

## HVTECK AL 1/C 140TRXLPE CB PVC AIA PVC 8kV 133% CSA

Single Conductor, 140 Mils Tree Retardant Cross Linked Polyethylene, 133% Insulation Level, Concentric Bond, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

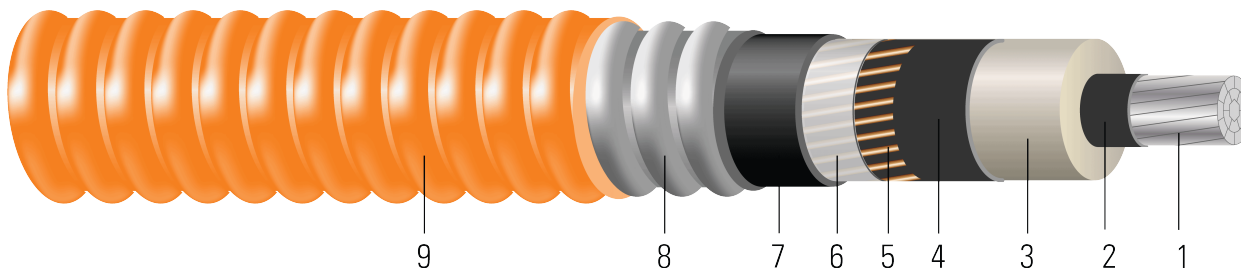


Image not to scale. See Table 1 for dimensions.

### CONSTRUCTION:

- Conductor:** Class B compact stranded 8000 Series aluminum per ASTM B800 and ASTM B836
- Conductor Shield:** Semi-conducting cross-linked copolymer; A conductor separator is used for cable size larger than or equal to 500 Kcmil
- Insulation:** 140 Mils Tree Retardant Cross Linked Polyethylene 133% insulation level
- Insulation Shield:** Strippable semi-conducting cross-linked copolymer
- Concentric Shield:** Concentrically applied copper bond / shield wires. Complies with greater than the minimum requirement as per Table 44, CSA Standard C68.10 and Table 16A, Canadian Electrical Code Part 1
- Neutral Separator:** Mylar tape
- Inner Jacket:** PVC inner jacket
- Armour:** Aluminum Interlocked Armour (AIA)
- Overall Jacket:** Orange Polyvinyl Chloride (PVC) Jacket

### APPLICATIONS AND FEATURES:

Southwire's 8kV HVTECK is a CSA armoured cable for industrial and commercial medium voltage applications. Rated FT4, -40°C, Hazardous Locations (HL). These cables are capable of operating continuously at the conductor temperature not in excess of 105°C for normal operation, 140°C for emergency overload, and 250°C for short circuit conditions. Rated for 1000 lbs /FT maximum sidewall pressure. These cables feature sunlight and moisture resistance, exceptional corona resistance, resistance to most chemical soils and acids and are flame retardant.

### SPECIFICATIONS:

- ASTM B801 Concentric-Lay-Stranded Conductors of 8000 Series Aluminum Alloy
- ASTM B836 Compact Rounded Stranded Aluminum Conductors
- CSA C22.2 No. 174 Cables in Hazardous Locations
- CSA C22.2 No. 2556 & No. 0.3 Wire and Cable Test Methods
- 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 LTGG [-40°C] - as per C68.10 - for Cold Bend and Impact rating
- CSA HL - for Hazardous Locations rating
- CSA SUN RES - for Sunlight Resistant rating
- ICEA S-93-639 (NEMA WC 74) 5-46 KV Shielded Power Cable
- ICEA T-29-520 Flame Test (210,000 BTU/Hr)



- IEEE 383 Flame Test (70,000 btu)
- IEEE 1202 FT4 Flame Test (70,000) BTU/hr Vertical Tray Test (1/0 and Larger)
- FT1 Flame Test (1,706 BTU/Hr nominal - Vertical Wire Flame Test)
- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV (Qualification Test Requirements)

