

## 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

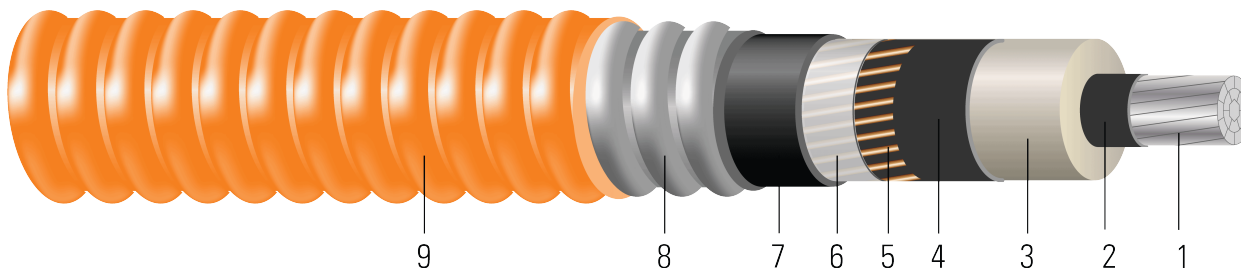


Image not to scale. See Table 1 for dimensions.

### 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)



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Southwire

**CABLETECH  
SUPPORT™**

Services

- 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.

