

**CITY OF AUSTIN, ELECTRIC UTILITY DEPARTMENT**  
**PURCHASE SPECIFICATION**  
**FOR**  
**CABLE, DIST, URD, 600V, TRIPLEXED, XLPE, INSULATED, SECONDARY**

<u>Date</u>	<u>Prepared by</u>	<u>Issuance/Revision</u>	<u>Division Manager/Standards Manager</u>
2/17/98	Peter G. Soosay, P.E.	Revision	
11/21/22	Josh Contreras	Revision – Non-functional Updates	

This specification until revised or rescinded, shall apply to each future purchase and contract for the commodity described herein. Retain for future reference.

## 1.0 SCOPE AND CLASSIFICATION

### 1.1 Scope

The City of Austin Electric Utility Department requires a qualified Vendor to supply 600 Volt cross-linked polyethylene (XLPE) insulated secondary URD cable. The three (3) categories of cable required are RHH, RHW, and USE.

### 1.2 Classification

The conductor sizes shall be 1/0 and 3/0 with reduced neutral. The cable will be used for installation in underground distribution systems, underground conduit, duct and direct burial.

## 2.0 APPLICABLE SPECIFICATIONS

The latest revision of the following standards:

- |     |           |  |
|-----|-----------|--|
| 2.1 | ASTM B262 | -  |
| 2.2 | ASTM B230 | - Specification for Aluminum 1350-H19 Wire for Electrical Purposes   |
| 2.3 | ASTM B231 | - Specification for Concentric-Lay-Stranded Aluminum 1350 Conductors |

- 2.4 ICEA S-66-524 - Cross-Linked-Thermosetting-Polyethylene-Insulated Wire and Cable For The Transmission and Distribution of Electrical Energy

### 3.0 DESIGN REQUIREMENTS

#### 3.1 Cable

The cable shall be triplexed with two (2) 1/0 and one (1) # 2 neutral or two (2) 3/0 and one (1) 1/0 neutral. The cable shall be insulated with heat and moisture resistant XLPE.

#### 3.2 Neutral Conductors

The neutral conductors shall be permanently marked with three (3) extruded continuous yellow stripes, 55 mils (minimum) in width, extruded 5 mils (minimum) deep in insulation. The stripes shall have an angular displacement of 120° with respect to each other and shall be longitudinal to the conductor.

#### 3.3 Wires

The wires shall be either,

- a) Aluminum ¾ Hard or hard drawn as per ASTM B262 or
- b) Aluminum 1350-H19 as per ASTM B230.

3.5 Stranding

The stranding shall be Class B as per ASTM B231.

3.6 Insulation

3.6.1 The insulation shall be heat and moisture resistant XLPE compound. The insulation shall be homogenous, tough and applied concentrically about the conductor to fit tightly.

3.6.2 The insulation shall be guaranteed for use at conductor temperatures not exceeding 90°C (194°F).

3.6.3 A separator tape shall be used between the conductor and insulation.

3.6.4 The average thickness of insulation shall be as per Attachment 1, Table 1. The minimum thickness, shall not be less than 90% of the values in Table 1.

3.7 The physical properties of the XLPE insulation, shall be as per ICEA S-66-524.

#### 4.0 PERFORMANCE REQUIREMENTS

##### 4.1 AC Voltage Test

The AC Voltage Test shall be performed as per ICEA S-66-524, at the voltages shown in Attachment 1, Table 1.

##### 4.2 Insulation Resistance

Each insulated conductor in the completed cable shall have an insulation resistance not less than that corresponding to a constant of 20,000 at 15.6°C (60°F).

$$R = K \log_{10} D/d$$

where,

R = Insulation resistance in MΩ-1000 ft

K = 20,000

D =