



CSA TRAY RATED

HVTC SPECIFICATIONS

HVTC CU 3/C 320EPR TS PVC 25KV 133% CSA



PRODUCT HIGHLIGHTS

Southwire's 25KV 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: 0.32 inches (8.13mm) - 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
- Phase identification as per ICEA Method 3, using printed circuit numbers
- Meets requirement of ICEA but built to CSA standards

Copper Tape Shield

- Helically wrapped 5 mil copper tape with 25% overlap

Bonding Conductor

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

Fillers

- Non-wicking, non-hygroscopic

Overall Jacket

- Black PVC (optional colours available)
- Nominal Thickness:
No.1 AWG to No.1/0 AWG = 0.11 inches (2.79mm)
No.2/0 AWG to 500 kcmil = 0.14 inches (3.56mm)

Typical Print Legend

- (CSA) SOUTHWIRE (NESC) #P# 3/C [#AWG or #kcmil] CU 320 EPR 25KV 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		Bonding Cond. Size	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	AWG	inches	mm	inches	mm	lb / 1000ft	kg/km	lbs	kg	inches	m	feet	m
CU320U11-001	1(19)	0.322	8.2	0.992	25.2	1.072	27.2	6	2.579	65.5	18.1	458	3161	4705	10881	4936	108/70.5	2.74/1.79	2950	899
CU320U11-010	1/0(19)	0.362	9.2	1.032	26.2	1.112	28.2	6	2.665	67.7	18.7	474	3485	5187	11314	5132	108/70.5	2.74/1.79	2800	853
CU320U11-020	2/0(19)	0.405	10.3	1.075	27.3	1.155	29.3	6	2.818	71.6	19.7	501	4028	5995	10821	4908	108/70.5	2.74/1.79	2300	701
CU320U11-030	3/0(19)	0.456	11.6	1.126	28.6	1.206	30.6	4	2.928	74.4	20.5	521	4562	6789	11591	5257	108/70.5	2.74/1.79	2200	671
CU320U11-040	4/0(19)	0.512	13.0	1.182	30.0	1.262	32.1	4	3.049	77.4	21.3	542	5149	7662	12110	5493	108/70.5	2.74/1.79	2050	625
CU320U11-250	250(37)	0.558	14.2	1.238	31.4	1.318	33.5	4	3.170	80.5	22.2	564	5521	8216	10941	4963	108/70.5	2.74/1.79	1700	518
CU320U11-350	350(37)	0.661	16.8	1.341	34.1	1.421	36.1	3	3.393	86.2	23.7	603	7006	10426	12064	5472	108/70.5	2.74/1.79	1500	457
CU320U11-500	500(37)	0.789	20.0	1.469	37.3	1.549	39.3	3	3.669	93.2	25.7	652	8831	13142	11269	5112	108/70.5	2.74/1.79	1100	335

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 ***

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

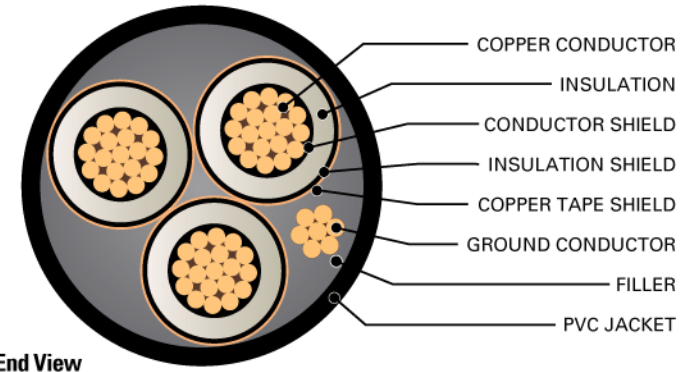


TABLE 2 - ENGINEERING SPECIFICATIONS

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
CU320U11-001	2009	8935	0.129	0.423	0.161	0.529	0.1262	0.4140	0.0437	0.1433	0.0476	0.1561	0.0607	0.0185	0.162 + j0.050	0.521 + j0.331	5.7	202	226
CU320U11-010	2534	11274	0.102	0.335	0.128	0.419	0.1214	0.3985	0.0469	0.1539	0.0458	0.1502	0.0565	0.0172	0.128 + j0.048	0.484 + j0.317	7.2	231	256
CU320U11-020	3194	14209	0.081	0.266	0.101	0.333	0.1171	0.3842	0.0503	0.1652	0.0441	0.1448	0.0527	0.0161	0.102 + j0.046	0.454 + j0.303	9.0	265	290
CU320U11-030	4027	17914	0.064	0.211	0.080	0.264	0.1127	0.3697	0.0544	0.1784	0.0425	0.1394	0.0488	0.0149	0.081 + j0.044	0.428 + j0.288	11.4	303	327
CU320U11-040	5078	22590	0.051	0.167	0.064	0.210	0.1086	0.3562	0.0587	0.1927	0.0409	0.1343	0.0452	0.0138	0.065 + j0.043	0.406 + j0.272	14.3	348	369
CU320U11-250	6000	26689	0.043	0.141	0.054	0.178	0.1062	0.3483	0.0617	0.2023	0.0400	0.1313	0.0430	0.0131	0.055 + j0.042	0.390 + j0.259	16.9	384	408
CU320U11-350	8400	37365	0.031	0.101	0.039	0.128	0.1007	0.3304	0.0695	0.2279	0.0380	0.1246	0.0382	0.0116	0.040 + j0.040	0.365 + j0.235	23.7	468	485
CU320U11-500	12000	53379	0.022	0.071	0.028	0.091	0.0955	0.3132	0.0791	0.2594	0.0360	0.1181	0.0335	0.0102	0.028 + j0.037	0.341 + j0.210	33.9	565	571

* Calculations are based on 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 D17N of the 2015 Canadian Electrical Code Part I (40°C Ambient Air Temperature, indoor installation)

‡ Ampacities are based on Table D17E 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.

