HVTECK AL 1/C 115TRXLPE CB PVC AIA PVC 5kV 133% CSA

Single Conductor, 115 Mils Tree Retardant Cross Linked Polyethylene, 133% Insulation Level, Concentric Bond, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

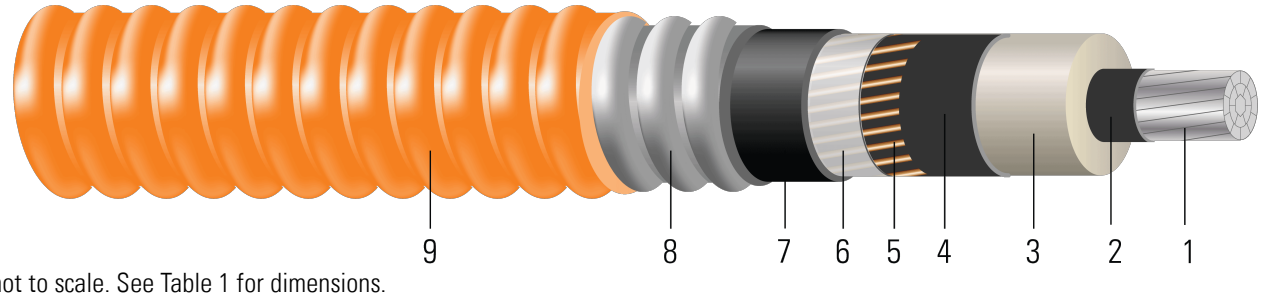


Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

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:** 115 Mils Tree Retardant Cross Linked Polyethylene 133% insulation level
4. **Insulation Shield:** Strippable semi-conducting cross-linked copolymer
5. **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
6. **Neutral Separator:** Mylar tape
7. **Inner Jacket:** PVC inner jacket
8. **Armour:** Aluminum Interlocked Armour (AIA)
9. **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)

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- 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 115 TRXLPE AIA 5kV 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	Copper Weight	Approx. Weight	Conduit Size*
AWG/ Kcmil	No.	inch	inch	mil	inch	No. x AWG	mil	inch	mil	inch	lb/ 1000ft	lb/ 1000ft	inch
2	7	0.268	0.536	115	0.596	5x12	80	1.256	50	1.356	130	966	3.5
1	19	0.299	0.567	115	0.627	5x12	80	1.287	50	1.387	133	1014	3.5
1/0	19	0.336	0.604	115	0.664	5x12	80	1.324	50	1.424	136	1072	3.5
2/0	19	0.376	0.644	115	0.704	7x12	80	1.364	50	1.464	187	1188	4
3/0	19	0.423	0.691	115	0.751	7x12	80	1.411	50	1.511	191	1269	4
4/0	19	0.475	0.743	115	0.803	7x12	80	1.563	60	1.683	195	1536	4.5
250	37	0.52	0.796	115	0.856	9x12	80	1.616	60	1.736	238	1675	4.5
350	37	0.616	0.892	115	0.952	11x12	80	1.712	60	1.832	283	1918	5
500	37	0.736	1.012	115	1.072	13x12	80	1.832	60	1.952	347	2252	5
750	61	0.908	1.194	115	1.254	17x12	110	2.074	60	2.194	429	2887	6
1000	61	1.117	1.403	115	1.463	17x12	110	2.283	75	2.433	446	3440	6.5