**SAMPLE PRINT LEGEND:**

(CSA) SOUTHWIRE (NESC) #P# 1/C [#AWG or #kcmil] CPT AL 140 TRXLPE AIA 8kV 133% INS LEVEL CB [No. x SIZE] AWG SUN RES 105°C FT4 HL (-40°C) LTGG RoHS YEAR [SEQUENTIAL METER MARKS]

**Table 1 – Weights and Measurements**

Cond. Size	Strand	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Concentric Neutral	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Approx. Weight
AWG/ Kcmil	No.	inch	inch	mil	inch	No. x AWG	mil	inch	mil	inch	lb/1000ft
2	7	0.268	0.586	140	0.646	7 x 14	80	1.162	50	1.262	706
1	19	0.298	0.616	140	0.676	7 x 14	80	1.192	50	1.292	745
1/0	19	0.336	0.654	140	0.714	7 x 14	80	1.340	50	1.440	804
2/0	19	0.376	0.694	140	0.754	11 x 14	80	1.380	50	1.480	912
3/0	19	0.422	0.740	140	0.800	11 x 14	80	1.426	50	1.526	979
4/0	19	0.474	0.792	140	0.852	11 x 14	80	1.478	50	1.578	1058
250	37	0.520	0.846	140	0.906	13 x 14	80	1.532	60	1.652	1196
350	37	0.615	0.941	140	1.001	17 x 14	80	1.651	60	1.771	1449
500	37	0.735	1.061	140	1.121	21 x 14	80	1.771	60	1.891	1738
750	61	0.908	1.244	140	1.304	17 x 12	80	1.988	60	2.108	2306
1000	61	1.060	1.396	140	1.456	17 x 12	110	2.200	60	2.320	2795

All dimensions are nominal and subject to normal manufacturing tolerances

◊ Cable marked with this symbol is a standard stock item

\* Strand count meets minimum number per ASTM



**Table 2 – Electrical and Engineering Data**

Cond. Size	Min Bending Radius	Max Pull Tension	DC Resistance @ 25°C	AC Resistance @ 90°C	Capacitive Reactance @ 60Hz	Inductive Reactance @ 60Hz	Zero Sequence Impedance*	Positive Sequence Impedance*	Phase Short Circuit Current @ 60Hz	Allowable Ampacity In Air 90°C	Allowable Ampacity Directly Buried 90°C
AWG/Kcmil	inch	lb	Ω/1000ft	Ω/1000ft	MΩ*1000ft	Ω/1000ft	Ω/1000ft	Ω/1000ft	Amp	Amp	Amp
2	8.8	398	0.267	0.336	0.053	0.057	0.318 + j0.031	0.324 + j0.039	5458	169	176
1	9.0	502	0.211	0.266	0.049	0.055	0.248 + j0.028	0.254 + j0.036	5458	194	198
1/0	10.0	633	0.168	0.211	0.045	0.055	0.193 + j0.026	0.198 + j0.034	5458	222	223
2/0	10.3	798	0.133	0.167	0.041	0.053	0.149 + j0.024	0.154 + j0.032	8577	255	250
3/0	10.6	1006	0.105	0.133	0.038	0.051	0.115 + j0.023	0.12 + j0.031	8577	290	278
4/0	11.0	1269	0.084	0.105	0.034	0.049	0.087 + j0.022	0.093 + j0.029	8577	329	309
250	11.5	1500	0.071	0.090	0.033	0.048	0.072 + j0.021	0.078 + j0.029	10137	370	347
350	12.3	2100	0.050	0.065	0.028	0.046	0.047 + j0.019	0.053 + j0.027	13256	446	402
500	13.2	3000	0.035	0.046	0.024	0.043	0.028 + j0.017	0.034 + j0.025	16376	533	451
750	14.7	4500	0.024	0.033	0.021	0.041	0.015 + j0.016	0.021 + j0.024	21062	631	500
1000	16.2	6000	0.018	0.026	0.018	0.040	0.008 + j0.015	0.014 + j0.023	21062	707	539

\* Inductive impedance is based on non-ferrous conduit with one diameter spacing.

