Southwire® CANADA

HVTECK SPECIFICATIONS

HVTECK AL 1/C 140TRXLPE TS PVC AIA PVC 8KV 133% CSA

PRODUCT HIGHLIGHTS

Southwire's 8KV HVTECK is a CSA armoured cable for industrial and commercial medium voltage applications. Rated FT4, -40°C, Hazardous Locations (HL) and 105°C for use in harsh Canadian environments. For installation in cable trays, duct banks, direct burial, troughs, continuous rigid cable supports and concrete encaseable.

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: 0.14 inches (3.56mm) - 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

Inner Jacket
- Black PVC
- Thickness:
  No.2 AWG = 0.06 inches (1.52mm)
  No.1 AWG to 750 kcmil = 0.08 inches (2.03mm)

Armour
- Aluminum Interlocked Armour (AIA)
- Optional Galvanized Steel Interlocked Armour (GSIA)

Overall Jacket
- Black PVC (optional colours available)
- Nominal Thickness:
  No.2 AWG to 250 kcmil = 0.05 inches (1.27mm)
  350 kcmil to 750 kcmil = 0.06 inches (1.52mm)

Typical Print Legend
- (CSA) SOUTHWIRE (NESC) #P# [#AWG or #kcmil] CPT AL 140 TRXLPE AIA 8KV 133% INS LEVEL 25% TS SUN RES 105° FT4 HL (-40°C) LTGG RoHS YEAR [SEQUENTIAL METER MARKS]

TABLE 1 - WEIGHTS & MEASUREMENTS

HVTECK Product Code	Conductor Size *	Conductor Diameter		Diameter Over Insulation		Diameter Over Insulation Shield		Diameter Over Inner Jacket		Diameter Over Armour		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	inches	mm	inches	mm	lb / 1000ft	kg/km	lbs	kg	inches	m	feet	m
AL140P57-002	2(7)	0.268	6.8	0.578	14.7	0.658	16.7	0.798	20.3	1.118	28.4	1.218	30.9	14.6	371	601	895	4358	1977	78/54	1.98/1.37	6000	1829
AL140P57-001	1(19)	0.299	7.6	0.609	15.5	0.689	17.5	0.869	22.1	1.189	30.2	1.289	32.7	15.5	393	684	1017	4852	2201	78/54	1.98/1.37	6000	1829
AL140P57-010	1/0(19)	0.336	8.5	0.646	16.4	0.726	18.4	0.906	23.0	1.226	31.1	1.326	33.7	15.9	404	733	1091	5147	2335	78/54	1.98/1.37	6000	1829
AL140P57-020	2/0(19)	0.376	9.6	0.686	17.4	0.766	19.5	0.946	24.0	1.266	32.2	1.366	34.7	16.4	416	790	1175	5898	2675	96/54.5	2.44/1.38	6000	1829
AL140P57-030	3/0(19)	0.423	10.7	0.733	18.6	0.813	20.7	0.993	25.2	1.313	33.4	1.413	35.9	17.0	431	859	1278	6311	2863	96/54.5	2.44/1.38	6000	1829
AL140P57-040	4/0(19)	0.475	12.1	0.785	19.9	0.865	22.0	1.045	26.5	1.365	34.7	1.465	37.2	17.6	447	977	1454	7023	3185	96/54.5	2.44/1.38	6000	1829
AL140P57-250	250(37)	0.520	13.2	0.840	21.3	0.920	23.4	1.100	27.9	1.420	36.1	1.520	38.6	18.2	463	1062	1580	7530	3416	96/54.5	2.44/1.38	6000	1829
AL140P57-350	350(37)	0.616	15.6	0.936	23.8	1.016	25.8	1.196	30.4	1.516	38.5	1.636	41.6	19.6	499	1264	1882	8928	4050	104/56.5	2.64/1.44	6000	1829
AL140P57-500	500(37)	0.736	18.7	1.056	26.8	1.136	28.9	1.316	33.4	1.636	41.6	1.756	44.6	21.1	535	1505	2240	10373	4705	104/56.5	2.64/1.44	6000	1829
AL140P57-750	750(61)	0.908	23.1	1.238	31.4	1.318	33.5	1.498	38.0	1.818	46.2	1.938	49.2	23.3	591	1900	2827	12572	5703	108/70.5	2.74/1.79	5800	1768

