HVTECK AL 1/C 420NLEPR CB PVC AIA PVC 35kV 133% CSA

Single Conductor, 420 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

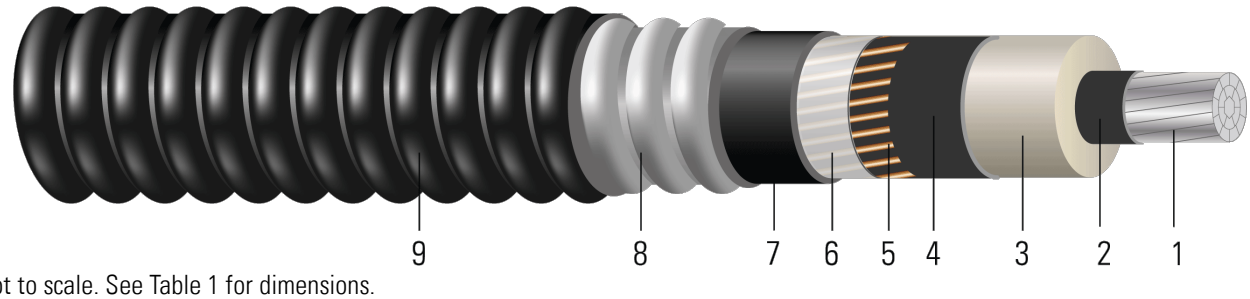


Image not to scale. See Table 1 for dimensions.

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:** 420 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:** Black Polyvinyl Chloride (PVC) Jacket

APPLICATIONS AND FEATURES:

Southwire's 35kV 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 420 NLEPR AIA 35kV 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	Copper Weight	Approx. Weight	Conduit Size*
AWG/ Kcmil	No.	inch	inch	mil	inch	No. x AWG	mil	inch	mil	inch	lb/ 1000ft	lb/ 1000ft	inch
1/0	19	0.336	1.214	420	1.274	5x12	110	2.094	60	2.214	186	2384	6
2/0	19	0.376	1.254	420	1.314	7x12	110	2.134	60	2.254	237	2528	6
3/0	19	0.423	1.301	420	1.361	7x12	110	2.181	60	2.301	241	2642	6
4/0	19	0.475	1.353	420	1.413	7x12	110	2.233	60	2.353	245	2773	6
250	37	0.52	1.406	420	1.466	9x12	110	2.286	75	2.436	288	3008	6.5
350	37	0.616	1.502	420	1.562	11x12	110	2.382	75	2.532	333	3310	6.5
500	37	0.736	1.622	420	1.682	13x12	110	2.502	75	2.652	397	3718	7
750	61	0.908	1.804	420	1.864	17x12	110	2.684	75	2.834	479	4352	7.5

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
TBA stock codes are estimations only and actual product may vary. Please wait until a stock code is assigned to purchase connectors and/or fittings.

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
1/0	15.5	633	0.167	0.229	0.061	0.065	0.520+j0.207	0.232+j0.069	2770	221	219
2/0	15.8	798	0.133	0.182	0.058	0.063	0.421+j0.136	0.186+j0.066	3879	253	246
3/0	16.1	1006	0.105	0.144	0.054	0.061	0.383+j0.135	0.147+j0.064	3879	288	275
4/0	16.5	1269	0.084	0.115	0.051	0.058	0.354+j0.133	0.118+j0.062	3879	327	305
250	17.1	1500	0.07	0.096	0.047	0.057	0.295+j0.096	0.100+j0.060	4987	367	343
350	17.7	2100	0.051	0.07	0.043	0.054	0.239+j0.074	0.075+j0.057	6095	443	399
500	18.6	3000	0.036	0.05	0.038	0.051	0.196+j0.059	0.056+j0.054	7203	529	451
750	19.8	4500	0.023	0.033	0.033	0.048	0.148+j0.043	0.040+j0.050	9420	633	505

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

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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	Copper Weight	Approx. Weight	Conduit Size*
AWG/ Kcmil	No.	mm	mm	mm	mm	No. x AWG	mm	mm	mm	mm	kg/km	kg/km	inch
1/0	19	8.53	30.84	10.67	32.36	5x12	2.79	53.19	1.52	56.24	277	3548	6
2/0	19	9.55	31.85	10.67	33.38	7x12	2.79	54.20	1.52	57.25	353	3762	6
3/0	19	10.74	33.05	10.67	34.57	7x12	2.79	55.40	1.52	58.45	359	3932	6
4/0	19	12.07	34.37	10.67	35.89	7x12	2.79	56.72	1.52	59.77	365	4127	6
250	37	13.21	35.71	10.67	37.24	9x12	2.79	58.06	1.91	61.87	429	4476	6.5
350	37	15.65	38.15	10.67	39.67	11x12	2.79	60.50	1.91	64.31	496	4926	6.5
500	37	18.69	41.20	10.67	42.72	13x12	2.79	63.55	1.91	67.36	591	5533	7
750	61	23.06	45.82	10.67	47.35	17x12	2.79	68.17	1.91	71.98	713	6476	7.5

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
TBA stock codes are estimations only and actual product may vary. Please wait until a stock code is assigned to purchase connectors and/or fittings.

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
1/0	393.70	2817	0.5479	0.75	0.0186	0.2133	0.520+j0.207	0.232+j0.069	2770	221	219
2/0	401.32	3551	0.4364	0.60	0.0177	0.2067	0.421+j0.136	0.186+j0.066	3879	253	246
3/0	408.94	4477	0.3445	0.47	0.0165	0.2001	0.383+j0.135	0.147+j0.064	3879	288	275
4/0	419.10	5647	0.2756	0.38	0.0155	0.1903	0.354+j0.133	0.118+j0.062	3879	327	305
250	434.34	6675	0.2297	0.31	0.0143	0.1870	0.295+j0.096	0.100+j0.060	4987	367	343
350	449.58	9345	0.1673	0.23	0.0131	0.1772	0.239+j0.074	0.075+j0.057	6095	443	399
500	472.44	13350	0.1181	0.16	0.0116	0.1673	0.196+j0.059	0.056+j0.054	7203	529	451
750	502.92	20025	0.0755	0.11	0.0101	0.1575	0.148+j0.043	0.040+j0.050	9420	633	505

* 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

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