HVTECK AL 1/C 90NLEPR CB PVC AIA PVC 5kV 100% CSA

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

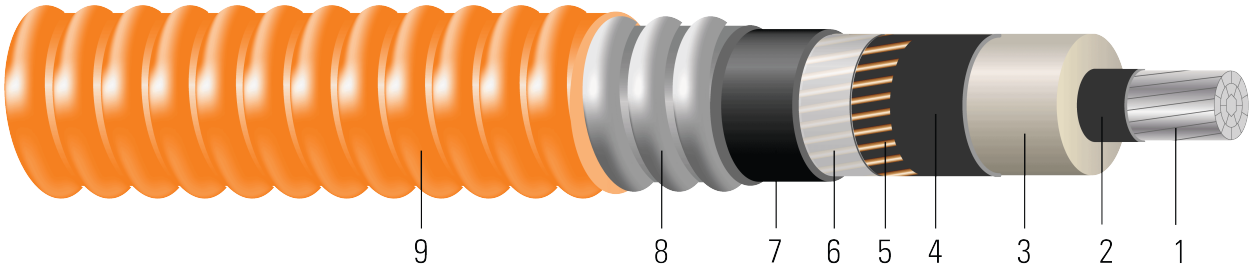


Image not to scale. See Table 1 for dimensions.

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. **Concentric Shield:** Concentrically applied copper bond / shield wires. Complies with greater than the minimum requirement as per Table 44, CSA Standard C68.10 and Table 16A, Canadian Electrical Code Part 1
6. **Neutral Separator:** Mylar tape
7. **Inner Jacket:** PVC inner jacket
8. **Armour:** Aluminum Interlocked Armour (AIA)
9. **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
- ICEA T-29-520 Flame Test (210,000 BTU/Hr)

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- 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 (Qualification Test Requirements)

SAMPLE PRINT LEGEND:

(CSA) SOUTHWIRE (NESC) #P# 1/C [#AWG or #kcmil] CPT AL 90 NLEPR AIA 5kV 100% INS LEVEL CB [No. x SIZE] AWG 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	Concentric Neutral	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Approx. Weight
AWG/ Kcmil	No.	inch	inch	mil	inch	No. x AWG	mil	inch	mil	inch	lb/1000ft
2	7	0.268	0.486	90	0.546	7x14	65	1.026	50	1.126	583
1	19	0.298	0.516	90	0.576	7x14	80	1.086	50	1.186	650
1/0	19	0.336	0.554	90	0.614	7x14	80	1.124	50	1.224	696
2/0	19	0.376	0.594	90	0.654	11x14	80	1.164	50	1.264	802
3/0	19	0.422	0.640	90	0.700	11x14	80	1.210	50	1.310	865
4/0	19	0.474	0.692	90	0.752	11x14	80	1.372	50	1.472	951
250	37	0.520	0.746	90	0.806	13x14	80	1.426	50	1.526	1051
350	37	0.615	0.841	90	0.901	17x14	80	1.555	60	1.675	1309
500	37	0.735	0.961	90	1.021	21x14	80	1.699	60	1.819	1619
750	61	0.908	1.144	90	1.204	17x12	80	1.882	60	2.002	2150
1000	61	1.060	1.296	90	1.356	17x12	110	2.094	60	2.214	2622

