



**CSA TRAY RATED**

**HVTC SPECIFICATIONS**  
**HVTC AL 1/C 90TRXLPE TS PVC 5KV 100% CSA**

**PRODUCT HIGHLIGHTS**

Southwire's 5KV 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: 0.09 inches (2.29mm) - 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**

- Orange PVC (optional colours available)
- Nominal Thickness:  
 No.2 AWG to No.2/0 AWG = 0.06 inches (1.52mm)  
 No.3/0 AWG to 1000 kcmil = 0.08 inches (2.03mm)

**Typical Print Legend**

- (CSA) SOUTHWIRE (NESC) #P# [#AWG or #kcmil] CPT AL 90 TRXLPE 5KV 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
AL90Q55-002	2(7)	0.268	6.8	0.478	12.1	0.558	14.2	0.698	17.7	8.4	213	260	387	1836	833	60/32	1.52/0.81	6000	1829
AL90Q55-001	1(19)	0.299	7.6	0.509	12.9	0.589	15.0	0.729	18.5	8.7	222	288	429	2005	910	60/32	1.52/0.81	6000	1829
AL90Q55-010	1/0(19)	0.336	8.5	0.546	13.9	0.626	15.9	0.766	19.5	9.2	233	323	481	2214	1004	60/32	1.52/0.81	6000	1829
AL90Q55-020	2/0(19)	0.376	9.6	0.586	14.9	0.666	16.9	0.806	20.5	9.7	246	365	543	2388	1083	72/42	1.83/1.07	6000	1829
AL90Q55-030	3/0(19)	0.423	10.7	0.633	16.1	0.713	18.1	0.893	22.7	10.7	272	448	667	2888	1310	72/42	1.83/1.07	6000	1829
AL90Q55-040	4/0(19)	0.475	12.1	0.685	17.4	0.765	19.4	0.945	24.0	11.3	288	511	761	3268	1482	72/42	1.83/1.07	6000	1829
AL90Q55-250	250(37)	0.520	13.2	0.740	18.8	0.820	20.8	1.000	25.4	12.0	305	575	855	3648	1655	72/42	1.83/1.07	6000	1829
AL90Q55-350	350(37)	0.616	15.6	0.836	21.2	0.916	23.3	1.096	27.8	13.2	334	710	1056	5009	2272	78/54	1.98/1.37	6000	1829
AL90Q55-500	500(37)	0.736	18.7	0.956	24.3	1.036	26.3	1.216	30.9	14.6	371	902	1343	6164	2796	78/54	1.98/1.37	6000	1829
AL90Q55-750	750(61)	0.908	23.1	1.138	28.9	1.218	30.9	1.398	35.5	16.8	426	1223	1820	8498	3855	96/54.5	2.44/1.38	6000	1829
AL90Q55-1000	1000(61)	1.060	26.9	1.290	32.8	1.370	34.8	1.550	39.4	18.6	472	1524	2268	10303	4673	96/54.5	2.44/1.38	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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**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

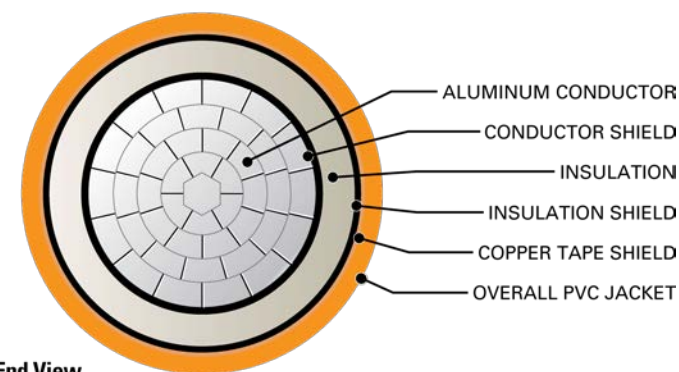
- FT1 - Flame Test - (1,706 BTU/Hr. nominal - Vertical Wire Flame Test)
- FT4, Flame Test - (70,000 BTU/Hr. - Vertical Tray Flame Test)
- IEEE 1202 - Flame Test - (70,000 BTU/Hr. - Vertical Tray Test)
- IEEE 383 - Flame Test - (70,000 BTU/Hr.)
- ICEA T-29-520 - Vertical Cable Tray Flame Test - (210,000 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 <sub>DC</sub>		AC Resistance @ 90°C 60 Hz (triplex formation) R <sub>AC</sub>		Inductance L		Capacitance C		Inductive Reactance @ 60Hz (triplexed) X <sub>L</sub>		Capacitive Reactance @ 60Hz (triplexed) X <sub>C</sub>		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	Ω / 1000ft	Ω / 1000ft	kAmps	Amps	Amps
AL90Q55-002	398	1771	0.265	0.869	0.333	1.093	0.0928	0.3046	0.0674	0.2210	0.0350	0.1148	0.0394	0.0120	0.333 + j0.044	0.693 + j0.540	3.1	169	176
AL90Q55-001	502	2234	0.211	0.692	0.265	0.870	0.0900	0.2953	0.0733	0.2404	0.0339	0.1113	0.0362	0.0110	0.266 + j0.042	0.629 + j0.521	3.9	194	198
AL90Q55-010	634	2818	0.168	0.551	0.211	0.693	0.0872	0.2860	0.0803	0.2634	0.0329	0.1078	0.0330	0.0101	0.212 + j0.041	0.578 + j0.500	5.0	222	223
AL90Q55-020	799	3552	0.133	0.436	0.167	0.549	0.0846	0.2776	0.0878	0.2882	0.0319	0.1047	0.0302	0.0092	0.168 + j0.039	0.537 + j0.478	6.3	255	250
AL90Q55-030	1007	4478	0.105	0.345	0.132	0.433	0.0821	0.2695	0.0967	0.3173	0.0310	0.1016	0.0274	0.0084	0.133 + j0.039	0.503 + j0.454	7.9	290	278
AL90Q55-040	1270	5647	0.084	0.274	0.105	0.345	0.0799	0.2621	0.1065	0.3493	0.0301	0.0988	0.0249	0.0076	0.106 + j0.037	0.476 + j0.428	9.9	329	309
AL90Q55-250	1500	6672	0.071	0.232	0.089	0.292	0.0791	0.2595	0.1105	0.3625	0.0298	0.0978	0.0240	0.0073	0.090 + j0.037	0.460 + j0.404	11.8	370	347
AL90Q55-350	2100	9341	0.051	0.166	0.064	0.209	0.0762	0.2500	0.1276	0.4188	0.0287	0.0942	0.0208	0.0063	0.064 + j0.035	0.431 + j0.365	16.5	446	402
AL90Q55-500	3000	13345	0.035	0.116	0.045	0.148	0.0735	0.2412	0.1490	0.4890	0.0277	0.0909	0.0178	0.0054	0.046 + j0.033	0.405 + j0.322	23.5	533	451
AL90Q55-750	4500	20017	0.024	0.077	0.030	0.100	0.0713	0.2340	0.1726	0.5664	0.0269	0.0882	0.0154	0.0047	0.031 + j0.032	0.375 + j0.270	35.3	631	500
AL90Q55-1000	6000	26689	0.018	0.058	0.023	0.077	0.0695	0.2282	0.1985	0.6512	0.0262	0.0860	0.0134	0.0041	0.024 + j0.030	0.353 + j0.234	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.

