HVTECK AL 1/C 280TRXLPE TS PVC AIA PVC 28kV 100% CSA

Single Conductor, 280 Mils Tree Retardant Cross Linked Polyethylene, 100% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

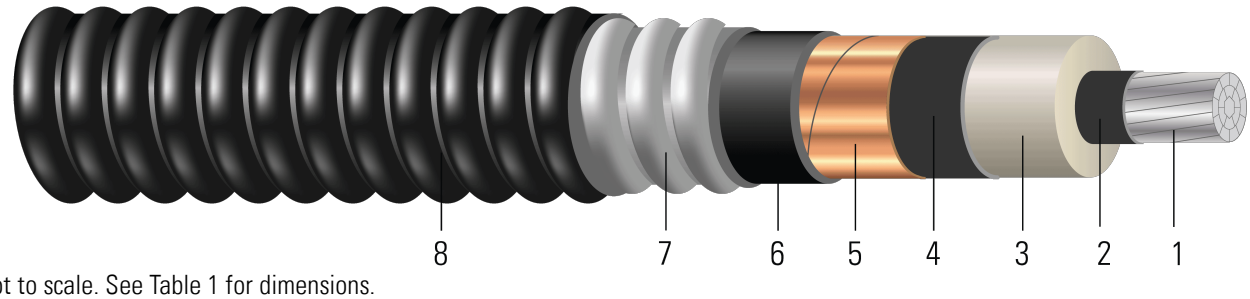


Image not to scale. See Table 1 for dimensions.

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:** 280 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:** Black Polyvinyl Chloride (PVC) Jacket

APPLICATIONS AND FEATURES:

Southwire's 28kV 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 280 TRXLPE AIA 28kV 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
1	19	0.299	0.897	280	0.957	80	1.347	50	1.447	79	1029	3.5
1/0	19	0.336	0.934	280	0.994	80	1.384	50	1.484	82	1089	4
2/0	19	0.376	0.974	280	1.034	80	1.424	50	1.524	85	1159	4
3/0	19	0.423	1.021	280	1.081	80	1.571	60	1.691	89	1417	4.5
4/0	19	0.475	1.073	280	1.133	80	1.623	60	1.743	93	1519	4.5
250	37	0.52	1.126	280	1.186	80	1.676	60	1.796	98	1623	4.5
350	37	0.616	1.222	280	1.282	80	1.772	60	1.892	105	1833	5
500	37	0.736	1.342	280	1.402	80	1.892	60	2.012	115	2119	5.5
750	61	0.908	1.524	280	1.584	110	2.134	60	2.254	130	2701	6

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	10.1	502	0.211	0.289	0.067	0.058	0.644+j0.409	0.290+j0.062	2996	193	194
1/0	10.4	633	0.167	0.229	0.062	0.056	0.583+j0.395	0.230+j0.060	3111	221	219
2/0	10.7	798	0.133	0.182	0.058	0.054	0.536+j0.380	0.183+j0.058	3235	253	246
3/0	11.8	1006	0.105	0.144	0.054	0.054	0.494+j0.364	0.145+j0.057	3380	288	275
4/0	12.2	1269	0.084	0.115	0.05	0.052	0.463+j0.347	0.116+j0.055	3541	327	305
250	12.6	1500	0.07	0.096	0.047	0.05	0.442+j0.331	0.097+j0.054	3706	367	343
350	13.2	2100	0.051	0.07	0.042	0.047	0.411+j0.305	0.071+j0.051	4003	443	399
500	14.1	3000	0.036	0.05	0.037	0.045	0.383+j0.276	0.052+j0.049	4375	529	451
750	15.8	4500	0.023	0.033	0.031	0.043	0.352+j0.239	0.035+j0.046	4939	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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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
1	19	7.59	22.78	7.11	24.31	2.03	34.21	1.27	36.75	118	1531	3.5
1/0	19	8.53	23.72	7.11	25.25	2.03	35.15	1.27	37.69	122	1621	4
2/0	19	9.55	24.74	7.11	26.26	2.03	36.17	1.27	38.71	126	1725	4
3/0	19	10.74	25.93	7.11	27.46	2.03	39.90	1.52	42.95	132	2109	4.5
4/0	19	12.07	27.25	7.11	28.78	2.03	41.22	1.52	44.27	138	2261	4.5
250	37	13.21	28.60	7.11	30.12	2.03	42.57	1.52	45.62	146	2415	4.5
350	37	15.65	31.04	7.11	32.56	2.03	45.01	1.52	48.06	156	2728	5
500	37	18.69	34.09	7.11	35.61	2.03	48.06	1.52	51.10	171	3153	5.5
750	61	23.06	38.71	7.11	40.23	2.79	54.20	1.52	57.25	193	4020	6

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	256.54	2234	0.6923	0.95	0.0204	0.1903	0.644+j0.409	0.290+j0.062	2996	193	194
1/0	264.16	2817	0.5479	0.75	0.0189	0.1837	0.583+j0.395	0.230+j0.060	3111	221	219
2/0	271.78	3551	0.4364	0.60	0.0177	0.1772	0.536+j0.380	0.183+j0.058	3235	253	246
3/0	299.72	4477	0.3445	0.47	0.0165	0.1772	0.494+j0.364	0.145+j0.057	3380	288	275
4/0	309.88	5647	0.2756	0.38	0.0152	0.1706	0.463+j0.347	0.116+j0.055	3541	327	305
250	320.04	6675	0.2297	0.31	0.0143	0.1640	0.442+j0.331	0.097+j0.054	3706	367	343
350	335.28	9345	0.1673	0.23	0.0128	0.1542	0.411+j0.305	0.071+j0.051	4003	443	399
500	358.14	13350	0.1181	0.16	0.0113	0.1476	0.383+j0.276	0.052+j0.049	4375	529	451
750	401.32	20025	0.0755	0.11	0.0094	0.1411	0.352+j0.239	0.035+j0.046	4939	633	505

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