



# AL Compact 15kV NLEPR Insulation 133% IL AIA Red PVC Jacket. MV 105 - Tray Rated - Sunlight Resistant - For Direct Burial

Type MV-105 Three Conductor Aluminum, 220 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level, Tape Shield, Aluminum Interlocked Armor (AIA), Polyvinyl Chloride (PVC) Jacket. Silicone Free

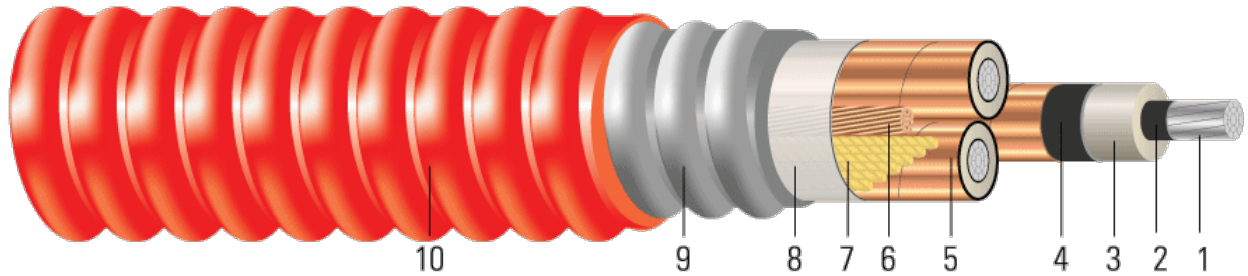


Image not to scale. See Table 1 for dimensions.

## 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:** 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 5 mil copper tape with 25% overlap
6. **Grounding Conductor:** Class B compressed stranded bare copper ground per ASTM B3 and ASTM B8
7. **Filler:** Wax paper filler
8. **Binder:** Polypropylene tape
9. **Armor:** Aluminum Interlocked Armor (AIA)
10. **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, 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 -40°C for cold bend and cold impact and marked with "LTGG" when CSA listed or dual UL/CSA listed. For uses in Class I and II, Division 2 hazardous locations per NEC Article 501 and 502. 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 Vertical-Tray Fire Propagation and Smoke Release Test
- ICEA S-93-639 (NEMA WC 74) 5-46 KV Shielded Power Cable
- 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® POWER CABLE {UL} 3/C XXX KCMIL COMPACT AL--- {ALUMAFLEX}® AA8176 220 MILS NL-EPR 15KV 133% INS LEVEL 25%TS GW 1 X 1 AWG CU MV-105 FOR CT USE SUN. RES. FOR DIRECT BURIAL {NESC}

**Table 1 – Weights and Measurements**

Stock Number	Cond. Size	Strand Count	Diameter Over Conductor	Diameter Over Insulation	Diameter Over Insulation Shield	Ground	Diameter Over armor	Jacket Thickness	Approx. OD	Copper Weight	Aluminum Weight	Approx. Weight	Max Pull Tension	Min Bending Radius
	AWG/ Kcmil	No. of Strands	inch	inch	inch	No. x AWG	inch	mil	inch	lb/ 1000ft	lb/1000ft	lb/ 1000ft	lb	inch
TBA	2	7	0.268	0.746	0.806	1x6	2.106	60	2.226	129	620	1885	1194	15.5
TBA	1	19	0.298	0.776	0.836	1x6	2.170	60	2.290	131	684	2009	1506	16.0
577688	1/0	10	0.336	0.814	0.874	1x6	2.259	75	2.409	297	649	2335	1900	16.8
597781	2/0	12	0.376	0.854	0.914	1x4	2.345	80	2.511	354	742	2620	2395	17.5
TBA	3/0	19	0.422	0.900	0.960	1x4	2.438	75	2.588	186	988	2696	3020	18.1
577738	4/0	18	0.474	0.953	1.013	1x4	2.559	80	2.725	380	1001	3089	3808	19.0
597561	250	22	0.520	1.006	1.066	1x3/0	2.674	80	2.840	784	1129	3734	4500	19.8
TBA	350	35	0.615	1.101	1.161	1x3	2.872	75	3.022	232	1609	3811	6300	21.1
577687	500	34	0.735	1.244	1.304	1x1	3.188	90	3.376	574	1928	5019	9000	23.6
TBA	750	58	0.908	1.404	1.464	1x1	3.527	90	3.707	346	2909	6056	13500	25.9

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	0.048	0.379 + j0.261	0.047 + j0.042	2528	115/125	125/145
1	0.211	0.266	0.049	0.046	0.379 + j0.261	0.047 + j0.042	2621	135/145	145/165
1/0	0.168	0.211	0.046	0.044	0.379 + j0.261	0.047 + j0.042	2738	150/165	170/185
2/0	0.133	0.167	0.042	0.043	0.379 + j0.302	0.031 + j0.038	2862	170/185	190/215
3/0	0.105	0.133	0.039	0.041	0.380 + j0.315	0.027 + j0.033	3005	195/210	220/245
4/0	0.084	0.105	0.036	0.040	0.381 + j0.278	0.042 + j0.042	3166	220/240	255/285
250	0.071	0.090	0.034	0.039	0.381 + j0.278	0.042 + j0.042	3333	245/265	280/315
350	0.050	0.065	0.030	0.037	0.382 + j0.281	0.040 + j0.037	3628	295/315	345/385
500	0.035	0.046	0.026	0.035	0.382 + j0.281	0.040 + j0.037	3999	355/385	425/475
750	0.024	0.033	0.022	0.033	0.382 + j0.309	0.031 + j0.035	4566	440/475	540/600

- \* NEC ampacities are based on:
- \* For Duct: Table 310.60(C)(14) Detail 1.
- \* For Free Air: Table 310.60(C)(6).
- \* 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.
- \* Capacitive Reactance is between Phase-to-Shield.