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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HVTECK SPECIFICATIONS

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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. 174 - Cables in Hazardous Locations
- ICEA S-93-639 (NEMA WC 74) 5 to 46 kV - Shielded Power Cable
- AEIC CS-8 - Qualification Testing Requirements

Flame Test Ratings

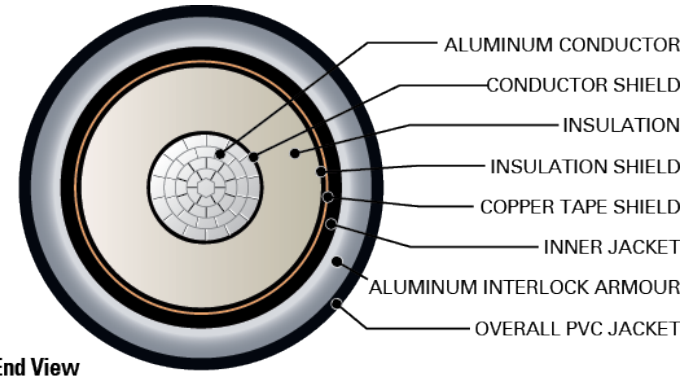
- FT1 - Flame Test - (1,706 BTU/Hr. nominal - Vertical Wire Flame Test)
- FT4, Flame Test - (70,000 BTU/Hr. - Vertical Tray Flame Test)
- IEEE 1202 - Flame Test - (70,000 BTU/Hr. - Vertical Tray Test)
- IEEE 383 - Flame Test - (70,000 BTU/Hr.)
- ICEA T-29-520 - Vertical Cable Tray Flame Test - (210,000 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 HL - for Hazardous Locations rating
- CSA FT4 - for Flame Retardancy rating
- CSA SUN RES - for Sunlight Resistant rating

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

HVTECK 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
AL140P57-002	398	1771	0.265	0.869	0.333	1.093	0.1044	0.3426	0.0507	0.1664	0.0394	0.1292	0.0523	0.0159	0.334 + j0.056	0.691 + j0.485	3.1	169	176
AL140P57-001	502	2234	0.211	0.692	0.265	0.870	0.1009	0.3312	0.0548	0.1798	0.0381	0.1249	0.0484	0.0148	0.266 + j0.055	0.625 + j0.469	3.9	194	198
AL140P57-010	634	2818	0.168	0.551	0.211	0.693	0.0974	0.3196	0.0596	0.1956	0.0367	0.1205	0.0445	0.0136	0.212 + j0.053	0.572 + j0.450	5.0	222	223
AL140P57-020	799	3552	0.133	0.436	0.167	0.549	0.0942	0.3092	0.0648	0.2127	0.0355	0.1166	0.0409	0.0125	0.168 + j0.051	0.529 + j0.431	6.3	255	250
AL140P57-030	1007	4478	0.105	0.345	0.132	0.433	0.0911	0.2989	0.0709	0.2326	0.0343	0.1127	0.0374	0.0114	0.133 + j0.049	0.494 + j0.410	7.9	290	278
AL140P57-040	1270	5647	0.084	0.274	0.105	0.345	0.0882	0.2894	0.0776	0.2546	0.0332	0.1091	0.0342	0.0104	0.106 + j0.048	0.467 + j0.388	9.9	329	309
AL140P57-250	1500	6672	0.071	0.232	0.089	0.292	0.0868	0.2848	0.0813	0.2667	0.0327	0.1074	0.0326	0.0099	0.090 + j0.046	0.449 + j0.366	11.8	370	347
AL140P57-350	2100	9341	0.051	0.166	0.064	0.209	0.0831	0.2726	0.0932	0.3057	0.0313	0.1028	0.0285	0.0087	0.065 + j0.044	0.419 + j0.332	16.5	446	402
AL140P57-500	3000	13345	0.035	0.116	0.045	0.147	0.0796	0.2611	0.1080	0.3542	0.0300	0.0984	0.0246	0.0075	0.046 + j0.042	0.391 + j0.295	23.5	533	451
AL140P57-750	4500	20017	0.024	0.077	0.030	0.099	0.0765	0.2509	0.1257	0.4125	0.0288	0.0946	0.0211	0.0064	0.031 + j0.039	0.361 + j0.249	35.3	631	500

* 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

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