

**UNDERGROUND PRIMARY CABLE-15KV-EPR/EAM-220 MIL-STRAND  
FILLED-  
CONCENTRIC NEUTRAL-JACKETED**

**SCOPE:**

This specification covers single conductor concentric neutral power cable insulated with an ozone and discharge free, flexible, rubber-like thermosetting dielectric.

The cable should be suitable for use in wet and dry locations in conduit, underground duct systems, direct buried and aerial installations.

**OPERATING EXPERIENCE:**

The manufacture shall have a performance record demonstrating a minimum of (30) year successful manufacturing EPR or EAM cable in the utility and industrial industries.

**BASIC CONSTRUCTION:**

1/C Class B strand aluminum conductor, triple tandem extruded semiconducting strand shield, EPR/EAM insulation, extruded semiconducting insulation shield, concentric copper neutral conductors (round wire), and a jacket overall.

**INDUSTRY STANDARDS:**

Cable shall meet or exceed the latest editions of the following industry standards:

**ICEA S-94-649**

**RUS 1728.204**

**ASTM B-231**

**AEIC CS8**

**CONDUCTOR: 1.0**

- 1.1 Uncoated aluminum wire, Class B, compressed stranded round aluminum per ASTM B-231**
- 1.2 Conductors shall meet the electrical resistance requirements of ICEA S-94-649 Section 2.4**
- 1.3 The conductor must be filled with a semiconducting compound to prevent possible water migration along the conductor during installation or operating service life. The surface of the conductor shall be clean and free of any strand filling compound.**

**CONDUCTOR SHIELD: 2.0**

2.1 Extruded layer of semiconducting thermosetting compound with a volume resistivity not in excess of 100 ohm-meters at 90 degree Celsius shall be applied over the conductor.

2.2 The shield shall be clean stripping from the conductor and inseparably bonded to the overlying insulation.

2.3 The nominal thickness of the extruded conductor shield shall be as shown.

Conductor Size	Conductor shield Thickness (mils)
8-4/0	12
250-500	16

**INSULATION: 3.0**

3.1 The insulation shall be **EPR/EAM**. The insulation shall be compounded by the manufacturer in its own facility using a closed system to insure maximum cleanliness.

3.2 The nominal thickness shall be 220 mil. Manufactured and tested at the latest editions of **AEIC CS8** and **ICEA S-94-649**.

**INSULATION SHIELD:**

The cable shall be supplied with a clean stripping extruded semiconducting shield. The stripping tension shall be between 3 pounds and 24 pounds over a temperature range of 10 degrees Celsius to +30 degree Celsius

**METALLIC SHIELD CONCENTRIC NEUTRAL:**

The metallic shield shall consist of an evenly spaced wrap of bare copper wires. They shall be applied directly over the insulation shield with a lay of 6 to 10 times the diameter over the wires.

**JACKET:**

The jacket shall be homogenous, non-conducting, linear low-density, black polyethylene with three red stripes. The stripe compound shall have ultraviolet stability, color retention, and compound compatibility. The jacket shall have a nominal thickness of 50 mils over the concentric neutral conductor. The jacket shall encapsulate the neutral strands to the extent that the strands are firmly contacting the insulation shield with an absence of voids at interfacing surfaces. The jacket shall be strippable and free of voids, porosity, holes, cracks, blisters, and other imperfections.

**MARKINGS: 4.0**

4.1 The cable jacket shall have identification markings along its entire length in accordance with **AEIC** and **NESC** requirements. All jacket

markings will have indented printing that is permanent and clearly visible.

- 4.2 Cable identification shall appear on the surface of the jacket by means of indent or surface printing indicating the manufacture's name, voltage rating, conductor size, conductor type, insulation thickness, and year of manufacture. The information shall be repeated every two feet.
- 4.3 Sequential footage markings shall be printed on the jacket at two foot intervals. The first and last numbers on each length of cable shall be marked on the corresponding reel.

**(12) Reels of 500 mcm cable cut to length shall be "minimum" of 750 feet and shall not exceed 825 feet**

**(12) Reels of 500 mcm cable cut to length shall be "minimum" of 1,100 feet and shall not exceed 1,210 feet**

**All 24 reels shall be REDUCED NUETRAL**

**Reel height must not exceed 64"**

**Acceptable manufactures are Okonite, General, and Prysmian**