



# 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, 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 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)





- 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	101	99	998	633	17.4	4.0
590621	2/0	12	0.376	1.254	1.314	80	1.494	104	125	1063	798	17.9	4.5
566995	3/0	15	0.422	1.301	1.361	80	1.541	107	158	1141	1006	18.4	4.5
591197	4/0	19	0.474	1.353	1.413	80	1.593	111	199	1233	1269	19.1	4.5
591198	250	22	0.520	1.406	1.466	80	1.646	115	235	1323	1500	19.7	5.0
591199	350	35	0.615	1.502	1.562	110	1.802	122	329	1611	2100	21.6	5.0
578178	500	35	0.735	1.644	1.704	110	1.944	133	471	1899	3000	23.3	5.5
TBA	600	58	0.812	1.708	1.768	110	2.008	35	565	2016	3600	24.0	6.0
566996	750	58	0.908	1.816	1.876	110	2.126	146	706	2339	4500	25.5	6.0
597787	1000	58	1.060	1.968	2.028	110	2.278	158	942	2722	6000	27.3	
677472!	1250	91	1.250	2.171	2.231	110	2.471	172	1171	3174	7500	29.6	

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





**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	0.168	0.211	0.067	0.055	0.362 + j0.229	0.047 + j0.045	3978	155/165	200/225
2/0	0.133	0.167	0.062	0.053	0.362 + j0.264	0.023 + j0.032	4102	175/190	230/260
3/0	0.105	0.133	0.058	0.051	0.362 + j0.264	0.023 + j0.032	4244	200/215	270/300
4/0	0.084	0.105	0.054	0.050	0.363 + j0.229	0.047 + j0.044	4405	230/245	310/345
250	0.071	0.090	0.051	0.048	0.364 + j0.243	0.042 + j0.046	4573	250/270	345/380
350	0.050	0.065	0.046	0.046	0.364 + j0.243	0.042 + j0.046	4867	305/330	430/475
500	0.035	0.046	0.041	0.044	0.364 + j0.243	0.042 + j0.046	5239	370/400	530/590
600	0.029	0.039	0.038	0.042	0.495 + j0.428	0.128 + j0.047	5508	404/436	592/660
750	0.024	0.033	0.035	0.041	0.364 + j0.243	0.042 + j0.046	5806	455/490	685/765
1000	0.018	0.026	0.031	0.039	0.365 + j0.269	0.027 + j0.036	6277	525/565	825/920
1250	0.014	0.023	0.028	0.037	0.492 + j0.513	0.128 + j0.038	6878	595/640	950/1055

\* 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.

