

## (3C) MC-HL POWER CABLE, 35000 VOLTS 133% UL TYPE MC-HL, EPR 105°C,

**APPLICATION:**

As armored Type MV-105 cable for installation aerially, rack, tray, trough, cable trays, or direct buried; for power circuits not exceeding 35000 volts 133% insulation level in manufacturing and processing plants, substations and generating stations. May be used in Class I, II and III, Divisions 1 and 2; and Class I, Zones 1 and 2 hazardous locations per NEC.

**STANDARDS:**

1. Listed by UL as Type MV-105 per Standard 1072.
2. Also listed for use as Type MC per Standard 1569.
3. Overall jacket UL listed as Sunlight Resistant.
4. Cables pass UL and IEEE-383 ribbon burner flame tests and are UL listed For CT Use.
5. Cables pass IEEE-1 202/CSA FT4(70,000 BTU/hr) cable tray flame test.
6. Cables pass ICEA T-29-520 210,000 BTU/hr Ribbon Burner Flame Test.
7. Cables UL listed for Direct Burial.
8. Conforms to ICEA S-93-639, NEMA WC74 for 5-46 kV Shielded Power Cable.
9. Meets ASTM D746 brittleness temperature at or below -40°C
10. UL Marine Shipboard
11. ABS Listed for CWCMC

**CONSTRUCTION:** Three conductors of stranded copper, extruded conductor shield, EPR (ethylene propylene rubber) insulation, extruded thermoset insulation shield, uncoated copper shielding tape. Three conductors twisted together with one uncoated copper grounding conductor, binder tape, continuously welded and corrugated aluminum alloy sheath, orange PVC jacket overall.



USAWC Part #	Size AWG or kcmil	No. of Strands	Insul. Thick. Mils	Nom. Diam. Over Armor Inches	PVC Jkt Thick Mils	Nom. Diam. Over PVC Jkt. Inches	COPPER PHASE CONDUCTORS				
							Copper Grounding Con- ductor AWG	Weight lbs/1000 ft		Ampacity	
								Net	Copper	IN AIR	DIRECT BURIAL
<b>35000 VOLTS - 133% INSULATION LEVEL</b>											
1/0-0335KVMCHL	1/0	19	420	3.41	85	3.59	4	5300	1404	240	255
2/0-0335KVMCHL	2/0	19	420	3.63	85	3.81	4	6000	1671	275	290
4/0-0335KVMCHL	4/0	19	420	3.80	85	3.98	3	7100	2458	360	345
250-0335KVMCHL	250	37	420	3.98	85	4.16	3	8100	2827	400	410
350-0335KVMCHL	350	37	420	4.10	85	4.29	2	9000	3823	490	495
500-0335KVMCHL	500	37	420	4.45	85	4.63	1	11100	5295	600	590

**MC-HL 3/C EPR POWER CABLE, 35000 VOLTS**  
**Three Conductor, Shielded, 35000 Volts – 133% insulation Level**  
**AEIC CS8, MV-105, Sunlight Resistant, CT Use**

1. SCOPE

- 1.1 This specification describes three conductor, EPR (Ethylene-propylene-rubber) insulated, shielded power cables for use in circuits not exceeding 35000 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 use on feeders and branch circuits in industrial power distributions systems in wet or dry locations including cable tray, raceways, direct burial and embedded in concrete.
- 1.2 For use in Class I, II and III, Divisions 1 and 2; and Class I, Zones 1 and 2 hazardous locations per NEC Articles 501, 502, 503 and 505.

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. S-93-639, Nema Pub. No. WC74 for 5-46 kV Shielded Power Cable.
  - 2.1.2 AEIC CS8 for Extruded Dielectric, Shielded Power Cables Rated 5 Through 46 kV.
  - 2.1.3 UL Standard 1072 for Type MV-105
  - 2.1.4 UL 1569 Metal Clad Cables
  - 2.1.5 UL 2225 Cables and Cable Fittings for Use in Hazardous Locations

3 CONDUCTORS

- 3.1 Class B stranded bare annealed uncoated copper per ASTM B3. Compact stranding per ASTM B496. Grounding conductor is class B stranded annealed uncoated copper sized in accordance with UL 1072 and NEC Article 250

4 CONDUCTOR SHIELDING

- 4.1 Conductors shall be covered with a layer of extruded semi-conducting thermosetting compound with thickness in accordance with ICEA S-93-639 and UL 1072

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 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 per ICEA S-93-639 and UL 1072

6 SHIELDING

- 6.1 Over the insulation shall be applied a semi-conducting thermosetting insulation shield. It shall be 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. The thickness of this layer shall be per ICEA S-93-639 and UL 1072
- 6.2 Directly over the insulation shield shall be a helically applied 5 mil uncoated copper shielding tape with a minimum lap of 25%.

7 CIRCUIT IDENTIFICATION

- 7.1 A color coded tape (black, red, blue) applied under the shielding tape shall provide circuit identification on each power conductor.

8 ASSEMBLY

- 8.1 The insulated conductors and ground wire(s) shall be cabled together with non-hygroscopic fillers, when necessary to make round.

9 CABLE TAPE

- 9.1 A suitable cable tape shall be applied over the assembly to hold the core together and provide bedding for the armor.

10 ARMOR

- 10.1 Continuously welded and corrugated aluminum alloy sheath per UL 1569 and UL 1072.

11 JACKET

- 11.1 A flame-retardant, moisture and sunlight resistant Polyvinyl Chloride (orange) shall be applied overall. The jacket shall meet the requirements of UL 1702

12 IDENTIFICATION

- 12.1 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.

13 TESTS

- 13.1 Cable shall be tested in accordance with ICEA S-93-639, AEIC CS8 and UL 1072