CU Compressed 35kV NLEPR Insulation 133% IL Black CPE-TP Jacket. MV 105 - Tray Rated - Sunlight Resistant - For Direct Burial

Type MV-105 Single Conductor Copper, 420 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level, Tape Shield, Thermoplastic Chlorinated Polyethylene (CPE-TP) Jacket, Dual Rated UL/CSA

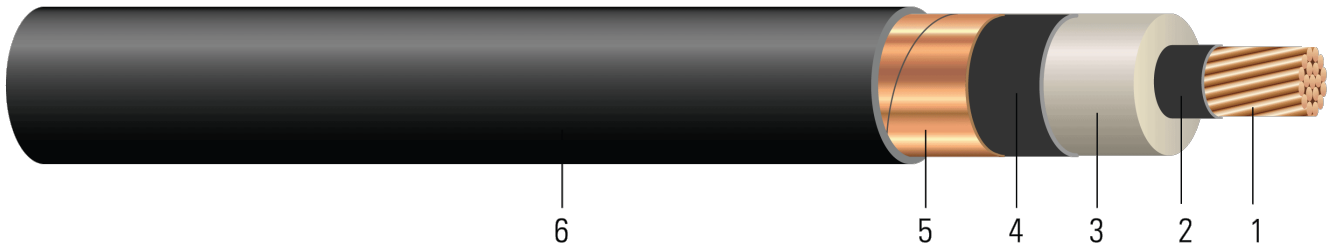


Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

1. **Conductor:** Class B compressed stranded bare copper per ASTM B3 and B8 (Tinned Copper per ASTM B33 optional)
2. **Conductor Shield:** Semi-conducting cross-linked copolymer
3. **Insulation:** 420 Mils 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 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 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 lb/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)

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SAMPLE PRINT LEGEND:

SOUTHWIRE [SYMBOL - LIGHTING BOLT] #P# (UL/CSA) 1/C [#AWG or #kcmil] CU 420 MILS NL-EPR 35KV 133% INS LEVEL 25% TS MV-105 FOR CT USE SUN. RES. TC-ER (CSA 1/0 LARGER) FOR DIRECT BURIAL FT4 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	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
TBA	1/0	19	0.362	1.24	1.3	80	1.48	433	1322	844	17.8	4
TBA	2/0	19	0.405	1.283	1.343	80	1.523	521	1452	1064	18.3	4
TBA	3/0	19	0.456	1.334	1.394	80	1.574	633	1614	1342	18.9	4
TBA	4/0	19	0.512	1.39	1.45	80	1.63	772	1807	1692	19.6	4
TBA	250	37	0.558	1.444	1.504	110	1.744	896	2079	2000	20.9	4.5
TBA	250	37	0.558	1.444	1.504	110	1.744	896	2079	2000	20.9	4.5
TBA	350	37	0.661	1.547	1.607	110	1.847	1213	2502	2800	22.2	5
679731	500	37	0.789	1.652	1.712	110	1.952	1686	3004	4000	23.4	5
TBA	750	61	0.968	1.864	1.924	110	2.164	2474	4099	6000	26	5.5
TBA	1000	61	1.117	2.013	2.073	110	2.313	3258	5038	8000	27.8	6
TBA	1250	91	1.25	2.15	2.21	110	2.45	4041	5969	10000	29.4	6.5

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

TBA stock codes are estimations only and actual product may vary. Please wait until a stock code is assigned to purchase connectors and/or fittings.

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	0.102	0.139	0.059	0.054	0.483+j0.315	0.140+j0.060	4059	195/210	215/240
2/0	0.082	0.112	0.055	0.052	0.453+j0.303	0.113+j0.058	4192	220/235	245/275
3/0	0.064	0.087	0.052	0.05	0.424+j0.290	0.088+j0.056	4350	250/270	285/315
4/0	0.051	0.07	0.048	0.048	0.403+j0.276	0.071+j0.054	4524	285/305	325/360
250	0.043	0.059	0.045	0.048	0.387+j0.264	0.060+j0.053	4691	310/335	360/400
250	0.043	0.059	0.045	0.048	0.387+j0.264	0.060+j0.053	4691	310/335	360/400
350	0.031	0.043	0.041	0.045	0.363+j0.243	0.044+j0.051	5010	375/400	435/490
500	0.021	0.03	0.036	0.043	0.341+j0.224	0.031+j0.048	5335	450/485	535/600
750	0.014	0.021	0.031	0.04	0.315+j0.192	0.022+j0.045	5992	545/585	670/745
1000	0.011	0.018	0.028	0.038	0.300+j0.174	0.019+j0.044	6454	615/660	770/860
1250	0.008	0.014	0.026	0.037	0.286+j0.159	0.016+j0.042	6878	685/735	870/975

***** NEC ampacities are based on:
***** For Duct: Table 310.60(C)(11) Detail 1.

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* 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.

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