



# CU Compressed 15kV NLEPR Insulation 133% IL AIA Red CPE-TP Jacket. MV 105 - Tray Rated - Sunlight Resistant - For Direct Burial

Type MV-105 Three Conductor Copper, 220 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level, Tape Shield, Aluminum Interlocked Armor (AIA), Thermoplastic Chlorinated Polyethylene (CPE-TP) Jacket. Silicone Free

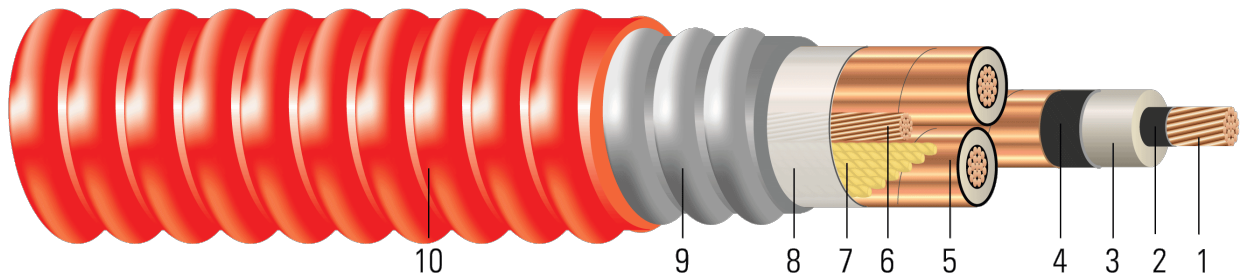


Image not to scale. See Table 1 for dimensions.

## CONSTRUCTION:

1. **Conductor:** Class B compressed stranded bare copper per ASTM B3 and ASTM B8 (Tinned Copper per ASTM B33 optional)
2. **Conductor Shield:** Semi-conducting cross-linked copolymer
3. **Insulation:** 220 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level,
4. **Insulation Shield:** Strippable semi-conducting cross-linked copolymer
5. **Copper Tape Shield:** Helically wrapped 5 mil copper tape with 25% overlap
6. **Grounding Conductor:** Class B compressed stranded bare copper ground per ASTM B3 and ASTM B8 (Tinned Copper per ASTM B33 optional)
7. **Filler:** Wax paper filler
8. **Binder:** Polypropylene tape
9. **Armor:** Aluminum Interlocked Armor (AIA)
10. **Overall Jacket:** Black thermoplastic Chlorinated Polyethylene (CPE-TP) jacket

## APPLICATIONS AND FEATURES:

Southwire's 15KV cables are suited for use in wet and dry areas, conduits, ducts, troughs, trays, direct burial, and where superior electrical properties are desired. These cables are capable of operating continuously at the conductor temperature not in excess of 105°C for normal operation, 140°C for emergency overload, and 250°C for short circuit conditions. Rated at -35°C for cold bend when UL listed. Rated at -40°C for cold bend and cold impact and marked with "LTGG" when CSA listed or dual UL/CSA listed. For uses in Class I and II, Division 2 hazardous locations per NEC Article 501 and 502. Rated for 1000 lbs./FT maximum sidewall pressure.

## SPECIFICATIONS:

- ASTM B3 Soft or Annealed Copper Wire
- ASTM B8 Concentric-Lay-Stranded Copper Conductors
- ASTM B33 Standard Specification for Tin-Coated Soft or Annealed Copper Wire
- UL 1072 Medium-Voltage Power Cables
- UL 1685 Vertical-Tray Fire Propagation and Smoke Release Test
- ICEA S-93-639 (NEMA WC 74) 5-46 KV Shielded Power Cable
- AIEC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV (Qualification Test Requirements)





- Made in America: Compliant with both Buy American and Buy America Act (BAA) requirements per 49 U.S.C. § 5323(j) and the Federal Transit Administration Buy America requirements per 49 C.F.R. part 661

**SAMPLE PRINT LEGEND:**

{SQFTG\_DUAL} SOUTHWIRE® POWER CABLE {UL} 3/C X AWG CU 220 MILS NL-EPR 15KV 133% INS LEVEL 25%TS GW 1 X X AWG CU MV-105 OR MC FOR CT USE SUN. RES. FOR DIRECT BURIAL {NESC}

