



# CU Compressed 5/8kV NLEPR Insulation 133/100% IL CPE-TP Jacket. MV 105 - Tray Rated - Sunlight Resistant - For Direct Burial

Type MV-105 Single Conductor Copper, 115 MiIs No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level, Tape Shield, Thermoplastic Chlorinated Polyethylene (CPE-TP) 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:** 115 MiIs 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:** Thermoplastic Chlorinated Polyethylene (CPE-TP)

## 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 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. 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
- CSA C22.2 No.230 Tray Cables - Rated TC
- 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® POWER CABLE {UL} XXX KCMIL CU 115 MILS NL-EPR CPE JKT 5KV 133%/8KV 100% INS LEVEL 25%TS TYPE MV-105 FOR CT USE SUN RES OIL RES I/II {NESC}

**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
550514◇	2	7	0.282	0.545	0.605	55	0.755	255	458	530	9.0	2.5
TBA	1	19	0.322	0.590	0.650	55	0.780	271	477	669	9.3	2.5
550515◇	1/0	19	0.361	0.630	0.690	80	0.870	383	645	844	10.4	2.5
550516◇	2/0	19	0.405	0.674	0.734	80	0.914	471	751	1064	10.9	3.0
584046	3/0	19	0.456	0.724	0.784	80	0.964	582	883	1342	11.5	3.0
550518◇	4/0	19	0.512	0.780	0.840	80	1.020	721	1046	1692	12.2	3.0
550519◇	250	37	0.558	0.818	0.878	80	1.058	843	1186	2000	12.6	3.0
550520◇	350	37	0.661	0.937	0.997	80	1.177	1162	1556	2800	14.1	3.5
550521◇	500	37	0.789	1.042	1.102	80	1.282	1632	2071	4000	15.3	4.0
550522◇	750	61	0.968	1.254	1.314	80	1.494	2419	2956	6000	17.9	4.5

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	0.204	0.034	0.044	0.389 + j0.263	0.056 + j0.045	1920	145/155	190/215
1	0.128	0.162	0.031	0.042	0.389 + j0.263	0.056 + j0.045	2044	170/180	225/250
1/0	0.102	0.128	0.028	0.042	0.389 + j0.285	0.047 + j0.040	2165	195/210	260/290
2/0	0.081	0.102	0.026	0.040	0.389 + j0.327	0.030 + j0.032	2302	220/235	300/330
3/0	0.064	0.081	0.024	0.039	0.389 + j0.327	0.030 + j0.032	2459	250/270	345/385
4/0	0.051	0.065	0.021	0.038	0.390 + j0.303	0.042 + j0.041	2633	290/310	400/445
250	0.043	0.056	0.020	0.037	0.390 + j0.340	0.030 + j0.033	2800	320/345	445/495
350	0.031	0.041	0.018	0.035	0.390 + j0.340	0.030 + j0.033	3120	385/415	550/615
500	0.022	0.030	0.015	0.033	0.390 + j0.340	0.030 + j0.033	3516	470/505	695/775
750	0.014	0.023	0.013	0.032	0.390 + j0.340	0.031 + j0.034	4102	585/630	900/1000

\* 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.





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- \* 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.

