HVTECK AL 1/C 175TRXLPE CB PVC AIA PVC 15kV 100% CSA

Single Conductor, 175 Mils Tree Retardant Cross Linked Polyethylene, 100% Insulation Level, Concentric Bond, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

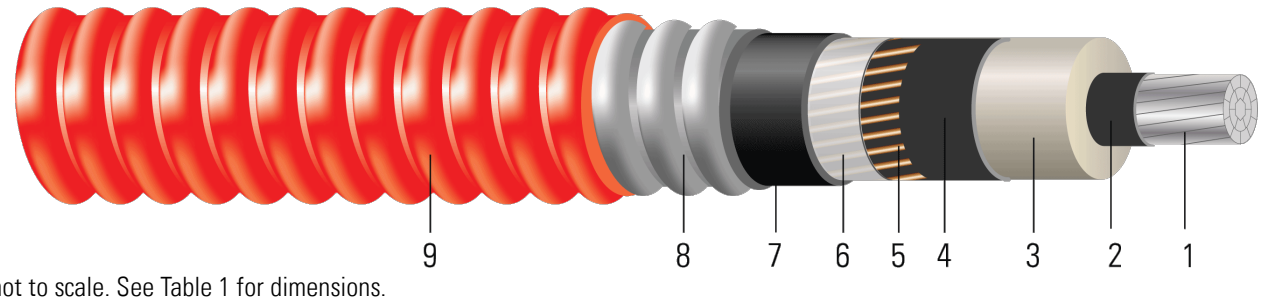

Image not to scale. See Table 1 for dimensions.

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:** 175 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:** 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 175 TRXLPE AIA 15kV 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
2	7	0.268	0.656	175	0.716	5x12	80	1.376	50	1.476	140	1124	4
1	19	0.299	0.687	175	0.747	5x12	80	1.407	50	1.507	143	1175	4
1/0	19	0.336	0.724	175	0.784	5x12	80	1.444	50	1.544	146	1237	4
2/0	19	0.376	0.764	175	0.824	7x12	80	1.584	60	1.704	197	1532	4.5
3/0	19	0.423	0.811	175	0.871	7x12	80	1.631	60	1.751	201	1624	4.5
4/0	19	0.475	0.863	175	0.923	7x12	80	1.683	60	1.803	205	1729	4.5
250	37	0.52	0.916	175	0.976	9x12	80	1.736	60	1.856	247	1874	5
350	37	0.616	1.012	175	1.072	11x12	80	1.832	60	1.952	293	2126	5
500	37	0.736	1.132	175	1.192	13x12	80	1.952	60	2.072	357	2473	5.5
750	61	0.908	1.314	175	1.374	17x12	110	2.194	60	2.314	439	3135	6
1000	61	1.117	1.523	175	1.583	17x12	110	2.403	75	2.553	456	3713	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	10.3	398	0.266	0.365	0.052	0.061	0.664+j0.198	0.368+j0.066	2770	169	176
1	10.5	502	0.211	0.289	0.048	0.059	0.588+j0.195	0.292+j0.062	2770	194	198
1/0	10.8	633	0.167	0.229	0.045	0.057	0.527+j0.194	0.232+j0.060	2770	222	223
2/0	11.9	798	0.133	0.182	0.042	0.056	0.425+j0.124	0.186+j0.060	3879	255	250
3/0	12.3	1006	0.105	0.144	0.038	0.054	0.386+j0.123	0.148+j0.058	3879	290	278
4/0	12.6	1269	0.084	0.115	0.035	0.052	0.357+j0.121	0.119+j0.056	3879	329	309
250	13	1500	0.07	0.096	0.033	0.051	0.297+j0.086	0.101+j0.054	4987	370	347
350	13.7	2100	0.051	0.07	0.029	0.048	0.240+j0.064	0.076+j0.051	6095	446	402
500	14.5	3000	0.036	0.05	0.025	0.045	0.197+j0.051	0.056+j0.048	7203	533	451
750	16.2	4500	0.023	0.033	0.021	0.043	0.148+j0.035	0.041+j0.045	9420	631	500
1000	17.9	6000	0.017	0.025	0.018	0.041	0.140+j0.036	0.033+j0.044	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	16.66	4.44	18.19	5x12	2.03	34.95	1.27	37.49	208	1673	4
1	19	7.59	17.45	4.44	18.97	5x12	2.03	35.74	1.27	38.28	213	1749	4
1/0	19	8.53	18.39	4.44	19.91	5x12	2.03	36.68	1.27	39.22	217	1841	4
2/0	19	9.55	19.41	4.44	20.93	7x12	2.03	40.23	1.52	43.28	293	2280	4.5
3/0	19	10.74	20.60	4.44	22.12	7x12	2.03	41.43	1.52	44.48	299	2417	4.5
4/0	19	12.07	21.92	4.44	23.44	7x12	2.03	42.75	1.52	45.80	305	2573	4.5
250	37	13.21	23.27	4.44	24.79	9x12	2.03	44.09	1.52	47.14	368	2789	5
350	37	15.65	25.70	4.44	27.23	11x12	2.03	46.53	1.52	49.58	436	3164	5
500	37	18.69	28.75	4.44	30.28	13x12	2.03	49.58	1.52	52.63	531	3680	5.5
750	61	23.06	33.38	4.44	34.90	17x12	2.79	55.73	1.52	58.78	653	4665	6
1000	61	28.37	38.68	4.44	40.21	17x12	2.79	61.04	1.91	64.85	679	5526	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	261.62	1771	0.8727	1.20	0.0158	0.2001	0.664+j0.198	0.368+j0.066	2770	169	176
1	266.70	2234	0.6923	0.95	0.0146	0.1936	0.588+j0.195	0.292+j0.062	2770	194	198
1/0	274.32	2817	0.5479	0.75	0.0137	0.1870	0.527+j0.194	0.232+j0.060	2770	222	223
2/0	302.26	3551	0.4364	0.60	0.0128	0.1837	0.425+j0.124	0.186+j0.060	3879	255	250
3/0	312.42	4477	0.3445	0.47	0.0116	0.1772	0.386+j0.123	0.148+j0.058	3879	290	278
4/0	320.04	5647	0.2756	0.38	0.0107	0.1706	0.357+j0.121	0.119+j0.056	3879	329	309
250	330.20	6675	0.2297	0.31	0.0101	0.1673	0.297+j0.086	0.101+j0.054	4987	370	347
350	347.98	9345	0.1673	0.23	0.0088	0.1575	0.240+j0.064	0.076+j0.051	6095	446	402
500	368.30	13350	0.1181	0.16	0.0076	0.1476	0.197+j0.051	0.056+j0.048	7203	533	451
750	411.48	20025	0.0755	0.11	0.0064	0.1411	0.148+j0.035	0.041+j0.045	9420	631	500
1000	454.66	26700	0.0558	0.08	0.0055	0.1345	0.140+j0.036	0.033+j0.044	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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