HVTECK AL 1/C 345NLEPR TS PVC AIA PVC 35kV 100% CSA

Single Conductor, 345 Mils No Lead Ethylene Propylene Rubber (NL-EPR), 100% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

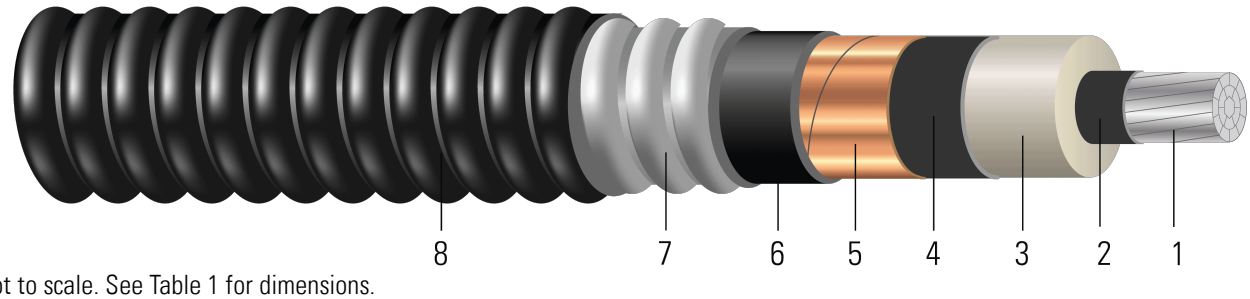

Image not to scale. See Table 1 for dimensions.

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:** 345 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 100% insulation level
4. **Insulation Shield:** Strippable semi-conducting cross-linked copolymer
5. **Copper Tape Shield:** Helically wrapped 5 mil copper tape with 25% overlap
6. **Inner Jacket:** PVC inner jacket
7. **Armour:** Aluminum Interlocked Armour (AIA)
8. **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)
- IEEE 383 Flame Test (70,000 btu)
- IEEE 1202 FT4 Flame Test (70,000) BTU/hr Vertical Tray Test (1/0 and Larger)

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- 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 345 NLEPR AIA 35kV 100% INS LEVEL 25% TS 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	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Approx. Weight
AWG/ Kcmil	No.	inch	inch	mil	inch	mil	inch	mil	inch	lb/1000ft
1/0	19	0.336	1.064	345	1.124	80	1.660	60	1.780	1234
2/0	19	0.376	1.104	345	1.164	80	1.700	60	1.820	1306
3/0	19	0.422	1.150	345	1.210	80	1.746	60	1.866	1389
4/0	19	0.474	1.202	345	1.262	80	1.798	60	1.918	1488
250	37	0.520	1.256	345	1.316	80	1.852	60	1.972	1679
350	37	0.615	1.351	345	1.411	80	1.947	60	2.067	1887
500	37	0.735	1.471	345	1.531	110	2.127	60	2.247	2293
750	61	0.908	1.654	345	1.714	110	2.310	75	2.460	2837

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	21.4	633	0.168	0.211	0.057	0.060	0.558 + j0.316	0.212 + j0.059	3513	221	219
2/0	21.8	798	0.133	0.167	0.053	0.058	0.511 + j0.303	0.168 + j0.056	3637	253	246
3/0	22.4	1006	0.105	0.133	0.049	0.056	0.473 + j0.289	0.134 + j0.054	3779	288	275
4/0	23.0	1269	0.084	0.105	0.046	0.054	0.441 + j0.275	0.106 + j0.052	3941	327	305
250	23.7	1500	0.071	0.090	0.043	0.052	0.421 + j0.261	0.091 + j0.051	4108	367	343
350	24.8	2100	0.050	0.065	0.039	0.050	0.387 + j0.239	0.066 + j0.048	4402	443	399
500	27.0	3000	0.035	0.046	0.034	0.047	0.356 + j0.215	0.047 + j0.046	4774	529	451
750	29.5	4500	0.024	0.033	0.029	0.045	0.326 + j0.185	0.034 + j0.043	5341	633	505

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* 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	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Approx. Weight
AWG/ Kcmil	No.	mm	mm	mm	mm	mm	mm	mm	mm	kg/km
1/0	19	8.53	27.03	8.76	28.55	2.03	42.16	1.52	45.21	1836
2/0	19	9.55	28.04	8.76	29.57	2.03	43.18	1.52	46.23	1944
3/0	19	10.72	29.21	8.76	30.73	2.03	44.35	1.52	47.40	2067
4/0	19	12.04	30.53	8.76	32.05	2.03	45.67	1.52	48.72	2214
250	37	13.21	31.90	8.76	33.43	2.03	47.04	1.52	50.09	2499
350	37	15.62	34.32	8.76	35.84	2.03	49.45	1.52	52.50	2808
500	37	18.67	37.36	8.76	38.89	2.79	54.03	1.52	57.07	3412
750	61	23.06	42.01	8.76	43.54	2.79	58.67	1.91	62.48	4222

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	543.56	2817	0.5512	0.69	0.0174	0.1969	0.558 + j0.316	0.212 + j0.059	3513	221	219
2/0	553.72	3551	0.4364	0.55	0.0162	0.1903	0.511 + j0.303	0.168 + j0.056	3637	253	246
3/0	568.96	4477	0.3445	0.44	0.0149	0.1837	0.473 + j0.289	0.134 + j0.054	3779	288	275
4/0	584.20	5647	0.2756	0.34	0.0140	0.1772	0.441 + j0.275	0.106 + j0.052	3941	327	305
250	601.98	6675	0.2329	0.30	0.0131	0.1706	0.421 + j0.261	0.091 + j0.051	4108	367	343
350	629.92	9345	0.1640	0.21	0.0119	0.1640	0.387 + j0.239	0.066 + j0.048	4402	443	399
500	685.80	13350	0.1148	0.15	0.0104	0.1542	0.356 + j0.215	0.047 + j0.046	4774	529	451
750	749.30	20025	0.0787	0.11	0.0088	0.1476	0.326 + j0.185	0.034 + j0.043	5341	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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