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

3 Conductor, 140 Mils No Lead Ethylene Propylene Rubber (NL-EPR), 133% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

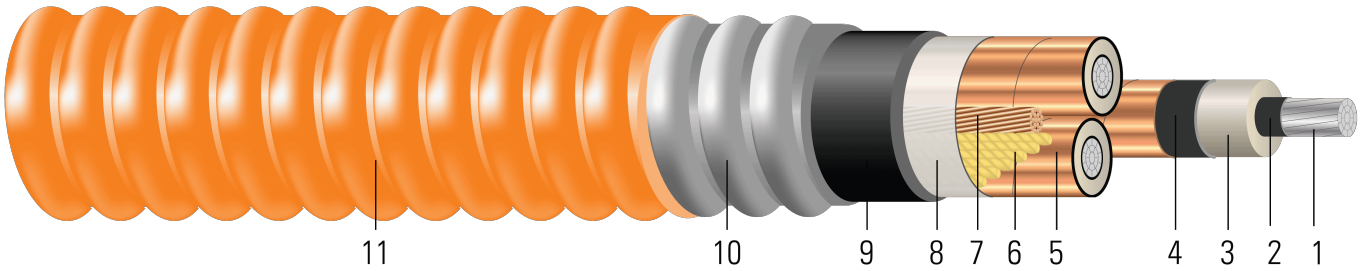

Image not to scale. See Table 1 for dimensions.

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 No Lead Ethylene Propylene Rubber (NL-EPR) 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:** Orange 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:

{SQMTR} {CSA} SOUTHWIRE POWER CABLE {NESC} 3/C XXX AWG COMPACT AL.--- {ALUMAFLEX}® AA8176 X.XX mm (140 mils) TR-XLPE AIA 8KV 133% INS LEVEL 25%TS SUN. RES. 90°C FT4 HL (-40°C) LTGG RoHS

Table 1 – Weights and Measurements

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	Approx. Weight
AWG/ Kcmil	No.	inch	inch	mil	inch	AWG	mil	inch	mil	inch	lb/1000ft
2	7	0.268	0.586	140	0.646	8	80	1.955	60	2.075	1651
1	19	0.298	0.616	140	0.676	6	110	2.079	60	2.199	1901
1/0	19	0.336	0.654	140	0.714	6	110	2.161	60	2.281	2061
2/0	19	0.376	0.694	140	0.754	6	110	2.248	60	2.368	2245
3/0	19	0.422	0.740	140	0.800	6	110	2.347	75	2.497	2537
4/0	19	0.474	0.792	140	0.852	6	110	2.460	75	2.610	2804
250	37	0.520	0.846	140	0.906	4	110	2.576	75	2.726	3084
350	37	0.615	0.941	140	1.001	4	110	2.781	75	2.931	3633
500	37	0.735	1.061	140	1.121	3	110	3.041	85	3.211	4479
750	61	0.908	1.244	140	1.304	2	125	3.466	85	3.636	5870
1000	61	1.060	1.396	140	1.456	2	125	3.794	85	3.964	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
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
2	14.5	1194	0.267	0.336	0.037	0.043	0.708 + j0.498	0.336 + j0.042	2032	135	157
1	15.4	1506	0.211	0.266	0.030	0.041	0.640 + j0.48	0.266 + j0.040	2125	154	178
1/0	16.0	1900	0.168	0.211	0.030	0.040	0.586 + j0.46	0.211 + j0.038	2243	176	202
2/0	16.6	2395	0.133	0.167	0.030	0.038	0.543 + j0.439	0.167 + j0.037	2367	204	229
3/0	17.5	3020	0.105	0.133	0.030	0.037	0.508 + j0.417	0.133 + j0.035	2509	234	260
4/0	18.3	3808	0.084	0.105	0.020	0.036	0.479 + j0.394	0.105 + j0.034	2670	268	294
250	19.1	4500	0.071	0.090	0.020	0.030	0.461 + j0.372	0.090 + j0.033	2838	296	323
350	20.5	6300	0.050	0.065	0.020	0.030	0.430 + j0.337	0.065 + j0.032	3132	363	386
500	22.5	9000	0.035	0.046	0.020	0.030	0.401 + j0.298	0.046 + j0.030	3504	447	465
750	25.5	13500	0.020	0.030	0.014	0.030	0.371 + j0.250	0.033 + j0.029	4071	566	563
1000	27.7	18000	0.020	0.030	0.013	0.030	0.349 + j0.218	0.027 + j0.028	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)

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	Approx. Weight
AWG/ Kcmil	No.	mm	mm	mm	mm	AWG	mm	mm	mm	mm	kg/km
2	7	6.81	14.88	3.56	16.41	8	2.03	49.66	1.52	52.71	2457
1	19	7.57	15.65	3.56	17.17	6	2.79	52.81	1.52	55.85	2829
1/0	19	8.53	16.61	3.56	18.14	6	2.79	54.89	1.52	57.94	3067
2/0	19	9.55	17.63	3.56	19.15	6	2.79	57.10	1.52	60.15	3341
3/0	19	10.72	18.80	3.56	20.32	6	2.79	59.61	1.91	63.42	3775
4/0	19	12.04	20.12	3.56	21.64	6	2.79	62.48	1.91	66.29	4173
250	37	13.21	21.49	3.56	23.01	4	2.79	65.43	1.91	69.24	4589
350	37	15.62	23.90	3.56	25.43	4	2.79	70.64	1.91	74.45	5406
500	37	18.67	26.95	3.56	28.47	3	2.79	77.24	2.16	81.56	6665
750	61	23.06	31.60	3.56	33.12	2	3.18	88.04	2.16	92.35	8736
1000	61	26.92	35.46	3.56	36.98	2	3.18	96.37	2.16	100.69	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
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
2	368.30	5313	0.8760	1.10	0.0113	0.1411	0.708 + j0.498	0.336 + j0.042	2032	135	157
1	391.16	6702	0.6923	0.87	0.0091	0.1345	0.640 + j0.48	0.266 + j0.040	2125	154	178
1/0	406.40	8455	0.5512	0.69	0.0091	0.1312	0.586 + j0.46	0.211 + j0.038	2243	176	202
2/0	421.64	10658	0.4364	0.55	0.0091	0.1247	0.543 + j0.439	0.167 + j0.037	2367	204	229
3/0	444.50	13439	0.3445	0.44	0.0091	0.1214	0.508 + j0.417	0.133 + j0.035	2509	234	260
4/0	464.82	16946	0.2756	0.34	0.0061	0.1181	0.479 + j0.394	0.105 + j0.034	2670	268	294
250	485.14	20025	0.2329	0.30	0.0061	0.0984	0.461 + j0.372	0.090 + j0.033	2838	296	323
350	520.70	28035	0.1640	0.21	0.0061	0.0984	0.430 + j0.337	0.065 + j0.032	3132	363	386
500	571.50	40050	0.1148	0.15	0.0061	0.0984	0.401 + j0.298	0.046 + j0.030	3504	447	465
750	647.70	60075	0.0656	0.10	0.0043	0.0984	0.371 + j0.250	0.033 + j0.029	4071	566	563
1000	703.58	80100	0.0656	0.10	0.0040	0.0984	0.349 + j0.218	0.027 + j0.028	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