb)	6100
Breaking strength, minimum (MBS) (lb)	5500
Working load limit (WLL) (lb)	990

Table 4c. 1/2-Inch Size Requirements

Diameter, nominal (in)	1/2
Breaking strength, average (lb)	11,600
Breaking strength, minimum (MBS) (lb)	10,400
Working load limit (WLL) (lb)	1872

4.1 Working Load Limit

Working Load Limit (WLL) shall be calculated using the manufacturer's recommendations as follows:

$$WLL = (MBS * DF) / SF$$

- WLL = Working Load Limit
- MBS = Minimum Breaking Strength
- DF = Derating Factor
- SF = Safety Factor

MBS is provided by the manufacturer and shown in tables 4b and 4c.

DF as recommended by the manufacturer is:

- 0.9 when splices are present
- 0.5 when knots are present

SF = 5 for normal conditions as recommended by the manufacturer. If dynamic loads are involved or if life or limb are at risk, WLL shall be recalculated using SF = 10.

The WLL in the tables above has been calculated use DF = 0.9 and SF = 5. If knots are used, WLL must be recalculated using DF = 0.5.

5. Testing

Test data that establishes compliance with the requirements of either CI 1500 or ISO 2307, and this standard shall be provided upon request.

6. Packaging

Rope shall be packaged on reels to prevent damage during shipping, handling, and inside storage.

Rope shall be packaged on 600-foot reels.

Each length shall be continuous throughout, containing no splices, hockles, kinks, or loose ends.

Each reel shall be legibly marked with the following information:

- Manufacturer identification
- Product description
- Length, nominal
- Seattle City Light stock number

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

- Manufacturer identification
- Seattle City Light purchase order number

7. Issuance

Stock Unit: FT

8. Approved Manufacturers

Manufacturer	Product Family	Product Code
Samson	TW-12, red/black	821 (coated)

9. Sources

Atkins, Dustin; SCL Capital Projects Coordinator Senior, Fleet, subject matter expert for 7272.31

Hutchison, Will; Capital Projects Coordinator, Fleet, subject matter expert for 7272.31

Jahangiri, Bahram; SCL Sr. Structural Engineer and subject matter expert for 7272.31

SamsonRope.com

Samson Utility Product Guide, 2016/2017, YGS:MSW 109598 500 8/2017

Shipek, John; SCL Standards Engineering Supervisor and originator for 7272.31

WAC 296-24-29401; Wire rope

WAC 296-24-29403; Hemp rope