

CROSS-LINKED POLYETHYLENE INSULATION (XLP) POWER CABLE, SHIELDED, 5000 TO 35000 VOLT TYPE MV-90, AEIC CS8 SINGLE AND MULTI-CONDUCTOR

SPEC 2-31
Ver. 7.0
Revised: 06/02/06

SCOPE:

This specification covers Aetna Insulated Wire's standard construction for single and multi-conductor shielded power cables, Type MV-90, insulated with solid dielectric cross-linked polyethylene (XLP), a copper tape shield and an overall jacket of polyvinylchloride (PVC) or chlorinated polyethylene (CPE).

PRODUCT SPECIFICATIONS AND RATINGS:

- i) National Fire Protection Association (NFPA) 70: National Electric Code (NEC)
- ii) Underwriters Laboratories 1072 for Medium Voltage Power Cables
- iii) ICEA S-93-639/NEMA WC74 Shielded Power Cable 5 - 46KV
- iv) See individual product sheets for specific listings and ratings.

APPLICATION:

All power cables manufactured under this specification are in accordance with the NEC specifications and as such are suitable under the code for 5 kV to 35 kV applications, at both the 100% and 133% insulation levels. All these cables are suitable for use in wet or dry locations at a continuous conductor operating temperature of 90°C, at an emergency overload conductor temperature of 130°C and at a short circuit conductor temperature of 250°C. These cables may be installed in duct or conduit or properly supported aerially and may be used in direct burial applications. Cables that are rated for use in cable tray applications are shown on the individual product specification sheets.

(Note: Unlike UL/ICEA/NEC, where AEIC is the governing specification, for the 5 KV voltage class there is a difference in insulation thickness between the 100% and 133% insulation levels. Users must therefore specify 5 KV 100 or 133% per AEIC when ordering.)

CONSTRUCTION DATA:

Conductors - The conductor consists of uncoated soft, copper strands meeting the requirements of ASTM B3. Unless otherwise specified the conductor is supplied as Class B compact per ASTM B496.

Conductor Shield - The conductor shield consists of an extruded semi-conducting layer meeting the requirements of the governing specifications above.

Insulation - The insulation is cross-linked polyethyl-

ene (XLP) extruded in a single pass with the conductor and insulation shields to the wall thickness as specified in the governing specifications listed and as shown on the individual product specification sheets.

Insulation Shield - Insulation shield consists of a semi-conducting extruded compound and a 5 mil bare copper metallic tape overlapped a minimum of 20%.

Conductor Coding - Phase identification for multi conductor cables is provided by a colored stripe on the insulation shield of each of the conductors (red, black, white).

Ground Wire - Standard multi conductor cables include one stranded bare copper ground in one of the outer cable interstices. The ground wire is sized per UL requirements, however custom ground wire sizes and configurations are available upon request.

Assembly - The assembly of multi conductor cables is done by cabling together the required number of insulated shielded conductors and the ground wires with a left hand lay. Suitable fillers are used in the interstices to round out the cable cross section. A mylar binder tape is applied overall.

Jacket - A sunlight and ozone resistant jacket of polyvinylchloride (PVC) or chlorinated polyethylene (CPE) is extruded over the single and multi conductor assembly. Optional jacket materials are available that offer enhanced ratings and performance.

AVAILABLE OPTIONS:

- a) Tree Retardant Cross-Linked Polyethylene Insulation
- b) Four conductor cables.
- c) With or without ground wire – insulated grounds – multiple grounds
- d) Alternate shielding constructions – coated copper tape shield or tape plus wires
- e) (-40°C) PVC jacket or LLD Polyethylene jacket.
- f) Aetna 3742 non-halogen, flame resistant, low smoke, low corrosion, non toxic jacket.