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

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

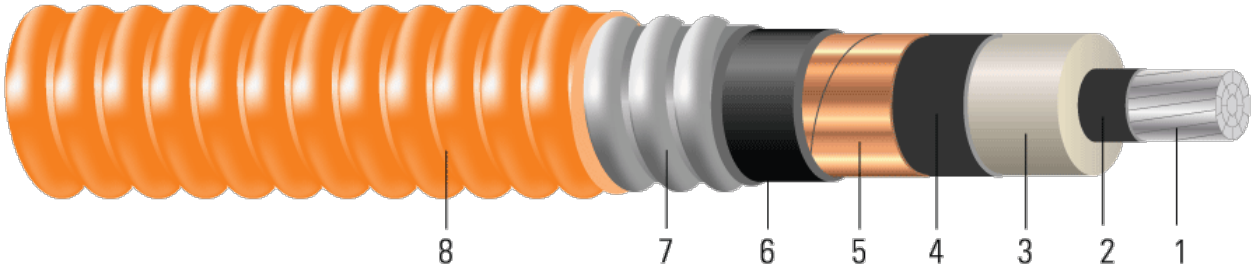

Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

1. **Conductor:** Class B compact stranded 8000 Series aluminum per ASTM B800 and ASTM B836
2. **Conductor Shield:** Semi-conducting cross-linked copolymer; A conductor separator is used for cable size larger than or equal to 500 Kcmil
3. **Insulation:** 140 Mils Tree Retardant Cross Linked Polyethylene 133% insulation level
4. **Insulation Shield:** Strippable semi-conducting cross-linked copolymer
5. **Copper Tape Shield:** Helically wrapped 5 mil copper tape with 25% overlap
6. **Inner Jacket:** PVC inner jacket
7. **Armour:** Aluminum Interlocked Armour (AIA)
8. **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)

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- 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 25% TS SUN RES 105°C FT4 HL (-40°C) LTGG RoHS YEAR [SEQUENTIAL METER MARKS]

Table 1 – Weights and Measurements

Stock Number	Cond. Size	Strand	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Copper Weight	Approx. Weight	Conduit Size*
	AWG/ Kcmil	No.	inch	inch	mil	inch	mil	inch	mil	inch	lb/ 1000ft	lb/ 1000ft	inch
TBA	2	7	0.268	0.586	140	0.646	65	1.006	50	1.106	53	615	3
TBA	1	19	0.299	0.617	140	0.677	65	1.037	50	1.137	56	656	3
TBA	1/0	19	0.336	0.654	140	0.714	80	1.104	50	1.204	59	738	3
TBA	2/0	19	0.376	0.694	140	0.754	80	1.144	50	1.244	62	798	3
TBA	3/0	19	0.423	0.741	140	0.801	80	1.191	50	1.291	66	870	3.5
TBA	4/0	19	0.475	0.793	140	0.853	80	1.243	50	1.343	70	955	3.5
TBA	250	37	0.52	0.846	140	0.906	80	1.296	50	1.396	75	1039	3.5
TBA	350	37	0.616	0.942	140	1.002	80	1.392	50	1.492	82	1215	4
672085	500	34	0.736	1.086	140	1.146	80	1.658	60	1.778	94	1487	4.5
TBA	750	61	0.908	1.244	140	1.304	80	1.794	60	1.914	107	2055	5
TBA	1000	61	1.117	1.453	140	1.513	110	2.063	60	2.183	124	2606	5.5

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
TBA stock codes are estimations only and actual product may vary. Please wait until a stock code is assigned to purchase connectors and/or fittings.

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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 @ 6 Cycles	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	7.7	398	0.266	0.365	0.044	0.054	0.705+j0.528	0.366+j0.059	2033	169	176
1	8	502	0.211	0.289	0.041	0.052	0.633+j0.512	0.290+j0.056	2129	194	198
1/0	8.4	633	0.167	0.229	0.038	0.051	0.576+j0.494	0.230+j0.055	2243	222	223
2/0	8.7	798	0.133	0.182	0.035	0.049	0.532+j0.475	0.183+j0.053	2367	255	250
3/0	9	1006	0.105	0.144	0.032	0.047	0.496+j0.455	0.145+j0.051	2513	290	278
4/0	9.4	1269	0.084	0.115	0.03	0.046	0.469+j0.434	0.116+j0.049	2674	329	309
250	9.8	1500	0.07	0.096	0.027	0.044	0.451+j0.413	0.097+j0.048	2838	370	347
350	10.4	2100	0.051	0.07	0.024	0.042	0.424+j0.379	0.071+j0.046	3136	446	402
500	12.4	3000	0.036	0.05	0.022	0.042	0.398+j0.334	0.051+j0.046	3582	533	451
750	13.4	4500	0.023	0.033	0.017	0.039	0.372+j0.291	0.034+j0.043	4071	631	500
1000	15.3	6000	0.017	0.025	0.015	0.037	0.349+j0.247	0.027+j0.042	4719	707	539

