



CSA TRAY RATED

HVTC SPECIFICATIONS

HVTC CU 1/C 175EPR TS PVC 15KV 100% CSA



PRODUCT HIGHLIGHTS

Southwire's 15KV HVTC is a CSA approved copper tape shielded cable for Industrial and Commercial medium voltage applications. FT4, -40°C, and 105°C rated for use in harsh Canadian environments. Rated for installation in cable trays, duct banks, direct burial, troughs, continuous rigid cable supports and concrete encaseable. For use in cable trays, exposed run and hazardous locations as per the limitations in the Canadian Electrical Code Part I, particularly Table 19.

CONSTRUCTION

Conductor

- Class B compressed stranded copper
- in accordance with ASTM B3 and ASTM B8

Options

- Class B compact stranded -8000 Series Aluminum -ACM
- Class B compact stranded copper

Conductor Shield

- Extruded semi-conducting thermosetting polymeric layer

Insulation

- No-lead EPR (Ethylene Propylene Rubber)
- Thickness: 0.175 inches (4.45mm) - nominal
- Insulation level: 100% - grounded system
- 105°C rated

Insulation Shield

- Extruded Semi-conducting thermosetting polymeric layer
- CSA 68.10 - Shield Removal/termination requirements are printed on the surface
- Meets requirement of ICEA but built to CSA standards

Copper Tape Shield

- Helically wrapped 5 mil copper tape with 25% overlap
- Not designed to carry ground fault current
- A separate bonding/grounding conductor may be required

Overall Jacket

- Red PVC (optional colours available)
- Nominal Thickness:
No.2 AWG to 750 kcmil = 0.08 inches (2.03mm)
1000 kcmil = 0.11 inches (2.79mm)

Typical Print Legend

- (CSA) SOUTHWIRE (NESC) #P# [#AWG or #kcmil] CU 175 EPR 15KV 100% INS LEVEL 25% TS SUN RES TC-ER 105° FT4 (-40°C) LTGG RoHS YEAR [SEQUENTIAL METER MARKS]

TABLE 1 - WEIGHTS & MEASUREMENTS

HVTC Product Code	Conductor Size *	Conductor Diameter		Diameter Over Insulation		Diameter Over Insulation Shield		Approx. Overall Diameter		Minimum Bend Radius		Approx. Weight of Cable		Max. Reel Weight (reel and cable) **		Max. Reel Diameter / Width **		Max. Length of Cable on Reel **	
	AWG or Kcmil	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	lb / 1000ft	kg/km	lbs	kg	inches	m	feet	m
CU175M93-002	2(7)	0.283	7.2	0.663	16.8	0.743	18.9	0.923	23.4	11.1	281	571	850	3628	1646	72/42	1.83/1.07	6000	1829
CU175M93-001	1(19)	0.322	8.2	0.702	17.8	0.782	19.9	0.962	24.4	11.5	293	648	964	4085	1853	72/42	1.83/1.07	6000	1829
CU175M93-010	1/0(19)	0.362	9.2	0.742	18.8	0.822	20.9	1.002	25.5	12.0	305	738	1099	4630	2100	72/42	1.83/1.07	6000	1829
CU175M93-020	2/0(19)	0.405	10.3	0.785	19.9	0.865	22.0	1.045	26.5	12.5	319	848	1263	5290	2400	72/42	1.83/1.07	6000	1829
CU175M93-030	3/0(19)	0.456	11.6	0.836	21.2	0.916	23.3	1.096	27.8	13.2	334	985	1466	6662	3022	78/54	1.98/1.37	6000	1829
CU175M93-040	4/0(19)	0.512	13.0	0.892	22.7	0.972	24.7	1.152	29.3	13.8	351	1153	1716	7669	3479	78/54	1.98/1.37	6000	1829
CU175M93-250	250(37)	0.558	14.2	0.948	24.1	1.028	26.1	1.208	30.7	14.5	368	1249	1858	8242	3739	78/54	1.98/1.37	6000	1829
CU175M93-350	350(37)	0.661	16.8	1.051	26.7	1.131	28.7	1.311	33.3	15.7	400	1679	2498	11231	5094	96/54.5	2.44/1.38	6000	1829
CU175M93-500	500(37)	0.789	20.0	1.179	29.9	1.259	32.0	1.439	36.6	17.3	439	2217	3300	14645	6643	104/56.5	2.64/1.44	6000	1829
CU175M93-750	750(61)	0.968	24.6	1.368	34.7	1.448	36.8	1.628	41.4	19.5	496	3108	4626	16475	7473	108/70.5	2.74/1.79	4800	1463
CU175M93-1000	1000(61)	1.117	28.4	1.517	38.5	1.597	40.6	1.837	46.7	22.0	560	4071	6058	16413	7445	108/70.5	2.74/1.79	3650	1113