**Table 1 – Weights and Measurements**

Stock Number	Cond. Size	Strand Count	Diameter Over Conductor	Diameter Over Insulation	Diameter Over Insulation Shield	Ground	Diameter Over armor	Jacket Thickness	Approx. OD	Copper Weight	Approx. Weight	Max Pull Tension	Min Bending Radius
	AWG/Kcmil	No. of Strands	inch	inch	inch	No. x AWG	inch	mil	inch	lb/1000ft	lb/1000ft	lb	inch
649443	2	7	0.282	0.755	0.815	1x6	2.132	65	2.264	904	2387	1592	15.8
TBA	1	19	0.322	0.800	0.860	1x4	2.222	60	2.342	962	2664	2008	16.3
TBA	1/0	19	0.361	0.839	0.899	1x4	2.307	75	2.457	1169	3041	2534	17.1
TBA	2/0	19	0.405	0.883	0.943	1x4	2.402	75	2.552	1428	3417	3194	17.8
TBA	3/0	19	0.456	0.934	0.994	1x3	2.512	75	2.662	1790	3913	4027	18.6
TBA	4/0	19	0.512	0.990	1.050	1x3	2.633	75	2.783	2202	4474	5078	19.4
TBA	250	37	0.558	1.044	1.104	1x3	2.749	75	2.899	2565	4994	6000	20.2
TBA	350	37	0.661	1.147	1.207	1x2	2.972	75	3.122	3549	6261	8400	21.8
646907	500	37	0.789	1.275	1.335	1x1	3.255	90	3.443	5259	8085	12000	24.1
TBA	750	61	0.968	1.464	1.524	1x1/0	3.657	90	3.837	7427	11181	18000	26.8

All dimensions are nominal and subject to normal manufacturing tolerances  
 ◊ Cable marked with this symbol is a standard stock item

**Table 2 – Electrical and Engineering Data**

Cond. Size	DC Resistance @ 25°C	AC Resistance @ 90°C	Capacitive Reactance @ 60Hz	Inductive Reactance @ 60Hz	Zero Sequence Impedance	Positive Sequence Impedance	Shield Short Circuit Current 6 Cycles	Allowable Ampacity In Duct 90/105°C	Allowable Ampacity In Air 90/105°C
AWG/Kcmil	Ω/1000ft	Ω/1000ft	MΩ*1000ft	Ω/1000ft	Ω/1000ft	Ω/1000ft	Amp	Amp	Amp
2	0.162	0.204	0.051	0.047	0.420 + j0.354	0.056 + j0.038	2571	150/160	165/185
1	0.128	0.162	0.047	0.045	0.420 + j0.354	0.056 + j0.038	2695	170/185	185/210
1/0	0.102	0.128	0.043	0.043	0.420 + j0.354	0.056 + j0.038	2816	195/210	215/240
2/0	0.081	0.102	0.040	0.042	0.420 + j0.354	0.056 + j0.038	2952	220/235	245/275
3/0	0.064	0.081	0.037	0.040	0.420 + j0.354	0.056 + j0.038	3110	250/270	285/315
4/0	0.051	0.065	0.034	0.039	0.420 + j0.354	0.056 + j0.038	3284	285/305	325/360
250	0.043	0.056	0.032	0.038	0.420 + j0.354	0.056 + j0.038	3451	310/335	360/400
350	0.031	0.041	0.028	0.036	0.420 + j0.354	0.056 + j0.038	3770	375/400	435/490
500	0.022	0.030	0.025	0.034	0.420 + j0.354	0.056 + j0.038	4167	450/485	535/600
750	0.014	0.023	0.021	0.032	0.420 + j0.354	0.056 + j0.038	4752	545/585	670/745

- \* NEC ampacities are based on:
- \* For Duct: Table 310.60(C)(13) Detail 1.
- \* For Free Air: Table 310.60(C)(5).
- \* Inductive impedance is based on non-ferrous conduit with one diameter spacing center-to-center.





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- \* Sequence Impedance values are based on Rho Earth Resistivity: 100 Ohm-Meter/1000ft.
  - \* Capacitive Reactance is between Phase-to-Shield.

