

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

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

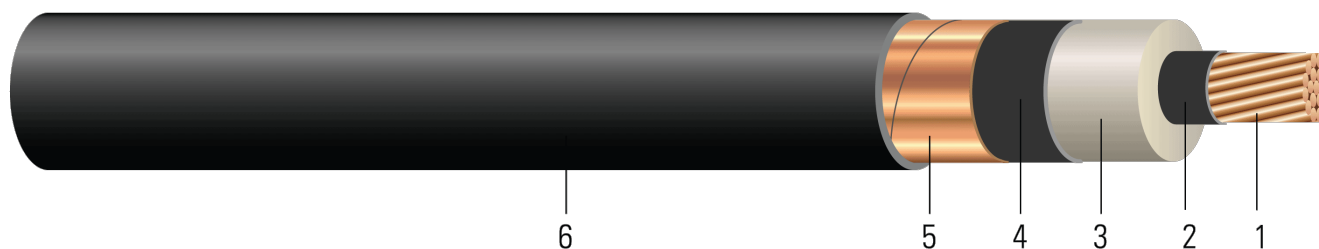


Image not to scale. See Table 1 for dimensions.

## CONSTRUCTION:

- Conductor:** Class B compressed stranded bare copper per ASTM B3 and ASTM B8 (Tinned Copper per ASTM B33 optional)
- Conductor Shield:** Semi-conducting cross-linked copolymer
- Insulation:** 320 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)

## 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 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 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
- 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



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**SAMPLE PRINT LEGEND:**

{SQFTG\_DUAL} SOUTHWIRE SIMpull{R} POWER CABLE MASTER-DESIGN {UL} XXX AWG CU 320 MILS NL-EPR 25KV 133% INS LEVEL 25%TS MV-105 FOR CT USE ST1 SUN RES (NESC) -- {CSA} XXX AWG CU 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
TBA	1	0.322	0.999	1.059	80	1.239	909	670	14.9	3.5
644614◇	1/0	0.362	1.039	1.099	80	1.279	1009	845	15.3	4
644615	2/0	0.405	1.082	1.142	80	1.322	1129	1065	15.9	4
644616	3/0	0.456	1.133	1.193	80	1.373	1278	1342	16.5	4
644618	4/0	0.512	1.189	1.249	80	1.429	1459	1693	17.1	4
644619	250	0.558	1.244	1.304	80	1.484	1622	2000	17.8	5
644620	300	0.611	1.297	1.357	80	1.537	1819	2400	18.4	5
644621	350	0.661	1.347	1.407	80	1.587	2015	2800	19.0	5
644623◇	500	0.789	1.475	1.535	80	1.715	2582	4000	20.6	5
644624	600	0.866	1.561	1.621	110	1.861	3062	4800	22.3	6
644626◇	750	0.968	1.663	1.723	110	1.963	3614	6000	23.6	6
644627	1000	1.117	1.812	1.872	110	2.112	4514	8000	25.3	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	0.129	0.161	0.061	0.053	0.519 + j0.334	0.162 + j0.053	3478	175/185	225/250
1/0	0.102	0.128	0.057	0.051	0.482 + j0.321	0.128 + j0.051	3608	200/215	260/290
2/0	0.081	0.101	0.053	0.049	0.452 + j0.307	0.102 + j0.049	3748	230/245	300/330
3/0	0.064	0.080	0.049	0.047	0.427 + j0.291	0.081 + j0.047	3914	260/275	345/380
4/0	0.051	0.064	0.045	0.045	0.405 + j0.276	0.065 + j0.045	4096	295/315	395/445
250	0.043	0.054	0.043	0.044	0.390 + j0.262	0.055 + j0.044	4275	325/345	440/490
300	0.036	0.045	0.041	0.043	0.376 + j0.249	0.046 + j0.043	4447	357/380	492/547
350	0.031	0.039	0.038	0.042	0.365 + j0.238	0.040 + j0.042	4610	390/415	545/605
500	0.022	0.028	0.034	0.040	0.341 + j0.213	0.029 + j0.039	5026	465/500	680/755
600	0.018	0.023	0.032	0.039	0.328 + j0.198	0.024 + j0.039	5306	505/544	765/855
750	0.014	0.019	0.029	0.038	0.314 + j0.182	0.020 + j0.038	5638	565/610	870/970
1000	0.011	0.015	0.026	0.036	0.296 + j0.163	0.016 + j0.036	6123	640/690	1040/1160



\* Calculations are based on three cables triplexed / 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)(77) 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)(69) of the 2020 National Electrical Code (40°C Ambient Air Temperature)

