

# 1/C AL 25kV 320 NLEPR 133% SIMpull® PVC MV-105

Type MV-105 Single Conductor Aluminum, 320 Mils No Lead Ethylene Propylene Rubber (NLEPR) 133% Insulation Level, Tape Shield, SIMpull Polyvinyl Chloride (PVC) Jacket, Dual Rated UL/CSA

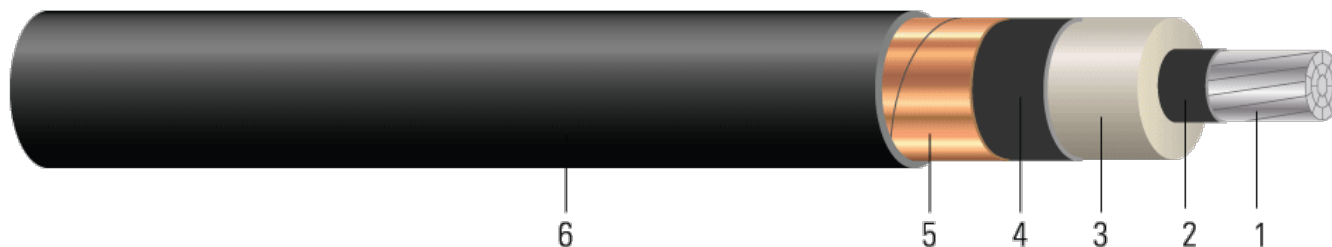


Image not to scale. See Table 1 for dimensions.

## 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:** 320 Mils No Lead Ethylene Propylene Rubber (NLEPR) 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)

## APPLICATIONS AND FEATURES:

Southwire's 25KV cables are 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. PVC jacket is made with SIM technology and has a coefficient of friction COF of 0.2. Cable can be installed in conduit without the aid of lubrication. Rated for 1000 lbs./FT maximum sidewall pressure.

## SPECIFICATIONS:

- ASTM B801 Concentric-Lay-Stranded Conductors of 8000 Series Aluminum Alloy
- ASTM B836 Compact Rounded Stranded Aluminum Conductors
- UL 1072 Medium-Voltage Power Cables
- UL 1685 FT4 Vertical-Tray Fire Propagation and Smoke Release Test (1/0 and Larger)
- 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
- 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
- ICEA S-97-682 Standard for Shielded Utility Cable Rated for 5 - 46kV
- 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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- 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 SIMpul{R} POWER CABLE MASTER-DESIGN {UL} XXX KCMIL COMPACT AL.--- {ALUMAFLEX} {R} AA8176 320 MILS NL-EPR 25KV 133% INS LEVEL 25%TS MV-105 FOR CT USE ST1 SUN RES (NESC) -- {CSA} 750 KCMIL COMPACT AL.--- {ALUMAFLEX}{R} AA8176 8.13mm (320 mils) NL-EPR 25KV 133% INS LEVEL 25%TS SR TC-ER 105{D}C FT4 -25{D}C LTDD -- PAT www.patentSW.com -- RoHS

### 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
671508	1/0	0.336	1.014	1.074	80	1.254	771	633	15	3.5
TBA	2/0	0.376	1.054	1.114	80	1.294	854	798	15.5	4
TBA	3/0	0.422	1.1	1.16	80	1.34	925	1006	16	4
672158	4/0	0.474	1.153	1.213	80	1.393	984	1269	16.7	4
TBA	250	0.52	1.206	1.266	80	1.446	1095	1500	17.3	4
TBA	350	0.615	1.301	1.361	80	1.541	1269	2100	18.4	4.5
TBA	500	0.735	1.421	1.481	110	1.721	1612	3000	20.6	5
665046	500	0.735	1.444	1.504	110	1.744	1593	3000	20.9	5
672021	750	0.908	1.616	1.676	110	1.926	2005	4500	23.1	5.5
TBA	1000	1.06	1.756	1.816	110	2.056	2395	6000	24.6	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
1/0	0.168	0.211	0.0583	0.0519	0.572 + j0.358	0.212 + j0.051	3080	155/165	200/225
2/0	0.133	0.167	0.0545	0.0501	0.525 + j0.344	0.168 + j0.049	3195	175/190	230/260
3/0	0.105	0.133	0.0506	0.0481	0.488 + j0.328	0.134 + j0.047	3327	200/215	270/300
4/0	0.084	0.105	0.047	0.0464	0.457 + j0.312	0.106 + j0.045	3476	230/245	310/345
250	0.071	0.09	0.0447	0.0452	0.437 + j0.297	0.091 + j0.044	3631	250/270	345/380
350	0.05	0.065	0.0399	0.0427	0.404 + j0.273	0.066 + j0.041	3904	305/330	430/475
500	0.035	0.046	0.0354	0.0412	0.374 + j0.246	0.047 + j0.04	4248	370/400	530/590
500	0.035	0.046	0.0354	0.0412	0.374 + j0.246	0.047 + j0.04	4248	370/400	530/590
750	0.024	0.033	0.0308	0.0387	0.345 + j0.212	0.034 + j0.037	4773	455/490	685/765
1000	0.018	0.026	0.0275	0.0369	0.325 + j0.189	0.027 + j0.036	5209	525/565	825/920



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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)

