# AL Compact 35kV NLEPR Insulation 133% IL Black SIM-PVC Jacket. MV 105 - Tray Rated - Sunlight Resistant - For Direct Burial

Type MV-105 Single Conductor Aluminum, 420 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level, Tape Shield, SIM*pull* Polyvinyl Chloride (PVC) Jacket, Dual Rated UL/CSA

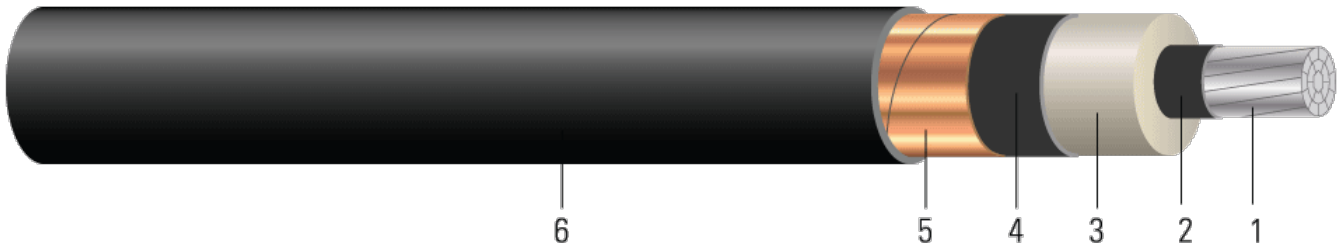



Image not to scale. See Table 1 for dimensions.

## CONSTRUCTION:

1. **Conductor:** Class B compact stranded 8000 Series aluminum per ASTM B800 and ASTM B836
2. **Conductor Shield:** Semi-conducting cross-linked copolymer; A conductor separator is used for cable size larger than or equal to 500 Kcmil
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:** Polyvinyl Chloride (PVC)

## 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. 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 B801 Concentric-Lay-Stranded Conductors of 8000 Series Aluminum Alloy
- ASTM B836 Compact Rounded Stranded Aluminum Conductors
- 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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- 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 KCMIL COMPACT AL.--- {ALUMAFLEX}® AA8176 420 MILS NL-EPR 35KV 133% INS LEVEL 25%TS MV-105 FOR CT USE SUN RES (NESC) -- {CSA} 1000 KCMIL COMPACT AL.--- {ALUMAFLEX}® AA8176 10.67mm (420 mils) NL-EPR 35KV 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 | Aluminum 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/ 1000ft | lb | inch | inch |
| 566994 | 1/0 | 10 | 0.336 | 1.214 | 1.274 | 80 | 1.454 | 108 | 99 | 1004 | 633 | 17.4 | 4 |
| 590621 | 2/0 | 12 | 0.376 | 1.254 | 1.314 | 80 | 1.494 | 111 | 125 | 1069 | 798 | 17.9 | 4 |
| 566995 | 3/0 | 15 | 0.423 | 1.301 | 1.361 | 80 | 1.541 | 114 | 158 | 1147 | 1006 | 18.5 | 4 |
| 591197 | 4/0 | 19 | 0.475 | 1.353 | 1.413 | 80 | 1.593 | 118 | 199 | 1239 | 1269 | 19.1 | 4 |
| 591198 | 250 | 22 | 0.52 | 1.406 | 1.466 | 80 | 1.646 | 123 | 236 | 1329 | 1500 | 19.8 | 5 |
| 591199 | 350 | 35 | 0.616 | 1.502 | 1.562 | 110 | 1.802 | 130 | 330 | 1617 | 2100 | 21.6 | 5 |
| 578178 | 500 | 35 | 0.736 | 1.646 | 1.706 | 110 | 1.946 | 142 | 471 | 1908 | 3000 | 23.4 | 5 |
| TBA | 600 | 58 | 0.813 | 1.709 | 1.769 | 110 | 2.009 | 145 | 570 | 2180 | 3600 | 24.1 | 6 |
| 566996 | 750 | 58 | 0.908 | 1.816 | 1.876 | 110 | 2.116 | 155 | 707 | 2324 | 4500 | 25.4 | 6 |
| 597787 | 1000 | 58 | 1.117 | 1.968 | 2.028 | 110 | 2.268 | 167 | 942 | 2717 | 6000 | 27.2 | 6 |
| 677472! | 1250 | 91 | 1.25 | 2.171 | 2.231 | 110 | 2.471 | 183 | 1172 | 3170 | 7500 | 29.7 | 7 |

All dimensions are nominal and subject to normal manufacturing tolerances
◊ Cable marked with this symbol is a standard stock item
* Strand count meets minimum number per ASTM
! Made with Aluminum 1350
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.


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## 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 | 0.167 | 0.229 | 0.061 | 0.055 | 0.575+j0.321 | 0.230+j0.059 | 3978 | 150/165 | 170/185 |
| 2/0 | 0.133 | 0.182 | 0.058 | 0.053 | 0.525+j0.309 | 0.183+j0.057 | 4102 | 170/185 | 190/215 |
| 3/0 | 0.105 | 0.144 | 0.054 | 0.051 | 0.484+j0.296 | 0.145+j0.055 | 4248 | 195/210 | 220/245 |
| 4/0 | 0.084 | 0.115 | 0.051 | 0.05 | 0.451+j0.283 | 0.116+j0.053 | 4409 | 220/240 | 255/285 |
| 250 | 0.07 | 0.096 | 0.047 | 0.048 | 0.428+j0.271 | 0.097+j0.052 | 4573 | 245/265 | 280/315 |
| 350 | 0.051 | 0.07 | 0.043 | 0.046 | 0.393+j0.250 | 0.071+j0.050 | 4871 | 295/315 | 345/385 |
| 500 | 0.036 | 0.05 | 0.039 | 0.044 | 0.362+j0.224 | 0.051+j0.048 | 5317 | 355/385 | 425/475 |
| 600 | 0.03 | 0.042 | 0.035 | 0.042 | 0.349+j0.213 | 0.043+j0.046 | 5512 | 389/421 | 471/525 |
| 750 | 0.023 | 0.033 | 0.033 | 0.041 | 0.331+j0.198 | 0.034+j0.045 | 5844 | 440/475 | 540/600 |
| 1000 | 0.017 | 0.025 | 0.027 | 0.038 | 0.311+j0.178 | 0.026+j0.043 | 6315 | 510/545 | 635/705 |
| 1250 | 0.014 | 0.022 | 0.026 | 0.037 | 0.292+j0.157 | 0.024+j0.043 | 6943 | 580/615 | 730/810 |

* NEC ampacities are based on:
* For Duct: Table 310.60(C)(12) Detail 1.
* For Free Air: Table 310.60(C)(4).
* 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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