

HVTECK AL 1/C 115NLEPR CB PVC AIA PVC 8kV 100% CSA

Single Conductor, 115 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

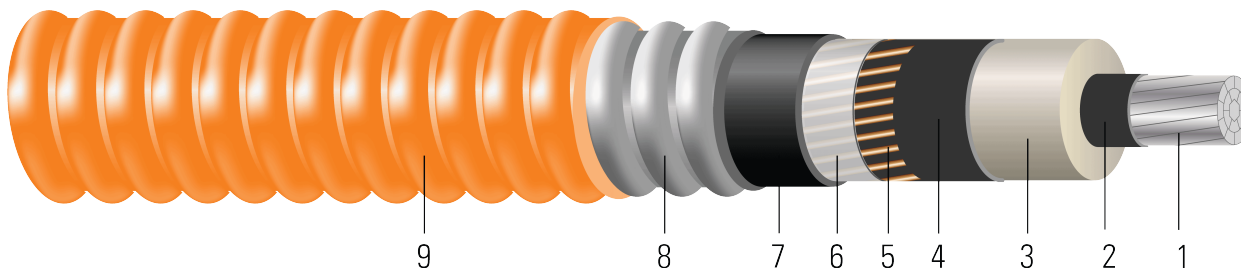


Image not to scale. See Table 1 for dimensions.

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:** 115 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 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)
- 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 115 NLEPR AIA 8kv 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	0.536	115	0.596	7 x 14	80	1.112	50	1.212	660
1	19	0.298	0.566	115	0.626	7 x 14	80	1.142	50	1.242	696
1/0	19	0.336	0.604	115	0.664	7 x 14	80	1.180	50	1.280	744
2/0	19	0.376	0.644	115	0.704	11 x 14	80	1.330	50	1.430	862
3/0	19	0.422	0.690	115	0.750	11 x 14	80	1.376	50	1.476	927
4/0	19	0.474	0.742	115	0.802	11 x 14	80	1.428	50	1.528	1004
250	37	0.520	0.796	115	0.856	13 x 14	80	1.482	50	1.582	1107
350	37	0.615	0.891	115	0.951	17 x 14	80	1.577	60	1.697	1354
500	37	0.735	1.011	115	1.071	21 x 14	80	1.721	60	1.841	1670
750	61	0.908	1.194	115	1.254	17 x 12	80	1.938	60	2.058	2229
1000	61	1.060	1.346	115	1.406	17 x 12	110	2.150	60	2.270	2708

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
2	8.4	398	0.267	0.336	0.036	0.056	0.318 + j0.029	0.323 + j0.037	5458	169	176
1	8.6	502	0.211	0.266	0.033	0.054	0.248 + j0.026	0.253 + j0.034	5458	194	198
1/0	8.9	633	0.168	0.211	0.030	0.052	0.193 + j0.025	0.199 + j0.033	5458	222	223
2/0	10.0	798	0.133	0.167	0.028	0.052	0.149 + j0.023	0.154 + j0.031	8577	255	250
3/0	10.3	1006	0.105	0.133	0.025	0.050	0.115 + j0.022	0.12 + j0.03	8577	290	278
4/0	10.6	1269	0.084	0.105	0.023	0.049	0.087 + j0.02	0.092 + j0.028	8577	329	309
250	11.0	1500	0.071	0.090	0.022	0.047	0.072 + j0.02	0.078 + j0.027	10137	370	347
350	11.8	2100	0.050	0.065	0.019	0.045	0.047 + j0.018	0.053 + j0.026	13256	446	402
500	12.8	3000	0.035	0.046	0.016	0.043	0.028 + j0.016	0.034 + j0.024	16376	533	451
750	14.4	4500	0.024	0.033	0.014	0.041	0.015 + j0.015	0.021 + j0.023	21062	631	500
1000	15.8	6000	0.018	0.026	0.012	0.039	0.008 + j0.014	0.014 + j0.022	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	13.61	2.92	15.14	7 x 14	2.03	28.24	1.27	30.78	982
1	19	7.57	14.38	2.92	15.90	7 x 14	2.03	29.01	1.27	31.55	1036
1/0	19	8.53	15.34	2.92	16.87	7 x 14	2.03	29.97	1.27	32.51	1107
2/0	19	9.55	16.36	2.92	17.88	11 x 14	2.03	33.78	1.27	36.32	1283
3/0	19	10.72	17.53	2.92	19.05	11 x 14	2.03	34.95	1.27	37.49	1380
4/0	19	12.04	18.85	2.92	20.37	11 x 14	2.03	36.27	1.27	38.81	1494
250	37	13.21	20.22	2.92	21.74	13 x 14	2.03	37.64	1.27	40.18	1647
350	37	15.62	22.63	2.92	24.16	17 x 14	2.03	40.06	1.52	43.10	2015
500	37	18.67	25.68	2.92	27.20	21 x 14	2.03	43.71	1.52	46.76	2485
750	61	23.06	30.33	2.92	31.85	17 x 12	2.03	49.23	1.52	52.27	3317
1000	61	26.92	34.19	2.92	35.71	17 x 12	2.79	54.61	1.52	57.66	4030

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
2	213.36	1771	0.8760	1.10	0.0110	0.1837	0.318 + j0.029	0.323 + j0.037	5458	169	176
1	218.44	2234	0.6923	0.87	0.0101	0.1772	0.248 + j0.026	0.253 + j0.034	5458	194	198
1/0	226.06	2817	0.5512	0.69	0.0091	0.1706	0.193 + j0.025	0.199 + j0.033	5458	222	223
2/0	254.00	3551	0.4364	0.55	0.0085	0.1706	0.149 + j0.023	0.154 + j0.031	8577	255	250
3/0	261.62	4477	0.3445	0.44	0.0076	0.1640	0.115 + j0.022	0.12 + j0.03	8577	290	278
4/0	269.24	5647	0.2756	0.34	0.0070	0.1608	0.087 + j0.02	0.092 + j0.028	8577	329	309
250	279.40	6675	0.2329	0.30	0.0067	0.1542	0.072 + j0.02	0.078 + j0.027	10137	370	347
350	299.72	9345	0.1640	0.21	0.0058	0.1476	0.047 + j0.018	0.053 + j0.026	13256	446	402
500	325.12	13350	0.1148	0.15	0.0049	0.1411	0.028 + j0.016	0.034 + j0.024	16376	533	451
750	365.76	20025	0.0787	0.11	0.0043	0.1345	0.015 + j0.015	0.021 + j0.023	21062	631	500
1000	401.32	26700	0.0591	0.09	0.0037	0.1280	0.008 + j0.014	0.014 + j0.022	21062	707	539

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