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

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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	13.5	398	0.267	0.336	0.027	0.055	0.678 + j0.542	0.337 + j0.054	5458	169	176
1	14.2	502	0.211	0.266	0.025	0.053	0.612 + j0.523	0.267 + j0.052	5458	194	198
1/0	14.7	633	0.168	0.211	0.023	0.051	0.561 + j0.502	0.212 + j0.050	5458	222	223
2/0	15.2	798	0.133	0.167	0.021	0.050	0.521 + j0.481	0.168 + j0.048	8577	255	250
3/0	15.7	1006	0.105	0.133	0.019	0.048	0.491 + j0.458	0.134 + j0.046	8577	290	278
4/0	17.7	1269	0.084	0.105	0.017	0.048	0.463 + j0.433	0.106 + j0.046	8577	329	309
250	18.3	1500	0.071	0.090	0.016	0.046	0.449 + j0.409	0.091 + j0.045	10137	370	347
350	20.1	2100	0.050	0.065	0.014	0.045	0.422 + j0.371	0.066 + j0.043	13256	446	402
500	21.8	3000	0.035	0.046	0.012	0.043	0.397 + j0.329	0.047 + j0.041	16376	533	451
750	24.0	4500	0.024	0.033	0.010	0.040	0.371 + j0.276	0.034 + j0.038	21062	631	500
1000	26.6	6000	0.018	0.026	0.009	0.039	0.351 + j0.240	0.027 + j0.037	21062	707	539

* 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	Concentric Neutral	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Approx. Weight
AWG/ Kcmil	No.	mm	mm	mm	mm	No. x AWG	mm	mm	mm	mm	kg/km
2	7	6.81	12.34	2.29	13.87	7x14	1.65	26.06	1.27	28.60	868
1	19	7.57	13.11	2.29	14.63	7x14	2.03	27.58	1.27	30.12	967
1/0	19	8.53	14.07	2.29	15.60	7x14	2.03	28.55	1.27	31.09	1036
2/0	19	9.55	15.09	2.29	16.61	11x14	2.03	29.57	1.27	32.11	1194
3/0	19	10.72	16.26	2.29	17.78	11x14	2.03	30.73	1.27	33.27	1287
4/0	19	12.04	17.58	2.29	19.10	11x14	2.03	34.85	1.27	37.39	1415
250	37	13.21	18.95	2.29	20.47	13x14	2.03	36.22	1.27	38.76	1564
350	37	15.62	21.36	2.29	22.89	17x14	2.03	39.50	1.52	42.55	1948
500	37	18.67	24.41	2.29	25.93	21x14	2.03	43.15	1.52	46.20	2409
750	61	23.06	29.06	2.29	30.58	17x12	2.03	47.80	1.52	50.85	3200
1000	61	26.92	32.92	2.29	34.44	17x12	2.79	53.19	1.52	56.24	3902

All dimensions are nominal and subject to normal manufacturing tolerances
◊ Cable marked with this symbol is a standard stock item

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* 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	342.90	1771	0.8760	1.10	0.0082	0.1804	0.678 + j0.542	0.337 + j0.054	5458	169	176
1	360.68	2234	0.6923	0.87	0.0076	0.1739	0.612 + j0.523	0.267 + j0.052	5458	194	198
1/0	373.38	2817	0.5512	0.69	0.0070	0.1673	0.561 + j0.502	0.212 + j0.050	5458	222	223
2/0	386.08	3551	0.4364	0.55	0.0064	0.1640	0.521 + j0.481	0.168 + j0.048	8577	255	250
3/0	398.78	4477	0.3445	0.44	0.0058	0.1575	0.491 + j0.458	0.134 + j0.046	8577	290	278
4/0	449.58	5647	0.2756	0.34	0.0052	0.1575	0.463 + j0.433	0.106 + j0.046	8577	329	309
250	464.82	6675	0.2329	0.30	0.0049	0.1509	0.449 + j0.409	0.091 + j0.045	10137	370	347
350	510.54	9345	0.1640	0.21	0.0043	0.1476	0.422 + j0.371	0.066 + j0.043	13256	446	402
500	553.72	13350	0.1148	0.15	0.0037	0.1411	0.397 + j0.329	0.047 + j0.041	16376	533	451
750	609.60	20025	0.0787	0.11	0.0030	0.1312	0.371 + j0.276	0.034 + j0.038	21062	631	500
1000	675.64	26700	0.0591	0.09	0.0027	0.1280	0.351 + j0.240	0.027 + j0.037	21062	707	539

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