HVTECK AL 1/C 90TRXLPE TS PVC AIA PVC 5kV 100% CSA

Single Conductor, 90 Mils Tree Retardant Cross Linked Polyethylene, 100% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

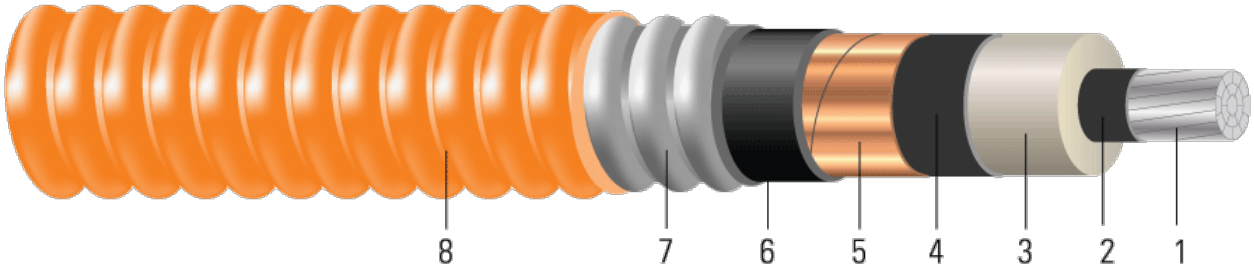


Image not to scale. See Table 1 for dimensions.

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:** 90 Mils Tree Retardant Cross Linked Polyethylene 100% 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 5kV 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 90 TRXLPE AIA 5kV 100% INS LEVEL 25% TS 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	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
2	7	0.268	0.486	90	0.546	65	0.906	50	1.006	45	515	2.5
1	19	0.299	0.517	90	0.577	65	0.937	50	1.037	48	554	2.5
1/0	19	0.336	0.554	90	0.614	65	0.974	50	1.074	51	600	2.5
2/0	19	0.376	0.594	90	0.654	65	1.014	50	1.114	54	656	3
3/0	19	0.423	0.641	90	0.701	80	1.091	50	1.191	58	754	3
4/0	19	0.475	0.693	90	0.753	80	1.143	50	1.243	62	834	3
250	37	0.52	0.746	90	0.806	80	1.196	50	1.296	66	914	3.5
350	37	0.616	0.842	90	0.902	80	1.292	50	1.392	74	1081	3.5
500	37	0.736	0.962	90	1.022	80	1.412	50	1.512	84	1314	4
750	61	0.908	1.144	90	1.204	80	1.694	60	1.814	99	1884	4.5
1000	61	1.117	1.353	90	1.413	80	1.903	60	2.023	116	2302	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	398	0.266	0.365	0.031	0.052	0.689+j0.572	0.366+j0.057	1723	169	176
1	7.3	502	0.211	0.289	0.029	0.05	0.619+j0.554	0.290+j0.054	1819	194	198
1/0	7.5	633	0.167	0.229	0.027	0.048	0.565+j0.536	0.230+j0.052	1933	222	223
2/0	7.8	798	0.133	0.182	0.025	0.047	0.523+j0.516	0.183+j0.050	2057	255	250
3/0	8.3	1006	0.105	0.144	0.022	0.045	0.489+j0.494	0.145+j0.049	2203	290	278
4/0	8.7	1269	0.084	0.115	0.02	0.044	0.465+j0.470	0.116+j0.048	2364	329	309
250	9.1	1500	0.07	0.096	0.019	0.043	0.449+j0.448	0.097+j0.046	2528	370	347
350	9.7	2100	0.051	0.07	0.016	0.04	0.425+j0.411	0.071+j0.044	2826	446	402
500	10.6	3000	0.036	0.05	0.014	0.038	0.404+j0.368	0.051+j0.042	3198	533	451
750	12.7	4500	0.023	0.033	0.012	0.038	0.378+j0.314	0.034+j0.041	3761	631	500
1000	14.2	6000	0.017	0.025	0.01	0.035	0.357+j0.265	0.027+j0.041	4409	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)

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
2	7	6.81	12.34	2.29	13.87	1.65	23.01	1.27	25.55	67	766	2.5
1	19	7.59	13.13	2.29	14.66	1.65	23.80	1.27	26.34	71	824	2.5
1/0	19	8.53	14.07	2.29	15.60	1.65	24.74	1.27	27.28	76	893	2.5
2/0	19	9.55	15.09	2.29	16.61	1.65	25.76	1.27	28.30	80	976	3
3/0	19	10.74	16.28	2.29	17.81	2.03	27.71	1.27	30.25	86	1122	3
4/0	19	12.07	17.60	2.29	19.13	2.03	29.03	1.27	31.57	92	1241	3
250	37	13.21	18.95	2.29	20.47	2.03	30.38	1.27	32.92	98	1360	3.5
350	37	15.65	21.39	2.29	22.91	2.03	32.82	1.27	35.36	110	1609	3.5
500	37	18.69	24.43	2.29	25.96	2.03	35.86	1.27	38.40	125	1955	4
750	61	23.06	29.06	2.29	30.58	2.03	43.03	1.52	46.08	147	2804	4.5
1000	61	28.37	34.37	2.29	35.89	2.03	48.34	1.52	51.38	173	3426	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	177.80	1771	0.8727	1.20	0.0094	0.1706	0.689+j0.572	0.366+j0.057	1723	169	176
1	185.42	2234	0.6923	0.95	0.0088	0.1640	0.619+j0.554	0.290+j0.054	1819	194	198
1/0	190.50	2817	0.5479	0.75	0.0082	0.1575	0.565+j0.536	0.230+j0.052	1933	222	223
2/0	198.12	3551	0.4364	0.60	0.0076	0.1542	0.523+j0.516	0.183+j0.050	2057	255	250
3/0	210.82	4477	0.3445	0.47	0.0067	0.1476	0.489+j0.494	0.145+j0.049	2203	290	278
4/0	220.98	5647	0.2756	0.38	0.0061	0.1444	0.465+j0.470	0.116+j0.048	2364	329	309
250	231.14	6675	0.2297	0.31	0.0058	0.1411	0.449+j0.448	0.097+j0.046	2528	370	347
350	246.38	9345	0.1673	0.23	0.0049	0.1312	0.425+j0.411	0.071+j0.044	2826	446	402
500	269.24	13350	0.1181	0.16	0.0043	0.1247	0.404+j0.368	0.051+j0.042	3198	533	451
750	322.58	20025	0.0755	0.11	0.0037	0.1247	0.378+j0.314	0.034+j0.041	3761	631	500
1000	360.68	26700	0.0558	0.08	0.0030	0.1148	0.357+j0.265	0.027+j0.041	4409	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

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