



CSA TRAY RATED

HVTC SPECIFICATIONS

HVTC CU 1/C 140EPR TS PVC 8KV 133% CSA



PRODUCT HIGHLIGHTS

Southwire's 8KV 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: 0.14 inches (3.56mm) - nominal
- Insulation level: 133%
- 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

- Black PVC (optional colours available)
- Nominal Thickness:
No.2 AWG = 0.06 inches (1.52mm)
No.1 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 140 EPR 8KV 133% 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
CU140Q17-002	2(7)	0.283	7.2	0.593	15.1	0.673	17.1	0.813	20.7	9.8	248	486	723	3116	1414	72/42	1.83/1.07	6000	1829
CU140Q17-001	1(19)	0.322	8.2	0.632	16.1	0.712	18.1	0.892	22.7	10.7	272	591	880	3748	1700	72/42	1.83/1.07	6000	1829
CU140Q17-010	1/0(19)	0.362	9.2	0.672	17.1	0.752	19.1	0.932	23.7	11.2	284	680	1012	4279	1941	72/42	1.83/1.07	6000	1829
CU140Q17-020	2/0(19)	0.405	10.3	0.715	18.2	0.795	20.2	0.975	24.8	11.7	297	788	1172	4926	2234	72/42	1.83/1.07	6000	1829
CU140Q17-030	3/0(19)	0.456	11.6	0.766	19.5	0.846	21.5	1.026	26.1	12.3	313	922	1372	5731	2600	72/42	1.83/1.07	6000	1829
CU140Q17-040	4/0(19)	0.512	13.0	0.822	20.9	0.902	22.9	1.082	27.5	13.0	330	1087	1617	7270	3298	78/54	1.98/1.37	6000	1829
CU140Q17-250	250(37)	0.558	14.2	0.878	22.3	0.958	24.3	1.138	28.9	13.7	347	1179	1755	7825	3550	78/54	1.98/1.37	6000	1829
CU140Q17-350	350(37)	0.661	16.8	0.981	24.9	1.061	26.9	1.241	31.5	14.9	378	1604	2386	10372	4704	78/54	1.98/1.37	6000	1829
CU140Q17-500	500(37)	0.789	20.0	1.109	28.2	1.189	30.2	1.369	34.8	16.4	417	2135	3178	14153	6420	104/56.5	2.64/1.44	6000	1829
CU140Q17-750	750(61)	0.968	24.6	1.298	33.0	1.378	35.0	1.558	39.6	18.7	475	3016	4489	16485	7478	108/70.5	2.74/1.79	4950	1509
CU140Q17-1000	1000(61)	1.117	28.4	1.447	36.8	1.527	38.8	1.767	44.9	21.2	539	3967	5903	16430	7452	108/70.5	2.74/1.79	3750	1143

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)

** Longer 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

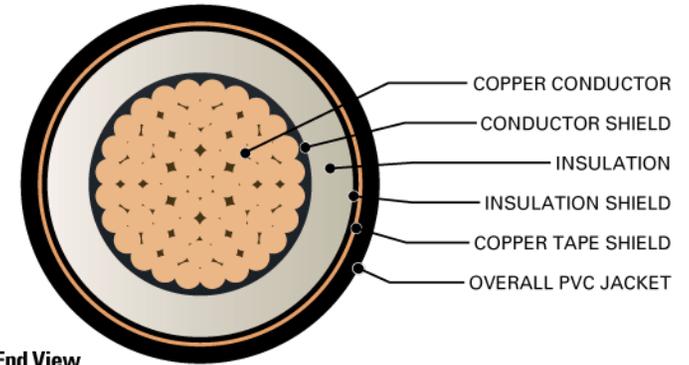
- FT1 - Flame Test - (1,706 BTU/Hr. nominal - Vertical Wire Flame Test)
- FT4, Flame Test - (70,000 BTU/Hr. - Vertical Tray Flame Test)
- IEEE 1202 - Flame Test - (70,000 BTU/Hr. - Vertical Tray Test)
- IEEE 383 - Flame Test - (70,000 BTU/Hr.)
- ICEA T-29-520 - Vertical Cable Tray Flame Test - (210,000 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					
CU140Q17-002	531	2361	0.162	0.532	0.203	0.665	0.1027	0.3369	0.0664	0.2180	0.0387	0.1270	0.0399	0.0122	0.203 + j0.046	0.573 + j0.481	4.5	215	221
CU140Q17-001	670	2978	0.129	0.423	0.161	0.530	0.0987	0.3238	0.0729	0.2391	0.0372	0.1221	0.0364	0.0111	0.162 + j0.045	0.532 + j0.460	5.7	245	247
CU140Q17-010	845	3758	0.102	0.335	0.128	0.419	0.0953	0.3126	0.0794	0.2607	0.0359	0.1179	0.0334	0.0102	0.128 + j0.043	0.499 + j0.440	7.2	278	275
CU140Q17-020	1065	4736	0.081	0.266	0.101	0.333	0.0922	0.3026	0.0865	0.2837	0.0348	0.1141	0.0307	0.0094	0.102 + j0.042	0.473 + j0.420	9.0	317	306
CU140Q17-030	1342	5971	0.064	0.211	0.081	0.264	0.0892	0.2926	0.0948	0.3109	0.0336	0.1103	0.0280	0.0085	0.081 + j0.040	0.451 + j0.397	11.4	357	335
CU140Q17-040	1693	7530	0.051	0.167	0.064	0.210	0.0864	0.2836	0.1038	0.3406	0.0326	0.1069	0.0256	0.0078	0.065 + j0.039	0.432 + j0.374	14.3	404	369
CU140Q17-250	2000	8896	0.043	0.141	0.054	0.178	0.0852	0.2796	0.1084	0.3557	0.0321	0.1054	0.0245	0.0075	0.055 + j0.038	0.419 + j0.353	16.9	456	412
CU140Q17-350	2800	12455	0.031	0.101	0.039	0.128	0.0816	0.2679	0.1245	0.4084	0.0308	0.1010	0.0213	0.0065	0.040 + j0.036	0.397 + j0.317	23.7	537	456
CU140Q17-500	4000	17793	0.022	0.071	0.028	0.092	0.0783	0.2570	0.1444	0.4736	0.0295	0.0969	0.0184	0.0056	0.029 + j0.034	0.375 + j0.280	33.9	616	497
CU140Q17-750	6000	26689	0.014	0.047	0.020	0.064	0.0755	0.2476	0.1675	0.5497	0.0284	0.0933	0.0158	0.0048	0.020 + j0.033	0.348 + j0.235	50.8	706	551
CU140Q17-1000	8000	35586	0.011	0.035	0.015	0.051	0.0733	0.2407	0.1899	0.6230	0.0277	0.0907	0.0140	0.0043	0.016 + j0.032	0.329 + j0.206	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.