**Table 3 – Weights and Measurements (Metric)**

Cond. Size	Strand	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Concentric Neutral	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Approx. Weight
AWG/Kcmil	No.	mm	mm	mm	mm	No. x AWG	mm	mm	mm	mm	kg/km
2	7	6.81	14.88	3.56	16.41	7 x 14	2.03	29.51	1.27	32.05	1051
1	19	7.57	15.65	3.56	17.17	7 x 14	2.03	30.28	1.27	32.82	1109
1/0	19	8.53	16.61	3.56	18.14	7 x 14	2.03	34.04	1.27	36.58	1196
2/0	19	9.55	17.63	3.56	19.15	11 x 14	2.03	35.05	1.27	37.59	1357
3/0	19	10.72	18.80	3.56	20.32	11 x 14	2.03	36.22	1.27	38.76	1457
4/0	19	12.04	20.12	3.56	21.64	11 x 14	2.03	37.54	1.27	40.08	1574
250	37	13.21	21.49	3.56	23.01	13 x 14	2.03	38.91	1.52	41.96	1780
350	37	15.62	23.90	3.56	25.43	17 x 14	2.03	41.94	1.52	44.98	2156
500	37	18.67	26.95	3.56	28.47	21 x 14	2.03	44.98	1.52	48.03	2586
750	61	23.06	31.60	3.56	33.12	17 x 12	2.03	50.50	1.52	53.54	3432
1000	61	26.92	35.46	3.56	36.98	17 x 12	2.79	55.88	1.52	58.93	4159

All dimensions are nominal and subject to normal manufacturing tolerances

◊ Cable marked with this symbol is a standard stock item



\* Strand count meets minimum number per ASTM

**Table 4 – Electrical and Engineering Data (Metric)**

Cond. Size	Min Bending Radius	Max Pull Tension	DC Resistance @ 25°C	AC Resistance @ 90°C	Capacitive Reactance @ 60Hz	Inductive Reactance @ 60Hz	Zero Sequence Impedance*	Positive Sequence Impedance*	Phase Short Circuit Current @ 60Hz	Allowable Ampacity In Air 90°C	Allowable Ampacity Directly Buried 90°C
AWG/Kcmil	mm	newton	Ω/km	Ω/km	MΩ*km	Ω/km	Ω/1000ft	Ω/1000ft	Amp	Amp	Amp
2	223.52	1771	0.8760	1.10	0.0162	0.1870	0.318 + j0.031	0.324 + j0.039	5458	169	176
1	228.60	2234	0.6923	0.87	0.0149	0.1804	0.248 + j0.028	0.254 + j0.036	5458	194	198
1/0	254.00	2817	0.5512	0.69	0.0137	0.1804	0.193 + j0.026	0.198 + j0.034	5458	222	223
2/0	261.62	3551	0.4364	0.55	0.0125	0.1739	0.149 + j0.024	0.154 + j0.032	8577	255	250
3/0	269.24	4477	0.3445	0.44	0.0116	0.1673	0.115 + j0.023	0.12 + j0.031	8577	290	278
4/0	279.40	5647	0.2756	0.34	0.0104	0.1608	0.087 + j0.022	0.093 + j0.029	8577	329	309
250	292.10	6675	0.2329	0.30	0.0101	0.1575	0.072 + j0.021	0.078 + j0.029	10137	370	347
350	312.42	9345	0.1640	0.21	0.0085	0.1509	0.047 + j0.019	0.053 + j0.027	13256	446	402
500	335.28	13350	0.1148	0.15	0.0073	0.1411	0.028 + j0.017	0.034 + j0.025	16376	533	451
750	373.38	20025	0.0787	0.11	0.0064	0.1345	0.015 + j0.016	0.021 + j0.024	21062	631	500
1000	411.48	26700	0.0591	0.09	0.0055	0.1312	0.008 + j0.015	0.014 + j0.023	21062	707	539

\* Inductive impedance is based on non-ferrous conduit with one diameter spacing.

