CU Compressed 35kV NLEPR Insulation 100% IL Black CPE-TP Jacket. MV 105 - Tray Rated - Sunlight Resistant - For Direct Burial

Type MV-105 Single Conductor Copper, 345 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 100% Insulation Level, Tape Shield, Thermoplastic Chlorinated Polyethylene (CPE-TP) Jacket, Dual Rated UL/CSA

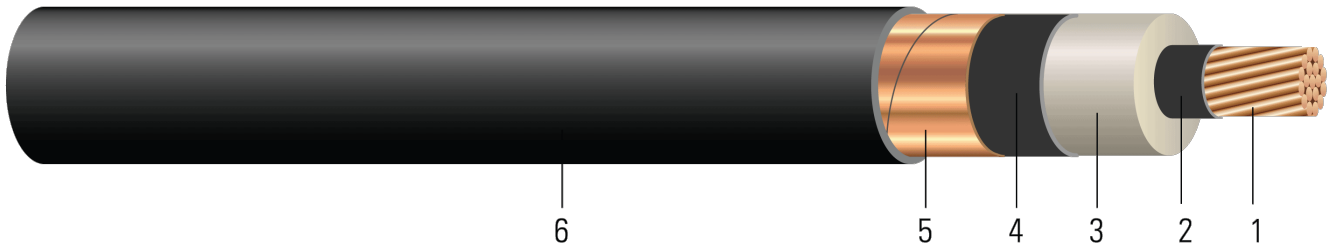

Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

1. **Conductor:** Class B compressed stranded bare copper per ASTM B3 and ASTM B8 (Tinned Copper per ASTM B33 optional)
2. **Conductor Shield:** Semi-conducting cross-linked copolymer
3. **Insulation:** 345 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:** 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 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. ST1 (low smoke) Rated for sizes 1/0 and larger. 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-ST1 Vertical-Tray Fire Propagation and Smoke Release Test (1/0 and Larger)
- CSA C22.2 No.230 Tray Cables - Rated TC-ER
- 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
- 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)
- NFPA 130 Standard for Fixed Guideway Transit and Passenger Rail Systems (500kcmil & Larger)

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- 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 CPE-TP {UL} XXX AWG CU 345 MILS NL-EPR CPE-TP; 35KV 100% 25%TS MV-105 ST-1 IEEE 1202/FT4 FOR CT USE SUN. RES. {NESC}

Table 1 – Weights and Measurements

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
1/0	19	0.361	1.090	1.150	80	1.330	418	1092	844	15.9	4.0
2/0	19	0.405	1.133	1.193	80	1.373	433	1150	1064	16.4	4.0
3/0	19	0.456	1.184	1.244	80	1.424	542	1299	1342	17.0	4.0
4/0	19	0.512	1.240	1.300	80	1.480	756	1548	1692	17.7	4.5
250	37	0.558	1.294	1.354	80	1.534	798	1646	2000	18.4	4.5
350	37	0.661	1.397	1.457	80	1.637	1110	2042	2800	19.6	4.5
500	37	0.789	1.525	1.585	110	1.825	1575	2718	4000	21.9	5.5
750	61	0.968	1.714	1.774	110	2.014	2351	3665	6000	24.1	6.0
1000	61	1.117	1.863	1.923	110	2.163	3126	4570	8000	25.9	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
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	0.128	0.057	0.052	0.499 + j0.429	0.128 + j0.044	3590	200/215	260/290
2/0	0.081	0.102	0.053	0.050	0.499 + j0.429	0.128 + j0.044	3727	230/245	300/330
3/0	0.064	0.081	0.049	0.048	0.499 + j0.429	0.128 + j0.044	3885	260/275	345/380
4/0	0.051	0.065	0.046	0.046	0.499 + j0.429	0.128 + j0.044	4058	295/315	395/445
250	0.043	0.056	0.043	0.045	0.501 + j0.483	0.133 + j0.036	4226	325/345	440/490
350	0.031	0.041	0.039	0.043	0.501 + j0.483	0.133 + j0.036	4545	390/415	545/605
500	0.022	0.030	0.034	0.041	0.503 + j0.404	0.133 + j0.042	4941	465/500	680/755
750	0.014	0.023	0.029	0.039	0.503 + j0.404	0.133 + j0.042	5527	565/610	870/970
1000	0.011	0.019	0.026	0.037	0.503 + j0.404	0.133 + j0.042	5989	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.

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