* Inductive impedance is based on non-ferrous conduit with one diameter spacing center-to-center.
***** CEC ampacities are based on:
3-1/C in air copper and aluminum: D17M
3-1/C direct buried copper and aluminum: D17A

Table 3 – Weights and Measurements (Metric)

Stock Number	Cond. Size	Strand	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Copper Weight	Approx. Weight	Conduit Size*
	AWG/ Kcmil	No.	mm	mm	mm	mm	mm	mm	mm	mm	kg/km	kg/km	inch
TBA	2	7	6.81	14.88	3.56	16.41	1.65	25.55	1.27	28.09	79	915	3
TBA	1	19	7.59	15.67	3.56	17.20	1.65	26.34	1.27	28.88	83	976	3
TBA	1/0	19	8.53	16.61	3.56	18.14	2.03	28.04	1.27	30.58	88	1098	3
TBA	2/0	19	9.55	17.63	3.56	19.15	2.03	29.06	1.27	31.60	92	1188	3
TBA	3/0	19	10.74	18.82	3.56	20.35	2.03	30.25	1.27	32.79	98	1295	3.5
TBA	4/0	19	12.07	20.14	3.56	21.67	2.03	31.57	1.27	34.11	104	1421	3.5
TBA	250	37	13.21	21.49	3.56	23.01	2.03	32.92	1.27	35.46	112	1546	3.5
TBA	350	37	15.65	23.93	3.56	25.45	2.03	35.36	1.27	37.90	122	1808	4
672085	500	34	18.69	27.58	3.56	29.11	2.03	42.11	1.52	45.16	140	2213	4.5
TBA	750	61	23.06	31.60	3.56	33.12	2.03	45.57	1.52	48.62	159	3058	5
TBA	1000	61	28.37	36.91	3.56	38.43	2.79	52.40	1.52	55.45	185	3878	5.5

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
TBA stock codes are estimations only and actual product may vary. Please wait until a stock code is assigned to purchase connectors and/or fittings.

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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 @ 6 Cycles	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	195.58	1771	0.8727	1.20	0.0134	0.1772	0.705+j0.528	0.366+j0.059	2033	169	176
1	203.20	2234	0.6923	0.95	0.0125	0.1706	0.633+j0.512	0.290+j0.056	2129	194	198
1/0	213.36	2817	0.5479	0.75	0.0116	0.1673	0.576+j0.494	0.230+j0.055	2243	222	223
2/0	220.98	3551	0.4364	0.60	0.0107	0.1608	0.532+j0.475	0.183+j0.053	2367	255	250
3/0	228.60	4477	0.3445	0.47	0.0098	0.1542	0.496+j0.455	0.145+j0.051	2513	290	278
4/0	238.76	5647	0.2756	0.38	0.0091	0.1509	0.469+j0.434	0.116+j0.049	2674	329	309
250	248.92	6675	0.2297	0.31	0.0082	0.1444	0.451+j0.413	0.097+j0.048	2838	370	347
350	264.16	9345	0.1673	0.23	0.0073	0.1378	0.424+j0.379	0.071+j0.046	3136	446	402
500	314.96	13350	0.1181	0.16	0.0067	0.1378	0.398+j0.334	0.051+j0.046	3582	533	451
750	340.36	20025	0.0755	0.11	0.0052	0.1280	0.372+j0.291	0.034+j0.043	4071	631	500
1000	388.62	26700	0.0558	0.08	0.0046	0.1214	0.349+j0.247	0.027+j0.042	4719	707	539

* Inductive impedance is based on non-ferrous conduit with one diameter spacing center-to-center.
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3-1/C direct buried copper and aluminum: D17A

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