CSA TRAY RATED

HVTC SPECIFICATIONS

HVTC CU 1/C 280EPR TS PVC 28KV 100% CSA

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
- No-lead EPR (Ethylene Propylene Rubber)
- 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
- 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.1 AWG to 500 kcmil = 0.08 inches (2.03mm)
  750 kcmil = 0.11 inches (2.79mm)

Typical Print Legend
- (CSA) SOUTHWIRE (NESC) #P# [#AWG or #kcmil] CU 280 EPR 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		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	inches	mm	inches	mm	lb / 1000ft	kg/km	lbs	kg	inches	m	feet	m
CU280R01-001	1(19)	0.322	8.2	0.912	23.2	0.992	25.2	1.172	29.8	14.1	357	839	1248	5784	2623	78/54	1.98/1.37	6000	1829
CU280R01-010	1/0(19)	0.362	9.2	0.952	24.2	1.032	26.2	1.212	30.8	14.5	369	936	1393	6367	2888	78/54	1.98/1.37	6000	1829
CU280R01-020	2/0(19)	0.405	10.3	0.995	25.3	1.075	27.3	1.255	31.9	15.1	383	1053	1567	7069	3207	78/54	1.98/1.37	6000	1829
CU280R01-030	3/0(19)	0.456	11.6	1.046	26.6	1.126	28.6	1.306	33.2	15.7	398	1198	1783	7940	3602	78/54	1.98/1.37	6000	1829
CU280R01-040	4/0(19)	0.512	13.0	1.102	28.0	1.182	30.0	1.362	34.6	16.3	415	1375	2047	9411	4269	96/54.5	2.44/1.38	6000	1829
CU280R01-250	250(37)	0.558	14.2	1.158	29.4	1.238	31.4	1.418	36.0	17.0	432	1480	2202	10039	4553	96/54.5	2.44/1.38	6000	1829
CU280R01-350	350(37)	0.661	16.8	1.261	32.0	1.341	34.1	1.521	38.6	18.3	464	1926	2867	12718	5769	96/54.5	2.44/1.38	6000	1829
CU280R01-500	500(37)	0.789	20.0	1.389	35.3	1.469	37.3	1.649	41.9	19.8	503	2486	3699	16257	7374	104/56.5	2.64/1.44	6000	1829
CU280R01-750	750(61)	0.968	24.6	1.578	40.1	1.658	42.1	1.898	48.2	22.8	579	3512	5227	16482	7476	108/70.5	2.74/1.79	4250	1295

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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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

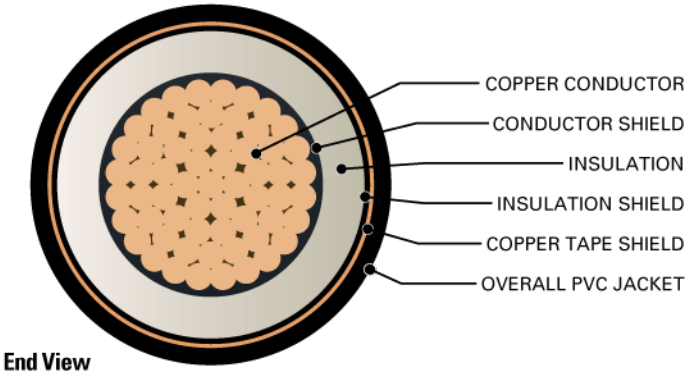
- FT1 - Flame Test - (1,706 BTU/Hr. nominal - Vertical Wire Flame Test)
- FT4, Flame Test - (70,000 BTU/Hr. - Vertical Tray Flame Test)
- IEEE 1202 - Flame Test - (70,000 BTU/Hr. - Vertical Tray Test)
- IEEE 383 - Flame Test - (70,000 BTU/Hr.)
- ICEA T-29-520 - Vertical Cable Tray Flame Test - (210,000 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 (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 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
CU280R01-001	670	2978	0.129	0.423	0.161	0.529	0.1210	0.3971	0.0472	0.1549	0.0456	0.1497	0.0562	0.0171	0.162 + j0.051	0.524 + j0.355	5.7	245	244
CU280R01-010	845	3758	0.102	0.335	0.128	0.419	0.1165	0.3823	0.0508	0.1668	0.0439	0.1441	0.0522	0.0159	0.128 + j0.049	0.488 + j0.340	7.2	278	272
CU280R01-020	1065	4736	0.081	0.266	0.101	0.333	0.1124	0.3687	0.0547	0.1794	0.0424	0.1390	0.0485	0.0148	0.102 + j0.048	0.458 + j0.325	9.0	316	303
CU280R01-030	1342	5971	0.064	0.211	0.080	0.264	0.1082	0.3550	0.0592	0.1942	0.0408	0.1338	0.0448	0.0137	0.081 + j0.046	0.433 + j0.308	11.4	356	333
CU280R01-040	1693	7530	0.051	0.167	0.064	0.210	0.1043	0.3422	0.0641	0.2104	0.0393	0.1290	0.0414	0.0126	0.065 + j0.044	0.412 + j0.291	14.3	403	367
CU280R01-250	2000	8896	0.043	0.141	0.054	0.178	0.1021	0.3349	0.0673	0.2209	0.0385	0.1263	0.0394	0.0120	0.055 + j0.043	0.396 + j0.276	16.9	455	411
CU280R01-350	2800	12455	0.031	0.101	0.039	0.128	0.0969	0.3181	0.0761	0.2496	0.0365	0.1199	0.0349	0.0106	0.040 + j0.041	0.371 + j0.250	23.7	537	459
CU280R01-500	4000	17793	0.022	0.071	0.028	0.091	0.0921	0.3020	0.0869	0.2851	0.0347	0.1139	0.0305	0.0093	0.029 + j0.039	0.347 + j0.223	33.9	616	499
CU280R01-750	6000	26689	0.014	0.047	0.019	0.063	0.0874	0.2866	0.1006	0.3300	0.0329	0.1081	0.0264	0.0080	0.020 + j0.037	0.320 + j0.191	50.8	716	557

* 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.

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