HVTECK AL 3/C 280TRXLPE TS PVC AIA PVC 28kV 100% CSA

3 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

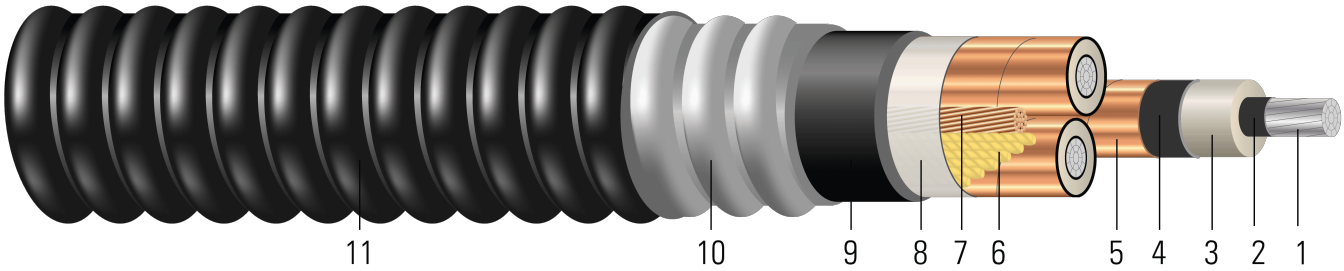


Image not to scale. See Table 1 for dimensions.

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. **Filler:** Interstices filled with non-hydroscoping/non-wicking fillers
7. **Grounding Conductor:** Class B compressed stranded bare copper ground per ASTM B3 and ASTM B8
8. **Binder:** Polypropylene tape
9. **Inner Jacket:** PVC inner jacket
10. **Armour:** Aluminum Interlocked Armour (AIA)
11. **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

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- 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
- 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# 3/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	Ground	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	19	0.299	0.897	280	0.957	1x6	110	2.623	75	2.773	322	2558	3.5
1/0	19	0.336	0.934	280	0.994	1x6	110	2.703	75	2.853	331	2724	3.5
2/0	19	0.376	0.974	280	1.034	1x6	110	2.789	75	2.939	341	2916	4
3/0	19	0.423	1.021	280	1.081	1x6	110	2.891	75	3.041	353	3150	4
4/0	19	0.475	1.073	280	1.133	1x6	110	3.003	85	3.173	366	3478	4
250	37	0.52	1.126	280	1.186	1x4	125	3.148	85	3.318	426	3809	4.5
350	37	0.616	1.222	280	1.282	1x4	125	3.355	85	3.525	450	4373	4.5
500	37	0.736	1.342	280	1.402	1x3	125	3.614	85	3.784	518	5190	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.

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	19.4	1506	0.211	0.289	0.067	0.033	0.659+j0.412	0.289+j0.047	2996	158	177
1/0	20	1900	0.167	0.229	0.062	0.031	0.598+j0.397	0.229+j0.046	3111	181	200
2/0	20.6	2395	0.133	0.182	0.058	0.029	0.549+j0.382	0.182+j0.044	3235	208	228
3/0	21.3	3020	0.105	0.144	0.054	0.028	0.509+j0.365	0.144+j0.042	3380	239	258
4/0	22.2	3808	0.084	0.115	0.05	0.026	0.477+j0.348	0.115+j0.041	3541	273	292
250	23.2	4500	0.07	0.096	0.047	0.025	0.455+j0.332	0.096+j0.040	3706	302	321
350	24.7	6300	0.051	0.07	0.042	0.023	0.422+j0.304	0.070+j0.037	4003	368	385
500	26.5	9000	0.036	0.05	0.037	0.021	0.392+j0.275	0.050+j0.035	4375	454	462

* 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/C in air copper and aluminum: D17N
3/C direct buried copper and aluminum: D17E

Table 3 – Weights and Measurements (Metric)

Cond. Size	Strand	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Ground	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	19	7.59	22.78	7.11	24.31	1x6	2.79	66.62	1.91	70.43	479	3807	3.5
1/0	19	8.53	23.72	7.11	25.25	1x6	2.79	68.66	1.91	72.47	493	4054	3.5
2/0	19	9.55	24.74	7.11	26.26	1x6	2.79	70.84	1.91	74.65	507	4339	4
3/0	19	10.74	25.93	7.11	27.46	1x6	2.79	73.43	1.91	77.24	525	4688	4
4/0	19	12.07	27.25	7.11	28.78	1x6	2.79	76.28	2.16	80.59	545	5176	4
250	37	13.21	28.60	7.11	30.12	1x4	3.18	79.96	2.16	84.28	634	5668	4.5
350	37	15.65	31.04	7.11	32.56	1x4	3.18	85.22	2.16	89.54	670	6508	4.5
500	37	18.69	34.09	7.11	35.61	1x3	3.18	91.80	2.16	96.11	771	7724	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.

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	492.76	6702	0.6923	0.95	0.0204	0.1083	0.659+j0.412	0.289+j0.047	2996	158	177
1/0	508.00	8455	0.5479	0.75	0.0189	0.1017	0.598+j0.397	0.229+j0.046	3111	181	200
2/0	523.24	10658	0.4364	0.60	0.0177	0.0951	0.549+j0.382	0.182+j0.044	3235	208	228
3/0	541.02	13439	0.3445	0.47	0.0165	0.0919	0.509+j0.365	0.144+j0.042	3380	239	258
4/0	563.88	16946	0.2756	0.38	0.0152	0.0853	0.477+j0.348	0.115+j0.041	3541	273	292
250	589.28	20025	0.2297	0.31	0.0143	0.0820	0.455+j0.332	0.096+j0.040	3706	302	321
350	627.38	28035	0.1673	0.23	0.0128	0.0755	0.422+j0.304	0.070+j0.037	4003	368	385
500	673.10	40050	0.1181	0.16	0.0113	0.0689	0.392+j0.275	0.050+j0.035	4375	454	462

* Inductive impedance is based on non-ferrous conduit with one diameter spacing center-to-center.
***** CEC ampacities are based on:
3/C in air copper and aluminum: D17N
3/C direct buried copper and aluminum: D17E

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