

# 1/C AL 35kV 345 TRXLPE 100% PVC MV-105

Type MV-105 Single Conductor Aluminum, 345 Mils Tree Retardant Cross Linked Polyethylene (TRXLPE) 100% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Jacket, Rated UL. Silicone Free

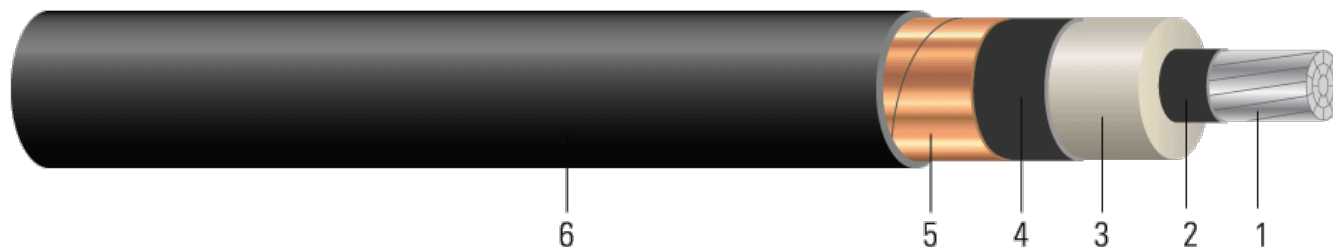


Image not to scale. See Table 1 for dimensions.

## 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:** 345 Mils Tree Retardant Cross Linked Polyethylene (TRXLPE) 100% 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, 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 for 1000 lbs./FT maximum sidewall pressure.

## SPECIFICATIONS:

- ASTM B800 8000 Series Aluminum Alloy Wire
- ASTM B836 Compact Rounded Stranded Aluminum Conductors
- UL 1072 Medium-Voltage Power Cables
- 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
- 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{R} POWER CABLE MASTER-DESIGN {UL} XXX KCMIL AL 345 MILS XLP 35KV 100% INS LEVEL 25%TS MV-105 SUN. RES. {NESC}



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**Table 1 – Weights and Measurements**

Stock Number	Cond. Size	Diameter Over Conductor	Diameter Over Insulation	Diameter Over Insulation Shield	Jacket Thickness <sup>1</sup>	Approx. OD	Approx. Weight	Max Pull Tension	Min Bending Radius	Conduit Size*
	AWG/Kcmil	inch	inch	inch	mil	inch	lb/1000ft	lb	inch	inch
TBA	1/0	0.336	1.063	1.123	80	1.303	812	634	15.6	4
TBA	2/0	0.376	1.103	1.163	80	1.343	871	799	16.1	4
TBA	3/0	0.423	1.150	1.210	80	1.390	943	1007	16.7	4
TBA	4/0	0.475	1.202	1.262	80	1.442	1028	1270	17.3	4
674026	250	0.520	1.256	1.316	80	1.496	1113	1500	18.0	5
TBA	350	0.616	1.352	1.412	80	1.592	1288	2100	19.1	5
674030	500	0.736	1.472	1.532	80	1.712	1531	3000	20.5	5
TBA	750	0.908	1.675	1.735	110	1.975	2058	4500	23.7	6
674023	1000	1.060	1.827	1.887	110	2.127	2432	6000	25.5	6

All dimensions are nominal and subject to normal manufacturing tolerances

◇ Cable marked with this symbol is a standard stock item

\* Conduit size based on 3 phase 40% fill-factor without ground

<sup>1</sup> Comply with ICEA S-93-639 Appendix C for jacket thickness determination

**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 <sup>†</sup>	Allowable Ampacity In Air 90/105°C <sup>‡</sup>
AWG/Kcmil	Ω/1000ft	Ω/1000ft	MΩ*1000ft	Ω/1000ft	Ω/1000ft	Ω/1000ft	Amp	Amp	Amp
1/0	0.168	0.211	0.062	0.053	0.564 + j0.316	0.212 + j0.053	3686	155/165	200/225
2/0	0.133	0.167	0.058	0.051	0.516 + j0.303	0.168 + j0.051	3816	175/190	230/260
3/0	0.105	0.132	0.054	0.049	0.477 + j0.289	0.133 + j0.049	3969	200/215	270/300
4/0	0.084	0.105	0.050	0.047	0.445 + j0.274	0.106 + j0.047	4138	230/245	310/345
250	0.071	0.089	0.048	0.046	0.424 + j0.261	0.090 + j0.046	4314	250/270	345/380
350	0.051	0.064	0.042	0.044	0.389 + j0.239	0.064 + j0.043	4626	305/330	430/475
500	0.035	0.045	0.037	0.041	0.358 + j0.215	0.046 + j0.041	5017	370/400	530/590
750	0.024	0.030	0.033	0.040	0.324 + j0.182	0.031 + j0.039	5677	455/490	685/765
1000	0.018	0.023	0.029	0.038	0.303 + j0.162	0.024 + j0.038	6172	525/565	825/920

\* Calculations are based on three cables triplexed / 5 mil 25 % over lapping copper tape shield Earth resistivity of 100 ohms-meter

<sup>†</sup> Ampacities are based on TABLE 310.60(C)(78) Detail 1. of the 2020 National Electrical Code (20°C Ambient Earth Temperature, Thermal Resistance ROH of 90)

<sup>‡</sup> Ampacities are based on TABLE 310.60(C)(70) of the 2020 National Electrical Code (40°C Ambient Air Temperature)

