



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

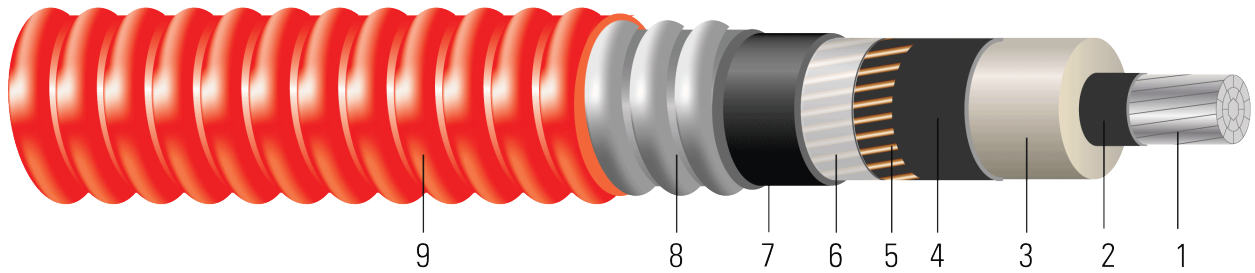


Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

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:** 175 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:** 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 (Qualification Test Requirements)

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	7x14	80	1.336	50	1.436	785
1	19	0.298	0.686	175	0.746	7x14	80	1.366	50	1.466	825
1/0	19	0.336	0.724	175	0.784	7x14	80	1.404	50	1.504	875
2/0	19	0.376	0.764	175	0.824	11x14	80	1.444	50	1.544	987
3/0	19	0.422	0.810	175	0.870	11x14	80	1.490	50	1.590	1056
4/0	19	0.474	0.862	175	0.922	11x14	80	1.542	60	1.662	1170
250	37	0.520	0.916	175	0.976	13x14	80	1.596	60	1.716	1281
350	37	0.615	1.011	175	1.071	17x14	80	1.749	60	1.869	1555
500	37	0.735	1.131	175	1.191	21x14	80	1.869	60	1.989	1943
750	61	0.908	1.314	175	1.374	17x12	110	2.112	60	2.232	2540
1000	61	1.060	1.466	175	1.526	17x12	110	2.264	75	2.414	2991

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 @ 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	17.2	398	0.267	0.336	0.043	0.060	0.692 + j0.462	0.337 + j0.060	5458	169	176
1	17.6	502	0.211	0.266	0.040	0.058	0.624 + j0.446	0.267 + j0.057	5458	194	198
1/0	18.0	633	0.168	0.211	0.037	0.056	0.569 + j0.428	0.212 + j0.055	5458	222	223
2/0	18.5	798	0.133	0.167	0.034	0.054	0.526 + j0.410	0.168 + j0.053	8577	255	250
3/0	19.1	1006	0.105	0.133	0.031	0.052	0.491 + j0.390	0.134 + j0.051	8577	290	278
4/0	19.9	1269	0.084	0.105	0.029	0.050	0.462 + j0.370	0.106 + j0.049	8577	329	309
250	20.6	1500	0.071	0.090	0.027	0.049	0.444 + j0.350	0.091 + j0.048	10137	370	347
350	22.4	2100	0.050	0.065	0.023	0.047	0.413 + j0.319	0.066 + j0.046	13256	446	402
500	23.9	3000	0.035	0.046	0.020	0.045	0.385 + j0.284	0.047 + j0.043	16376	533	451
750	26.8	4500	0.024	0.033	0.017	0.042	0.356 + j0.240	0.034 + j0.041	21062	631	500
1000	29.0	6000	0.018	0.026	0.015	0.041	0.335 + j0.210	0.027 + j0.039	21062	707	539

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

* CEC ampacities are based on:

3-1/C in air copper and aluminum: D17M

3-1/C direct buried copper and aluminum: D17A

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	7x14	2.03	33.93	1.27	36.47	1168
1	19	7.57	17.42	4.44	18.95	7x14	2.03	34.70	1.27	37.24	1228
1/0	19	8.53	18.39	4.44	19.91	7x14	2.03	35.66	1.27	38.20	1302
2/0	19	9.55	19.41	4.44	20.93	11x14	2.03	36.68	1.27	39.22	1469
3/0	19	10.72	20.57	4.44	22.10	11x14	2.03	37.85	1.27	40.39	1572
4/0	19	12.04	21.89	4.44	23.42	11x14	2.03	39.17	1.52	42.21	1741
250	37	13.21	23.27	4.44	24.79	13x14	2.03	40.54	1.52	43.59	1906
350	37	15.62	25.68	4.44	27.20	17x14	2.03	44.42	1.52	47.47	2314
500	37	18.67	28.73	4.44	30.25	21x14	2.03	47.47	1.52	50.52	2892
750	61	23.06	33.38	4.44	34.90	17x12	2.79	53.64	1.52	56.69	3780
1000	61	26.92	37.24	4.44	38.76	17x12	2.79	57.51	1.91	61.32	4451





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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	436.88	1771	0.8760	1.10	0.0131	0.1969	0.692 + j0.462	0.337 + j0.060	5458	169	176
1	447.04	2234	0.6923	0.87	0.0122	0.1903	0.624 + j0.446	0.267 + j0.057	5458	194	198
1/0	457.20	2817	0.5512	0.69	0.0113	0.1837	0.569 + j0.428	0.212 + j0.055	5458	222	223
2/0	469.90	3551	0.4364	0.55	0.0104	0.1772	0.526 + j0.410	0.168 + j0.053	8577	255	250
3/0	485.14	4477	0.3445	0.44	0.0094	0.1706	0.491 + j0.390	0.134 + j0.051	8577	290	278
4/0	505.46	5647	0.2756	0.34	0.0088	0.1640	0.462 + j0.370	0.106 + j0.049	8577	329	309
250	523.24	6675	0.2329	0.30	0.0082	0.1608	0.444 + j0.350	0.091 + j0.048	10137	370	347
350	568.96	9345	0.1640	0.21	0.0070	0.1542	0.413 + j0.319	0.066 + j0.046	13256	446	402
500	607.06	13350	0.1148	0.15	0.0061	0.1476	0.385 + j0.284	0.047 + j0.043	16376	533	451
750	680.72	20025	0.0787	0.11	0.0052	0.1378	0.356 + j0.240	0.034 + j0.041	21062	631	500
1000	736.60	26700	0.0591	0.09	0.0046	0.1345	0.335 + j0.210	0.027 + j0.039	21062	707	539

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

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