

# 1/C AL 15kV 220 NLEPR 133% PVC MV-105 - Silicone Free

Type MV-105 Single Conductor Aluminum, 220 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Jacket, Dual Rated UL/CSA - Silicone Free

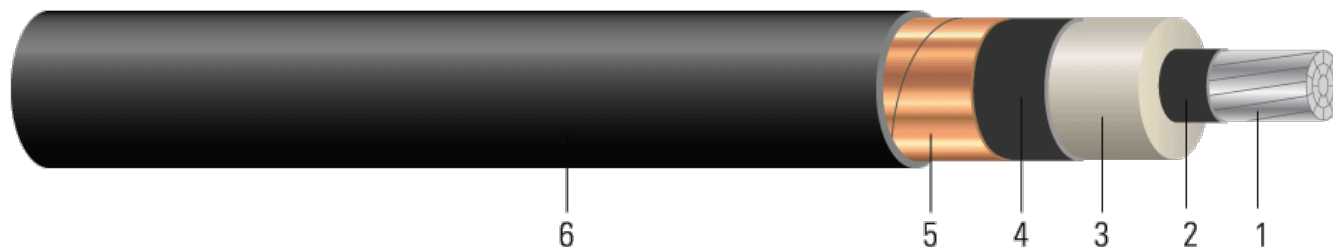


Image not to scale. See Table 1 for dimensions.

## CONSTRUCTION:

- Conductor:** Class B compact stranded 8000 Series aluminum per ASTM B800 and ASTM B836
- Conductor Shield:** Semi-conducting cross-linked copolymer; A conductor separator is used for cable size larger than or equal to 500 Kcmil
- Insulation:** 220 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level,
- Insulation Shield:** Strippable semi-conducting cross-linked copolymer
- Copper Tape Shield:** Helically wrapped 5 mil copper tape with 25% overlap
- Overall Jacket:** Polyvinyl Chloride (PVC). Silicone free

## APPLICATIONS AND FEATURES:

Southwire's 15KV cables are silicone free suited for use in wet and dry areas, conduits, ducts, troughs, trays, direct burial when installed with a grounding conductor in close proximity that conforms to NEC section 311.36 and 250.4(A)(5), 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. ST1 (low smoke) Rated for sizes 1/0 and larger. Rated for 1000 lbs./FT maximum sidewall pressure.

## SPECIFICATIONS:

- ASTM B800 8000 Series Aluminum Alloy Wire
- ASTM B836 Compact Rounded Stranded Aluminum Conductors
- UL 1072 Medium-Voltage Power Cables
- UL 1685 FT4-ST1 Vertical-Tray Fire Propagation and Smoke Release Test (1/0 and Larger)
- CSA C22.2 No.230 Tray Cables - Rated TC-ER (1/0 AWG and Larger)
- CSA C22.2 No. 2556 / UL 2556 Cable Test Methods
- CSA C68.10 Shielded Power Cables for Commercial and Industrial Applications - 5 to 46 KV
- ICEA S-93-639 (NEMA WC 74) 5-46 KV Shielded Power Cable
- IEEE 1202 FT4 Flame Test (70,000) BTU/hr Vertical Tray Test (1/0 and Larger)
- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV



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**SAMPLE PRINT LEGEND:**

SOUTHWIRE [SYMBOL - LIGHTING BOLT] #P# (UL/CSA) 1/C [#AWG or #kcmil] AL 220 MILS NL-EPR 15KV 133% INS LEVEL 25% TS MV-105 FOR CT USE SUN. RES. TC-ER(CSA 1/0 LARGER) FOR DIRECT BURIAL FT4 -ST1 YEAR (NESC) [SEQUENTIAL FEET MARKS]

