



# CU Compressed 5kV NLEPR Insulation 100% IL PVC Jacket. MV 105 - Tray Rated - Sunlight Resistant - For Direct Burial

Type MV-105 Single Conductor Copper, 90 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:

1. **Conductor:** Class B compressed stranded bare copper per ASTM B3 and ASTM B8 (Tinned Copper per ASTM B33 optional)
2. **Conductor Shield:** Semi-conducting cross-linked copolymer
3. **Insulation:** 90 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 100% Insulation Level,
4. **Insulation Shield:** Strippable semi-conducting cross-linked copolymer
5. **Copper Tape Shield:** Helically wrapped 5 mil copper tape with 25% overlap
6. **Overall Jacket:** Polyvinyl Chloride (PVC)

## APPLICATIONS AND FEATURES:

Southwire's 5KV 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 for 1000 lbs./FT maximum sidewall pressure.

## SPECIFICATIONS:

- ASTM B3 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 (1/0 and Larger)
- 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
- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV (Qualification Test Requirements)
- 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 [SYMBOL - LIGHTING BOLT] ## (UL/CSA) 1/C [#AWG or #kcmil] CU 90 MILS NL-EPR 5KV 100% INS LEVEL 25% TS MV-105 FOR CT USE SUN. RES. TC-ER(CSA 1/0 LARGER) FOR DIRECT BURIAL FT4 -ST1 YEAR (NESC) [SEQUENTIAL FEET MARKS]

**Table 1 – Weights and Measurements**

Stock Number	Cond. Size	Strand Count	Diameter Over Conductor	Diameter Over Insulation	Diameter Over Insulation Shield	Jacket Thickness	Approx. OD	Approx. Weight	Max Pull Tension	Min Bending Radius	Conduit Size
	AWG/ Kcmil	No. of Strands	inch	inch	inch	mil	inch	lb/1000ft	lb	inch	inch
TBA	2	7	0.283	0.500	0.560	55	0.710	422	531	8.5	2.0
TBA	1	19	0.322	0.539	0.599	55	0.749	489	670	9.0	2.5
555656	1/0	19	0.361	0.580	0.640	55	0.790	578	844	9.4	2.5
TBA	2/0	19	0.405	0.622	0.682	80	0.832	677	1065	10.0	2.5
TBA	3/0	19	0.456	0.673	0.733	80	0.883	806	1342	10.6	2.5
TBA	4/0	19	0.512	0.730	0.789	80	0.970	1002	1693	11.6	3.0
TBA	250	37	0.558	0.784	0.844	80	1.024	1150	2000	12.2	3.0
TBA	350	37	0.661	0.887	0.947	80	1.127	1508	2800	13.5	3.5
TBA	500	37	0.789	1.015	1.075	80	1.255	2030	4000	15.0	3.5
TBA	750	61	0.968	1.204	1.264	80	1.444	2899	6000	17.3	4.0
TBA	1000	61	1.117	1.353	1.413	80	1.593	3742	8000	19.1	5.0

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

**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	0.031	0.043	0.637 + j0.457	0.266 + j0.046	1854	145/155	190/215
1	0.129	0.161	0.028	0.041	0.632 + j0.456	0.266 + j0.05	1981	170/180	225/250
1/0	0.102	0.128	0.024	0.039	0.368 + j0.278	0.023 + j0.030	2010	195/210	260/290
2/0	0.081	0.101	0.023	0.038	0.637 + j0.457	0.266 + j0.046	2251	220/235	300/330
3/0	0.064	0.081	0.021	0.037	0.683 + j0.559	0.336 + j0.047	2417	250/270	345/385
4/0	0.051	0.064	0.019	0.036	0.690 + j0.564	0.336 + j0.041	2478	290/310	400/445
250	0.043	0.054	0.018	0.036	0.690 + j0.564	0.336 + j0.041	2645	320/345	445/495
350	0.031	0.039	0.016	0.034	0.702 + j0.470	0.336 + j0.052	2965	385/415	550/615
500	0.022	0.028	0.014	0.032	0.702 + j0.470	0.336 + j0.052	3361	470/505	695/775
750	0.014	0.020	0.012	0.031	0.706 + j0.471	0.336 + j0.048	3947	585/630	900/1000
1000	0.011	0.016	0.010	0.030	0.706 + j0.471	0.336 + j0.048	4408	670/720	1075/1200

\* NEC ampacities are based on:

\* For Duct: Table 310.60(C)(11) Detail 1.

\* For Free Air: Table 310.60(C)(3).

\* Inductive impedance is based on non-ferrous conduit with one diameter spacing center-to-center.





\* Sequence Impedance values are based on Rho Earth Resistivity: 100 Ohm-Meter/1000ft, Spacing: one diameter spacing center-to-center..

\* Capacitive Reactance is between Phase-to-Shield.

