CSA TRAY RATED

HVTC SPECIFICATIONS

HVTC CU 1/C 420EPR TS PVC 35KV 133% CSA

PRODUCT HIGHLIGHTS

Southwire's 35KV 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: 0.42 inches (10.67mm) - 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
- 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.1/0 AWG to No.4/0 AWG = 0.08 inches (2.03mm)
  250 kcmil to 1000 kcmil = 0.11 inches (2.79mm)

Typical Print Legend
- (CSA) SOUTHWIRE (NESC) #P# [#AWG or #kcmil] CU 420 EPR 35KV 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		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
CU420D19-010	1/0(19)	0.362	9.2	1.232	31.3	1.312	33.3	1.492	37.9	17.9	455	1253	1864	8676	3935	96/54.5	2.44/1.38	6000	1829
CU420D19-020	2/0(19)	0.405	10.3	1.275	32.4	1.355	34.4	1.535	39.0	18.4	468	1379	2052	9434	4279	96/54.5	2.44/1.38	6000	1829
CU420D19-030	3/0(19)	0.456	11.6	1.326	33.7	1.406	35.7	1.586	40.3	19.0	483	1535	2285	10554	4787	104/56.5	2.64/1.44	6000	1829
CU420D19-040	4/0(19)	0.512	13.0	1.382	35.1	1.462	37.1	1.642	41.7	19.7	500	1724	2566	11688	5301	104/56.5	2.64/1.44	6000	1829
CU420D19-250	250(37)	0.558	14.2	1.438	36.5	1.518	38.6	1.758	44.7	21.1	536	1938	2884	12969	5883	104/56.5	2.64/1.44	6000	1829
CU420D19-350	350(37)	0.661	16.8	1.541	39.1	1.621	41.2	1.861	47.3	22.3	567	2412	3590	16029	7271	108/70.5	2.74/1.79	6000	1829
CU420D19-500	500(37)	0.789	20.0	1.669	42.4	1.749	44.4	1.989	50.5	23.9	606	3006	4474	16437	7456	108/70.5	2.74/1.79	4950	1509
CU420D19-750	750(61)	0.968	24.6	1.858	47.2	1.938	49.2	2.178	55.3	26.1	664	3980	5922	16478	7474	108/70.5	2.74/1.79	3750	1143
CU420D19-1000	1000(61)	1.117	28.4	2.007	51.0	2.107	53.5	2.347	59.6	28.2	715	4945	7358	16389	7434	108/70.5	2.74/1.79	3000	914

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

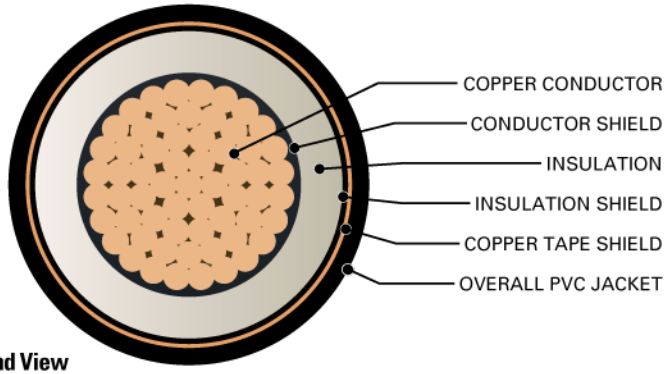
- FT1 - Flame Test - (1,706 BTU/Hr. nominal - Vertical Wire Flame Test)
- FT4, Flame Test - (70,000 BTU/Hr. - Vertical Tray Flame Test)
- IEEE 1202 - Flame Test - (70,000 BTU/Hr. - Vertical Tray Test)
- IEEE 383 - Flame Test - (70,000 BTU/Hr.)
- ICEA T-29-520 - Vertical Cable Tray Flame Test - (210,000 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
CU420D19-010	845	3758	0.102	0.335	0.128	0.419	0.1322	0.4339	0.0401	0.1317	0.0499	0.1636	0.0661	0.0201	0.128 + j0.054	0.463 + j0.270	7.2	278	272
CU420D19-020	1065	4736	0.081	0.266	0.101	0.333	0.1275	0.4183	0.0429	0.1406	0.0481	0.1577	0.0619	0.0189	0.102 + j0.052	0.432 + j0.259	9.0	316	303
CU420D19-030	1342	5971	0.064	0.211	0.080	0.264	0.1227	0.4024	0.0460	0.1511	0.0462	0.1517	0.0576	0.0176	0.081 + j0.050	0.406 + j0.247	11.4	356	333
CU420D19-040	1693	7530	0.051	0.167	0.064	0.210	0.1181	0.3875	0.0495	0.1624	0.0445	0.1461	0.0536	0.0163	0.065 + j0.048	0.384 + j0.234	14.3	403	367
CU420D19-250	2000	8896	0.043	0.141	0.054	0.178	0.1153	0.3783	0.0519	0.1703	0.0435	0.1426	0.0511	0.0156	0.055 + j0.048	0.368 + j0.223	16.9	455	411
CU420D19-350	2800	12455	0.031	0.101	0.039	0.128	0.1092	0.3582	0.0581	0.1905	0.0412	0.1350	0.0457	0.0139	0.040 + j0.045	0.343 + j0.204	23.7	537	459
CU420D19-500	4000	17793	0.022	0.071	0.028	0.091	0.1032	0.3388	0.0656	0.2152	0.0389	0.1277	0.0404	0.0123	0.029 + j0.043	0.320 + j0.184	33.9	616	499
CU420D19-750	6000	26689	0.014	0.047	0.019	0.063	0.0973	0.3193	0.0754	0.2473	0.0367	0.1204	0.0352	0.0107	0.020 + j0.040	0.294 + j0.159	50.8	716	557
CU420D19-1000	8000	35586	0.011	0.035	0.015	0.049	0.0933	0.3061	0.0839	0.2752	0.0352	0.1154	0.0316	0.0096	0.016 + j0.039	0.276 + j0.142	67.8	825	608

* 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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