NOTE: These are minimum average dimensions as per CSA Standards.

* Other conductor sizes and outer jacket colours are available upon request. (#s in brackets represent # of strands / conductor)

** Maximum lengths may be possible. Standard sizes and lengths may be supplied. Reel sizes are not guaranteed. The factory reserves the right to make changes as necessary to optimize manufacturing requirements.





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DESIGN

Qualification Standards

- CSA C68.10 - Shielded Power Cables for Commercial and Industrial Applications - 5 to 46 kV
- CSA C68.3 - Shielded & Concentric Neutral Power Cable - 5 to 46 kV
- CSA C22.2 No. 230 - Tray Cables
- ICEA S-93-639 (NEMA WC 74) 5 to 46 kV - Shielded Power Cable
- AEIC CS-8 - Qualification Testing Requirements

Flame Test Ratings

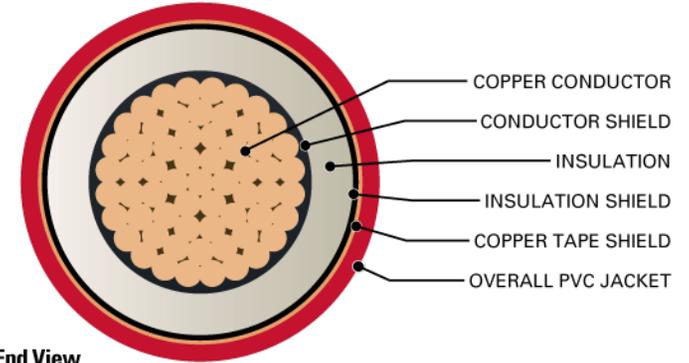
- FT1 - Flame Test - (1,706 BTU/Hr. nominal - Vertical Wire Flame Test)
- FT4, Flame Test - (70,000 BTU/Hr. - Vertical Tray Flame Test)
- IEEE 1202 - Flame Test - (70,000 BTU/Hr. - Vertical Tray Test)
- IEEE 383 - Flame Test - (70,000 BTU/Hr.)
- ICEA T-29-520 - Vertical Cable Tray Flame Test - (210,000 BTU/Hr)

Product Ratings

- CSA C22.2 No. 2556 & No. 0.3 - Wire and Cable Test Methods
- CSA LTGG [-40°C] - as per C68.10 - for Cold Bend and Impact rating
- CSA FT4 - for Flame Retardancy rating
- CSA SUN RES - for Sunlight Resistant rating
- CSA TC-ER (marked TC for No. 1/0 AWG and larger)***

Operating Temperatures

- -40°C - CSA Cold Bend and Impact Temperature
- -25°C - Min. Installation Temperature
- 105°C - Max Continuous Operating Temperature
- 140°C for Emergency Overload Temperature
- 250°C for Short Circuit Temperature



