

1.0 SCOPE

This specification covers the minimum requirements for bare and covered copper conductors to be used in overhead primary voltage distribution, 15 kV maximum.

2.0 PRODUCT REQUIREMENTS

2.1. General Requirements

2.1.1. Conductor Identification

Reel markings on weather resistant reel tags are to include: shipping location, length of cable, gross, net and tare weights, purchase order number, manufacturer's name, date of manufacture, conductor size and stranding, conductor codename (if applicable), manufacturer's production run number, reel serial number, and DOP Division ID.

2.1.2. Shipping and Quality Assurance Requirements

To prevent damage, reels shall be securely blocked in an upright position so that they will not shift during transit. Reels shall not be stacked, nor shall other material be stacked on the reels.

Quality assurance documentation and information on the manufacturer's quality control program shall be furnished upon request. Furthermore, the manufacturer's facilities shall be open for inspection by the purchaser, for quality assurance purposes, upon request.

2.2. Solid Bare Copper Conductor

2.2.1. Purpose

This conductor is for used for uninsulated hook-ups, jumpers, and grounds on overhead distribution.

2.2.2. Product Description

Conductor shall be tempered solid, soft-drawn copper in accordance with ASTM standards.

2.2.3. Applicable Codes and Standards

The conductor in this specification shall meet and/or exceed all requirements of the latest editions of the standards listed below. The conductor shall further meet and/or exceed those applicable standards not stated herein but referenced by the below standards.

- a) ASTM B3 – Standard Specification for Soft or Annealed Copper Wire

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- b) ASTM B33 – Standard Specification for Tin-Coated Soft or Annealed Copper Wire for Electrical Purposes

2.2.4. Standard Conductor Sizes

Conductor supplied under this category shall be sized per the table below:

Size (AWG)	Stranding	Approx. Weight (lbs/1000')	Division ID
4	Solid	126.3	78850
6	Solid	79.42	20082

2.2.5. Packaging

Conductor shall be packaged on wood spools per the table below and in accordance with Section 2.1.

Size (AWG)	Stranding	Approx. Feet Per Spool	Max. Spool Weight (lbs.)	Division ID
4	Solid	315	25	78850
6	Solid	200	25	20082

2.3. **Bare and Covered Stranded Copper Conductor**

2.3.1. Purpose

This conductor is for used for uninsulated hook-ups, jumpers, and grounds on overhead distribution.

2.3.2. Product Description

Stranded conductors shall be copper, compressed round, combination unilay, class "B" stranding. Copper conductor shall be soft or annealed, tinned or uncoated, in accordance with ASTM standards.

Covered conductors shall be covered with a cross-linked polyethylene (XLP) jacket, which shall have no voltage rating and provide weatherproof protection to the conductor in accordance with ICA S-70-547.

2.3.3. Applicable Codes and Standards

The conductor in this specification shall meet and/or exceed all requirements of the latest editions of the standards listed below. The conductor shall further meet and/or exceed those applicable standards not stated herein but referenced by the below standards.

- a) ASTM B3 – Standard Specification for Soft or Annealed Copper Wire
- b) ASTM B8 – Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft

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- c) ASTM B33 – Standard Specification for Tin-Coated Soft or Annealed Copper Wire for Electrical Purposes
- d) ASTM D1248 – Standard Specification for Polyethylene Plastics Extrusion Materials for Wire and Cable
- e) ANSI/ICEA S-70-547 – Specifications for Weather-Resistant Polyethylene-Covered Wire and Cable

2.3.4. Standard Conductor Sizes

Conductor supplied under this category shall be sized per the table below:

Size (AWG or kcmil)	Stranding	Covering	Cover Thickness (mils)	Approx. Weight (lbs/1000')	Division ID
2	7	Bare	N/A	204.9	20095
2	7	XLP	45	227.1	20097
2/0	7	Bare	N/A	410.9	19951
2/0	19	Bare	N/A	410.9	78849
4/0	7	Bare	N/A	653.3	19958
4/0	7	XLP	60	707.6	78853
500	37	XLP	80	1,637	78854

2.3.5. Packaging

Conductor shall be packaged on wood reels per the table below and in accordance with Section 2.1.

Size (AWG or kcmil)	Strands	Covering	O.D. (in.)	Approx. Feet Per Reel	Max. Flange Dia. (in.)	Division ID
2	7	Bare	0.292	3,000	30	20095
2	7	XLP	0.373	2,500	32	20097
2/0	7	Bare	0.414	2,500	32	19951
2/0	19	Bare	0.418	2,500	32	78849
4/0	7	Bare	0.522	2,500	36	19958
4/0	7	XLP	0.626	2,500	42	78853
500	37	XLP	0.950	2,500	60	78854

2.4. **Theft-Resistant Stranded Copper Conductor**

2.4.1. Purpose

This conductor is used as a theft-resistant ground wire for electric distribution applications.

2.4.2. Product Description

The conductor shall be bare, solid copper with an annealed temper (soft drawn). The outer surface shall be tinned and have a permanently-etched, unique set of codes that will be visible for the life of the conductor. The code shall be comprised of a license code, a serial number unique to every foot of cable, and the website URL which stores the purchasing information.

2.4.3. Applicable Codes and Standards

The conductor in this specification shall meet and/or exceed all requirements of the latest editions of the standards listed below. The conductor shall further meet and/or exceed those applicable standards not stated herein but referenced by the below standards.

- a) ASTM B3 – Standard Specification for Soft or Annealed Copper Wire
- b) ASTM B33 – Standard Specification for Tin-Coated Soft or Annealed Copper Wire for Electrical Purposes

2.4.4. Standard Conductor Sizes

Conductor supplied under this category shall be sized per the table below:

Size (AWG)	Stranding	Approx. Weight (lbs/1000')	Division ID
4	Solid	126.3	78848

2.4.5. Packaging

Conductor shall be packaged on wood spools per the table below and in accordance with Section 2.1.

Size (AWG)	Stranding	Approx. Feet Per Spool	Max. Spool Weight (lbs.)	Division ID
4	Solid	315	25	78848

2.5. **Bare Stranded Copper Conductor with Copper-Clad Steel Core**

2.5.1. Purpose

This conductor is used for applications that include grounding, connection of ground rods to metallic structures, ground grid meshes, substations, power installations, and lightning arrestors.

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2.5.2. Product Description

Conductor shall consist of bare annealed copper wires concentrically laid around a core consisting of copper-clad steel wire. The copper cladding shall be metallurgically bonded to the steel core.

2.5.3. Applicable Codes and Standards

- a) ASTM B227 – Standard Specification for Hard-Drawn Copper-Clad Steel Wire
- b) ASTM B229 – Standard Specification for Concentric-Lay-Stranded Copper and Copper-Clad Steel Composite Conductors

2.5.4. Standard Conductor Sizes

Conductor supplied under this category shall be sized per the table below:

Size (AWG)	Type	Copper-Clad Steel Strands	Copper Strands	Approx. Weight (lbs/1000')	Division ID
4/0	“E”	7	12	848.3	68004

2.5.5. Packaging

Conductor shall be packaged on wood reels per the table below and in accordance with Section 2.1.

Size (AWG)	O.D. (in.)	Approx. Feet Per Reel	Max. Flange Dia. (in.)	Division ID
4/0	0.613	2,500	42	68004