POWER CABLE, SHIELDED, 5000 TO 35000 VOLT ETHYLENE-PROPYLENE RUBBER INSULATION (EPR) TYPE MV-105, AEIC CS8 SINGLE AND MULTI-CONDUCTOR

SCOPE:

This specification covers Aetna Insulated Wire's standard construction for single and multi-conductor shielded power cables, Type MV-105, insulated with solid dielectric ethylene-propylene Rubber (EPR), a copper tape shield and an overall jacket of polyvinyl-chloride (PVC), chlorinated polyethylene (CPE) or low smoke halogen free (LSHF) polyolefin.

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) ICEA S-97-682 Utility Shielded Power Cable 4 - 46KV
v) AEIC CS8 Specification for Extruded Dielectric Shielded Power Cables Rated 5 through 46 kV
vi) See individual product sheets for specific listings and ratings.

APPLICATION:

All power cables manufactured under this specification are in accordance with the NEC requirements 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 105°C, at an emergency overload conductor temperature of 140°C and at a short circuit conductor temperature of 250°C. These cables may be installed in duct or conduit or properly supported aerial installations 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 or ICEA S-97-682 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 conductors are supplied as compact round 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 ethylene-propylene rubber (EPR) 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 shield overlapped a minimum of 12 ½ %.

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

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 suitable left hand lay. Suitable fillers are used in the interstices to round out the cable cross section. A binder is applied overall.

Jacket - A sunlight and ozone resistant polyvinylchloride (PVC), chlorinated polyethylene (CPE) or low smoke halogen free (LSHF) polyolefin is extruded over the single and multi conductor assembly. Optional jacket materials are available that offer other ratings and performance.

AVAILABLE OPTIONS:

a) Four conductor cables.
b) With or without ground wire – insulated grounds – multiple grounds.
c) Alternate shielding constructions – coated copper tape shield or tape plus wires.
d) (-40°C) PVC jacket or LLD Polyethylene jacket.

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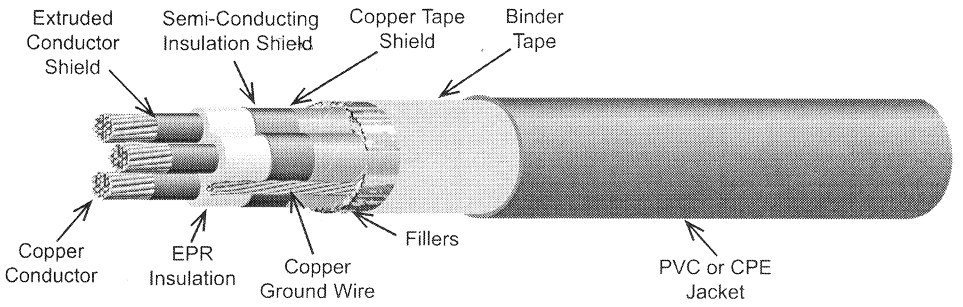
EPR POWER CABLE, SHIELDED, 25000 VOLT, TYPE MV-105

SPEC 2-61-4.3

Ver. 8.0
Revised: 07/04/13



105°C CONDUCTOR TEMPERATURE, WET OR DRY								
Conductor			Insulation in Mils	Jacket in Mils	Size AWG Copper Ground Wire	Approximate O.D. in Inches	Ampacity** 40°C Ambient	Approximate Net Weight Lbs/Kft
Size AWG or KCMIL	No. of Strands	Nominal O.D in Inches						
THREE CONDUCTOR 25000 VOLT 100% INSULATION LEVEL, SHIELDED								
1	19	0.30	260	110	4	2.28	210	2800
1/0	19	0.34	260	110	4	2.36	240	3110
2/0	19	0.38	260	110	4	2.44	275	3485
3/0	19	0.42	260	110	3	2.55	315	3980
4/0	19	0.48	260	110	3	2.66	360	4545
250	37	0.52	260	110	2	2.76	400	5080
350	37	0.62	260	140	2	3.02	490	6485
500	37	0.74	260	140	1	3.28	600	8335
750	61	0.91	260	140	1/0	3.65	745	11325
1000*	61	1.12	260	140	2/0	4.15	860	14590
THREE CONDUCTOR 25000 VOLT 133% INSULATION LEVEL, SHIELDED								
1	19	0.30	320	110	4	2.56	210	3280
1/0	19	0.34	320	110	4	2.64	240	3605
2/0	19	0.38	320	110	4	2.73	275	3995
3/0	19	0.42	320	140	3	2.83	315	4510
4/0	19	0.48	320	140	3	3.00	360	5265
250	37	0.52	320	140	2	3.10	400	5825
350	37	0.62	320	140	2	3.30	490	7105
500	37	0.74	320	140	1	3.56	600	9005
750	61	0.91	320	140	1/0	3.93	745	12060
1000*	61	1.12	320	140	2/0	4.43	860	15415

Note:**Based on one three conductor cable isolated in air per NEC. For other installations refer to the NEC.
*Compressed conductors.

The above data is approximate and subject to normal manufacturing tolerances.

STANDARDS AND RATINGS:

1. Listed by UL as Type MV-105 per Standard 1072.
2. Conforms to ICEA S-93-639/NEMA WC74 Shielded Power Cable 5 - 46KV.
3. Listed by UL as Sunlight Resistant, for Direct Burial, For CT Use and IEEE 1202.
4. Listed by CSA as Type Power Cable per Standard CSA C68.3 (with -40°C PVC jacket).

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