HVTECK AL 3/C 90NLEPR TS PVC AIA PVC 5kV 100% CSA

3 Conductor, 90 Mils No Lead Ethylene Propylene Rubber (NL-EPR), 100% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

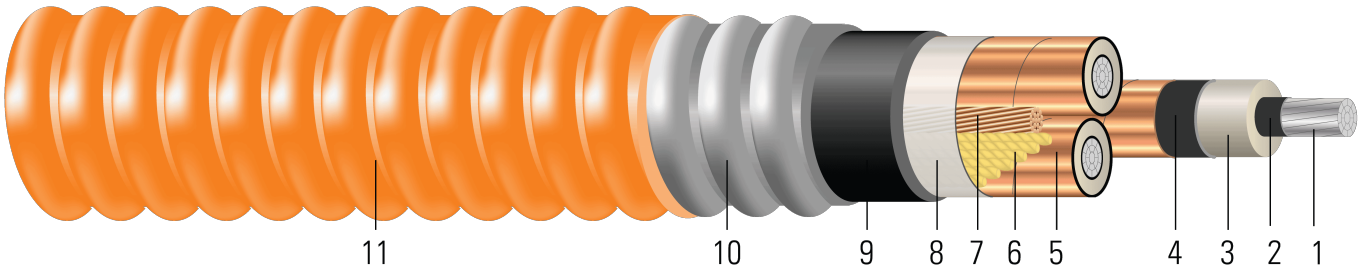


Image not to scale. See Table 1 for dimensions.

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:** 90 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 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:** Orange Polyvinyl Chloride (PVC) Jacket

APPLICATIONS AND FEATURES:

Southwire's 5kV 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 90 NLEPR AIA 5kV 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
2	7	0.268	0.486	90	0.546	1x8	80	1.675	60	1.795	190	1157	2
1	19	0.299	0.517	90	0.577	1x6	80	1.742	60	1.862	228	1287	2.5
1/0	19	0.336	0.554	90	0.614	1x6	80	1.822	60	1.942	237	1409	2.5
2/0	19	0.376	0.594	90	0.654	1x6	80	1.909	60	2.029	247	1555	2.5
3/0	15	0.423	0.641	90	0.701	1x6	110	2.07	60	2.19	259	1750	3
4/0	19	0.475	0.693	90	0.753	1x6	110	2.182	60	2.302	272	1961	3
250	37	0.52	0.746	90	0.806	1x4	110	2.297	75	2.447	332	2282	3
350	37	0.616	0.842	90	0.902	1x4	110	2.504	75	2.654	356	2734	3.5
500	34	0.736	0.962	90	1.022	1x3	110	2.764	75	2.914	423	3411	4
750	61	0.908	1.144	90	1.204	1x2	125	3.187	85	3.357	507	4575	4.5
1000	61	1.117	1.353	90	1.413	1x2	125	3.638	85	3.808	559	5666	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.

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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	12.6	1194	0.266	0.365	0.024	0.023	0.711+j0.588	0.365+j0.039	1723	135	157
1	13	1506	0.211	0.289	0.022	0.021	0.640+j0.569	0.289+j0.036	1819	154	178
1/0	13.6	1900	0.167	0.229	0.02	0.02	0.585+j0.548	0.229+j0.035	1933	176	202
2/0	14.2	2395	0.133	0.182	0.019	0.019	0.543+j0.527	0.182+j0.034	2057	204	229
3/0	15.3	3020	0.105	0.144	0.017	0.018	0.509+j0.503	0.144+j0.033	2203	234	260
4/0	16.1	3808	0.084	0.115	0.016	0.017	0.483+j0.478	0.115+j0.031	2364	268	294
250	17.1	4500	0.07	0.096	0.014	0.016	0.466+j0.455	0.096+j0.031	2528	296	323
350	18.6	6300	0.051	0.07	0.013	0.015	0.441+j0.415	0.070+j0.029	2826	363	386
500	20.4	9000	0.036	0.05	0.011	0.014	0.418+j0.370	0.050+j0.028	3198	447	465
750	23.5	13500	0.023	0.033	0.009	0.012	0.390+j0.314	0.033+j0.027	3761	566	563
1000	26.7	18000	0.017	0.025	0.007	0.011	0.366+j0.264	0.025+j0.027	4409	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	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
2	7	6.81	12.34	2.29	13.87	1x8	2.03	42.55	1.52	45.59	283	1722	2
1	19	7.59	13.13	2.29	14.66	1x6	2.03	44.25	1.52	47.29	339	1915	2.5
1/0	19	8.53	14.07	2.29	15.60	1x6	2.03	46.28	1.52	49.33	353	2097	2.5
2/0	19	9.55	15.09	2.29	16.61	1x6	2.03	48.49	1.52	51.54	368	2314	2.5
3/0	15	10.74	16.28	2.29	17.81	1x6	2.79	52.58	1.52	55.63	385	2604	3
4/0	19	12.07	17.60	2.29	19.13	1x6	2.79	55.42	1.52	58.47	405	2918	3
250	37	13.21	18.95	2.29	20.47	1x4	2.79	58.34	1.91	62.15	494	3396	3
350	37	15.65	21.39	2.29	22.91	1x4	2.79	63.60	1.91	67.41	530	4069	3.5
500	34	18.69	24.43	2.29	25.96	1x3	2.79	70.21	1.91	74.02	629	5076	4
750	61	23.06	29.06	2.29	30.58	1x2	3.18	80.95	2.16	85.27	754	6808	4.5
1000	61	28.37	34.37	2.29	35.89	1x2	3.18	92.41	2.16	96.72	832	8432	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.

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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	320.04	5313	0.8727	1.20	0.0073	0.0755	0.711+j0.588	0.365+j0.039	1723	135	157
1	330.20	6702	0.6923	0.95	0.0067	0.0689	0.640+j0.569	0.289+j0.036	1819	154	178
1/0	345.44	8455	0.5479	0.75	0.0061	0.0656	0.585+j0.548	0.229+j0.035	1933	176	202
2/0	360.68	10658	0.4364	0.60	0.0058	0.0623	0.543+j0.527	0.182+j0.034	2057	204	229
3/0	388.62	13439	0.3445	0.47	0.0052	0.0591	0.509+j0.503	0.144+j0.033	2203	234	260
4/0	408.94	16946	0.2756	0.38	0.0049	0.0558	0.483+j0.478	0.115+j0.031	2364	268	294
250	434.34	20025	0.2297	0.31	0.0043	0.0525	0.466+j0.455	0.096+j0.031	2528	296	323
350	472.44	28035	0.1673	0.23	0.0040	0.0492	0.441+j0.415	0.070+j0.029	2826	363	386
500	518.16	40050	0.1181	0.16	0.0034	0.0459	0.418+j0.370	0.050+j0.028	3198	447	465
750	596.90	60075	0.0755	0.11	0.0027	0.0394	0.390+j0.314	0.033+j0.027	3761	566	563
1000	678.18	80100	0.0558	0.08	0.0021	0.0361	0.366+j0.264	0.025+j0.027	4409	661	638

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