

## HVTECK AL 1/C 345TRXLPE TS PVC AIA PVC 28kV 133% CSA

Single Conductor, 345 Mils Tree Retardant Cross Linked Polyethylene, 133% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

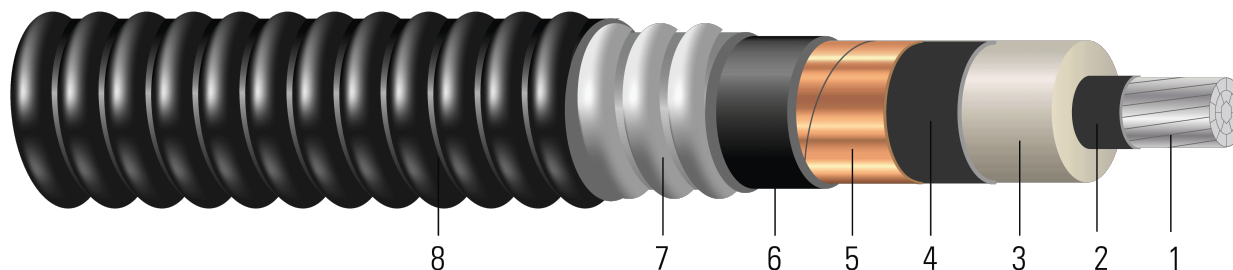


Image not to scale. See Table 1 for dimensions.

### 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:** 345 Mils Tree Retardant Cross Linked Polyethylene 133% 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)



- 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

### SAMPLE PRINT LEGEND:

(CSA) SOUTHWIRE (NESC) #P# 1/C [#AWG or #kcmil] CPT AL 345 TRXLPE AIA 28kV 133% 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	Approx. Weight
AWG/ Kcmil	No.	inch	inch	mil	inch	mil	inch	mil	inch	lb/1000ft
1	19	0.298	1.026	345	1.086	80	1.598	60	1.718	1201
1/0	19	0.336	1.064	345	1.124	80	1.660	60	1.780	1301
2/0	19	0.376	1.104	345	1.164	80	1.700	60	1.820	1373
3/0	19	0.422	1.150	345	1.210	80	1.746	60	1.866	1460
4/0	19	0.474	1.202	345	1.262	80	1.798	60	1.918	1563
250	37	0.520	1.256	345	1.316	80	1.852	60	1.972	1757
350	37	0.615	1.351	345	1.411	80	1.947	60	2.067	1970
500	37	0.735	1.471	345	1.531	110	2.127	60	2.247	2384
750	61	0.908	1.654	345	1.714	110	2.310	75	2.460	2939

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



**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 @ 60Hz	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	12	502	0.211	0.266	0.083	0.062	0.617 + j0.331	0.267 + j0.06	3364	193	194
1/0	12.4	633	0.168	0.211	0.078	0.060	0.559 + j0.318	0.212 + j0.059	3482	221	219
2/0	12.7	798	0.133	0.167	0.073	0.058	0.512 + j0.305	0.168 + j0.056	3606	253	246
3/0	13	1006	0.105	0.133	0.068	0.056	0.474 + j0.292	0.134 + j0.054	3749	288	275
4/0	13.4	1269	0.084	0.105	0.063	0.054	0.441 + j0.277	0.106 + j0.052	3910	327	305
250	13.8	1500	0.071	0.090	0.060	0.052	0.422 + j0.263	0.091 + j0.051	4077	367	343
350	14.4	2100	0.050	0.065	0.053	0.050	0.388 + j0.241	0.066 + j0.048	4371	443	399
500	15.7	3000	0.035	0.046	0.047	0.047	0.357 + j0.217	0.047 + j0.046	4743	529	451
750	17.2	4500	0.024	0.033	0.040	0.045	0.327 + j0.187	0.034 + j0.043	5310	633	505

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

**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	Approx. Weight
AWG/Kcmil	No.	mm	mm	mm	mm	mm	mm	mm	mm	kg/km
1	19	7.57	26.06	8.76	27.58	2.03	40.59	1.52	43.64	1787
1/0	19	8.53	27.03	8.76	28.55	2.03	42.16	1.52	45.21	1936
2/0	19	9.55	28.04	8.76	29.57	2.03	43.18	1.52	46.23	2043
3/0	19	10.72	29.21	8.76	30.73	2.03	44.35	1.52	47.40	2173
4/0	19	12.04	30.53	8.76	32.05	2.03	45.67	1.52	48.72	2326
250	37	13.21	31.90	8.76	33.43	2.03	47.04	1.52	50.09	2615
350	37	15.62	34.32	8.76	35.84	2.03	49.45	1.52	52.50	2932
500	37	18.67	37.36	8.76	38.89	2.79	54.03	1.52	57.07	3548
750	61	23.06	42.01	8.76	43.54	2.79	58.67	1.91	62.48	4374

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



**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 @ 60Hz	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	304.80	2234	0.6923	0.87	0.0253	0.2034	0.617 + j0.331	0.267 + j0.06	3364	193	194
1/0	314.96	2817	0.5512	0.69	0.0238	0.1969	0.559 + j0.318	0.212 + j0.059	3482	221	219
2/0	322.58	3551	0.4364	0.55	0.0223	0.1903	0.512 + j0.305	0.168 + j0.056	3606	253	246
3/0	330.20	4477	0.3445	0.44	0.0207	0.1837	0.474 + j0.292	0.134 + j0.054	3749	288	275
4/0	340.36	5647	0.2756	0.34	0.0192	0.1772	0.441 + j0.277	0.106 + j0.052	3910	327	305
250	350.52	6675	0.2329	0.30	0.0183	0.1706	0.422 + j0.263	0.091 + j0.051	4077	367	343
350	365.76	9345	0.1640	0.21	0.0162	0.1640	0.388 + j0.241	0.066 + j0.048	4371	443	399
500	398.78	13350	0.1148	0.15	0.0143	0.1542	0.357 + j0.217	0.047 + j0.046	4743	529	451
750	436.88	20025	0.0787	0.11	0.0122	0.1476	0.327 + j0.187	0.034 + j0.043	5310	633	505

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