End View

TABLE 2 - ENGINEERING SPECIFICATIONS

HVTC Product Code	Maximum Pulling Tension		DC Resistance @ 25°C R _{DC}		AC Resistance @ 90°C 60 Hz (triplex formation) R _{AC}		Inductance L		Capacitance C		Inductive Reactance @ 60Hz (triplexed) X _L		Capacitive Reactance @ 60Hz (triplexed) X _C		Positive - Sequence Impedance*	Zero - Sequence Impedance*	Short Circuit Current (each phase conductor) @ 60Hz	Allowable Ampacities in Ventilated Cable Tray †	Allowable Ampacities Directly Buried in Earth ‡
	lb	Newtons	Ω / 1000 ft.	Ω / km	Ω / 1000 ft.	Ω / km	mH / 1000 ft	mH / km	µF / 1000 ft	µF / km	Ω / 1000 ft.	Ω / km	MΩ • 1000ft	MΩ • km	Ω / 1000ft	Ω / 1000ft	kAmps	Amps	Amps
CU175M93-002	531	2361	0.162	0.532	0.203	0.665	0.1095	0.3592	0.0577	0.1894	0.0413	0.1354	0.0459	0.0140	0.203 + j0.049	0.574 + j0.450	4.5	215	221
CU175M93-001	670	2978	0.129	0.423	0.161	0.530	0.1051	0.3448	0.0631	0.2069	0.0396	0.1300	0.0421	0.0128	0.162 + j0.047	0.533 + j0.430	5.7	245	247
CU175M93-010	845	3758	0.102	0.335	0.128	0.419	0.1013	0.3325	0.0685	0.2247	0.0382	0.1253	0.0387	0.0118	0.128 + j0.045	0.498 + j0.412	7.2	278	275
CU175M93-020	1065	4736	0.081	0.266	0.101	0.333	0.0979	0.3213	0.0743	0.2437	0.0369	0.1211	0.0357	0.0109	0.102 + j0.043	0.471 + j0.393	9.0	317	306
CU175M93-030	1342	5971	0.064	0.211	0.081	0.264	0.0945	0.3101	0.0811	0.2660	0.0356	0.1169	0.0327	0.0100	0.081 + j0.042	0.448 + j0.372	11.4	357	335
CU175M93-040	1693	7530	0.051	0.167	0.064	0.210	0.0914	0.2999	0.0885	0.2905	0.0345	0.1131	0.0300	0.0091	0.065 + j0.040	0.428 + j0.350	14.3	404	369
CU175M93-250	2000	8896	0.043	0.141	0.054	0.178	0.0899	0.2949	0.0927	0.3042	0.0339	0.1112	0.0286	0.0087	0.055 + j0.039	0.415 + j0.331	16.9	456	412
CU175M93-350	2800	12455	0.031	0.101	0.039	0.128	0.0858	0.2816	0.1060	0.3477	0.0324	0.1062	0.0250	0.0076	0.040 + j0.037	0.391 + j0.298	23.7	537	456
CU175M93-500	4000	17793	0.022	0.071	0.028	0.092	0.0821	0.2692	0.1224	0.4015	0.0309	0.1015	0.0217	0.0066	0.029 + j0.035	0.368 + j0.263	33.9	616	497
CU175M93-750	6000	26689	0.014	0.047	0.019	0.064	0.0787	0.2581	0.1421	0.4662	0.0297	0.0973	0.0187	0.0057	0.020 + j0.034	0.341 + j0.222	50.8	706	551
CU175M93-1000	8000	35586	0.011	0.035	0.015	0.050	0.0762	0.2501	0.1606	0.5268	0.0287	0.0943	0.0165	0.0050	0.016 + j0.033	0.322 + j0.196	67.8	813	596

* 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

† Ampacities are based on Table D17M of the 2015 Canadian Electrical Code Part I (40°C Ambient Air Temperature, indoor installation)

‡ Ampacities are based on Table D17A of the 2015 Canadian Electrical Code Part I

*** For use in cable trays, exposed run and hazardous locations as per the limitations in the Canadian Electrical Code Part I, particularly Table 19.

