



CSA TRAY RATED

HVTC SPECIFICATIONS

HVTC CU 3/C 220TRXLPE TS PVC 15KV 133% 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

- TR-XLPE - (Tree Retardent Cross Linked Polyethylene)
- Thickness: 0.22 inches (5.59mm) - 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

- Red PVC (optional colours available)
- Nominal Thickness:
No.2 AWG to 250 kcmil = 0.11 inches (2.79mm)
350 kcmil to 750 kcmil = 0.14 inches (3.56mm)

Typical Print Legend

- (CSA) SOUTHWIRE (NESC) #P# 3/C [#AWG or #kcmil] CU 220 TRXLPE 15KV 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
CU220U33-002	2(7)	0.283	7.2	0.753	19.1	0.833	21.2	6	2.062	52.4	14.4	367	2108	3137	12094	5486	108/70.5	2.74/1.79	5000	1524
CU220U33-001	1(19)	0.322	8.2	0.792	20.1	0.872	22.1	6	2.147	54.5	15.0	382	2356	3506	12512	5675	108/70.5	2.74/1.79	4650	1417
CU220U33-010	1/0(19)	0.362	9.2	0.832	21.1	0.912	23.2	6	2.233	56.7	15.6	397	2649	3943	13478	6113	108/70.5	2.74/1.79	4500	1372
CU220U33-020	2/0(19)	0.405	10.3	0.875	22.2	0.955	24.3	6	2.326	59.1	16.3	414	3004	4470	13119	5951	108/70.5	2.74/1.79	3850	1173
CU220U33-030	3/0(19)	0.456	11.6	0.926	23.5	1.006	25.6	4	2.436	61.9	17.1	433	3492	5196	13951	6328	108/70.5	2.74/1.79	3550	1082
CU220U33-040	4/0(19)	0.512	13.0	0.982	24.9	1.062	27.0	4	2.557	65.0	17.9	455	4029	5996	13442	6097	108/70.5	2.74/1.79	2950	899
CU220U33-250	250(37)	0.558	14.2	1.038	26.4	1.118	28.4	4	2.678	68.0	18.7	476	4352	6476	13741	6233	108/70.5	2.74/1.79	2800	853
CU220U33-350	350(37)	0.661	16.8	1.141	29.0	1.221	31.0	3	2.961	75.2	20.7	526	5910	8795	14557	6603	108/70.5	2.74/1.79	2200	671
CU220U33-500	500(37)	0.789	20.0	1.269	32.2	1.349	34.3	3	3.237	82.2	22.7	576	7637	11366	13775	6248	108/70.5	2.74/1.79	1600	488
CU220U33-750	750(61)	0.968	24.6	1.458	37.0	1.538	39.1	2	3.645	92.6	25.5	648	10535	15677	13143	5962	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)

** 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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Southwire®
CANADA

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

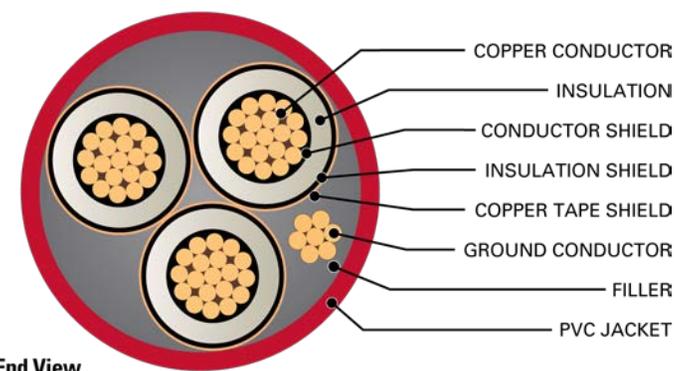
- FT1 - Flame Test - (1,706 BTU/Hr. nominal - Vertical Wire Flame Test)
- FT4, Flame Test - (70,000 BTU/Hr. - Vertical Tray Flame Test)
- IEEE 1202 - Flame Test - (70,000 BTU/Hr. - Vertical Tray Test)
- IEEE 383 - Flame Test - (70,000 BTU/Hr.)
- ICEA T-29-520 - Vertical Cable Tray Flame Test - (210,000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



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					
CU220U33-002	1593	7084	0.162	0.532	0.203	0.665	0.1172	0.3847	0.0398	0.1307	0.0442	0.1450	0.0666	0.0203	0.203 + j0.047	0.577 + j0.414	4.8	172	201
CU220U33-001	2009	8935	0.129	0.423	0.161	0.530	0.1124	0.3689	0.0433	0.1421	0.0424	0.1391	0.0612	0.0187	0.162 + j0.045	0.534 + j0.396	6.0	197	228
CU220U33-010	2534	11274	0.102	0.335	0.128	0.419	0.1083	0.3554	0.0468	0.1537	0.0408	0.1340	0.0566	0.0173	0.128 + j0.043	0.499 + j0.379	7.6	225	257
CU220U33-020	3194	14209	0.081	0.266	0.101	0.333	0.1045	0.3430	0.0506	0.1660	0.0394	0.1293	0.0524	0.0160	0.102 + j0.042	0.470 + j0.361	9.6	260	292
CU220U33-030	4027	17914	0.064	0.211	0.081	0.264	0.1008	0.3306	0.0550	0.1805	0.0380	0.1246	0.0482	0.0147	0.081 + j0.040	0.445 + j0.342	12.1	297	330
CU220U33-040	5078	22590	0.051	0.167	0.064	0.210	0.0973	0.3192	0.0598	0.1964	0.0367	0.1203	0.0443	0.0135	0.065 + j0.039	0.424 + j0.323	15.2	342	372
CU220U33-250	6000	26689	0.043	0.141	0.054	0.178	0.0954	0.3130	0.0628	0.2060	0.0360	0.1180	0.0422	0.0129	0.055 + j0.038	0.410 + j0.305	18.0	376	410
CU220U33-350	8400	37365	0.031	0.101	0.039	0.128	0.0909	0.2981	0.0714	0.2343	0.0343	0.1124	0.0372	0.0113	0.040 + j0.036	0.385 + j0.276	25.2	460	487
CU220U33-500	12000	53379	0.022	0.071	0.028	0.092	0.0865	0.2839	0.0820	0.2691	0.0326	0.1070	0.0323	0.0099	0.028 + j0.034	0.361 + j0.244	36.0	556	573
CU220U33-750	18000	80068	0.014	0.047	0.020	0.064	0.0825	0.2708	0.0952	0.3122	0.0311	0.1021	0.0279	0.0085	0.020 + j0.033	0.333 + j0.207	53.9	678	668

* 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.

