



AL Compact 15kV NLEPR Insulation 133% IL Black SIM-PVC Jacket. 2x5 mils Tape Shield - MV 105 - Tray Rated - Sunlight Resistant - For Direct Burial

Type MV-105 Single Conductor Aluminum, 220 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level, 2x5 Mils Tape Shield, SIMpull[®] Polyvinyl Chloride (PVC) Jacket, Dual Rated UL/CSA

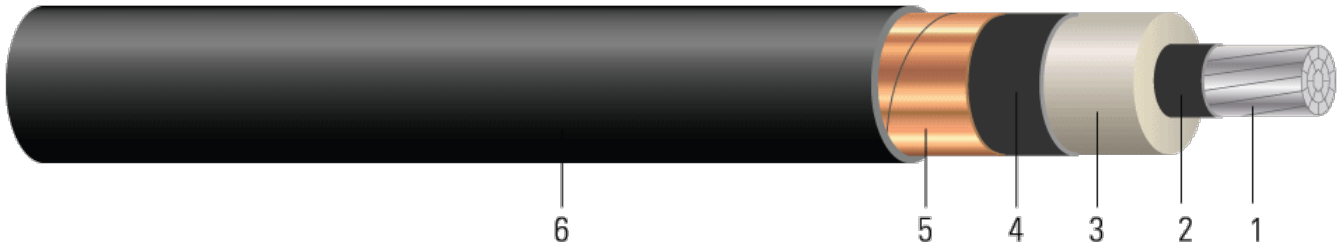


Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

1. **Conductor:** Class B compact stranded TRIPLE E Aluminum Alloy (AA-8176) per ASTM B801 and 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:** 220 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 2x5 mil copper tape with 25% overlap
6. **Overall Jacket:** Polyvinyl Chloride (PVC)

APPLICATIONS AND FEATURES:

Southwire's 15KV 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. 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. 2x5 mils tape shield for higher short circuit withstand.

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-ST1 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
- 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:

SOUTHWIRE [SYMBOL - LIGHTING BOLT] ## (UL/CSA) 1/C [#AWG or #kcmil] AL 220 MILS NL-EPR 15KV 133% INS LEVEL 25% TS MV-105 FOR CT USE SUN. RES. TC-ER(CSA 1/0 LARGER) FOR DIRECT BURIAL FT4 -ST1 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 | 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 |
| TBA | 2 | 7 | 0.268 | 0.746 | 0.806 | 80 | 0.986 | 16 | 62 | 455 | 398 | 11.8 | 3.0 |
| TBA | 1 | 19 | 0.298 | 0.776 | 0.836 | 80 | 1.016 | 16 | 78 | 489 | 502 | 12.1 | 3.0 |
| TBA | 1/0 | 19 | 0.336 | 0.814 | 0.874 | 80 | 1.054 | 17 | 99 | 534 | 633 | 12.6 | 3.0 |
| TBA | 2/0 | 19 | 0.376 | 0.854 | 0.914 | 80 | 1.094 | 18 | 125 | 585 | 798 | 13.1 | 3.0 |
| TBA | 3/0 | 19 | 0.422 | 0.900 | 0.960 | 80 | 1.140 | 19 | 158 | 644 | 1006 | 13.6 | 3.5 |
| TBA | 4/0 | 19 | 0.474 | 0.952 | 1.012 | 80 | 1.192 | 20 | 199 | 718 | 1269 | 14.3 | 3.5 |
| 589002 | 250 | 22 | 0.520 | 1.006 | 1.066 | 80 | 1.266 | 173 | 235 | 930 | 1500 | 15.1 | 3.5 |
| TBA | 350 | 35 | 0.615 | 1.101 | 1.161 | 80 | 1.341 | 23 | 329 | 944 | 2100 | 16.0 | 4.0 |
| 640814 | 500 | 34 | 0.735 | 1.244 | 1.304 | 80 | 1.504 | 208 | 471 | 1341 | 3000 | 18.0 | 4.5 |
| TBA | 600 | 58 | 0.812 | 1.308 | 1.368 | 80 | 1.548 | 27 | 565 | 1315 | 3600 | 18.5 | 4.5 |
| 589001 | 750 | 58 | 0.908 | 1.426 | 1.486 | 80 | 1.746 | 235 | 706 | 1821 | 4500 | 20.9 | 5.0 |
| 585564 | 1000 | 61 | 1.060 | 1.568 | 1.628 | 110 | 1.888 | 256 | 942 | 2161 | 6000 | 22.6 | 5.5 |

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





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 | 0.267 | 0.336 | 0.053 | 0.052 | 0.447 + j0.447 | 0.081 + j0.041 | 2528 | 120/130 | 150/170 |
| 1 | 0.211 | 0.266 | 0.049 | 0.050 | 0.447 + j0.447 | 0.081 + j0.041 | 2621 | 135/145 | 175/195 |
| 1/0 | 0.168 | 0.211 | 0.046 | 0.048 | 0.447 + j0.447 | 0.081 + j0.041 | 2738 | 155/165 | 200/225 |
| 2/0 | 0.133 | 0.167 | 0.042 | 0.046 | 0.447 + j0.404 | 0.081 + j0.045 | 2862 | 175/190 | 235/260 |
| 3/0 | 0.105 | 0.133 | 0.039 | 0.044 | 0.447 + j0.302 | 0.103 + j0.053 | 3005 | 200/215 | 270/300 |
| 4/0 | 0.084 | 0.105 | 0.036 | 0.043 | 0.447 + j0.302 | 0.103 + j0.053 | 3166 | 230/245 | 310/350 |
| 250 | 0.071 | 0.090 | 0.034 | 0.042 | 0.447 + j0.302 | 0.103 + j0.053 | 3333 | 250/270 | 345/385 |
| 350 | 0.050 | 0.065 | 0.030 | 0.040 | 0.447 + j0.302 | 0.103 + j0.053 | 3628 | 305/330 | 430/480 |
| 500 | 0.035 | 0.046 | 0.026 | 0.037 | 0.446 + j0.466 | 0.081 + j0.039 | 3999 | 370/400 | 535/600 |
| 600 | 0.029 | 0.039 | 0.024 | 0.037 | 0.446 + j0.466 | 0.081 + j0.039 | 4269 | 404/436 | 601/672 |
| 750 | 0.024 | 0.033 | 0.022 | 0.035 | 0.446 + j0.466 | 0.081 + j0.039 | 4566 | 455/490 | 700/780 |
| 1000 | 0.018 | 0.026 | 0.020 | 0.035 | 0.446 + j0.466 | 0.081 + j0.039 | 5037 | 525/565 | 840/940 |

* 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.

