# CU Compressed 35kV NLEPR Insulation 100% IL Black LSZH-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 Low Smoke Zero Halogen (LSZH-TP) Jacket, Dual Rated UL/CSA. Silicone Free

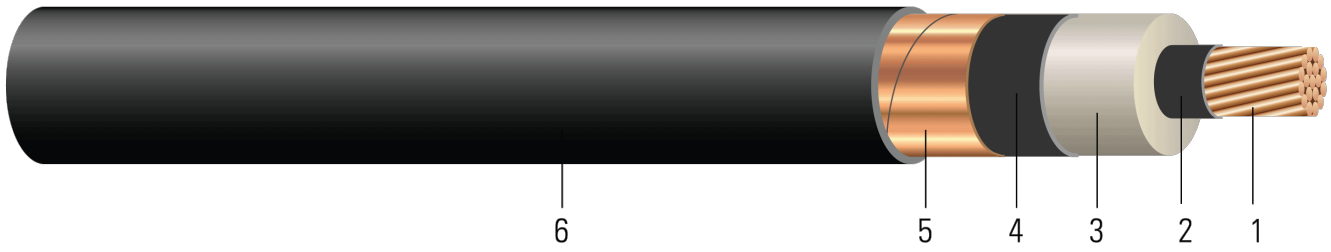



Image not to scale. See Table 1 for dimensions.

## 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:** 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 Low Smoke Zero Halogen (LSZH-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 SOLONON® {UL} XXX AWG CU 345 MILS NL-EPR SOLONON® 35KV 100% 25%TS MV-105 ST-1 IEEE 1202/FT4 FOR CT USE SUN. RES. {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 |
| 559357 | 1/0 | 19 | 0.362 | 1.09 | 1.15 | 80 | 1.33 | 424 | 1098 | 844 | 16 | 4 |
| TBA | 2/0 | 19 | 0.405 | 1.133 | 1.193 | 80 | 1.373 | 509 | 1250 | 1064 | 16.5 | 4 |
| TBA | 3/0 | 19 | 0.456 | 1.184 | 1.244 | 80 | 1.424 | 620 | 1404 | 1342 | 17.1 | 4 |
| 648775 | 4/0 | 19 | 0.512 | 1.24 | 1.3 | 80 | 1.48 | 763 | 1555 | 1692 | 17.8 | 4 |
| TBA | 250 | 37 | 0.558 | 1.294 | 1.354 | 80 | 1.534 | 883 | 1763 | 2000 | 18.4 | 4 |
| TBA | 350 | 37 | 0.661 | 1.397 | 1.457 | 80 | 1.637 | 1201 | 2169 | 2800 | 19.6 | 4 |
| TBA | 500 | 37 | 0.789 | 1.525 | 1.585 | 110 | 1.825 | 1674 | 2845 | 4000 | 21.9 | 5 |
| TBA | 750 | 61 | 0.968 | 1.714 | 1.774 | 110 | 2.014 | 2462 | 3812 | 6000 | 24.2 | 6 |
| TBA | 1000 | 61 | 1.117 | 1.863 | 1.923 | 110 | 2.163 | 3246 | 4732 | 8000 | 26 | 6 |

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 | 0.052 | 0.052 | 0.493+j0.351 | 0.140+j0.057 | 3594 | 195/210 | 215/240 |
| 2/0 | 0.082 | 0.112 | 0.049 | 0.05 | 0.463+j0.337 | 0.113+j0.055 | 3727 | 220/235 | 245/275 |
| 3/0 | 0.064 | 0.087 | 0.046 | 0.048 | 0.435+j0.322 | 0.088+j0.053 | 3885 | 250/270 | 285/315 |
| 4/0 | 0.051 | 0.07 | 0.042 | 0.046 | 0.414+j0.307 | 0.071+j0.052 | 4059 | 285/305 | 325/360 |
| 250 | 0.043 | 0.059 | 0.04 | 0.045 | 0.399+j0.293 | 0.060+j0.050 | 4226 | 310/335 | 360/400 |
| 350 | 0.031 | 0.043 | 0.036 | 0.043 | 0.375+j0.269 | 0.044+j0.048 | 4545 | 375/400 | 435/490 |
| 500 | 0.021 | 0.03 | 0.031 | 0.041 | 0.352+j0.243 | 0.031+j0.046 | 4942 | 450/485 | 535/600 |
| 750 | 0.014 | 0.021 | 0.027 | 0.039 | 0.327+j0.210 | 0.022+j0.044 | 5528 | 545/585 | 670/745 |
| 1000 | 0.011 | 0.018 | 0.024 | 0.037 | 0.312+j0.189 | 0.019+j0.042 | 5989 | 615/660 | 770/860 |

* 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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