

ROME INTERLOCKED ARMOR POWER CABLE, 15000 Volts-Type MV-105 or Type MC, CT Use 3 Conductor, Rome-EPR Insulated, 133% Insulation Level, Aluminum or Steel Armor

<p>APPLICATION: As armored Type MV-105 cable for installation aerially or in rack, tray, trough, cable trays, or direct buried; for power not exceeding 15000 volts in manufacturing and processing plants, substations and generating stations. May be used in NEC Class I and II, Division 2 and Class III, Division 1 and 2 hazardous locations.</p> <p>STANDARDS:</p> <ol style="list-style-type: none"> Listed by UL as Type MV-105 cable per Standard 1072. Also suitable for use as Type MC cable per Standard 1569. Overall jacket UL listed as Sunlight Resistant. Cables pass UL and IEEE-383 ribbon burner flame test and are UL listed For CT Use. Cables pass IEEE-1202/CSA FT4 (70,000 BTU/hr) cable tray flame test. Cables pass ICEA 210,000 BTU/Hr. Ribbon Burner Flame Test. Cables UL listed for Direct Burial. Conforms to ICEA S-93-639, NEMA WC74 for 5-46 kV Shielded Power Cable. Conforms to ICEA S-97-682 for Utility Shielded Power Cables Rated 5 Through 46 kV. Conforms to AEIC CS8 for Extruded Dielectric, Shielded Power Cables Rated 5 Through 46 kV. <p>CONSTRUCTION: Three conductors of stranded copper, extruded conductor shield, Rome-EPR (ethylene propylene rubber) insulation, extruded thermoset insulation shield, uncoated copper shielding tape. Three conductors twisted together with one uncoated copper grounding conductor, suitable fillers, binder tape, aluminum or galvanized steel interlocked armor, red PVC jacket overall.</p>											
Size AWG or kcmil	No. of Strands	Nom. Insul. Thick. Mills	Nom. Diam. Over Ins. Inches	Nom. Diam. Over Armor Inches	Nom. PVC Jkt. Thick. Mills	Nom. Diam. Over PVC Jkt. Inches	Copper Phase Conductor				
							Copper Grounding Conductor AWG	Approx. Net Wt. Lb.		Ampacity	Ampacity
							Alum. Armor	Steel Armor			
15000 VOLTS, 133% INSULATION LEVEL											
2	7	220	.78	2.11	60	2.24	6	2605	3125	165	185
1	19	220	.82	2.20	60	2.33	4	2835	3390	185	210
1/0	19	220	.86	2.28	60	2.41	4	3100	3620	215	240
2/0	19	220	.90	2.39	75	2.55	4	3530	4025	245	275
3/0	19	220	.95	2.50	75	2.66	3	3990	4510	280	315
4/0	19	220	1.01	2.61	75	2.77	3	4615	5200	320	360
250	37	220	1.06	2.79	75	2.95	3	5315	5895	350	400
350	37	220	1.17	3.01	75	3.17	2	6600	7225	430	490
500	37	220	1.30	3.29	85	3.47	1	8710	9350	525	600
750	61	220	1.49	3.67	85	3.85	1/0	11695	12850	635	745

* **AMPACITY** for cables installed in uncovered cable tray without maintained spacing; 105°C conductor temperature, 40°C ambient.

** **AMPACITY** for cables installed in uncovered cable tray with maintained spacing of one cable diameter; 105°C conductor temperature, 40°C ambient. For other installation conditions refer to the NEC.

NOTE: 1. Phase identification is provided by a longitudinal narrow colored tape (1/c black, 1/c red, 1/c blue) between the semiconducting insulation shield and the copper shielding tape.

Information on this page subject to change without notice.

Specification

ROME INTERLOCKED ARMOR POWER CABLE, 15000 Volts-Type MV-105 or Type MC, CT Use
3 Conductor, Rome-EPR Insulated, 133% Insulation Level, Aluminum or Steel Armor

1. SCOPE

- 1.1 This specification describes three conductor Rome-EPR (ethylene-propylene-rubber), aluminum or galvanized steel interlocked armor MV-105 power cable for circuits rated 15 kV 133 % IL at conductor temperatures of 105 C for continuous normal operation, 140 C for emergency overload and 250 C for short circuit conditions. Cables are suitable for installation indoors or outdoors, aerially, in rack, trough or tray, or direct burial.

