

Wire, 600 V, Single-Conductor, Thermoplastic-Insulated



1. Scope

This standard covers the requirements for 600 V, single-conductor, thermoplastic-insulated wire.

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






































Stock No.	Size (AWG)	Stranding	Jacket Color
612215	14	Solid	Black
612217	"	"	White
612218	"	"	Green
014397	"	"	Red
014398	"	"	Orange
014399	"	"	Yellow
014400	"	"	Gray
014701	"	19 str	Black
014702	"	"	White
014703	"	"	Red
014704	"	"	Orange
014705	"	"	Yellow
014706	"	"	Gray
014707	"	"	Brown
014708	"	"	Pink
014709	"	"	White with blue tracer

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Stock No.	Size (AWG)	Stranding	Jacket Color	
612219	12	Solid	Gray with black tracer	
612220	"	"	Black	
612221	"	"	Brown	
612222	"	"	White	
010382	"	"	White with black tracer	
612223	"	"	Gray	
612224	"	"	Red	
612225	"	"	Blue	
612226	"	"	Green	
612227	"	"	Yellow	
612228	"	"	Orange	
612229	"	"	Purple	
612230	"	19 str	Black	
612232	"	"	White	
612233	"	"	Red	
612234	"	"	Blue	
612250	10	Solid	Black	
612252	"	"	White	
612254	"	"	Red	
612255	"	"	Blue	
612256	"	"	Green	
612260	"	19 str	Black	
612272	"	"	White	
612274	"	"	Red	
612275	"	"	Blue	
612276	8	19 str	Black	
612277	"	"	Green	
612278	"	"	White	
612279	"	"	Red	
612280	"	"	Blue	
612282	6	19 str	Black	
612284	"	"	White	
612286	"	"	Red	
612287	"	"	Blue	
612288	"	"	Green	
612298	4	19 str	Black	
612300	"	"	White	
612302	"	"	Red	
612304	"	"	Blue	
612306	"	"	Green	
014745	2	19 str	Black	
014746	"	"	White	
014747	"	"	Red	
014748	"	"	Blue	
014749	"	"	Green	

2. Application

600 V, single-conductor, thermoplastic-insulated wire is for low voltage systems nominally rated up to 480 V phase-to-phase, 60 Hz.

Wire is suitable for installation in ducts and in wet or dry locations at temperatures not to exceed 90 degrees C.

The wire specified in this standard is also known as building or construction wire and should not be used for control or other critical circuits. It is not suitable for direct burial.

3. Industry Standards

600 V, single-conductor, thermoplastic-insulated wire shall meet the applicable requirements of the following industry standards:

UL 83-2017; Thermoplastic-Insulated Wires and Cables

ASTM B3-13; Standard Specification for Soft or Annealed Copper Wire

ASTM B8-11(2017); Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft

4. Requirements

Wire shall meet the requirements of Section 1 and Table 4 of this standard.

#2 AWG wire jacket shall be sunlight resistant.

Table 4. Wire Attributes and Requirements

Attribute	Requirement
Wire type designation	THHN or THWN-2 (dual rating)
Maximum temperature	90 degrees C, dry or wet
Maximum voltage	600 V
Conductor metal	Copper per ASTM B3
Stranding, if not solid	Class C per ASTM B8
Insulation material	Flame-retardant, heat- and moisture-resistant Polyvinyl Chloride (PVC)
Outer covering	Nylon jacket extruded tightly over the insulation

5. Marking

Wire shall be durably and legibly marked throughout its length, at maximum intervals of 1 meter, with a marking legend.

The marking legend shall include, but not be limited to, the following information:

- Manufacturer identification
- Type letter or letters
- Conductor size
- Conductor metal
- Voltage marking
- UL mark

6. Testing

Wire shall be tested according to the requirements of UL 83.

Test results shall be provided upon request.

7. Packaging

Wire shall be packaged on 500-foot spools to prevent damage during shipping, handling, and inside storage.

#2 AWG wire shall be packaged on 250-ft spools to prevent damage during shipping, handling and inside storage.

Spool flange diameter and spool width for #6 AWG and larger wire shall not exceed 12 inches.

Each spool shall be durably and legibly marked with the following information:

- Manufacturer identification
- Type letter or letters
- Conductor size
- Conductor metal
- Voltage rating
- Month and year of manufacture
- UL mark
- SCL stock number

Shipping containers shall be legibly marked with the following information:

- SCL purchase order number

8. Issuance

Stock Unit: FT

9. Approved Manufacturers

- American Wire & Cable Company
- Cerrowire
- Encore Wire
- General Cable
- Republic Wire Inc.
- Southwire

10. Sources

Shipek, John; SCL Standards Supervisor, subject matter expert, and originator of 6122.35.

SCL Material Standard 6122.3; (canceled) "Copper Wire Type THWN Thermoplastic Polyvinyl Chloride"

National Electric Code (NEC), NFPA-70; 2017 Edition, Article 310 General Requirements for Wiring Methods and Materials, National Fire Protection Association, Quincy, MA, 2010