CSA TRAY RATED

HVTC SPECIFICATIONS

HVTC CU 3/C 115TRXLPE TS PVC 5KV 133% CSA

Southwire® CANADA

PRODUCT HIGHLIGHTS

Southwire's 5KV 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: 0.115 inches (2.92mm) - 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
- Orange PVC (optional colours available)
- Nominal Thickness:
  No.2 AWG to No.1 AWG = 0.08 inches (2.03mm)
  No.1/0 AWG to 350 kcmil = 0.11 inches (2.79mm)
  500 kcmil to 1000 kcmil = 0.14 inches (3.56mm)

Typical Print Legend
- (CSA) SOUTHWIRE (NESC) #P# 3/C [#AWG or #kcmil] CU 115 TRXLPE 5KV 133% INS LEVEL 25% TS SUN RES TC-ER 105° FT4 (-40°C) LTGG RoHS YEAR [SEQUENTIAL METER MARKS]

TABLE 1 - WEIGHTS & MEASUREMENTS

	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 **	
HVTC Product Code	AWG or Kcmil	inches	mm	inches	mm	inches	mm	AWG	inches	mm	inches	mm	lb / 1000ft	kg/km	lbs	kg	inches	m	feet	m
CU115B44-002	2(7)	0.283	7.2	0.543	13.8	0.623	15.8	6	1.549	39.3	10.8	275	1493	2222	8625	3912	96/54.5	2.44/1.38	5000	1524
CU115B44-001	1(19)	0.322	8.2	0.582	14.8	0.662	16.8	6	1.633	41.5	11.4	290	1717	2555	9743	4420	96/54.5	2.44/1.38	5000	1524
CU115B44-010	1/0(19)	0.362	9.2	0.622	15.8	0.702	17.8	6	1.780	45.2	12.5	316	2083	3100	11756	5332	104/56.5	2.64/1.44	5000	1524
CU115B44-020	2/0(19)	0.405	10.3	0.665	16.9	0.745	18.9	6	1.872	47.6	13.1	333	2415	3594	13417	6086	104/56.5	2.64/1.44	5000	1524
CU115B44-030	3/0(19)	0.456	11.6	0.716	18.2	0.796	20.2	4	1.983	50.4	13.9	352	2877	4281	15939	7230	108/70.5	2.74/1.79	5000	1524
CU115B44-040	4/0(19)	0.512	13.0	0.772	19.6	0.852	21.6	4	2.104	53.4	14.7	374	3386	5038	16452	7462	108/70.5	2.74/1.79	4400	1341
CU115B44-250	250(37)	0.558	14.2	0.828	21.0	0.908	23.1	4	2.224	56.5	15.6	396	3679	5476	16457	7465	108/70.5	2.74/1.79	4050	1234
CU115B44-350	350(37)	0.661	16.8	0.931	23.6	1.011	25.7	3	2.447	62.2	17.1	435	5020	7471	16365	7423	108/70.5	2.74/1.79	2950	899
CU115B44-500	500(37)	0.789	20.0	1.059	26.9	1.139	28.9	3	2.783	70.7	19.5	495	6821	10150	16220	7357	108/70.5	2.74/1.79	2150	655
CU115B44-750	750(61)	0.968	24.6	1.248	31.7	1.328	33.7	2	3.192	81.1	22.3	567	9621	14318	16468	7470	108/70.5	2.74/1.79	1550	472
CU115B44-1000	1000(61)	1.117	28.4	1.397	35.5	1.477	37.5	1	3.514	89.2	24.6	625	12339	18362	16361	7421	108/70.5	2.74/1.79	1200	366

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

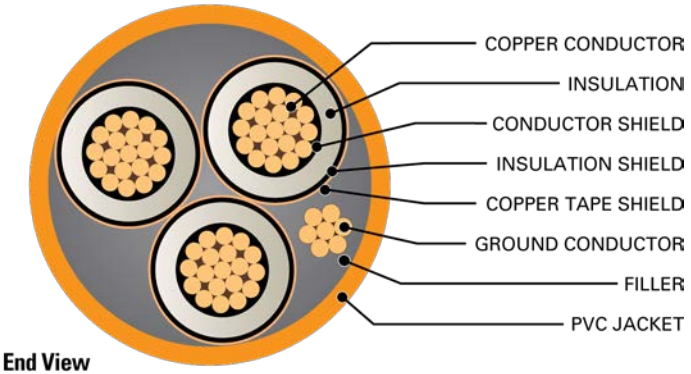
- FT1 - Flame Test - (1,706 BTU/Hr. nominal - Vertical Wire Flame Test)
- FT4, Flame Test - (70,000 BTU/Hr. - Vertical Tray Flame Test)
- IEEE 1202 - Flame Test - (70,000 BTU/Hr. - Vertical Tray Test)
- IEEE 383 - Flame Test - (70,000 BTU/Hr.)
- ICEA T-29-520 - Vertical Cable Tray Flame Test - (210,000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



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 Buries 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
CU115B44-002	1593	7084	0.162	0.532	0.203	0.665	0.0973	0.3192	0.0598	0.1962	0.0367	0.1204	0.0443	0.0135	0.203 + j0.041	0.574 + j0.507	4.8	172	201
CU115B44-001	2009	8935	0.129	0.423	0.161	0.530	0.0937	0.3073	0.0659	0.2161	0.0353	0.1158	0.0403	0.0123	0.162 + j0.039	0.535 + j0.485	6.0	197	228
CU115B44-010	2534	11274	0.102	0.335	0.128	0.419	0.0906	0.2972	0.0720	0.2363	0.0341	0.1120	0.0368	0.0112	0.128 + j0.038	0.503 + j0.464	7.6	225	257
CU115B44-020	3194	14209	0.081	0.266	0.102	0.333	0.0878	0.2881	0.0786	0.2579	0.0331	0.1086	0.0337	0.0103	0.102 + j0.036	0.477 + j0.442	9.6	260	292
CU115B44-030	4027	17914	0.064	0.211	0.081	0.264	0.0851	0.2791	0.0864	0.2834	0.0321	0.1052	0.0307	0.0094	0.081 + j0.035	0.456 + j0.418	12.1	297	330
CU115B44-040	5078	22590	0.051	0.167	0.064	0.211	0.0826	0.2710	0.0949	0.3114	0.0311	0.1022	0.0279	0.0085	0.065 + j0.034	0.438 + j0.393	15.2	342	372
CU115B44-250	6000	26689	0.043	0.141	0.054	0.179	0.0816	0.2678	0.0988	0.3240	0.0308	0.1010	0.0269	0.0082	0.055 + j0.033	0.426 + j0.370	18.0	376	410
CU115B44-350	8400	37365	0.031	0.101	0.039	0.129	0.0784	0.2574	0.1138	0.3734	0.0296	0.0970	0.0233	0.0071	0.040 + j0.032	0.404 + j0.332	25.2	460	487
CU115B44-500	12000	53379	0.022	0.071	0.028	0.093	0.0755	0.2477	0.1324	0.4345	0.0285	0.0934	0.0200	0.0061	0.029 + j0.030	0.382 + j0.292	36.0	556	573
CU115B44-750	18000	80068	0.014	0.047	0.020	0.065	0.0731	0.2397	0.1534	0.5034	0.0275	0.0904	0.0173	0.0053	0.020 + j0.029	0.355 + j0.244	53.9	678	668
CU115B44-1000	24000	106757	0.011	0.035	0.016	0.052	0.0712	0.2336	0.1743	0.5717	0.0268	0.0881	0.0152	0.0046	0.016 + j0.028	0.336 + j0.213	71.9	798	772

* 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.

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