HVTECK AL 1/C 220TRXLPE CB PVC AIA PVC 15kV 133% CSA

Single Conductor, 220 Mils Tree Retardant Cross Linked Polyethylene, 133% Insulation Level, Concentric Bond, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

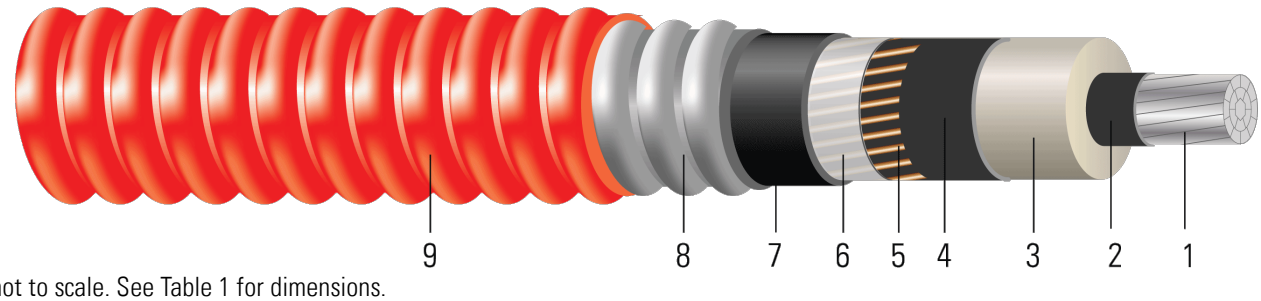


Image not to scale. See Table 1 for dimensions.

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:** 220 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:** Red Polyvinyl Chloride (PVC) Jacket

APPLICATIONS AND FEATURES:

Southwire's 15kV 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 220 TRXLPE AIA 15kV 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	0.746	220	0.806	5x12	80	1.566	60	1.686	147	1424	4.5
1	19	0.299	0.777	220	0.837	5x12	80	1.597	60	1.717	150	1481	4.5
1/0	19	0.336	0.814	220	0.874	5x12	80	1.634	60	1.754	153	1550	4.5
2/0	19	0.376	0.854	220	0.914	7x12	80	1.674	60	1.794	204	1678	4.5
3/0	19	0.423	0.901	220	0.961	7x12	80	1.721	60	1.841	208	1773	5
4/0	19	0.475	0.953	220	1.013	7x12	80	1.773	60	1.893	212	1882	5
250	37	0.52	1.006	220	1.066	9x12	80	1.826	60	1.946	255	2031	5
350	37	0.616	1.102	220	1.162	11x12	80	1.922	60	2.042	301	2291	5.5
500	37	0.736	1.222	220	1.282	13x12	110	2.102	60	2.222	364	2764	6
750	61	0.908	1.404	220	1.464	17x12	110	2.284	75	2.434	446	3393	6.5
1000	61	1.117	1.613	220	1.673	17x12	110	2.493	75	2.643	464	3926	7

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	11.8	398	0.266	0.365	0.061	0.064	0.662+j0.201	0.368+j0.069	2770	169	176
1	12	502	0.211	0.289	0.057	0.062	0.586+j0.198	0.292+j0.065	2770	194	198
1/0	12.3	633	0.167	0.229	0.053	0.06	0.525+j0.197	0.232+j0.063	2770	222	223
2/0	12.6	798	0.133	0.182	0.049	0.058	0.424+j0.127	0.186+j0.061	3879	255	250
3/0	12.9	1006	0.105	0.144	0.046	0.056	0.386+j0.125	0.148+j0.059	3879	290	278
4/0	13.3	1269	0.084	0.115	0.042	0.053	0.356+j0.124	0.119+j0.057	3879	329	309
250	13.6	1500	0.07	0.096	0.039	0.052	0.296+j0.088	0.101+j0.055	4987	370	347
350	14.3	2100	0.051	0.07	0.035	0.049	0.240+j0.066	0.076+j0.052	6095	446	402
500	15.6	3000	0.036	0.05	0.03	0.047	0.197+j0.052	0.056+j0.050	7203	533	451
750	17	4500	0.023	0.033	0.026	0.044	0.148+j0.037	0.041+j0.046	9420	631	500
1000	18.5	6000	0.017	0.025	0.022	0.041	0.140+j0.037	0.032+j0.045	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	18.95	5.59	20.47	5x12	2.03	39.78	1.52	42.82	219	2119	4.5
1	19	7.59	19.74	5.59	21.26	5x12	2.03	40.56	1.52	43.61	223	2204	4.5
1/0	19	8.53	20.68	5.59	22.20	5x12	2.03	41.50	1.52	44.55	228	2307	4.5
2/0	19	9.55	21.69	5.59	23.22	7x12	2.03	42.52	1.52	45.57	304	2497	4.5
3/0	19	10.74	22.89	5.59	24.41	7x12	2.03	43.71	1.52	46.76	310	2639	5
4/0	19	12.07	24.21	5.59	25.73	7x12	2.03	45.03	1.52	48.08	315	2801	5
250	37	13.21	25.55	5.59	27.08	9x12	2.03	46.38	1.52	49.43	379	3022	5
350	37	15.65	27.99	5.59	29.51	11x12	2.03	48.82	1.52	51.87	448	3409	5.5
500	37	18.69	31.04	5.59	32.56	13x12	2.79	53.39	1.52	56.44	542	4113	6
750	61	23.06	35.66	5.59	37.19	17x12	2.79	58.01	1.91	61.82	664	5049	6.5
1000	61	28.37	40.97	5.59	42.49	17x12	2.79	63.32	1.91	67.13	691	5843	7

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	299.72	1771	0.8727	1.20	0.0186	0.2100	0.662+j0.201	0.368+j0.069	2770	169	176
1	304.80	2234	0.6923	0.95	0.0174	0.2034	0.586+j0.198	0.292+j0.065	2770	194	198
1/0	312.42	2817	0.5479	0.75	0.0162	0.1969	0.525+j0.197	0.232+j0.063	2770	222	223
2/0	320.04	3551	0.4364	0.60	0.0149	0.1903	0.424+j0.127	0.186+j0.061	3879	255	250
3/0	327.66	4477	0.3445	0.47	0.0140	0.1837	0.386+j0.125	0.148+j0.059	3879	290	278
4/0	337.82	5647	0.2756	0.38	0.0128	0.1739	0.356+j0.124	0.119+j0.057	3879	329	309
250	345.44	6675	0.2297	0.31	0.0119	0.1706	0.296+j0.088	0.101+j0.055	4987	370	347
350	363.22	9345	0.1673	0.23	0.0107	0.1608	0.240+j0.066	0.076+j0.052	6095	446	402
500	396.24	13350	0.1181	0.16	0.0091	0.1542	0.197+j0.052	0.056+j0.050	7203	533	451
750	431.80	20025	0.0755	0.11	0.0079	0.1444	0.148+j0.037	0.041+j0.046	9420	631	500
1000	469.90	26700	0.0558	0.08	0.0067	0.1345	0.140+j0.037	0.032+j0.045	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

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