HVTECK SPECIFICATIONS

HVTECK AL 3/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
- 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

Inner Jacket
- Black PVC
- Thickness:
  No.2 AWG = 0.08 inches (2.03mm)
  No.1 AWG to 500 kcmil = 0.11 inches (2.79mm)
  750 kcmil = 0.14 inches (3.56mm)

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

Overall Jacket
- Black PVC (optional colours available)
- Nominal Thickness:
  No.2 AWG to No.2/0 AWG = 0.06 inches (1.52mm)
  No.3/0 AWG to 350 kcmil = 0.075 inches (1.91mm)
  500 kcmil to 750 kcmil = 0.085 inches (2.16mm)

Typical Print Legend
- (CSA) SOUTHWIRE (NESC) #P# 3/C [#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		Bonding Cond. Size	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	AWG	inches	mm	inches	mm	inches	mm	inches	mm	lb / 1000ft	kg/km	lbs	kg	inches	m	feet	m
AL140B83-002	2(7)	0.268	6.8	0.578	14.7	0.658	16.7	8	1.624	41.3	1.954	49.6	2.074	52.7	14.5	369	1678	2498	9947	4512	108/70.5	2.74/1.79	5000	1524
AL140B83-001	1(19)	0.299	7.6	0.609	15.5	0.689	17.5	6	1.751	44.5	2.081	52.9	2.201	55.9	15.4	391	1944	2892	10301	4672	108/70.5	2.74/1.79	4500	1372
AL140B83-010	1/0(19)	0.336	8.5	0.646	16.4	0.726	18.4	6	1.831	46.5	2.161	54.9	2.281	57.9	16.0	406	2090	3110	9600	4354	108/70.5	2.74/1.79	3850	1173
AL140B83-020	2/0(19)	0.376	9.6	0.686	17.4	0.766	19.5	6	1.918	48.7	2.248	57.1	2.368	60.1	16.6	421	2259	3361	9912	4496	108/70.5	2.74/1.79	3700	1128
AL140B83-030	3/0(19)	0.423	10.7	0.733	18.6	0.813	20.7	6	2.019	51.3	2.349	59.7	2.499	63.5	17.5	444	2614	3891	10836	4915	108/70.5	2.74/1.79	3550	1082
AL140B83-040	4/0(19)	0.475	12.1	0.785	19.9	0.865	22.0	6	2.132	54.1	2.462	62.5	2.612	66.3	18.3	464	2864	4263	10005	4538	108/70.5	2.74/1.79	2950	899
AL140B83-250	250(37)	0.520	13.2	0.840	21.3	0.920	23.4	4	2.250	57.2	2.580	65.5	2.730	69.4	19.1	485	3166	4711	10420	4726	108/70.5	2.74/1.79	2800	853
AL140B83-350	350(37)	0.616	15.6	0.936	23.8	1.016	25.8	4	2.458	62.4	2.788	70.8	2.938	74.6	20.6	522	3682	5480	9656	4380	108/70.5	2.74/1.79	2200	671
AL140B83-500	500(37)	0.736	18.7	1.056	26.8	1.136	28.9	3	2.717	69.0	3.047	77.4	3.217	81.7	22.5	572	4492	6684	8741	3965	108/70.5	2.74/1.79	1600	488
AL140B83-750	750(61)	0.908	23.1	1.238	31.4	1.318	33.5	2	3.170	80.5	3.500	88.9	3.670	93.2	25.7	653	5918	8807	8065	3658	108/70.5	2.74/1.79	1100	335

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.

SPS_B83_INDUSTRIAL-E(07/20/2016) Rev: 3.06R

HVTECK SPECIFICATIONS

HVTECK AL 3/C 140TRXLPE TS PVC AIA PVC 8KV 133% CSA

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

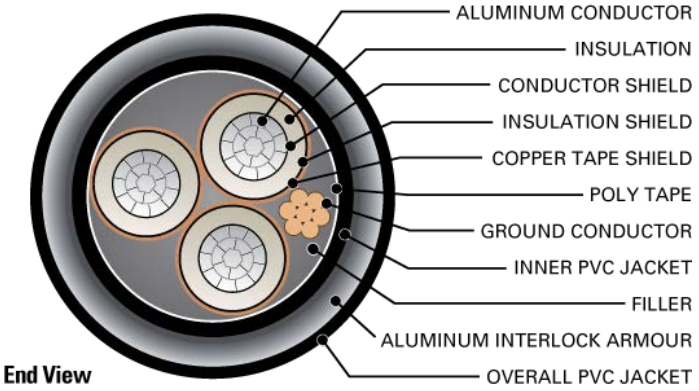
- FT1 - Flame Test - (1,706 BTU/Hr. nominal - Vertical Wire Flame Test)
- FT4, Flame Test - (70,000 BTU/Hr. - Vertical Tray Flame Test)
- IEEE 1202 - Flame Test - (70,000 BTU/Hr. - Vertical Tray Test)
- IEEE 383 - Flame Test - (70,000 BTU/Hr.)
- ICEA T-29-520 - Vertical Cable Tray Flame Test - (210,000 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
AL140B83-002	1194	5313	0.265	0.869	0.333	1.093	0.1044	0.3426	0.0507	0.1664	0.0394	0.1292	0.0523	0.0159	0.333 + j0.043	0.707 + j0.491	3.1	135	157
AL140B83-001	1506	6701	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 + j0.041	0.640 + j0.474	3.9	154	178
AL140B83-010	1901	8455	0.168	0.551	0.211	0.693	0.0974	0.3196	0.0596	0.1956	0.0367	0.1205	0.0445	0.0136	0.211 + j0.040	0.587 + j0.455	5.0	176	202
AL140B83-020	2396	10657	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 + j0.039	0.543 + j0.434	6.3	204	229
AL140B83-030	3020	13435	0.105	0.345	0.132	0.433	0.0911	0.2989	0.0709	0.2326	0.0343	0.1127	0.0374	0.0114	0.132 + j0.037	0.507 + j0.412	7.9	234	260
AL140B83-040	3809	16942	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 + j0.036	0.479 + j0.390	9.9	268	294
AL140B83-250	4500	20017	0.071	0.232	0.089	0.292	0.0868	0.2848	0.0813	0.2667	0.0327	0.1074	0.0326	0.0099	0.089 + j0.035	0.460 + j0.368	11.8	296	323
AL140B83-350	6300	28024	0.051	0.166	0.064	0.209	0.0831	0.2726	0.0932	0.3057	0.0313	0.1028	0.0285	0.0087	0.064 + j0.034	0.428 + j0.332	16.5	363	386
AL140B83-500	9000	40034	0.035	0.116	0.045	0.148	0.0796	0.2611	0.1080	0.3542	0.0300	0.0984	0.0246	0.0075	0.045 + j0.032	0.399 + j0.294	23.5	447	465
AL140B83-750	13500	60051	0.024	0.077	0.031	0.100	0.0765	0.2509	0.1257	0.4125	0.0288	0.0946	0.0211	0.0064	0.031 + j0.031	0.367 + j0.247	35.3	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

SPS_B83_INDUSTRIAL-E(07/20/2016) Rev: 3.06R