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	9.5	398	0.266	0.365	0.038	0.059	0.666+j0.193	0.368+j0.064	2770	169	176
1	9.7	502	0.211	0.289	0.035	0.057	0.590+j0.190	0.292+j0.061	2770	194	198
1/0	10	633	0.167	0.229	0.033	0.055	0.529+j0.189	0.232+j0.059	2770	222	223
2/0	10.2	798	0.133	0.182	0.03	0.053	0.426+j0.119	0.186+j0.056	3879	255	250
3/0	10.6	1006	0.105	0.144	0.028	0.051	0.388+j0.118	0.148+j0.054	3879	290	278
4/0	11.8	1269	0.084	0.115	0.025	0.051	0.358+j0.118	0.119+j0.054	3879	329	309
250	12.2	1500	0.07	0.096	0.023	0.049	0.297+j0.082	0.101+j0.052	4987	370	347
350	12.8	2100	0.051	0.07	0.02	0.047	0.240+j0.061	0.076+j0.049	6095	446	402
500	13.7	3000	0.036	0.05	0.018	0.044	0.197+j0.048	0.057+j0.047	7203	533	451
750	15.4	4500	0.023	0.033	0.015	0.042	0.148+j0.033	0.041+j0.044	9420	631	500
1000	17	6000	0.017	0.025	0.012	0.04	0.140+j0.034	0.033+j0.043	9420	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	Concentric Neutral	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Copper Weight	Approx. Weight	Conduit Size*
AWG/ Kcmil	No.	mm	mm	mm	mm	No. x AWG	mm	mm	mm	mm	kg/km	kg/km	inch
2	7	6.81	13.61	2.92	15.14	5x12	2.03	31.90	1.27	34.44	193	1438	3.5
1	19	7.59	14.40	2.92	15.93	5x12	2.03	32.69	1.27	35.23	198	1509	3.5
1/0	19	8.53	15.34	2.92	16.87	5x12	2.03	33.63	1.27	36.17	202	1595	3.5
2/0	19	9.55	16.36	2.92	17.88	7x12	2.03	34.65	1.27	37.19	278	1768	4
3/0	19	10.74	17.55	2.92	19.08	7x12	2.03	35.84	1.27	38.38	284	1888	4
4/0	19	12.07	18.87	2.92	20.40	7x12	2.03	39.70	1.52	42.75	290	2286	4.5
250	37	13.21	20.22	2.92	21.74	9x12	2.03	41.05	1.52	44.09	354	2493	4.5
350	37	15.65	22.66	2.92	24.18	11x12	2.03	43.48	1.52	46.53	421	2854	5
500	37	18.69	25.70	2.92	27.23	13x12	2.03	46.53	1.52	49.58	516	3351	5
750	61	23.06	30.33	2.92	31.85	17x12	2.79	52.68	1.52	55.73	638	4296	6
1000	61	28.37	35.64	2.92	37.16	17x12	2.79	57.99	1.91	61.80	664	5119	6.5

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	241.30	1771	0.8727	1.20	0.0116	0.1936	0.666+j0.193	0.368+j0.064	2770	169	176
1	246.38	2234	0.6923	0.95	0.0107	0.1870	0.590+j0.190	0.292+j0.061	2770	194	198
1/0	254.00	2817	0.5479	0.75	0.0101	0.1804	0.529+j0.189	0.232+j0.059	2770	222	223
2/0	259.08	3551	0.4364	0.60	0.0091	0.1739	0.426+j0.119	0.186+j0.056	3879	255	250
3/0	269.24	4477	0.3445	0.47	0.0085	0.1673	0.388+j0.118	0.148+j0.054	3879	290	278
4/0	299.72	5647	0.2756	0.38	0.0076	0.1673	0.358+j0.118	0.119+j0.054	3879	329	309
250	309.88	6675	0.2297	0.31	0.0070	0.1608	0.297+j0.082	0.101+j0.052	4987	370	347
350	325.12	9345	0.1673	0.23	0.0061	0.1542	0.240+j0.061	0.076+j0.049	6095	446	402
500	347.98	13350	0.1181	0.16	0.0055	0.1444	0.197+j0.048	0.057+j0.047	7203	533	451
750	391.16	20025	0.0755	0.11	0.0046	0.1378	0.148+j0.033	0.041+j0.044	9420	631	500
1000	431.80	26700	0.0558	0.08	0.0037	0.1312	0.140+j0.034	0.033+j0.043	9420	707	539

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

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