CSA TRAY RATED

HVTC SPECIFICATIONS

HVTC CU 3/C 280TRXLPE TS PVC 28KV 100% CSA

Southwire® CANADA

PRODUCT HIGHLIGHTS

Southwire's 28KV 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: 0.28 inches (7.11mm) - 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
- 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.3/0 AWG = 0.11 inches (2.79mm)
  No.4/0 AWG to 500 kcmil = 0.14 inches (3.56mm)

Typical Print Legend
- (CSA) SOUTHWIRE (NESC) #P# 3/C [#AWG or #kcmil] CU 280 TRXLPE 28KV 100% 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
CU280X56-001	1(19)	0.322	8.2	0.912	23.2	0.992	25.2	6	2.406	61.1	16.8	428	2717	4043	11607	5265	108/70.5	2.74/1.79	3700	1128
CU280X56-010	1/0(19)	0.362	9.2	0.952	24.2	1.032	26.2	6	2.492	63.3	17.4	443	3022	4497	12282	5571	108/70.5	2.74/1.79	3550	1082
CU280X56-020	2/0(19)	0.405	10.3	0.995	25.3	1.075	27.3	6	2.585	65.7	18.1	460	3389	5043	11551	5240	108/70.5	2.74/1.79	2950	899
CU280X56-030	3/0(19)	0.456	11.6	1.046	26.6	1.126	28.6	4	2.695	68.5	18.9	479	3892	5791	12451	5648	108/70.5	2.74/1.79	2800	853
CU280X56-040	4/0(19)	0.512	13.0	1.102	28.0	1.182	30.0	4	2.876	73.1	20.1	511	4605	6853	12147	5510	108/70.5	2.74/1.79	2300	701
CU280X56-250	250(37)	0.558	14.2	1.158	29.4	1.238	31.4	4	2.997	76.1	21.0	533	4951	7368	12447	5646	108/70.5	2.74/1.79	2200	671
CU280X56-350	350(37)	0.661	16.8	1.261	32.0	1.341	34.1	3	3.220	81.8	22.5	572	6388	9506	11775	5341	108/70.5	2.74/1.79	1600	488
CU280X56-500	500(37)	0.789	20.0	1.389	35.3	1.469	37.3	3	3.496	88.8	24.5	622	8152	12132	13784	6252	108/70.5	2.74/1.79	1500	457

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

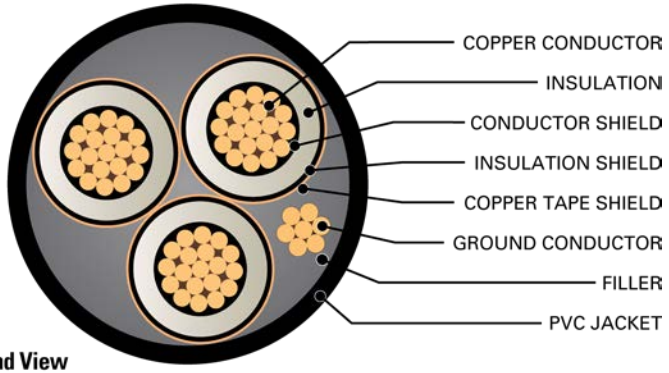
- FT1 - Flame Test - (1,706 BTU/Hr. nominal - Vertical Wire Flame Test)
- FT4, Flame Test - (70,000 BTU/Hr. - Vertical Tray Flame Test)
- IEEE 1202 - Flame Test - (70,000 BTU/Hr. - Vertical Tray Test)
- IEEE 383 - Flame Test - (70,000 BTU/Hr.)
- ICEA T-29-520 - Vertical Cable Tray Flame Test - (210,000 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
CU280X56-001	2009	8935	0.129	0.423	0.161	0.529	0.1210	0.3971	0.0374	0.1228	0.0456	0.1497	0.0708	0.0216	0.162 + j0.048	0.527 + j0.355	6.0	202	226
CU280X56-010	2534	11274	0.102	0.335	0.128	0.419	0.1165	0.3823	0.0403	0.1323	0.0439	0.1441	0.0658	0.0201	0.128 + j0.046	0.490 + j0.340	7.6	231	256
CU280X56-020	3194	14209	0.081	0.266	0.101	0.333	0.1124	0.3687	0.0434	0.1423	0.0424	0.1390	0.0612	0.0186	0.102 + j0.045	0.461 + j0.325	9.6	265	290
CU280X56-030	4027	17914	0.064	0.211	0.080	0.264	0.1082	0.3550	0.0469	0.1540	0.0408	0.1338	0.0565	0.0172	0.081 + j0.043	0.435 + j0.308	12.1	303	327
CU280X56-040	5078	22590	0.051	0.167	0.064	0.210	0.1043	0.3422	0.0508	0.1668	0.0393	0.1290	0.0522	0.0159	0.065 + j0.041	0.414 + j0.291	15.2	348	369
CU280X56-250	6000	26689	0.043	0.141	0.054	0.178	0.1021	0.3349	0.0534	0.1752	0.0385	0.1263	0.0497	0.0151	0.055 + j0.040	0.398 + j0.276	18.0	384	408
CU280X56-350	8400	37365	0.031	0.101	0.039	0.128	0.0969	0.3181	0.0603	0.1980	0.0365	0.1199	0.0440	0.0134	0.040 + j0.038	0.373 + j0.250	25.2	468	485
CU280X56-500	12000	53379	0.022	0.071	0.028	0.091	0.0921	0.3020	0.0689	0.2261	0.0347	0.1139	0.0385	0.0117	0.028 + j0.036	0.349 + j0.223	36.0	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.

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