



CSA TRAY RATED

HVTC SPECIFICATIONS

HVTC AL 1/C 175TRXLPE TS PVC 15KV 100% CSA



Southwire®
C A N A D A

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 - compact stranded -8000 Series Aluminum -ACM

Options

- Class B compact stranded copper
- Class B compressed stranded copper
- Strand blocking technology
- Tinning on copper conductors

Conductor Shield

- Extruded semi-conducting thermosetting polymeric layer

Insulation

- TR-XLPE - (Tree Retardent Cross Linked Polyethylene)
- Thickness: 0.175 inches (4.45mm) - 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

- Red PVC (optional colours available)
- Nominal Thickness:
No.2 AWG to 750 kcmil = 0.08 inches (2.03mm)
1000 kcmil = 0.11 inches (2.79mm)

Typical Print Legend

- (CSA) SOUTHWIRE (NESC) #P# [#AWG or #kcmil] CPT AL 175 TRXLPE 15KV 100% 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		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	inches	mm	inches	mm	lb / 1000ft	kg/km	lbs	kg	inches	m	feet	m
AL175S24-002	2(7)	0.268	6.8	0.648	16.5	0.728	18.5	0.908	23.1	10.9	277	396	590	2577	1169	72/42	1.83/1.07	6000	1829
AL175S24-001	1(19)	0.299	7.6	0.679	17.2	0.759	19.3	0.939	23.9	11.3	286	429	638	2773	1258	72/42	1.83/1.07	6000	1829
AL175S24-010	1/0(19)	0.336	8.5	0.716	18.2	0.796	20.2	0.976	24.8	11.7	297	469	698	3015	1367	72/42	1.83/1.07	6000	1829
AL175S24-020	2/0(19)	0.376	9.6	0.756	19.2	0.836	21.2	1.016	25.8	12.2	310	516	768	3298	1496	72/42	1.83/1.07	6000	1829
AL175S24-030	3/0(19)	0.423	10.7	0.803	20.4	0.883	22.4	1.063	27.0	12.8	324	574	854	4192	1902	78/54	1.98/1.37	6000	1829
AL175S24-040	4/0(19)	0.475	12.1	0.855	21.7	0.935	23.7	1.115	28.3	13.4	340	643	956	4606	2089	78/54	1.98/1.37	6000	1829
AL175S24-250	250(37)	0.520	13.2	0.910	23.1	0.990	25.1	1.170	29.7	14.0	357	712	1059	5021	2278	78/54	1.98/1.37	6000	1829
AL175S24-350	350(37)	0.616	15.6	1.006	25.6	1.086	27.6	1.266	32.2	15.2	386	857	1276	5894	2673	78/54	1.98/1.37	6000	1829
AL175S24-500	500(37)	0.736	18.7	1.126	28.6	1.206	30.6	1.386	35.2	16.6	422	1063	1581	7534	3418	96/54.5	2.44/1.38	6000	1829
AL175S24-750	750(61)	0.908	23.1	1.308	33.2	1.388	35.3	1.568	39.8	18.8	478	1403	2088	9576	4344	96/54.5	2.44/1.38	6000	1829
AL175S24-1000	1000(61)	1.060	26.9	1.460	37.1	1.540	39.1	1.780	45.2	21.4	543	1818	2705	12462	5653	108/70.5	2.74/1.79	6000	1829

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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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

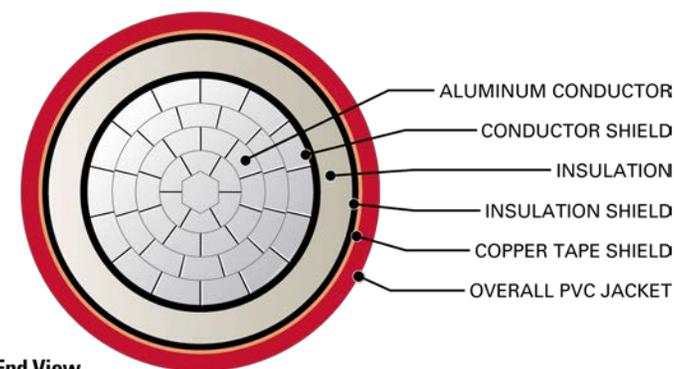
- FT1 - Flame Test - (1,706 BTU/Hr. nominal - Vertical Wire Flame Test)
- FT4, Flame Test - (70,000 BTU/Hr. - Vertical Tray Flame Test)
- IEEE 1202 - Flame Test - (70,000 BTU/Hr. - Vertical Tray Test)
- IEEE 383 - Flame Test - (70,000 BTU/Hr.)
- ICEA T-29-520 - Vertical Cable Tray Flame Test - (210,000 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 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					
AL175S24-002	398	1771	0.265	0.869	0.333	1.093	0.1114	0.3655	0.0441	0.1448	0.0420	0.1378	0.0601	0.0183	0.334 + j0.050	0.704 + j0.457	3.1	169	176
AL175S24-001	502	2234	0.211	0.692	0.265	0.870	0.1076	0.3530	0.0475	0.1559	0.0406	0.1331	0.0558	0.0170	0.266 + j0.048	0.636 + j0.442	3.9	194	198
AL175S24-010	634	2818	0.168	0.551	0.211	0.693	0.1037	0.3402	0.0515	0.1690	0.0391	0.1283	0.0515	0.0157	0.212 + j0.046	0.582 + j0.424	5.0	222	223
AL175S24-020	799	3552	0.133	0.436	0.167	0.549	0.1002	0.3286	0.0558	0.1831	0.0378	0.1239	0.0475	0.0145	0.168 + j0.044	0.538 + j0.405	6.3	255	250
AL175S24-030	1007	4478	0.105	0.345	0.132	0.433	0.0966	0.3171	0.0608	0.1995	0.0364	0.1195	0.0436	0.0133	0.133 + j0.043	0.501 + j0.385	7.9	290	278
AL175S24-040	1270	5647	0.084	0.274	0.105	0.345	0.0934	0.3065	0.0663	0.2176	0.0352	0.1155	0.0400	0.0122	0.106 + j0.041	0.472 + j0.364	9.9	329	309
AL175S24-250	1500	6672	0.071	0.232	0.089	0.292	0.0917	0.3008	0.0697	0.2285	0.0346	0.1134	0.0381	0.0116	0.090 + j0.040	0.452 + j0.344	11.8	370	347
AL175S24-350	2100	9341	0.051	0.166	0.064	0.209	0.0875	0.2870	0.0795	0.2607	0.0330	0.1082	0.0334	0.0102	0.064 + j0.038	0.420 + j0.312	16.5	446	402
AL175S24-500	3000	13345	0.035	0.116	0.045	0.147	0.0835	0.2739	0.0917	0.3008	0.0315	0.1033	0.0289	0.0088	0.046 + j0.036	0.390 + j0.277	23.5	533	451
AL175S24-750	4500	20017	0.024	0.077	0.030	0.100	0.0798	0.2619	0.1068	0.3504	0.0301	0.0987	0.0248	0.0076	0.031 + j0.034	0.358 + j0.234	35.3	631	500
AL175S24-1000	6000	26689	0.018	0.058	0.023	0.076	0.0771	0.2529	0.1217	0.3994	0.0291	0.0953	0.0218	0.0066	0.024 + j0.034	0.335 + j0.205	47.0	707	539

* 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.

