

3/C AL 35kV 420 NLEPR 133% ARMOR-X PVC MV-105

Type MV-105 Three Conductor Aluminum, 420 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level, Tape Shield, Continuous Corrugated Welded Armor (Armor-X), Polyvinyl Chloride (PVC) Jacket

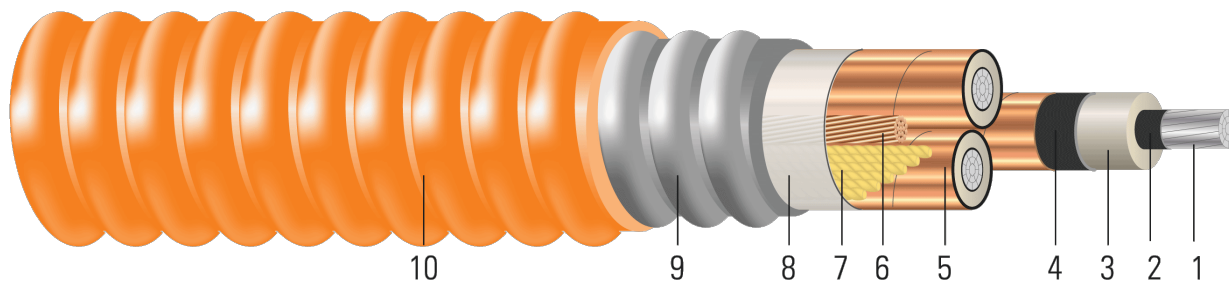


Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

1. **Conductor:** Class B compact stranded bare 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. **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:** Continuous Corrugated Welded Armor (Armor-X)
10. **Overall Jacket:** Polyvinyl Chloride (PVC)

APPLICATIONS AND FEATURES:

Southwire's 35KV ARMOR-X are armored cables 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, 250°C for short circuit conditions, and -50°C for cold bend. For uses in Class I, II, and III, Division 1 and 2 hazardous locations per NEC Article 501, 502, and 503.

SPECIFICATIONS:

- ASTM B800 8000 Series Aluminum Alloy Wire
- ASTM B836 Compact Rounded Stranded Aluminum Conductors
- UL 1072 Medium-Voltage Power Cables
- UL 1685 FT4 Vertical-Tray Fire Propagation and Smoke Release Test
- 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
- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV



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SAMPLE PRINT LEGEND:

{SQFTG_DUAL} SOUTHWIRE{R} MASTER-DESIGN ARMOR-X {UL} MV-105 OR MC-HL 3/C SHIELDED XXX KCMIL COMPACT AL.--- {ALUMAFLEX}{R} AA8176 420 MILS NL-EPR 25%TS GW 1 X 1 AWG CU 90{D}C JKT DIR. BUR. FOR CT USE FT4 -40{D} C SUN. RES. 35KV 133% -- USA {NESC}

Table 1 – Weights and Measurements

Stock Number	Cond. Size	Diameter Over Conductor	Diameter Over Insulation	Diameter Over Insulation Shield	Ground	Jacket Thickness ¹	Approx. OD	Approx. Weight	Max Pull Tension	Min Bending Radius
	AWG/ Kcmil	inch	inch	inch	No. x AWG	mil	inch	lb/1000ft	lb	inch
TBA	1/0	0.362	1.239	1.299	1 x 6	85	3.46	4411	1901	24.2
TBA	2/0	0.405	1.282	1.342	1 x 4	85	3.71	4759	2396	26
TBA	3/0	0.456	1.333	1.393	1 x 4	85	3.71	5142	3020	26
591154	4/0	0.512	1.389	1.449	1 x 4	85	3.71	5570	3809	26
TBA	250	0.558	1.444	1.504	1 x 4	85	4.02	5740	4500	28.1
TBA	350	0.661	1.547	1.607	1 x 3	85	4.415	6821	6300	30.9
591153	500	0.736	1.622	1.682	1 x 2	85	4.415	7663	9000	30.9
590720	750	0.908	1.825	1.885	1 x 1	85	4.949	9465	13500	35

All dimensions are nominal and subject to normal manufacturing tolerances

◊ Cable marked with this symbol is a standard stock item

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 Directly Buried 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	0.069	0.053	0.212 + j0.053	0.552 + j0.280	4174	185/200	170/185
2/0	0.133	0.167	0.065	0.051	0.168 + j0.051	0.504 + j0.269	4304	210/225	190/215
3/0	0.105	0.132	0.061	0.049	0.133 + j0.049	0.464 + j0.257	4457	240/260	220/245
4/0	0.084	0.105	0.056	0.047	0.106 + j0.047	0.432 + j0.244	4626	270/295	255/285
250	0.071	0.089	0.054	0.046	0.090 + j0.046	0.410 + j0.233	4802	300/320	280/315
350	0.051	0.064	0.048	0.043	0.064 + j0.043	0.375 + j0.214	5114	360/390	345/385
500	0.035	0.045	0.043	0.041	0.045 + j0.041	0.345 + j0.193	5505	435/470	425/475
750	0.024	0.03	0.038	0.039	0.031 + j0.039	0.311 + j0.166	6165	540/580	540/600

* Calculations are based on 5 mil 25 % over lapping copper tape shield / Conductor temperature of 90°C / Shield temperature of 45°C / Earth resistivity of 100 ohms-meter

† Ampacities are based on TABLE 310.60(C)(84) of the 2014 National Electrical Code (20°C Ambient Earth Temperature, Thermal Resistance ROH of 90)

‡ Ampacities are based on TABLE 310.60(C)(72) of the 2014 National Electrical Code (40°C Ambient Air Temperature)

