

# 1/C CU 15kV 220 TRXLPE 133% PVC MV-105

Type MV-105 Single Conductor Copper, 220 Mils Tree Retardant Cross Linked Polyethylene (TRXLPE) 133% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Jacket. Silicone Free



Image not to scale. See Table 1 for dimensions.

## CONSTRUCTION:

- Conductor:** Class B compressed stranded bare copper per ASTM B3 and ASTM B8 (Tinned Copper per ASTM B33 optional)
- Conductor Shield:** Semi-conducting cross-linked copolymer
- Insulation:** 220 Mils Tree Retardant Cross Linked Polyethylene (TRXLPE) 133% Insulation Level,
- Insulation Shield:** Strippable semi-conducting cross-linked copolymer
- Copper Tape Shield:** Helically wrapped 5 mil copper tape with 25% overlap
- Overall Jacket:** Polyvinyl Chloride (PVC)

## APPLICATIONS AND FEATURES:

Southwire's 15KV 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 at -40°C for cold bend. 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
- ASTM B33 Standard Specification for Tin-Coated Soft or Annealed Copper Wire
- UL 1072 Medium-Voltage Power Cables
- 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:

{SQFTG} SOUTHWIRE SIMpuII{R} POWER CABLE MASTER-DESIGN {UL} XXX KCMIL CU 220 MILS XLP 15KV 133% INS LEVEL 25%TS MV-105 SUN. RES. {NESC} PAT www.patentSW.com



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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
673433	2	0.283	0.760	0.820	80	1.000	603	531	12.0	3
673432	1	0.322	0.799	0.859	80	1.039	677	670	12.5	3
673431	1/0	0.362	0.839	0.899	80	1.079	768	845	12.9	3
673430	2/0	0.405	0.882	0.942	80	1.122	878	1065	13.5	3.5
673429	3/0	0.456	0.933	0.993	80	1.173	1016	1342	14.1	3.5
673428	4/0	0.512	0.989	1.049	80	1.229	1185	1693	14.7	3.5
673427	250	0.558	1.044	1.104	80	1.284	1335	2000	15.4	4
673425	350	0.661	1.147	1.207	80	1.387	1706	2800	16.6	4
673415	500	0.789	1.275	1.335	80	1.515	2245	4000	18.2	5
TBA	750	0.968	1.463	1.523	80	1.703	3128	6000	20.4	5
TBA	1000	1.117	1.612	1.672	110	1.912	4092	8000	22.9	6
TBA	1250	1.250	1.767	1.827	110	2.067	4972	10000	24.8	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
2	0.162	0.203	0.067	0.051	0.573 + j0.418	0.203 + j0.051	2700	155/165	195/215
1	0.129	0.161	0.062	0.049	0.531 + j0.400	0.162 + j0.049	2827	175/185	225/250
1/0	0.102	0.128	0.057	0.047	0.496 + j0.383	0.128 + j0.047	2957	200/215	260/290
2/0	0.081	0.101	0.053	0.045	0.467 + j0.366	0.102 + j0.045	3097	230/245	300/335
3/0	0.064	0.080	0.049	0.043	0.443 + j0.346	0.081 + j0.043	3263	260/275	345/385
4/0	0.051	0.064	0.045	0.042	0.423 + j0.327	0.065 + j0.042	3445	295/315	400/445
250	0.043	0.054	0.043	0.041	0.409 + j0.309	0.055 + j0.041	3624	325/345	445/495
350	0.031	0.039	0.038	0.039	0.384 + j0.279	0.040 + j0.039	3959	390/415	550/610
500	0.022	0.028	0.033	0.037	0.361 + j0.248	0.029 + j0.037	4376	465/500	685/765
750	0.014	0.019	0.028	0.035	0.334 + j0.210	0.020 + j0.035	4987	565/610	885/990
1000	0.011	0.015	0.025	0.034	0.315 + j0.185	0.016 + j0.034	5472	640/690	1060/1185
1250	0.009	0.013	0.024	0.033	0.298 + j0.165	0.014 + j0.033	5976	715/770	1210/1350

\* 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 2020 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 2020 National Electrical Code (40°C Ambient Air Temperature)

