



## HVTECK AL 3/C 140TRXLPE TS PVC AIA PVC 8kV 133% CSA

3 Conductor, 140 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:** 140 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. **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 8kV 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)
- 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 140 TRXLPE AIA 8kV 133% INS LEVEL 25% TS SUN RES 105°C FT4 HL (-40°C) LTGG RoHS YEAR [SEQUENTIAL METER MARKS]

**Table 1 – Weights and Measurements**

Stock Number	Cond. Size	Strand	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Ground Size	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Copper Weight	Approx. Weight
	AWG/ Kcmil	No.	inch	inch	mil	inch	AWG	mil	inch	mil	inch	lb/ 1000ft	lb/ 1000ft
673689	2	8	0.268	0.586	140	0.646	8	80	1.949	60	2.069	223	1726
652778	1	19	0.298	0.617	140	0.677	6	110	2.076	60	2.196	260	1985
672079	1/0	10	0.336	0.654	140	0.714	6	110	2.156	60	2.276	268	2171
674249	2/0	12	0.376	0.694	140	0.754	6	110	2.118	60	2.238	276	2291
TBA	3/0	19	0.422	0.740	140	0.800	6	110	2.347	75	2.497	208	2537
672070	4/0	19	0.474	0.793	140	0.853	6	110	2.456	75	2.606	297	2896
TBA	250	37	0.520	0.846	140	0.906	4	110	2.576	75	2.726	246	3084
652787	350	37	0.615	0.942	140	1.002	4	110	2.778	75	2.928	377	3750
674257	500	34	0.735	1.084	140	1.144	3	110	3.134	85	3.304	442	4747
TBA	750	61	0.908	1.244	140	1.304	2	125	3.466	85	3.636	360	5870
TBA	1000	61	1.060	1.396	140	1.456	2	125	3.794	85	3.964	394	7056

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 @ 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	14.5	1194	0.267	0.336	0.044	0.043	0.696 + j0.540	0.336 + j0.043	2032	135	157
1	15.4	1506	0.211	0.266	0.041	0.041	0.629 + j0.524	0.266 + j0.042	2125	154	178
1/0	15.9	1900	0.168	0.211	0.038	0.040	0.577 + j0.504	0.211 + j0.040	2243	176	202
2/0	15.7	2395	0.133	0.167	0.035	0.038	0.535 + j0.485	0.167 + j0.039	2367	204	229
3/0	17.5	3020	0.105	0.133	0.032	0.037	0.503 + j0.463	0.133 + j0.037	2509	234	260
4/0	18.2	3808	0.084	0.105	0.029	0.036	0.476 + j0.441	0.105 + j0.036	2670	268	294
250	19.1	4500	0.071	0.090	0.027	0.035	0.461 + j0.419	0.090 + j0.036	2838	296	323
350	20.5	6300	0.050	0.065	0.024	0.033	0.433 + j0.383	0.065 + j0.034	3132	363	386
500	23.1	9000	0.035	0.046	0.022	0.032	0.409 + j0.343	0.046 + j0.032	3504	447	465
750	25.5	13500	0.024	0.033	0.017	0.030	0.383 + j0.292	0.033 + j0.031	4071	566	563
1000	27.7	18000	0.018	0.026	0.015	0.029	0.364 + j0.257	0.026 + j0.030	4542	661	638

\* 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





**Table 3 – Weights and Measurements (Metric)**

Stock Number	Cond. Size	Strand	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Ground Size	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Copper Weight	Approx. Weight
	AWG/ Kcmil	No.	mm	mm	mm	mm	AWG	mm	mm	mm	mm	kg/km	kg/km
673689	2	8	6.81	14.88	3.56	16.41	8	2.03	49.50	1.52	52.55	332	2569
652778	1	19	7.57	15.67	3.56	17.20	6	2.79	52.73	1.52	55.78	387	2954
672079	1/0	10	8.53	16.61	3.56	18.14	6	2.79	54.76	1.52	57.81	399	3231
674249	2/0	12	9.55	17.63	3.56	19.15	6	2.79	53.80	1.52	56.85	411	3409
TBA	3/0	19	10.72	18.80	3.56	20.32	6	2.79	59.61	1.91	63.42	310	3775
672070	4/0	19	12.04	20.14	3.56	21.67	6	2.79	62.38	1.91	66.19	442	4310
TBA	250	37	13.21	21.49	3.56	23.01	4	2.79	65.43	1.91	69.24	366	4589
652787	350	37	15.62	23.93	3.56	25.45	4	2.79	70.56	1.91	74.37	561	5581
674257	500	34	18.67	27.53	3.56	29.06	3	2.79	79.60	2.16	83.92	658	7064
TBA	750	61	23.06	31.60	3.56	33.12	2	3.18	88.04	2.16	92.35	536	8736
TBA	1000	61	26.92	35.46	3.56	36.98	2	3.18	96.37	2.16	100.69	586	10500

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 @ 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	368.30	5313	0.8760	1.10	0.0134	0.1411	0.696 + j0.540	0.336 + j0.043	2032	135	157
1	391.16	6702	0.6923	0.87	0.0125	0.1345	0.629 + j0.524	0.266 + j0.042	2125	154	178
1/0	403.86	8455	0.5512	0.69	0.0116	0.1312	0.577 + j0.504	0.211 + j0.040	2243	176	202
2/0	398.78	10658	0.4364	0.55	0.0107	0.1247	0.535 + j0.485	0.167 + j0.039	2367	204	229
3/0	444.50	13439	0.3445	0.44	0.0098	0.1214	0.503 + j0.463	0.133 + j0.037	2509	234	260
4/0	462.28	16946	0.2756	0.34	0.0088	0.1181	0.476 + j0.441	0.105 + j0.036	2670	268	294
250	485.14	20025	0.2329	0.30	0.0082	0.1148	0.461 + j0.419	0.090 + j0.036	2838	296	323
350	520.70	28035	0.1640	0.21	0.0073	0.1083	0.433 + j0.383	0.065 + j0.034	3132	363	386
500	586.74	40050	0.1148	0.15	0.0067	0.1050	0.409 + j0.343	0.046 + j0.032	3504	447	465
750	647.70	60075	0.0787	0.11	0.0052	0.0984	0.383 + j0.292	0.033 + j0.031	4071	566	563
1000	703.58	80100	0.0591	0.09	0.0046	0.0951	0.364 + j0.257	0.026 + j0.030	4542	661	638

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

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