

# 1/C CU 15kV 220 NLEPR 133% SIMpull® PVC MV-105 (Utility Concentric Neutral)

Type MV-105 Single Conductor Copper, 220 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level, Concentric Neutral Shield, SIMpull Polyvinyl Chloride (PVC) Jacket

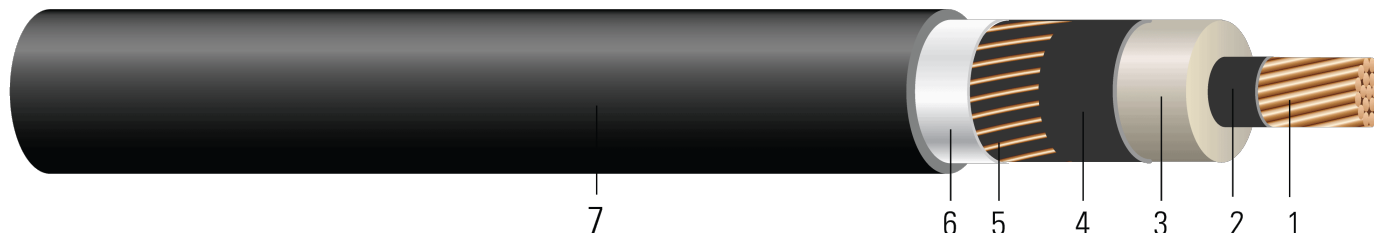


Image not to scale. See Table 1 for dimensions.

## 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:** 220 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level,
- Insulation Shield:** Strippable semi-conducting cross-linked copolymer
- Concentric Neutral:** 1/3 concentric neutral
- Neutral Separator:** Mylar tape
- Overall Jacket:** Polyvinyl Chloride (PVC)

## APPLICATIONS AND FEATURES:

Southwire's 15KV cables are suited for use in wet and dry areas, conduits, ducts, troughs, 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. 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
- ICEA S-93-639 (NEMA WC 74) 5-46 KV Shielded Power Cable
- ICEA S-94-649 Standard for Concentric Neutral Cables Rated 5 - 46kV
- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV

## SAMPLE PRINT LEGEND:

{SEQUENTIAL FEET MARKS} SOUTHWIRE SIMpull{R} POWER CABLE (PLANT CODE) {UL} XXX AWG CU 220 MILS NL-EPR 15KV 133% INS LEVEL XX x XX AWG CU WS MV-105 SUN RES FOR DIRECT BURIAL (NESC) -- PAT www.patentSW.com -- RoHS



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**Table 1 – Weights and Measurements**

Stock Number	Cond. Size	Diameter Over Conductor	Diameter Over Insulation	Diameter Over Insulation Shield	Concentric Neutral	Jacket Thickness <sup>1</sup>	Approx. OD	Approx. Weight	Max Pull Tension	Min Bending Radius	Conduit Size*
	AWG/Kcmil	inch	inch	inch	No. x AWG	mil	inch	lb/1000ft	lb	inch	inch
TBA	2	0.283	0.760	0.840	6 x 14	80	1.128	683	531	13.5	3.5
TBA	1	0.322	0.799	0.879	7 x 14	80	1.167	769	670	14.0	3.5
TBA	1/0	0.362	0.839	0.919	9 x 14	80	1.207	885	845	14.5	3.5
TBA	2/0	0.405	0.882	0.962	11 x 14	80	1.250	1021	1065	15.0	3.5
TBA	3/0	0.456	0.933	1.013	14 x 14	80	1.301	1196	1342	15.6	4
655393	4/0	0.512	0.989	1.080	18 x 14	80	1.357	1415	1693	16.3	4
TBA	250	0.558	1.044	1.144	21 x 14	80	1.432	1624	2000	17.2	4
TBA	350	0.661	1.147	1.247	18 x 12	80	1.567	2098	2800	18.8	5
TBA	500	0.789	1.275	1.375	17 x 10	80	1.739	2824	4000	20.9	5
TBA	750	0.968	1.463	1.563	20 x 9	80	1.952	3973	6000	23.4	6
TBA	1000	1.117	1.612	1.742	21 x 8	110	2.219	5264	8000	26.6	

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	0.162	0.203	0.053	0.053	0.519 + j0.235	0.204 + j0.053	5282	155/165	195/215
1	0.129	0.161	0.049	0.051	0.454 + j0.194	0.163 + j0.051	6162	175/185	225/250
1/0	0.102	0.128	0.045	0.049	0.379 + j0.142	0.129 + j0.049	7922	200/215	260/290
2/0	0.081	0.101	0.042	0.048	0.319 + j0.109	0.103 + j0.047	9683	230/245	300/335
3/0	0.064	0.080	0.039	0.046	0.260 + j0.081	0.083 + j0.045	12324	260/275	345/385
4/0	0.051	0.064	0.036	0.044	0.208 + j0.060	0.067 + j0.044	15845	295/315	400/445
250	0.043	0.054	0.034	0.043	0.180 + j0.052	0.057 + j0.043	18486	325/345	445/495
350	0.031	0.039	0.030	0.042	0.134 + j0.041	0.043 + j0.040	25175	390/415	550/610
500	0.022	0.028	0.026	0.040	0.091 + j0.032	0.034 + j0.037	37794	465/500	685/765
750	0.014	0.019	0.022	0.038	0.062 + j0.026	0.026 + j0.033	56072	565/610	885/990
1000	0.011	0.015	0.020	0.037	0.047 + j0.024	0.023 + j0.031	74258	640/690	1060/1185

\* 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

<sup>†</sup> 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)

<sup>‡</sup> Ampacities are based on TABLE 310.60(C)(69) of the 2020 National Electrical Code (40°C Ambient Air Temperature)

