HVTECK AL 1/C 345TRXLPE CB PVC AIA PVC 35kV 100% CSA

Single Conductor, 345 Mils Tree Retardant Cross Linked Polyethylene, 100% Insulation Level, Concentric Bond, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

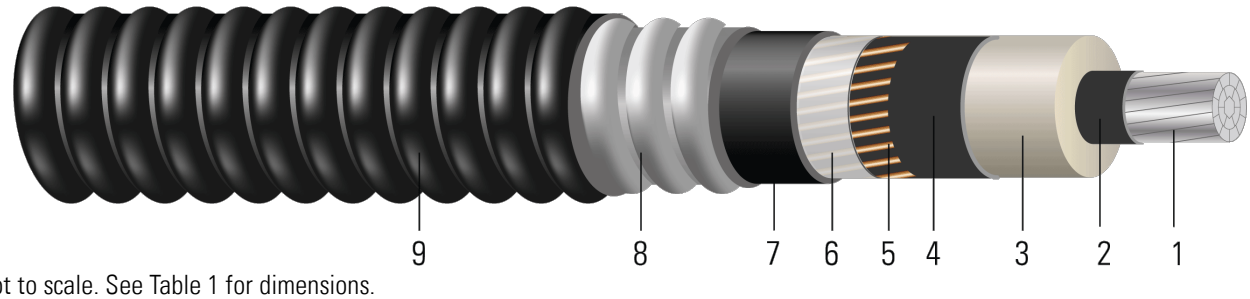


Image not to scale. See Table 1 for dimensions.

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:** 345 Mils Tree Retardant Cross Linked Polyethylene 100% 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:** Black Polyvinyl Chloride (PVC) Jacket

APPLICATIONS AND FEATURES:

Southwire's 35kV 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 345 TRXLPE AIA 35kV 100% 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
1/0	19	0.336	1.064	345	1.124	5x12	80	1.884	60	2.004	173	1982	5
2/0	19	0.376	1.104	345	1.164	7x12	80	1.924	60	2.044	225	2119	5.5
3/0	19	0.423	1.151	345	1.211	7x12	110	2.031	60	2.151	229	2337	5.5
4/0	19	0.475	1.203	345	1.263	7x12	110	2.083	60	2.203	233	2461	6
250	37	0.52	1.256	345	1.316	9x12	110	2.136	60	2.256	275	2624	6
350	37	0.616	1.352	345	1.412	11x12	110	2.232	60	2.352	321	2911	6
500	37	0.736	1.472	345	1.532	13x12	110	2.352	75	2.502	385	3366	6.5
750	61	0.908	1.654	345	1.714	17x12	110	2.534	75	2.684	467	3976	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.

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
1/0	14	633	0.167	0.229	0.071	0.063	0.522+j0.203	0.232+j0.066	2770	221	219
2/0	14.3	798	0.133	0.182	0.067	0.061	0.422+j0.133	0.186+j0.064	3879	253	246
3/0	15.1	1006	0.105	0.144	0.062	0.059	0.384+j0.132	0.148+j0.063	3879	288	275
4/0	15.4	1269	0.084	0.115	0.058	0.057	0.355+j0.130	0.119+j0.060	3879	327	305
250	15.8	1500	0.07	0.096	0.054	0.055	0.295+j0.094	0.100+j0.059	4987	367	343
350	16.5	2100	0.051	0.07	0.049	0.052	0.239+j0.071	0.075+j0.055	6095	443	399
500	17.5	3000	0.036	0.05	0.043	0.05	0.196+j0.057	0.056+j0.052	7203	529	451
750	18.8	4500	0.023	0.033	0.037	0.047	0.148+j0.041	0.040+j0.049	9420	633	505

* Inductive impedance is based on non-ferrous conduit with one diameter spacing center-to-center.
***** CEC ampacities are based on:

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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
1/0	19	8.53	27.03	8.76	28.55	5x12	2.03	47.85	1.52	50.90	257	2950	5
2/0	19	9.55	28.04	8.76	29.57	7x12	2.03	48.87	1.52	51.92	335	3153	5.5
3/0	19	10.74	29.24	8.76	30.76	7x12	2.79	51.59	1.52	54.64	341	3478	5.5
4/0	19	12.07	30.56	8.76	32.08	7x12	2.79	52.91	1.52	55.96	347	3662	6
250	37	13.21	31.90	8.76	33.43	9x12	2.79	54.25	1.52	57.30	409	3905	6
350	37	15.65	34.34	8.76	35.86	11x12	2.79	56.69	1.52	59.74	478	4332	6
500	37	18.69	37.39	8.76	38.91	13x12	2.79	59.74	1.91	63.55	573	5009	6.5
750	61	23.06	42.01	8.76	43.54	17x12	2.79	64.36	1.91	68.17	695	5917	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.

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
1/0	355.60	2817	0.5479	0.75	0.0216	0.2067	0.522+j0.203	0.232+j0.066	2770	221	219
2/0	363.22	3551	0.4364	0.60	0.0204	0.2001	0.422+j0.133	0.186+j0.064	3879	253	246
3/0	383.54	4477	0.3445	0.47	0.0189	0.1936	0.384+j0.132	0.148+j0.063	3879	288	275
4/0	391.16	5647	0.2756	0.38	0.0177	0.1870	0.355+j0.130	0.119+j0.060	3879	327	305
250	401.32	6675	0.2297	0.31	0.0165	0.1804	0.295+j0.094	0.100+j0.059	4987	367	343
350	419.10	9345	0.1673	0.23	0.0149	0.1706	0.239+j0.071	0.075+j0.055	6095	443	399
500	444.50	13350	0.1181	0.16	0.0131	0.1640	0.196+j0.057	0.056+j0.052	7203	529	451
750	477.52	20025	0.0755	0.11	0.0113	0.1542	0.148+j0.041	0.040+j0.049	9420	633	505

* 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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