

HVTECK AL 1/C 175NLEPR CB PVC AIA PVC 15kV 100% CSA

Single Conductor, 175 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

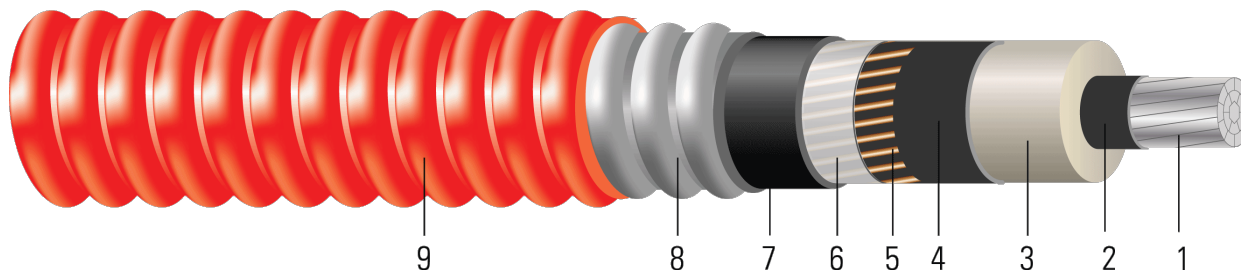


Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

- Conductor:** Class B compact stranded 8000 Series aluminum per ASTM B800 and ASTM B836
- Conductor Shield:** Semi-conducting cross-linked copolymer; A conductor separator is used for cable size larger than or equal to 500 Kcmil
- Insulation:** 175 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 100% insulation level
- Insulation Shield:** Strippable semi-conducting cross-linked copolymer
- 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
- Neutral Separator:** Mylar tape
- Inner Jacket:** PVC inner jacket
- Armour:** Aluminum Interlocked Armour (AIA)
- Overall Jacket:** Red Polyvinyl Chloride (PVC) Jacket

APPLICATIONS AND FEATURES:

Southwire's 15kV 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

SAMPLE PRINT LEGEND:

(CSA) SOUTHWIRE (NESC) #P# 1/C [#AWG or #kcmil] CPT AL 175 NLEPR AIA 15kV 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	0.656	175	0.716	7 x 14	80	1.342	50	1.442	786
1	19	0.298	0.686	175	0.746	7 x 14	80	1.372	50	1.472	825
1/0	19	0.336	0.724	175	0.784	7 x 14	80	1.410	50	1.510	877
2/0	19	0.376	0.764	175	0.824	11 x 14	80	1.450	50	1.550	988
3/0	19	0.422	0.810	175	0.870	11 x 14	80	1.496	50	1.596	1056
4/0	19	0.474	0.862	175	0.922	11 x 14	80	1.548	60	1.668	1171
250	37	0.520	0.916	175	0.976	13 x 14	80	1.602	60	1.722	1281
350	37	0.615	1.011	175	1.071	17 x 14	80	1.721	60	1.841	1541
500	37	0.735	1.131	175	1.191	21 x 14	80	1.841	60	1.961	1836
750	61	0.908	1.314	175	1.374	17 x 12	110	2.118	60	2.238	2541
1000	61	1.060	1.466	175	1.526	17 x 12	110	2.270	75	2.420	2993

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	10.0	398	0.267	0.336	0.046	0.060	0.318 + j0.033	0.323 + j0.04	5458	169	176
1	10.3	502	0.211	0.266	0.043	0.058	0.248 + j0.03	0.253 + j0.037	5458	194	198
1/0	10.5	633	0.168	0.211	0.040	0.056	0.193 + j0.028	0.198 + j0.036	5458	222	223
2/0	10.8	798	0.133	0.167	0.036	0.054	0.149 + j0.026	0.155 + j0.034	8577	255	250
3/0	11.1	1006	0.105	0.133	0.033	0.052	0.115 + j0.025	0.121 + j0.033	8577	290	278
4/0	11.6	1269	0.084	0.105	0.031	0.051	0.087 + j0.023	0.093 + j0.031	8577	329	309
250	12.0	1500	0.071	0.090	0.029	0.049	0.072 + j0.022	0.078 + j0.03	10137	370	347
350	12.8	2100	0.050	0.065	0.025	0.047	0.047 + j0.02	0.053 + j0.028	13256	446	402
500	13.7	3000	0.035	0.046	0.022	0.044	0.028 + j0.018	0.034 + j0.026	16376	533	451
750	15.6	4500	0.024	0.033	0.019	0.042	0.015 + j0.017	0.021 + j0.025	21062	631	500
1000	16.9	6000	0.018	0.026	0.016	0.041	0.008 + j0.016	0.014 + j0.024	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	16.66	4.44	18.19	7 x 14	2.03	34.09	1.27	36.63	1170
1	19	7.57	17.42	4.44	18.95	7 x 14	2.03	34.85	1.27	37.39	1228
1/0	19	8.53	18.39	4.44	19.91	7 x 14	2.03	35.81	1.27	38.35	1305
2/0	19	9.55	19.41	4.44	20.93	11 x 14	2.03	36.83	1.27	39.37	1470
3/0	19	10.72	20.57	4.44	22.10	11 x 14	2.03	38.00	1.27	40.54	1572
4/0	19	12.04	21.89	4.44	23.42	11 x 14	2.03	39.32	1.52	42.37	1743
250	37	13.21	23.27	4.44	24.79	13 x 14	2.03	40.69	1.52	43.74	1906
350	37	15.62	25.68	4.44	27.20	17 x 14	2.03	43.71	1.52	46.76	2293
500	37	18.67	28.73	4.44	30.25	21 x 14	2.03	46.76	1.52	49.81	2732
750	61	23.06	33.38	4.44	34.90	17 x 12	2.79	53.80	1.52	56.85	3781
1000	61	26.92	37.24	4.44	38.76	17 x 12	2.79	57.66	1.91	61.47	4454

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	254.00	1771	0.8760	1.10	0.0140	0.1969	0.318 + j0.033	0.323 + j0.04	5458	169	176
1	261.62	2234	0.6923	0.87	0.0131	0.1903	0.248 + j0.03	0.253 + j0.037	5458	194	198
1/0	266.70	2817	0.5512	0.69	0.0122	0.1837	0.193 + j0.028	0.198 + j0.036	5458	222	223
2/0	274.32	3551	0.4364	0.55	0.0110	0.1772	0.149 + j0.026	0.155 + j0.034	8577	255	250
3/0	281.94	4477	0.3445	0.44	0.0101	0.1706	0.115 + j0.025	0.121 + j0.033	8577	290	278
4/0	294.64	5647	0.2756	0.34	0.0094	0.1673	0.087 + j0.023	0.093 + j0.031	8577	329	309
250	304.80	6675	0.2329	0.30	0.0088	0.1608	0.072 + j0.022	0.078 + j0.03	10137	370	347
350	325.12	9345	0.1640	0.21	0.0076	0.1542	0.047 + j0.02	0.053 + j0.028	13256	446	402
500	347.98	13350	0.1148	0.15	0.0067	0.1444	0.028 + j0.018	0.034 + j0.026	16376	533	451
750	396.24	20025	0.0787	0.11	0.0058	0.1378	0.015 + j0.017	0.021 + j0.025	21062	631	500
1000	429.26	26700	0.0591	0.09	0.0049	0.1345	0.008 + j0.016	0.014 + j0.024	21062	707	539

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

