

## 3/C CU 35kV 345 NLEPR 100% PVC MV-105

Type MV-105 Three Conductor Copper, 345 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 100% 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 compressed stranded bare copper per ASTM B3 and ASTM B8 (Tinned Copper per ASTM B33 optional)
- Conductor Shield:** Semi-conducting cross-linked copolymer
- Insulation:** 345 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 100% Insulation Level,
- Insulation Shield:** Strippable semi-conducting cross-linked copolymer
- Copper Tape Shield:** Helically wrapped 5 mil copper tape with 25% overlap
- Grounding Conductor:** Class B compressed stranded bare copper ground per ASTM B3 and ASTM B8 (Tinned Copper per ASTM B33 optional)
- Filler:** Wax paper filler
- Binder:** Poly glass tape
- Overall Jacket:** Polyvinyl Chloride (PVC)

### APPLICATIONS AND FEATURES:

Southwire's 35KV cables are suited for use in wet and dry areas, conduits, ducts, troughs, trays, direct burial, 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. For uses in Class I and II, Division 2 hazardous locations per NEC Article 501 and 502. 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 Vertical-Tray Fire Propagation and Smoke Release Test
- ICEA S-93-639 (NEMA WC 74) 5-46 KV Shielded Power Cable
- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV

### SAMPLE PRINT LEGEND:

{SQFTG\_DUAL} SOUTHWIRE{R} POWER CABLE MASTER-DESIGN {UL} 3/C XXX AWG CU 345 MILS NL-EPR 35KV 100% INS LEVEL 25%TS GW 1 X X AWG CU MV-105 FOR CT USE SUN. RES. FOR DIRECT BURIAL {NESC}



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**Table 1 – Weights and Measurements**

Stock Number	Cond. Size	Diameter Over Conductor	Diameter Over Insulation	Diameter Over Insulation Shield	Ground	Jacket Thickness <sup>1</sup>	Approx. OD	Approx. Weight	Max Pull Tension	Min Bending Radius
	AWG/ Kcmil	inch	inch	inch	No. x AWG	mil	inch	lb/1000ft	lb	inch
599364	1/0	0.362	1.089	1.149	1 x 4	110	2.773	3788	2534	19.4
TBA	2/0	0.405	1.132	1.192	1 x 4	110	2.866	4188	3194	20.1
TBA	3/0	0.456	1.183	1.243	1 x 3	135	3.026	4857	4027	21.2
TBA	4/0	0.512	1.239	1.299	1 x 3	135	3.147	5463	5078	22.0
TBA	250	0.558	1.294	1.354	1 x 3	135	3.266	6014	6000	22.9
TBA	350	0.661	1.397	1.457	1 x 2	135	3.488	7362	8400	24.4
TBA	500	0.789	1.525	1.585	1 x 1	135	3.765	9284	12000	26.4
TBA	750	0.968	1.713	1.773	1x 1/0	135	4.171	12393	18000	29.2

All dimensions are nominal and subject to normal manufacturing tolerances

◊ Cable marked with this symbol is a standard stock item

<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	0.102	0.128	0.059	0.049	0.480 + j0.307	0.128 + j0.049	3771	195/210	215/240
2/0	0.081	0.101	0.055	0.047	0.450 + j0.294	0.102 + j0.047	3910	220/235	245/275
3/0	0.064	0.080	0.051	0.045	0.424 + j0.279	0.081 + j0.045	4076	250/270	285/315
4/0	0.051	0.064	0.048	0.043	0.402 + j0.265	0.065 + j0.043	4259	285/305	325/360
250	0.043	0.054	0.045	0.042	0.387 + j0.251	0.055 + j0.042	4438	310/335	360/400
350	0.031	0.039	0.040	0.040	0.361 + j0.229	0.040 + j0.040	4773	375/400	435/490
500	0.022	0.028	0.036	0.038	0.337 + j0.205	0.028 + j0.038	5189	450/485	535/600
750	0.014	0.019	0.031	0.036	0.310 + j0.176	0.020 + j0.036	5801	545/585	670/745

\* Calculations are based on 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)(79) 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)(71) of the 2020 National Electrical Code (40°C Ambient Air Temperature)

