

# EPR POWER CABLE, 35000 VOLTS

Single Conductor, Shielded, 133% Insulation Level  
 AEIC CS8, MV-105, Sunlight Resistant, CT Use

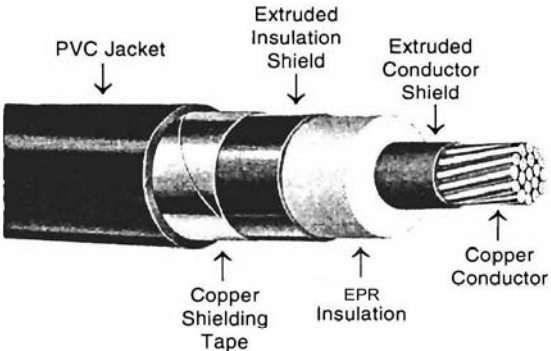
**APPLICATION:** As medium voltage MV-105 power cable for use in main feeder, distribution and branch circuits in industrial, commercial and electric utility installations. Cables may be used in wet or dry locations in circuits not exceeding 35000 volts 133% insulation level, at conductor temperatures not exceeding 105°C for normal, 140°C for emergency over-load and 250°C for short-circuit conditions. Suitable for installation in conduit, tray, trough, ducts, aerial and direct burial applications.

**STANDARDS:**

1. Conforms to ICEA S-93-639, NEMA WC74 for 5-46 kV Shielded Power Cable.
2. Conforms to ICEA S-97-682 for Utility Shielded Power Cables Rated 5 Through 46 kV.
3. Conforms to AEIC CS8 for Extruded Dielectric, Shielded Power Cables Rated 5 Through 46 kV.
4. Listed by UL as Type MV-105, per Standard 1072.
5. Listed by UL as Sunlight Resistant.
6. Sizes 4/0 AWG and larger UL listed For CT Use (3).
7. Conforms to Federal Specification J-C-30B.

**CONSTRUCTION:** Annealed copper conductor, extruded conductor shield, EPR ethylene-propylene-rubber insulation, extruded insulation shield, 5 mil copper shielding tape, black polyvinyl chloride jacket, surface printed.

**OPTIONAL JACKETS:** CPE, HYPALON® , LSZH (Low Smoke Zero Halogen)



USAWC Part #	Size AWG or kcmil	No. of Strands	Thickness in Mils		Nominal Diameter Over Ins. Inches	Nominal Diameter Inches	Copper Conductor					
			Insulation	Jacket			Approx. Net. Wt. lbs/1000 ft	Copper Weight lbs/1000 ft	Ampacity*			
									Tray	Conduit	Duct	
<b>35000 VOLTS, SHIELDED, 133% INSULATION LEVEL (UNGROUND NEUTRAL)</b>												
1/0-0135KVESPU	1/0	19	420	80	1.31	1.60	1320	425	290	215	215	
2/0-0135KVESPU	2/0	19	420	80	1.35	1.64	1490	514	330	255	245	
3/0-0135KVESPU	3/0	19	420	80	1.39	1.68	1655	625	380	290	275	
4/0-0135KVESPU	4/0	19	420	80	1.44	1.70	1845	765	445	330	315	
250-0135KVESPU	250	37	420	110	1.48	1.81	2125	888	490	365	345	
350-0135KVESPU	350	37	420	110	1.59	1.93	2575	1206	605	440	415	
500-0135KVESPU	500	37	420	110	1.72	2.06	3185	1679	755	535	500	
750-0135KVESPU	750	61	420	110	1.89	2.24	4180	2467	970	655	610	
1000-0135KVESPU	1000	61	420	110	2.05	2.40	5145	3250	1160	755	690	

TRAY: Single layer in uncovered cable tray with one cable diameter spacing, 105°C Conductor Temperature, 40°C Ambient. CONDUIT: Three cables in isolated conduit in air, 105°C Conductor Temperature, 40°C Ambient. DUCT: Three cables per duct, 105°C Conductor Temperature, 20°C Ambient, One Circuit, 100% Load Factor, Rho = 90. For other installation conditions refer to the NEC.

## Specification

### EPR POWER CABLE, 35000 VOLTS

#### Single Conductor, Shielded, 133% Insulation Level AEIC CS8, MV-105, Sunlight Resistant, CT Use

#### 1. SCOPE

- 1.1 This specification describes single conductor, EPR (Ethylene-propylene-rubber) insulated, shielded power cables for use in circuits not exceeding 35,000 volts 133% insulation level at conductor temperatures of 105°C for continuous normal operation, 140°C for emergency overload conditions and 250°C for short-circuit conditions. Cables are intended for power cable applications, in wet or dry locations, including conduit, cable tray, duct, direct burial and aerial installation.

#### 2. STANDARDS

- 2.1 The following standards shall form a part of this specification to the extent specified herein:
  - 2.1.1 ICEA Pub. No. 8-93-639, NEMA Pub. No. WC74 for 5-46 kV Shielded Power Cable.
  - 2.1.2 ICEA Pub. No. S-97-682 for Utility Shielded Power Cables Rated 5 Through 46 kV.
  - 2.1.3 AEIC CS8 for Extruded Dielectric, Shielded Power Cables Rated 5 Through 46 kV.
  - 2.1.4 UL Standard 1072 for Type MV-105.

#### 3. CONDUCTORS

- 3.1 Class B stranded annealed uncoated copper per Part 2 of ICEA.

#### 4. CONDUCTOR SHIELDING

- 4.1 Conductors shall be covered with a layer of extruded conducting thermosetting compound with thickness in accordance with Table 3-1 of ICEA S-97-682. The extruded layer shall be compatible with and firmly bonded to the cable insulation and shall be in accordance with Par. 3.1 and meet the resistivity requirements of Par. 3.6.1 of ICEA S-97-682.

#### 5. INSULATION

- 5.1 Directly over the conductor shielding shall be applied a homogeneous wall of EPR insulation. The insulation thickness shall be 420 mils and the minimum thickness at any point shall be not less than 90% of the specified thickness. Physical and electrical properties of the insulation shall be in accordance with Part 4 of ICEA S-97-682 for a Class III insulation.

#### 6. SHIELDING

- 6.1 Over the insulation shall be applied an extruded conducting thermosetting insulation shield. It shall be in intimate contact with the outer surface of the insulation and shall be free-stripping, leaving no conducting particles or other residue on the insulation surface. This layer shall be legibly identified as being conducting. The thickness of this layer shall be in accordance with Table 5-1 of ICEA S-97-682. The insulation shield shall meet the requirements of Par. 5.1.1 of ICEA S-97-682.
- 6.2 Directly over the extruded insulation shield shall be a helically applied 5 mil uncoated copper shielding tape with a minimum lap of 12.5%. This tape shall meet the requirements of Part 6 of ICEA 8-97-682.

#### 7. JACKET

- 7.1 A polyvinyl chloride jacket shall be applied overall. The jacket shall meet the requirements of Part 7 of ICEA 8-97-682 and UL 1072. The jacket shall meet the Sunlight Resistant requirements of UL Standard 1072. The jacket thickness shall be as specified in Part 7 of ICEA S-97-682 and UL 1072. The minimum thickness at any point shall be not less than 80% of the specified UL thickness.

#### 8. IDENTIFICATION

- 8.1 All cable shall be identified by means of surface ink printing indicating manufacturer, size, insulation type, insulation thickness, voltage rating, insulation level, year of manufacture and UL designations.

#### 9. TESTS

- 9.1 Cable shall be tested in accordance with ICEA S-97-682, ICEA S-93-639, AEIC CS8 and UL 1072.