**Table 1 – Weights and Measurements**

Stock Number	Cond. Size	Diameter Over Conductor	Diameter Over Insulation	Diameter Over Insulation Shield	Jacket Thickness <sup>1</sup>	Approx. OD	Approx. Weight	Max Pull Tension	Min Bending Radius	Conduit Size*
	AWG/ Kcmil	inch	inch	inch	mil	inch	lb/1000ft	lb	inch	inch
TBA	2	0.268	0.745	0.805	80	0.985	482	398	11.8	3
TBA	1	0.299	0.776	0.836	80	1.016	518	502	12.2	3
TBA	1/0	0.336	0.813	0.873	80	1.053	562	634	12.6	3
TBA	2/0	0.376	0.853	0.913	80	1.093	613	799	13.1	3
TBA	3/0	0.423	0.900	0.960	80	1.140	677	1007	13.7	3.5
TBA	4/0	0.475	0.952	1.012	80	1.192	751	1270	14.3	3.5
TBA	250	0.520	1.006	1.066	80	1.246	825	1500	15.0	3.5
TBA	350	0.616	1.102	1.162	80	1.342	982	2100	16.1	4
TBA	500	0.736	1.222	1.282	80	1.462	1201	3000	17.5	4
TBA	600	0.813	1.330	1.390	80	1.570	1378	3600	18.8	5
TBA	750	0.908	1.425	1.485	80	1.665	1582	4500	20.0	5
TBA	1000	1.060	1.577	1.637	110	1.877	2020	6000	22.5	6

All dimensions are nominal and subject to normal manufacturing tolerances

◊ Cable marked with this symbol is a standard stock item

\* Conduit size based on 3 phase 40% fill-factor without ground

<sup>1</sup> Comply with ICEA S-93-639 Appendix C for jacket thickness determination

**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 <sup>†</sup>	Allowable Ampacity In Air 90/105°C <sup>‡</sup>
AWG/ Kcmil	Ω/1000ft	Ω/1000ft	MΩ*1000ft	Ω/1000ft	Ω/1000ft	Ω/1000ft	Amp	Amp	Amp
2	0.266	0.334	0.055	0.052	0.705 + j0.425	0.335 + j0.052	2651	120/130	150/170
1	0.211	0.265	0.051	0.050	0.636 + j0.411	0.266 + j0.050	2752	135/145	175/195
1/0	0.168	0.211	0.048	0.048	0.580 + j0.394	0.212 + j0.048	2873	155/165	200/225
2/0	0.133	0.167	0.044	0.046	0.535 + j0.377	0.168 + j0.046	3003	175/190	235/260
3/0	0.105	0.132	0.041	0.044	0.497 + j0.359	0.133 + j0.044	3156	200/215	270/300
4/0	0.084	0.105	0.038	0.043	0.467 + j0.339	0.106 + j0.043	3325	230/245	310/350
250	0.071	0.089	0.036	0.042	0.446 + j0.321	0.090 + j0.042	3501	250/270	345/385
350	0.051	0.064	0.031	0.040	0.413 + j0.292	0.064 + j0.040	3813	305/330	430/480
500	0.035	0.045	0.027	0.037	0.383 + j0.260	0.046 + j0.037	4203	370/400	535/600
600	0.030	0.038	0.027	0.037	0.365 + j0.236	0.038 + j0.037	4555	/	/
750	0.024	0.030	0.024	0.036	0.348 + j0.217	0.031 + j0.036	4864	455/490	700/780
1000	0.018	0.023	0.021	0.035	0.326 + j0.191	0.024 + j0.035	5358	525/565	840/940



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\* Calculations are based on three cables triplexed / 5 mil 25 % over lapping copper tape shield Earth resistivity of 100 ohms-meter

† Ampacities are based on TABLE 310.60(C)(78) Detail 1. of the 2020 National Electrical Code (20°C Ambient Earth Temperature, Thermal Resistance ROH of 90)

‡ Ampacities are based on TABLE 310.60(C)(70) of the 2020 National Electrical Code (40°C Ambient Air Temperature)

