

# 1/C CU 15kV 175 TRXLPE 100% PVC MV-105

Type MV-105 Single Conductor Copper, 175 Mils Tree Retardant Cross Linked Polyethylene (TRXLPE) 100% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Jacket, Dual Rated UL/CSA

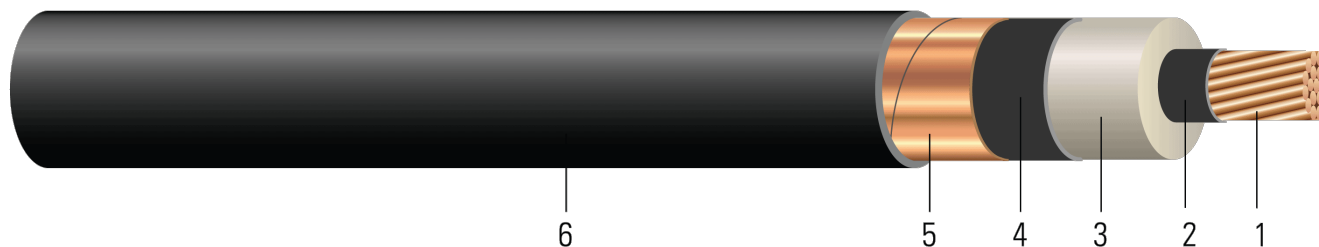


Image not to scale. See Table 1 for dimensions.

## CONSTRUCTION:

1. **Conductor:** Class B compressed stranded bare copper per ASTM B3 and ASTM B8
2. **Conductor Shield:** Semi-conducting cross-linked copolymer
3. **Insulation:** 175 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 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. ST1 (low smoke) Rated for sizes 1/0 and larger. Rated for 1000 lbs./FT maximum sidewall pressure.

## SPECIFICATIONS:

- ASTM B3 Standard Specification for Soft or Annealed Copper Wire
- ASTM B8 Concentric-Lay-Stranded Copper 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
- 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

## SAMPLE PRINT LEGEND:

SOUTHWIRE [SYMBOL - LIGHTING BOLT] #P# (UL/CSA) 1/C [#AWG or #kcmil] CU 175 MILS TRXLPE 15KV 100% 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]



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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	2	0.283	0.670	0.730	65	0.880	514	531	10.6	2.5
TBA	1	0.322	0.709	0.769	80	0.949	610	670	11.4	3
TBA	1/0	0.362	0.749	0.809	80	0.989	699	845	11.9	3
TBA	2/0	0.405	0.792	0.852	80	1.032	807	1065	12.4	3
TBA	3/0	0.456	0.843	0.903	80	1.083	942	1342	13.0	3
TBA	4/0	0.512	0.899	0.959	80	1.139	1107	1693	13.7	3.5
TBA	250	0.558	0.954	1.014	80	1.194	1254	2000	14.3	3.5
TBA	350	0.661	1.057	1.117	80	1.297	1619	2800	15.6	4
TBA	500	0.789	1.185	1.245	80	1.425	2151	4000	17.1	4
TBA	750	0.968	1.373	1.433	80	1.613	3024	6000	19.4	5

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
2	0.162	0.203	0.059	0.048	0.574 + j0.456	0.203 + j0.048	2407	155/165	195/215
1	0.129	0.161	0.054	0.047	0.533 + j0.436	0.162 + j0.046	2534	175/185	225/250
1/0	0.102	0.128	0.049	0.045	0.499 + j0.417	0.128 + j0.045	2664	200/215	260/290
2/0	0.081	0.101	0.046	0.043	0.471 + j0.397	0.102 + j0.043	2804	230/245	300/335
3/0	0.064	0.081	0.042	0.042	0.448 + j0.376	0.081 + j0.042	2970	260/275	345/385
4/0	0.051	0.064	0.038	0.040	0.429 + j0.354	0.065 + j0.040	3152	295/315	400/445
250	0.043	0.054	0.036	0.039	0.416 + j0.335	0.055 + j0.039	3331	325/345	445/495
350	0.031	0.039	0.032	0.037	0.392 + j0.302	0.040 + j0.037	3666	390/415	550/610
500	0.022	0.028	0.028	0.035	0.370 + j0.267	0.029 + j0.035	4083	465/500	685/765
750	0.014	0.019	0.024	0.033	0.343 + j0.225	0.020 + j0.033	4695	565/610	885/990

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

<sup>†</sup> Ampacities are based on TABLE 310.60(C)(77) Detail 1. of the 2014 National Electrical Code (20°C Ambient Earth Temperature, Thermal Resistance ROH of 90)

<sup>‡</sup> Ampacities are based on TABLE 310.60(C)(69) of the 2014 National Electrical Code (40°C Ambient Air Temperature)

