HVTECK AL 1/C 345NLEPR TS PVC AIA PVC 28kV 133% CSA

Single Conductor, 345 Mils No Lead Ethylene Propylene Rubber (NL-EPR), 133% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

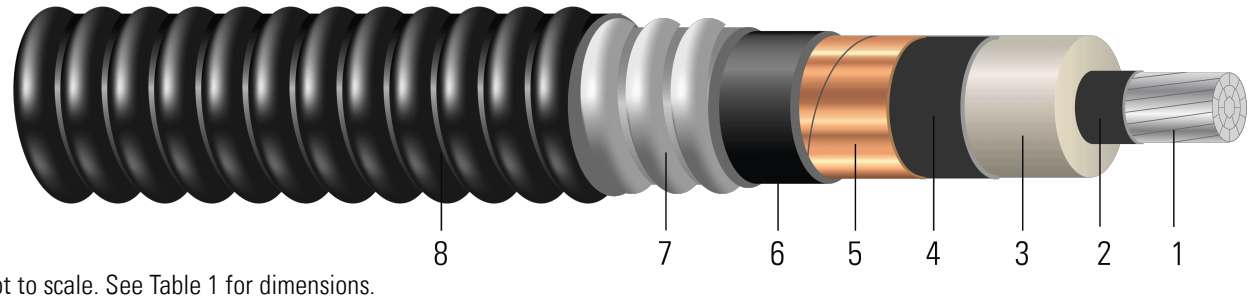

Image not to scale. See Table 1 for dimensions.

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) 133% 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 28kV 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 28kV 133% 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	Copper Weight	Approx. Weight	Conduit Size*
AWG/ Kcmil	No.	inch	inch	mil	inch	mil	inch	mil	inch	lb/1000ft	lb/1000ft	inch
1	19	0.299	1.027	345	1.087	80	1.577	60	1.697	89	1386	4.5
1/0	19	0.336	1.064	345	1.124	80	1.614	60	1.734	92	1454	4.5
2/0	19	0.376	1.104	345	1.164	80	1.654	60	1.774	96	1533	4.5
3/0	19	0.423	1.151	345	1.211	80	1.701	60	1.821	100	1627	4.5
4/0	19	0.475	1.203	345	1.263	80	1.753	60	1.873	104	1736	5
250	37	0.52	1.256	345	1.316	80	1.806	60	1.926	108	1846	5
350	37	0.616	1.352	345	1.412	80	1.902	60	2.022	116	2067	5.5
500	37	0.736	1.472	345	1.532	110	2.082	60	2.202	126	2482	6
750	61	0.908	1.654	345	1.714	110	2.264	75	2.414	141	3040	6.5

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	11.9	502	0.211	0.289	0.058	0.062	0.639+j0.370	0.290+j0.065	3399	193	194
1/0	12.1	633	0.167	0.229	0.055	0.059	0.578+j0.358	0.230+j0.063	3514	221	219
2/0	12.4	798	0.133	0.182	0.051	0.057	0.529+j0.344	0.183+j0.061	3638	253	246
3/0	12.7	1006	0.105	0.144	0.048	0.055	0.489+j0.330	0.145+j0.059	3783	288	275
4/0	13.1	1269	0.084	0.115	0.044	0.053	0.457+j0.315	0.116+j0.057	3944	327	305
250	13.5	1500	0.07	0.096	0.042	0.052	0.434+j0.301	0.097+j0.056	4108	367	343
350	14.2	2100	0.051	0.07	0.037	0.049	0.402+j0.278	0.072+j0.053	4406	443	399
500	15.4	3000	0.036	0.05	0.033	0.047	0.372+j0.252	0.052+j0.051	4778	529	451
750	16.9	4500	0.023	0.033	0.028	0.044	0.341+j0.219	0.035+j0.048	5342	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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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	Copper Weight	Approx. Weight	Conduit Size*
AWG/ Kcmil	No.	mm	mm	mm	mm	mm	mm	mm	mm	kg/km	kg/km	inch
1	19	7.59	26.09	8.76	27.61	2.03	40.06	1.52	43.10	132	2063	4.5
1/0	19	8.53	27.03	8.76	28.55	2.03	41.00	1.52	44.04	137	2164	4.5
2/0	19	9.55	28.04	8.76	29.57	2.03	42.01	1.52	45.06	143	2281	4.5
3/0	19	10.74	29.24	8.76	30.76	2.03	43.21	1.52	46.25	149	2421	4.5
4/0	19	12.07	30.56	8.76	32.08	2.03	44.53	1.52	47.57	155	2583	5
250	37	13.21	31.90	8.76	33.43	2.03	45.87	1.52	48.92	161	2747	5
350	37	15.65	34.34	8.76	35.86	2.03	48.31	1.52	51.36	173	3076	5.5
500	37	18.69	37.39	8.76	38.91	2.79	52.88	1.52	55.93	188	3694	6
750	61	23.06	42.01	8.76	43.54	2.79	57.51	1.91	61.32	210	4524	6.5

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	302.26	2234	0.6923	0.95	0.0177	0.2034	0.639+j0.370	0.290+j0.065	3399	193	194
1/0	307.34	2817	0.5479	0.75	0.0168	0.1936	0.578+j0.358	0.230+j0.063	3514	221	219
2/0	314.96	3551	0.4364	0.60	0.0155	0.1870	0.529+j0.344	0.183+j0.061	3638	253	246
3/0	322.58	4477	0.3445	0.47	0.0146	0.1804	0.489+j0.330	0.145+j0.059	3783	288	275
4/0	332.74	5647	0.2756	0.38	0.0134	0.1739	0.457+j0.315	0.116+j0.057	3944	327	305
250	342.90	6675	0.2297	0.31	0.0128	0.1706	0.434+j0.301	0.097+j0.056	4108	367	343
350	360.68	9345	0.1673	0.23	0.0113	0.1608	0.402+j0.278	0.072+j0.053	4406	443	399
500	391.16	13350	0.1181	0.16	0.0101	0.1542	0.372+j0.252	0.052+j0.051	4778	529	451
750	429.26	20025	0.0755	0.11	0.0085	0.1444	0.341+j0.219	0.035+j0.048	5342	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 direct buried copper and aluminum: D17A

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