

3/C CU 15kV 220 NLEPR 133% AIA Thermoplastic CPE-TP MV-105

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

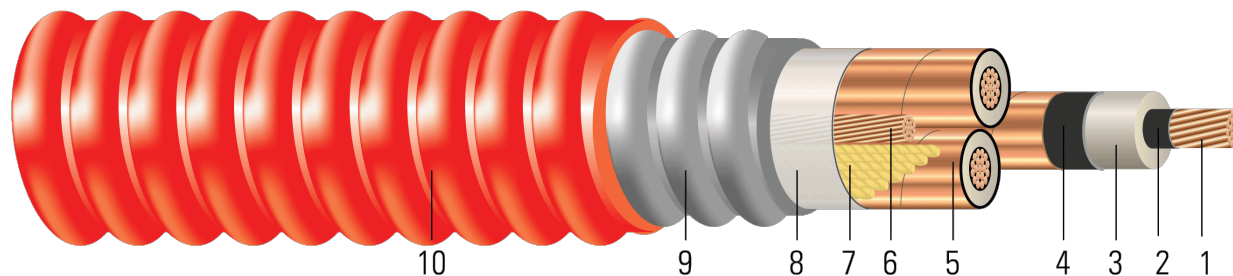


Image not to scale. See Table 1 for dimensions.

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. 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 Standard Specification for 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
- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV
- 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{R} POWER CABLE MASTER-DESIGN {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	Diameter Over Conductor	Diameter Over Insulation	Diameter Over Insulation Shield	Ground	Jacket Thickness ¹	Approx. OD	Approx. Weight	Max Pull Tension	Min Bending Radius
	AWG/Kcmil	inch	inch	inch	No. x AWG	mil	inch	lb/1000ft	lb	inch
649443	2	0.283	0.760	0.820	1 x 6	60	2.256	2433	1593	15.8
TBA	1	0.322	0.799	0.859	1 x 4	60	2.341	2738	2009	16.4
TBA	1/0	0.362	0.839	0.899	1 x 4	75	2.457	3123	2534	17.2
TBA	2/0	0.405	0.882	0.942	1 x 4	75	2.550	3501	3194	17.8
TBA	3/0	0.456	0.933	0.993	1 x 3	75	2.660	4006	4027	18.6
TBA	4/0	0.512	0.989	1.049	1 x 3	75	2.781	4576	5078	19.5
TBA	250	0.558	1.044	1.104	1 x 3	75	2.900	5093	6000	20.3
TBA	350	0.661	1.147	1.207	1 x 2	75	3.122	6377	8400	21.9
646907	500	0.789	1.275	1.335	1 x 1	85	3.419	8286	12000	23.9
TBA	750	0.968	1.463	1.523	1 x 0	85	3.825	11287	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 Directly Buried 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	0.203	0.053	0.047	0.577 + j0.419	0.203 + j0.047	2700	185/200	165/185
1	0.129	0.161	0.049	0.045	0.535 + j0.401	0.162 + j0.045	2827	210/225	185/210
1/0	0.102	0.128	0.045	0.043	0.499 + j0.383	0.128 + j0.043	2957	240/255	215/240
2/0	0.081	0.101	0.042	0.042	0.471 + j0.366	0.102 + j0.042	3097	270/290	245/275
3/0	0.064	0.081	0.039	0.040	0.446 + j0.346	0.081 + j0.040	3263	305/330	285/315
4/0	0.051	0.064	0.036	0.039	0.426 + j0.327	0.065 + j0.039	3445	350/375	325/360
250	0.043	0.054	0.034	0.038	0.411 + j0.309	0.055 + j0.038	3624	380/410	360/400
350	0.031	0.039	0.030	0.036	0.386 + j0.279	0.040 + j0.036	3959	460/495	435/490
500	0.022	0.028	0.026	0.034	0.362 + j0.247	0.028 + j0.034	4376	550/590	535/600
750	0.014	0.020	0.022	0.032	0.335 + j0.209	0.020 + j0.032	4987	665/720	670/745

* Calculations are based on 5 mil 25 % over lapping copper tape shield / Conductor temperature of 90°C / Shield temperature of 45°C / Earth resistivity of 100 ohm-meter

† Ampacities are based on TABLE 310.60(C)(83) of the 2020 National Electrical Code (20°C Ambient Earth Temperature, Thermal Resistance ROH of 90)

‡ Ampacities are based on TABLE 310.60(C)(71) of the 2020 National Electrical Code (40°C Ambient Air Temperature)

