



CSA TRAY RATED

HVTC SPECIFICATIONS

HVTC AL 3/C 175EPR TS PVC 15KV 100% CSA



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

- No-lead EPR (Ethylene Propylene Rubber)
- 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
- 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

- Red PVC (optional colours available)
- Nominal Thickness:
No.2 AWG to 350 kcmil = 0.11 inches (2.79mm)
500 kcmil to 750 kcmil = 0.14 inches (3.56mm)

Typical Print Legend

- (CSA) SOUTHWIRE (NESC) #P# 3/C [#AWG or #kcmil] CPT AL 175 EPR 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		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 **	
	AWG or Kcmil	inches	mm	inches	mm	inches	mm	AWG	inches	mm	inches	mm	lb / 1000ft	kg/km	lbs	kg	inches	m	feet	m
AL175Z95-002	2(7)	0.268	6.8	0.648	16.5	0.728	18.5	8	1.836	46.6	12.8	326	1452	2160	8601	3901	104/56.5	2.64/1.44	5000	1524
AL175Z95-001	1(19)	0.299	7.6	0.679	17.2	0.759	19.3	6	1.903	48.3	13.3	338	1598	2378	9544	4329	108/70.5	2.74/1.79	5000	1524
AL175Z95-010	1/0(19)	0.336	8.5	0.716	18.2	0.796	20.2	6	1.983	50.4	13.9	352	1740	2590	10257	4653	108/70.5	2.74/1.79	5000	1524
AL175Z95-020	2/0(19)	0.376	9.6	0.756	19.2	0.836	21.2	6	2.069	52.6	14.5	368	1907	2838	11089	5030	108/70.5	2.74/1.79	5000	1524
AL175Z95-030	3/0(19)	0.423	10.7	0.803	20.4	0.883	22.4	6	2.170	55.1	15.2	386	2109	3139	11363	5154	108/70.5	2.74/1.79	4650	1417
AL175Z95-040	4/0(19)	0.475	12.1	0.855	21.7	0.935	23.7	6	2.283	58.0	16.0	406	2351	3498	10605	4810	108/70.5	2.74/1.79	3850	1173
AL175Z95-250	250(37)	0.520	13.2	0.910	23.1	0.990	25.1	4	2.402	61.0	16.8	427	2645	3936	11341	5144	108/70.5	2.74/1.79	3700	1128
AL175Z95-350	350(37)	0.616	15.6	1.006	25.6	1.086	27.6	4	2.609	66.3	18.3	464	3152	4691	10855	4924	108/70.5	2.74/1.79	2950	899
AL175Z95-500	500(37)	0.736	18.7	1.126	28.6	1.206	30.6	3	2.928	74.4	20.5	521	4061	6043	10488	4757	108/70.5	2.74/1.79	2200	671
AL175Z95-750	750(61)	0.908	23.1	1.308	33.2	1.388	35.3	2	3.321	84.4	23.2	591	5308	7899	10047	4557	108/70.5	2.74/1.79	1600	488

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

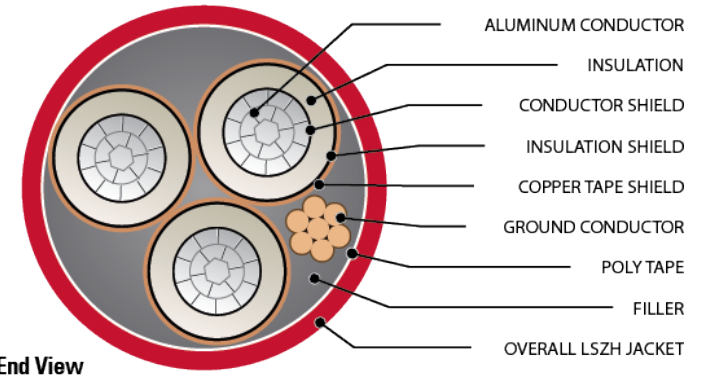
- FT1 - Flame Test - (1,706 BTU/Hr. nominal - Vertical Wire Flame Test)
- FT4, Flame Test - (70,000 BTU/Hr. - Vertical Tray Flame Test)
- IEEE 1202 - Flame Test - (70,000 BTU/Hr. - Vertical Tray Test)
- IEEE 383 - Flame Test - (70,000 BTU/Hr.)
- ICEA T-29-520 - Vertical Cable Tray Flame Test - (210,000 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 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					
AL175Z95-002	1194	5313	0.265	0.869	0.333	1.093	0.1114	0.3655	0.0557	0.1826	0.0420	0.1378	0.0477	0.0145	0.333 + j0.045	0.709 + j0.459	2.9	135	157
AL175Z95-001	1506	6701	0.211	0.692	0.265	0.870	0.1076	0.3530	0.0599	0.1966	0.0406	0.1331	0.0443	0.0135	0.266 + j0.044	0.641 + j0.443	3.7	154	178
AL175Z95-010	1901	8455	0.168	0.551	0.211	0.693	0.1037	0.3402	0.0650	0.2131	0.0391	0.1283	0.0408	0.0124	0.212 + j0.042	0.587 + j0.425	4.7	176	202
AL175Z95-020	2396	10657	0.133	0.436	0.167	0.549	0.1002	0.3286	0.0704	0.2309	0.0378	0.1239	0.0377	0.0115	0.168 + j0.041	0.542 + j0.406	5.9	204	229
AL175Z95-030	3020	13435	0.105	0.345	0.132	0.433	0.0966	0.3171	0.0767	0.2516	0.0364	0.1195	0.0346	0.0105	0.132 + j0.039	0.505 + j0.386	7.4	234	260
AL175Z95-040	3809	16942	0.084	0.274	0.105	0.345	0.0934	0.3065	0.0836	0.2743	0.0352	0.1155	0.0317	0.0097	0.106 + j0.038	0.475 + j0.364	9.4	268	294
AL175Z95-250	4500	20017	0.071	0.232	0.089	0.292	0.0917	0.3008	0.0878	0.2881	0.0346	0.1134	0.0302	0.0092	0.089 + j0.037	0.455 + j0.344	11.1	296	323
AL175Z95-350	6300	28024	0.051	0.166	0.064	0.209	0.0875	0.2870	0.1002	0.3288	0.0330	0.1082	0.0265	0.0081	0.064 + j0.035	0.422 + j0.312	15.5	363	386
AL175Z95-500	9000	40034	0.035	0.116	0.045	0.148	0.0835	0.2739	0.1156	0.3792	0.0315	0.1033	0.0229	0.0070	0.045 + j0.033	0.392 + j0.277	22.2	447	465
AL175Z95-750	13500	60051	0.024	0.077	0.030	0.100	0.0798	0.2619	0.1346	0.4418	0.0301	0.0987	0.0197	0.0060	0.031 + j0.032	0.360 + j0.234	33.2	566	563

* 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.

