HVTECK AL 1/C 220NLEPR CB PVC AIA PVC 15kV 133% CSA

Single Conductor, 220 Mils No Lead Ethylene Propylene Rubber (NL-EPR), 133% Insulation Level, Concentric Bond, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

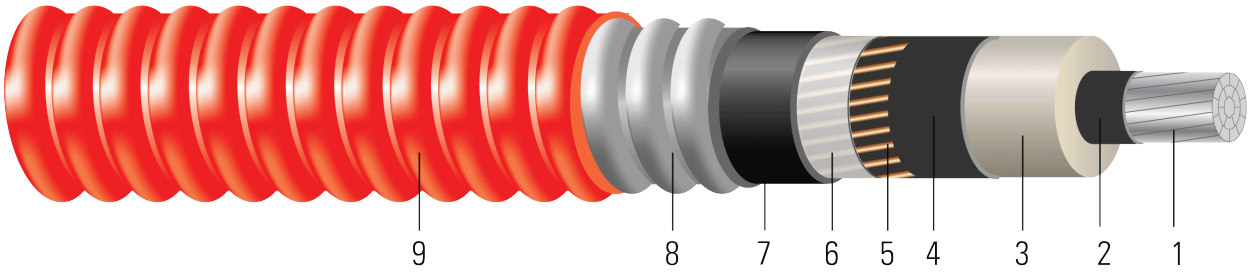

Image not to scale. See Table 1 for dimensions.

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:** 220 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% 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)

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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 220 NLEPR AIA 15kV 133% 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	0.746	220	0.806	7x14	80	1.426	50	1.526	878
1	19	0.298	0.776	220	0.836	7x14	80	1.456	50	1.556	921
1/0	19	0.336	0.814	220	0.874	7x14	80	1.494	50	1.594	975
2/0	19	0.376	0.854	220	0.914	11x14	80	1.534	60	1.654	1121
3/0	19	0.422	0.900	220	0.960	11x14	80	1.580	60	1.700	1195
4/0	19	0.474	0.952	220	1.012	11x14	80	1.656	60	1.776	1314
250	37	0.520	1.006	220	1.066	13x14	80	1.710	60	1.830	1429
350	37	0.615	1.101	220	1.161	17x14	80	1.839	60	1.959	1679
500	37	0.735	1.221	220	1.281	21x14	80	1.959	60	2.079	2080
750	61	0.908	1.404	220	1.464	17x12	110	2.202	60	2.322	2695
1000	61	1.060	1.556	220	1.616	17x12	110	2.354	75	2.504	3162

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	18.3	398	0.267	0.336	0.049	0.062	0.695 + j0.426	0.337 + j0.061	5458	169	176
1	18.7	502	0.211	0.266	0.046	0.060	0.625 + j0.411	0.267 + j0.058	5458	194	198
1/0	19.1	633	0.168	0.211	0.043	0.057	0.569 + j0.394	0.212 + j0.056	5458	222	223
2/0	19.8	798	0.133	0.167	0.040	0.056	0.524 + j0.378	0.168 + j0.054	8577	255	250
3/0	20.4	1006	0.105	0.133	0.037	0.054	0.488 + j0.360	0.134 + j0.052	8577	290	278
4/0	21.3	1269	0.084	0.105	0.034	0.052	0.457 + j0.341	0.106 + j0.050	8577	329	309
250	22.0	1500	0.071	0.090	0.032	0.051	0.439 + j0.323	0.091 + j0.049	10137	370	347
350	23.5	2100	0.050	0.065	0.028	0.048	0.407 + j0.295	0.066 + j0.047	13256	446	402
500	24.9	3000	0.035	0.046	0.024	0.046	0.378 + j0.263	0.047 + j0.044	16376	533	451
750	27.9	4500	0.024	0.033	0.021	0.043	0.348 + j0.224	0.034 + j0.042	21062	631	500
1000	30.0	6000	0.018	0.026	0.018	0.041	0.327 + j0.197	0.027 + j0.040	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	18.95	5.59	20.47	7x14	2.03	36.22	1.27	38.76	1307
1	19	7.57	19.71	5.59	21.23	7x14	2.03	36.98	1.27	39.52	1371
1/0	19	8.53	20.68	5.59	22.20	7x14	2.03	37.95	1.27	40.49	1451
2/0	19	9.55	21.69	5.59	23.22	11x14	2.03	38.96	1.52	42.01	1668
3/0	19	10.72	22.86	5.59	24.38	11x14	2.03	40.13	1.52	43.18	1778
4/0	19	12.04	24.18	5.59	25.70	11x14	2.03	42.06	1.52	45.11	1955
250	37	13.21	25.55	5.59	27.08	13x14	2.03	43.43	1.52	46.48	2127
350	37	15.62	27.97	5.59	29.49	17x14	2.03	46.71	1.52	49.76	2499
500	37	18.67	31.01	5.59	32.54	21x14	2.03	49.76	1.52	52.81	3095
750	61	23.06	35.66	5.59	37.19	17x12	2.79	55.93	1.52	58.98	4011
1000	61	26.92	39.52	5.59	41.05	17x12	2.79	59.79	1.91	63.60	4706

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	464.82	1771	0.8760	1.10	0.0149	0.2034	0.695 + j0.426	0.337 + j0.061	5458	169	176
1	474.98	2234	0.6923	0.87	0.0140	0.1969	0.625 + j0.411	0.267 + j0.058	5458	194	198
1/0	485.14	2817	0.5512	0.69	0.0131	0.1870	0.569 + j0.394	0.212 + j0.056	5458	222	223
2/0	502.92	3551	0.4364	0.55	0.0122	0.1837	0.524 + j0.378	0.168 + j0.054	8577	255	250
3/0	518.16	4477	0.3445	0.44	0.0113	0.1772	0.488 + j0.360	0.134 + j0.052	8577	290	278
4/0	541.02	5647	0.2756	0.34	0.0104	0.1706	0.457 + j0.341	0.106 + j0.050	8577	329	309
250	558.80	6675	0.2329	0.30	0.0098	0.1673	0.439 + j0.323	0.091 + j0.049	10137	370	347
350	596.90	9345	0.1640	0.21	0.0085	0.1575	0.407 + j0.295	0.066 + j0.047	13256	446	402
500	632.46	13350	0.1148	0.15	0.0073	0.1509	0.378 + j0.263	0.047 + j0.044	16376	533	451
750	708.66	20025	0.0787	0.11	0.0064	0.1411	0.348 + j0.224	0.034 + j0.042	21062	631	500
1000	762.00	26700	0.0591	0.09	0.0055	0.1345	0.327 + j0.197	0.027 + j0.040	21062	707	539

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