

# 1/C CU 5/8 kV 133%/100% 115 NLEPR SIMpull® PVC MV-105

Type MV-105 Single Conductor Copper, 5kV 133% /8KV 100% 115 Mils No Lead Ethylene Propylene Rubber (NL-EPR) Insulation Level, Tape Shield, SIMpull Polyvinyl Chloride (PVC) Jacket, Dual Rated UL/CSA

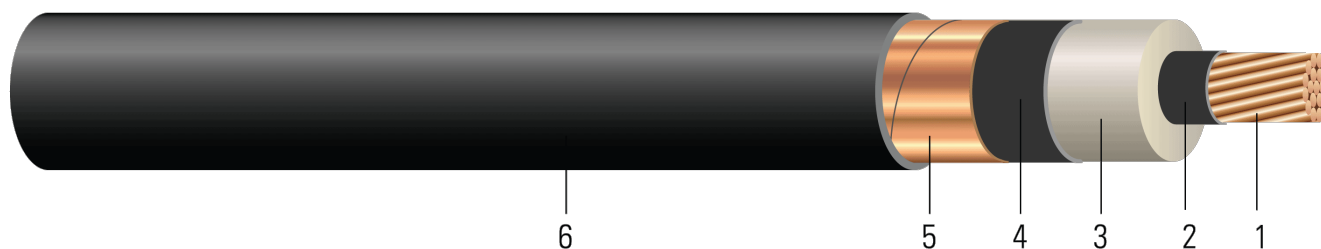


Image not to scale. See Table 1 for dimensions.

## CONSTRUCTION:

- Conductor:** Class B compressed stranded bare copper per ASTM B3 and ASTM B8. Tinned copper optional per ASTM B33
- Conductor Shield:** Semi-conducting cross-linked copolymer
- Insulation:** 5kV 133% /8KV 100% Insulation Level 115 Mils No Lead Ethylene Propylene Rubber (NL-EPR)
- 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 5kV 133% /8KV 100% 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), aerially supported by a messenger 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. These cables feature sunlight and moisture resistance, exceptional corona resistance, resistance to most chemicals, oils and acids and are flame retardant.

## 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
- ASTM B496 Compact Round Concentric-lay-standard copper
- 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
- 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:

SOUTHWIRE SIMpull{R} POWER CABLE {UL} XXX AWG CU 115 MILS NL-EPR 5KV 133%/8KV 100% INS LEVEL 25%TS MV-105 FOR CT USE ST1 SUN RES {NESC} -- {CSA} XXX AWG CU X.XXmm (115 mils) NL-EPR 5KV 133%/8KV 100% INS LEVEL 25%TS SR TC-ER 105{D}C FT4 -25{D}C LTDD {YYYY} -- 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
954636◇	2	0.283	0.550	0.610	65	0.760	454	531	9.1	2.5
954644	1	0.322	0.589	0.649	65	0.799	522	670	9.6	2.5
955005◇	1/0	0.362	0.629	0.689	65	0.839	609	845	10.1	2.5
955013◇	2/0	0.405	0.672	0.732	65	0.882	714	1065	10.6	2.5
955021	3/0	0.456	0.723	0.783	80	0.963	871	1342	11.6	3
955088◇	4/0	0.512	0.779	0.839	80	1.019	1034	1693	12.2	3
955039◇	250	0.558	0.834	0.894	80	1.074	1180	2000	12.9	3
955047◇	350	0.661	0.937	0.997	80	1.177	1540	2800	14.1	3.5
955054◇	500	0.789	1.065	1.125	80	1.305	2067	4000	15.7	4
679638	600	0.866	1.151	1.211	80	1.391	2419	4800	16.7	4
955096◇	750	0.968	1.253	1.313	80	1.493	2932	6000	17.9	5
955070	1000	1.117	1.402	1.462	80	1.642	3777	8000	19.7	5
596374	1500	1.370	1.770	1.830	110	2.070	5746	12000	25	
552012	2000	1.582	1.953	2.013	110	2.153	7208	16000	26	

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†	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	0.036	0.044	0.568 + j0.512	0.203 + j0.044	2017	145/155	190/215
1	0.129	0.161	0.033	0.043	0.530 + j0.490	0.162 + j0.043	2144	170/180	225/250
1/0	0.102	0.128	0.030	0.041	0.498 + j0.468	0.128 + j0.041	2274	195/210	260/290
2/0	0.081	0.101	0.027	0.040	0.473 + j0.446	0.102 + j0.040	2414	220/235	300/330
3/0	0.064	0.081	0.025	0.039	0.452 + j0.422	0.081 + j0.039	2580	250/270	345/385
4/0	0.051	0.064	0.023	0.038	0.434 + j0.397	0.065 + j0.037	2762	290/310	400/445
250	0.043	0.054	0.022	0.037	0.423 + j0.375	0.055 + j0.037	2941	320/345	445/495
350	0.031	0.039	0.019	0.035	0.402 + j0.336	0.040 + j0.035	3276	385/415	550/615
500	0.022	0.028	0.016	0.033	0.381 + j0.296	0.029 + j0.033	3693	470/505	695/775
600	0.018	0.024	0.015	0.033	0.369 + j0.272	0.024 + j0.033	3972	505/544	765/855
750	0.014	0.020	0.014	0.032	0.355 + j0.247	0.020 + j0.032	4304	585/630	900/1000
1000	0.011	0.016	0.012	0.031	0.336 + j0.216	0.016 + j0.030	4789	670/720	1075/1200
1500	0.007	0.0110	0.019	0.031	0.282 + j0.145	0.011 + j0.020	8965	805/865	1325/1477
2000	0.005	0.010	0.010	0.029	0.282 + j0.145	0.011 + j0.020	9862	940/1010	1575/1755

\* 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)