2. STANDARDS

- 2.1 The following form a part of this specification to the extent specified :
 - 2.1.1 ICEA S-97-682 for Utility Shielded Power Cables Rated 5 – 46 kV.
 - 2.1.2 ICEA S-93-639 / NEMA WC 74 for 5-46 kV Shielded Power Cables.
 - 2.1.3 AEIC CS8 for Extruded Dielectric, Shielded Power Cables 5-46 kV.
 - 2.1.4 UL 1072 for Type MV 105.

3. MANUFACTURING METHODOLOGY

- 3.1 Manufacturer shall be ISO 9001:2000 certified.
- 3.2 The EPR insulation compound shall be manufactured in a compounding facility dedicated exclusively to wire and cable insulation. The use of carbon black shall be prohibited inside the facility. The base polymer of the insulation compound shall be an electrical grade EPDM designed for low dielectric constant and dissipation factor and maximum impulse and ac breakdown strength. The compound shall not contain plasticizers or oils of any type, to preclude migration into the semiconducting layers, effecting their resistivity. Compound ingredients shall be mixed in an automated system to provide a completely dispersed, homogeneous material. The mixed compound shall be extruded through a single 200-mesh screen to insure cleanliness. It shall then be treated with the crosslinking agent using an in-line absorption system.
- 3.3 Cable shall be manufactured using a triple tandem dry-cure extrusion line to provide smooth contact surfaces in the high electrical stress areas between the insulation and extruded semiconducting layers and to enhance water treeing resistance by limiting microporosity in the insulation caused by steam cure lines.
- 3.4 All compounds shall be conveyed to the extruders using a Clean Compound Handling System that prevents the compounds from exposure to the factory environment. Containers of conductor shield, insulation and insulation shield compound shall each be placed in a Class 7 Clean Room in accordance with ISO 14644 and conveyed to the extruder in a closed system.

4. CONDUCTORS

- 4.1 Shall comply with Part 2 of ICEA for Class B stranded annealed uncoated compressed copper providing the optimum balance between reduced conductor diameter and bendability of the finished cable.

5. CONDUCTOR SHIELD

- 5.1 Shall be an extruded semiconducting elastomeric compound with thickness per Table 3-1 of ICEA S-97-682.
- 5.2 The conductor shield shall have the same temperature rating as the insulation, be compatible with and firmly bonded to the insulation and shall strip freely from the conductor.
- 5.3 Shall conform to Par 3.1 and meet the resistivity requirements of Par 3.6.1 of ICEA S-97-682.

6. INSULATION

- 6.1 Shall be a homogeneous wall of Rome-EPR. Nominal thickness shall be 220-mils and the minimum point-maximum point thickness shall be in accordance with ICEA S-97-682. Physical and electrical properties shall comply with Part 4 of ICEA S-97-682 for a Class III insulation.

7. SHIELDING

- 7.1 A semiconducting thermosetting elastomeric insulation shield shall be extruded over the insulation. It shall be free-stripping, leaving no conducting particles or other residue on the insulation surface. This layer shall be identified as being conducting. Thickness shall be per Table 5-1 of ICEA S-97-682 and the shield shall meet the requirements of Par. 5.5.1 of ICEA S-97-682.
- 7.2 The extruded shield shall have a strip tension in accordance with ICEA S-97-682 and shall strip at room temperature with a tension of 6 to 18 pounds. This shall be obtained through chemical composition of the shield compound. No release agent shall be allowed on the surface of the EPR insulation, to insure cleanliness of the interface between the insulation and extruded insulation shield.
- 7.3 A 5-mil bare copper tape shall be helically applied over the extruded insulation shield with a minimum 12.5% lap. Tape shall meet Part 6 of ICEA S-97-682.

8. PHASE IDENTIFICATION

- 8.1 Shall be provided by a colored tape applied longitudinally under the copper shielding tape.

9. ASSEMBLY

- 9.1 Three phase conductors shall be cabled with a Class B stranded, uncoated copper grounding conductor and suitable fillers. Length of lay shall not exceed 35 times the phase conductor diameter. The grounding conductor shall comply with UL 1072. A tape shall be applied over the assembly to hold the core together and provide bedding for the armor.

10. ARMOR

- 10.1 Shall be an aluminum or galvanized steel interlocked armor in accordance with UL 1072 and Par. 7.3.3 of ICEA S-93-639.

11. COVERING

- 11.1 Shall be flame retardant PVC per Part 7 of ICEA S-93-639 and UL 1072. Covering shall be Sunlight Resistant per UL 1072 and have a thickness as specified in Part 7 of ICEA S-97-639 and UL 1072.

12. IDENTIFICATION

- 12.1 Cable shall be surface printed with manufacturer name, size, insulation type and thickness, voltage rating, insulation level, UL information, NESC lightning bolt, year and sequential footage.

13. TESTS

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