



# CU Compressed 25kV NLEPR Insulation 133% IL Black SIM-PVC Jacket. MV 105 - Tray Rated - Sunlight Resistant - For Direct Burial

Type MV-105 Single Conductor Copper, 320 Mil 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:

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:** 320 Mil No Lead Ethylene Propylene Rubber (NL-EPR) 133% 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 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 when UL listed. Rated at -25°C for cold bend and cold impact and marked with "LTDD" when CSA listed or dual UL/CSA listed. 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 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 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 (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:**

{SQFTG\_DUAL} SOUTHWIRE SIMpull® POWER CABLE {UL} XXX AWG CU 320 MILS NL-EPR 25KV 133% INS LEVEL 25%TS MV-105 FOR CT USE SUN RES (NESC) -- {CSA} XXX AWG CU 8.13mm (320 mils) NL-EPR 25KV 133% INS LEVEL 25%TS SR TC-ER 105°C FT4 -25°C LTDD -- PAT www.patentSW.com -- RoHS

**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	Copper Weight	Approx. Weight	Max Pull Tension	Min Bending Radius	Conduit Size
	AWG/Kcmil	No. of Strands	inch	inch	inch	mil	inch	lb/1000ft	lb/1000ft	lb	inch	inch
664238	1	19	0.322	1.000	1.060	80	1.240	344	918	669	14.8	3.5
644614◇	1/0	19	0.361	1.040	1.100	80	1.280	414	1018	844	15.3	4.0
644615	2/0	19	0.405	1.084	1.144	80	1.324	502	1138	1064	15.8	4.0
644616	3/0	19	0.456	1.134	1.194	80	1.374	613	1286	1342	16.4	4.0
644618	4/0	19	0.512	1.176	1.236	80	1.416	751	1455	1692	16.9	4.0
644619	250	37	0.558	1.228	1.288	80	1.468	874	1618	2000	17.6	4.5
644620	300	37	0.610	1.297	1.357	80	1.537	1033	1828	2400	18.4	4.5
644621	350	37	0.661	1.327	1.387	80	1.567	1190	2007	2800	18.8	4.5
644623◇	500	37	0.789	1.452	1.512	110	1.752	1662	2669	4000	21.0	5.0
644624	600	61	0.865	1.562	1.622	110	1.862	1979	3079	4800	22.3	5.5
644626◇	750	61	0.968	1.664	1.724	110	1.964	2450	3632	6000	23.5	5.5
644627	1000	61	1.117	1.813	1.873	110	2.113	3233	4535	8000	25.3	6.0

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
1	0.128	0.162	0.059	0.053	0.52 + j0.335	0.163 + j0.053	3315	175/185	225/250
1/0	0.102	0.128	0.055	0.051	0.483 + j0.322	0.129 + j0.051	3435	200/215	260/290
2/0	0.081	0.102	0.051	0.049	0.453 + j0.308	0.103 + j0.049	3572	230/245	300/330
3/0	0.064	0.081	0.047	0.047	0.428 + j0.292	0.082 + j0.047	3730	260/275	345/380
4/0	0.051	0.065	0.044	0.045	0.406 + j0.277	0.066 + j0.046	3903	295/315	395/445
250	0.043	0.056	0.041	0.044	0.392 + j0.263	0.057 + j0.044	4071	325/345	440/490
300	0.036	0.047	0.039	0.043	0.378 - j0.022	0.048 - j0.23	4232	357/380	/
350	0.031	0.041	0.037	0.042	0.367 + j0.239	0.042 + j0.042	4390	390/415	545/605
500	0.022	0.030	0.032	0.040	0.343 + j0.214	0.031 + j0.04	4786	465/500	680/755
600	0.018	0.026	0.030	0.039	0.331 + j0.198	0.027 + j0.039	5053	505/544	765/841
750	0.014	0.023	0.028	0.038	0.318 + j0.183	0.024 + j0.038	5372	565/610	870/970
1000	0.011	0.019	0.025	0.036	0.3 + j0.163	0.02 + j0.036	5834	640/690	1040/1160

\* 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.

