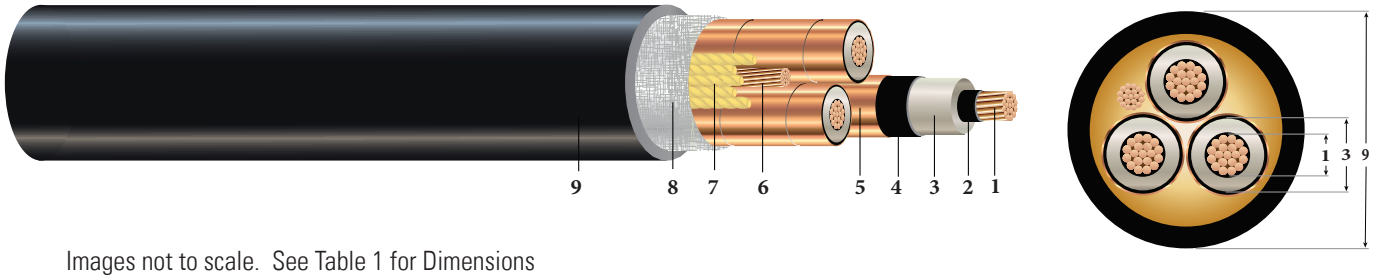
3/C CU 15KV 220 NL-EPR 133% TS CPE MV-105

Type MV-105 Three Conductor Copper, 220 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level, Tape Shield, Chlorinated Polyethylene (CPE) Jacket, Dual Rated UL/CSA



Images not to scale. See Table 1 for Dimensions

CONSTRUCTION:

1. **Conductor**: Class B compressed stranded bare copper per ASTM B3 and ASTM B8
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**: 1 Class B compressed stranded bare copper ground per ASTM B3 and ASTM B8
7. **Filler**: Wax paper filler
8. **Binder**: Poly glass tape
9. **Overall Jacket**: Thermoplastic Chlorinated Polyethylene (CPE)

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 Soft or annealed copper
- ASTM B8 Concentric-lay-standard copper
- UL 1072 - Medium Voltage Power Cables
- ICEA S-93-639 (NEMA WC 74) 5-46 KV Shielded Power Cable & ICEA S-97-682 5-46 KV Utility
- UL 1685/FT4 Vertical-Tray Fire Propagation and Smoke Release Test
- IEEE 1202 -Flame Test (70,000) BTU/hr Vertical Tray Test
- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV
- CSA C68.10 - Shielded Power Cables for Commercial and Industrial Applications - 5 to 46 KV
- CSA C22.2 No.230 - Tray Cables - Rated TC-ER
- CSA C22.2 No. 2556 / UL 2556 - Cable Test Methods

SAMPLE PRINT LEGEND:

SOUTHWIRE [SYMBOL - LIGHTING BOLT] #P# (UL/CSA) 3/C [#AWG or #kcmil] CU 220 MILS NL-EPR 15KV 133% INS LEVEL 25% TS MV-105 FOR CT USE SUN. RES. TC-ER(CSA) FOR DIRECT BURIAL FT4 YEAR (NESC) [SEQUENTIAL FEET MARKS]

We've got it MADE IN AMERICA

Southwire Company, LLC | One Southwire Drive, Carrollton, GA 30119 | www.southwire.com

Copyright © 2017 Southwire Company, LLC. All Rights Reserved

Table 1 – Weights & Measurements

Stock Code	Cond. Size	Diameter over Cond. (1)	Diameter over Insul. (3)	Diameter over Insul. Shield	Ground	Jacket Thickness[1]	Approx. OD (9)	Approx. Weight	Max Pull Tension	Min Bending Radius
	AWG	inches	inches	inches	No. x AWG	mils	inches	lbs./MFT	lbs.	inches
643380	2	0.283	0.760	0.820	1 x 6	110	2.062	2275	1593	14.4
TBA	1	0.322	0.799	0.859	1 x 4	110	2.147	2575	2009	15.0
584041	1/0	0.362	0.839	0.899	1 x 4	110	2.233	2884	2534	15.6
TBA	2/0	0.405	0.882	0.942	1 x 4	110	2.326	3253	3194	16.3
584042	3/0	0.456	0.933	0.993	1 x 3	110	2.436	3749	4027	17.1
560251	4/0	0.512	0.989	1.049	1 x 3	110	2.557	4309	5078	17.9
TBA	250	0.558	1.044	1.104	1 x 3	110	2.676	4816	6000	18.7
563785	350	0.661	1.147	1.207	1 x 2	110	2.898	6081	8400	20.3
561232	500	0.789	1.275	1.335	1 x 1	135	3.225	8058	12000	22.6
TBA	750	0.968	1.463	1.523	1 x 0	135	3.631	11036	18000	25.4

All dimensions are nominal and subject to normal manufacturing tolerances

[1] Comply with ICEA S-93-639 Appendix C for jacket thickness determination

Table 2 – Electrical and Engineering Data

Stock Code	Cond. Size	Resistance DC @ 25°C	Resistance AC @ 90°C	Reactance X_C @ 60Hz	Reactance X_L @ 60Hz	Positive Sequence Impedance*	Zero Sequence Impedance*	Shield Short Circuit Current 6 Cycles	Allowable Ampacities 90°C/105°C In Duct †	Allowable Ampacities 90°C/105°C In Air ‡
	AWG	Ω/MFT	Ω/MFT	MΩ*MFT	Ω/MFT	Ω/MFT	Ω/MFT	Amps	Amps	Amps
643380	2	0.162	0.203	0.053	0.047	0.203 + j0.047	0.577 + j0.419	2700	150 / 160	165 / 185
TBA	1	0.129	0.161	0.049	0.045	0.162 + j0.045	0.535 + j0.401	2827	170 / 185	185 / 210
584041	1/0	0.102	0.128	0.045	0.043	0.128 + j0.043	0.499 + j0.383	2957	195 / 210	215 / 240
TBA	2/0	0.081	0.101	0.042	0.042	0.102 + j0.042	0.471 + j0.366	3097	220 / 235	245 / 275
584042	3/0	0.064	0.081	0.039	0.040	0.081 + j0.040	0.446 + j0.346	3263	250 / 270	285 / 315
560251	4/0	0.051	0.064	0.036	0.039	0.065 + j0.039	0.426 + j0.327	3445	285 / 305	325 / 360
TBA	250	0.043	0.054	0.034	0.038	0.055 + j0.038	0.411 + j0.309	3624	310 / 335	360 / 400
563785	350	0.031	0.039	0.030	0.036	0.040 + j0.036	0.386 + j0.279	3959	375 / 400	435 / 490
561232	500	0.022	0.028	0.026	0.034	0.028 + j0.034	0.362 + j0.247	4376	450 / 485	535 / 600
TBA	750	0.014	0.020	0.022	0.032	0.020 + j0.032	0.335 + j0.209	4987	545 / 585	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 ohms-meter

† Ampacities are based on TABLE 310.60(C)(79) Detail 1. of the 2014 National Electrical Code (20°C Ambient Earth Temperature, Thermal Resistance ROH of 90)

‡ Ampacities are based on TABLE 310.60(C)(71) of the 2014 National Electrical Code (40°C Ambient Air Temperature)

Copyright © 2017 Southwire Company, LLC. All Rights Reserved