

**35 kV, 1/C, TRXLPE INSULATED, TAPE SHIELDED CABLE**



**1. Foreword**

**1.1 Scope**

This material standard covers the detailed requirements for 35 kV, tree retardant, cross-linked polyethylene (TRXLPE), single conductor cable used for the distribution of electric energy.

Industry designation: **1/C**

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

<b>Stock Number</b>	<b>623655</b>
<b>Size</b>	1000 kcmil

**1.2 Application**

Cable is intended for use on a nominal 34.5 kV, three-phase, 4-wire, solidly-grounded, wye-connected, 60 Hz, power system.

**1.3 General Requirements**

This detailed material standard is to be used in conjunction with the latest revision of Seattle City Light Material Standard 6015.00, "Medium Voltage Cable – General."

**1.4 Industry Standards**

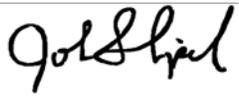
Cable shall meet the requirements of the following industry standards: ICEA S-97-682-2006

Refer to Material Standard 6015.00 to obtain the appropriate revision date for other referenced industry standards.

**2. Construction**

**2.1 General**

Unless indicated otherwise, all values cited below should be consistent with industry standards - they are repeated here for the convenience of the reader. Values or requirements different from industry standards are identified with the symbol ▲. In some situations, the ▲ symbol offers warning that special requirements are located in Material Standard 6015.00.

<i>standards coordinator</i>	<i>standards manager</i>	<i>unit director</i>
 John Shipek	 John Shipek	 Pam S. Johnson

**MATERIAL STANDARD****2. Construction, continued****2.2 Conductor**

		Requirements	Reference
<b>Stock Number</b>		<b>623655</b>	SCL
<b>Size</b>		1000 kcmil	various
<b>Diameter</b>	minimum	1.039 in	ICEA S-97-682, Section 2.5
	nominal	1.060 in	ASTM B496
	maximum	1.081 in	ICEA S-97-682, Section 2.5
<b>Metal</b>		copper	ASTM B49
<b>Stranding type</b>		concentric-lay	ASTM B496
<b>Class</b>		none	none
<b>Stranding subtype</b>		compact	ASTM B496
<b>Number of strands</b>		58-61	ASTM B496, Table 1
<b>Temper</b>		soft drawn, annealed prior to stranding	ASTM B3
<b>Lay, outer layer</b>		left hand	ASTM B496, Section 5
<b>Lay, successive layers</b>		reversed	ASTM B496, Section 5
<b>Sealant for stranded conductors</b>		option required ▲	ICEA S-97-682, Section 2.2

**2.3 Conductor Shield (Stress Control Layer)**

		Requirements	Reference
<b>Stock Number</b>		<b>623655</b>	SCL
<b>Size</b>		1000 kcmil	various
<b>Thickness, minimum point</b>		20 mil	ICEA S-97-682, Part 3, Table 3-1

**2.4 Insulation**

		Requirements	Reference
<b>Stock Number</b>		<b>623655</b>	SCL
<b>Size</b>		1000 kcmil	various
<b>Material</b>		unfilled tree retardant crosslinked polyethylene (TRXLPE)	ICEA S-97-682, Section 4.1
<b>Approved material formulations</b>		specified in General Material Standard	SCL 6015.00
<b>Thickness</b>	minimum point	400 mil	ICEA S-97-682, Section 4.2, Table 4-11
	nominal	420 mil	ICEA S-97-682, Table 8-1
	maximum point	450 mil	ICEA S-97-682, Section 4.2, Table 4-11
<b>Insulation level</b>		133%	ICEA S-97-682, Section 4.2, Table 4-11
<b>Basic impulse level (BIL)</b>		200 kV crest	ICEA S-97-682, Section 4.3, Table 4-10

**MATERIAL STANDARD**

superseding: November 28, 2007

effective date: January 27, 2010

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**2. Construction, continued****2.5 Extruded Insulation Shield**

	Requirements	Reference
<b>Stock Number</b>	<b>623655</b>	SCL
<b>Size</b>	1000 kcmil	various
<b>Material</b>	discharge-free (thermosetting material)	ICEA S-97-682, Section 5.1 to 5.5.1
<b>Thickness</b>	minimum point	24 mil
	maximum point	60 mil

**2.6 Metallic Shield**

	Requirements	Reference
<b>Stock Number</b>	<b>623655</b>	SCL
<b>Size</b>	1000 kcmil	various
<b>Metal</b>	copper, uncoated	ICEA S-97-682, Section 6.1 to 6.2
<b>Type</b>	helically applied tape ▲	ICEA S-97-682, Section 6.1 to 6.2 and SCL 6015.00
<b>Water blocking components for metallic shield</b>	option not required	ICEA S-97-682, Section 6.7

**2.7 Jacket (Non-Metallic Covering)**

	Requirements	Reference
<b>Stock Number</b>	<b>623655</b>	SCL
<b>Size</b>	1000 kcmil	various
<b>Material</b>	linear low density polyethylene (LLDPE)	ICEA S-97-682, Section 7.1.1
<b>Color</b>	black	ICEA S-97-682, Section 7.1.1
<b>Type</b>	overlying	ICEA S-97-682, Section 7.2
<b>Thickness</b>	minimum point	100 mil
	maximum point	150 mil
<b>Maximum diameter over jacket</b>	2.45 in ▲	SCL preference

**2.8 Sheath (Continuous Metallic Covering)**

Cable shall not be provided with a sheath.

**2.9 Assembly and Identification ▲**

	Requirements	Reference
<b>Stock Number</b>	<b>623655</b>	SCL
<b>Size</b>	1000 kcmil	various
<b>Red stripe identification</b>	option not required	ICEA S-97-682, Section 8.2.1.1

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**3. Packaging**

		Requirements	Reference
<b>Stock Number</b>		<b>623655</b>	SCL
<b>Size</b>		1000 kcmil	various
<b>Reel type</b>		steel, fluted	WC 26, Section 2.1.2
<b>Reel dimension</b>	flange diameter, maximum	84 in ▲	SCL preference
	outside width, maximum	45 in ▲	SCL preference
	drum diameter, minimum	42 in ▲	SCL preference
	length per reel ± 10%	2,000 ft ▲	SCL preference
	gross weight, maximum	17,000 lb ▲	SCL preference

**4. Issuance**

		Requirements
<b>Stock Number</b>		<b>623655</b>
<b>Size</b>		1000 kcmil
<b>Stock unit</b>		FT

**5. Approved Manufacturing Plants**

Manufacturer	Location
<b>General Cable/BICC</b>	DuQuoin, IL
	Malvern, AR
	Marshall, TX
	Moose Jaw, SK, Canada
	St. Jerome, QC, Canada
<b>Prysmian (formerly Pirelli)</b>	Abbeville, SC
	Prescott, ON, Canada
	St. Jean Sur Richelieu, QC, Canada