

SECTION 16120

MEDIUM VOLTAGE POWER CABLE

PART 1 - GENERAL

1.1 SUMMARY

- A. This section covers single-conductor 5KV and 15KV shielded power cable insulated with an ozone and discharge resistant, flexible, rubber-like dielectric for high voltage applications that shall be suitable for use in wet and dry locations in conduit, underground duct systems, and aerial installations.
- B. Cable shall be rated 90 C for normal operation, 130 C for emergency overload operation, and 250 C for short circuit conditions. Emergency overload operation may occur for periods up to 100 hours per year and with as many as five such 100 hour periods within the lifetime of the cable.
- C. Use 15KV rated cable for all new work on both 4.16KV and 12.74KV systems. 5KV rated cable may be used only where existing 4.16KV ducts are too small to accommodate 15KV rated cable.

1.2 RELATED WORK:

- A. Section 16210 – Electrical Utility Services
- B. Section 16121 – Primary Voltage Cable Installation

1.3 QUALITY ASSURANCE

A. Factory Tests:

- 1. Cable shall be factory tested at high voltage AC, high voltage DC, and for corona discharge according to ICEA requirements.
- 2. Certification of satisfactory completion of factory tests for cable shall be submitted to the Project Manager at the time of cable delivery.

1.4 REFERENCES

- A. American Society for Testing and Materials (ASTM): ASTM B-8 and ASTM B-231.
- B. Association of Edison Illumination Companies (AEIC): AEIC CS6.
- C. Insulated Cable Engineers Association (ICEA): ICEA S-68-516.

D. Underwriters Laboratories (UL): UL-1072.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Manufacturers

1. Cablee - UNSHIELDED.
2. Okonite Co.
3. Pirelli Cable Co.
4. B.C.C.C.

2.2 MATERIALS

- A. Basic cable construction shall be 1/C Class B copper strand, extruded semi-conducting strand screen, EPR insulation, copper tape or wire shield, and a tough, oil-resistant jacket overall.
- B. Conductor size shall be as indicated in specification & drawings and shall consist of bare soft copper wire. Stranding shall be Class B, stranded or compact and shall meet the electrical resistance requirements of ICEA S-68-516, Section 2.5.2.
- C. Conductor screen shall consist of an extruded layer of semi-conducting thermosetting compound.
- D. The insulation shall be ethylene-propylene rubber and shall meet the electrical and physical characteristics set forth in ICEA S-68-516. Cross-linked polyethylene is not acceptable. Average insulation thickness shall be 0.115 inches for 5KV rated cable and 0.220 inches for 15KV rated cable.
- E. Insulation screen shall be an extruded semi-conducting compound.
- F. Copper shield shall be tape or wires sized in accordance with applicable standards.
- G. Overall jacket shall be polyvinyl chloride or polyethylene, according to ICEA S-68-516. The following information shall be printed every 24 inches on the jacket:
 1. Manufacturer
 2. Insulation thickness and type (shielded)
 3. Jacket type
 4. Conductor type and size (AWG or MCM)
 5. Rated voltage
 6. Year of Manufacturer

PART 3 – EXECUTION

3.1 INSTALLATION

- A. See section 16121 – Primary Cable Installation, for details

END OF SECTION