HVTECK AL 1/C 320NLEPR TS PVC AIA PVC 25kV 133% CSA

Single Conductor, 320 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

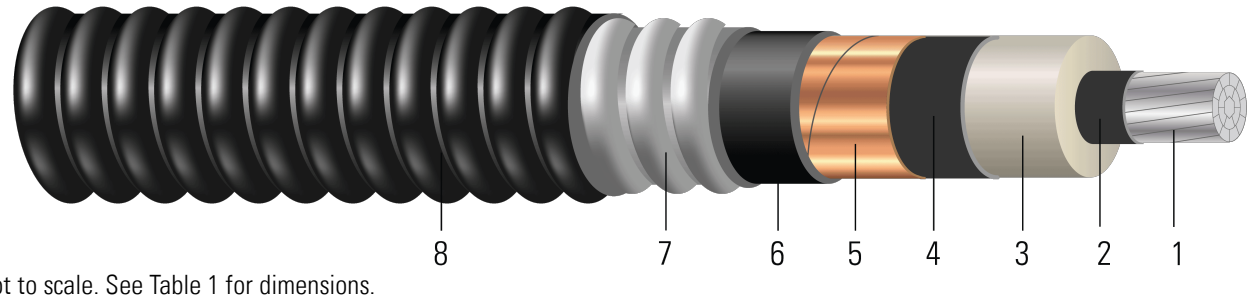


Image not to scale. See Table 1 for dimensions.

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:** 320 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 25kV 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 320 NLEPR AIA 25kV 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	0.977	320	1.037	80	1.427	50	1.527	85	1140	4
1/0	19	0.336	1.014	320	1.074	80	1.564	60	1.684	88	1375	4.5
2/0	19	0.376	1.054	320	1.114	80	1.604	60	1.724	92	1452	4.5
3/0	19	0.423	1.101	320	1.161	80	1.651	60	1.771	96	1544	4.5
4/0	19	0.475	1.153	320	1.213	80	1.703	60	1.823	100	1651	4.5
250	37	0.52	1.206	320	1.266	80	1.756	60	1.876	104	1758	5
350	37	0.616	1.302	320	1.362	80	1.852	60	1.972	112	1975	5
500	37	0.736	1.422	320	1.482	110	2.032	60	2.152	122	2383	5.5
750	61	0.908	1.604	320	1.664	110	2.214	60	2.334	137	2869	6
1000	61	1.117	1.813	320	1.873	110	2.423	75	2.573	154	3451	7

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	10.7	502	0.211	0.289	0.056	0.059	0.643+j0.385	0.290+j0.063	3244	193	194
1/0	11.8	633	0.167	0.229	0.052	0.059	0.580+j0.371	0.230+j0.063	3359	221	219
2/0	12.1	798	0.133	0.182	0.049	0.057	0.531+j0.358	0.183+j0.060	3483	253	246
3/0	12.4	1006	0.105	0.144	0.045	0.055	0.491+j0.343	0.145+j0.058	3628	288	275
4/0	12.8	1269	0.084	0.115	0.042	0.053	0.460+j0.327	0.116+j0.056	3789	327	305
250	13.1	1500	0.07	0.096	0.039	0.051	0.437+j0.312	0.097+j0.055	3954	367	343
350	13.8	2100	0.051	0.07	0.035	0.048	0.405+j0.288	0.071+j0.052	4251	443	399
500	15.1	3000	0.036	0.05	0.031	0.046	0.376+j0.261	0.052+j0.050	4623	529	451
750	16.3	4500	0.023	0.033	0.027	0.043	0.345+j0.226	0.035+j0.047	5187	633	505
1000	18	6000	0.017	0.025	0.023	0.041	0.321+j0.196	0.027+j0.046	5834	711	544

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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	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	24.82	8.13	26.34	2.03	36.25	1.27	38.79	126	1697	4
1/0	19	8.53	25.76	8.13	27.28	2.03	39.73	1.52	42.77	131	2046	4.5
2/0	19	9.55	26.77	8.13	28.30	2.03	40.74	1.52	43.79	137	2161	4.5
3/0	19	10.74	27.97	8.13	29.49	2.03	41.94	1.52	44.98	143	2298	4.5
4/0	19	12.07	29.29	8.13	30.81	2.03	43.26	1.52	46.30	149	2457	4.5
250	37	13.21	30.63	8.13	32.16	2.03	44.60	1.52	47.65	155	2616	5
350	37	15.65	33.07	8.13	34.59	2.03	47.04	1.52	50.09	167	2939	5
500	37	18.69	36.12	8.13	37.64	2.79	51.61	1.52	54.66	182	3546	5.5
750	61	23.06	40.74	8.13	42.27	2.79	56.24	1.52	59.28	204	4270	6
1000	61	28.37	46.05	8.13	47.57	2.79	61.54	1.91	65.35	229	5136	7

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	271.78	2234	0.6923	0.95	0.0171	0.1936	0.643+j0.385	0.290+j0.063	3244	193	194
1/0	299.72	2817	0.5479	0.75	0.0158	0.1936	0.580+j0.371	0.230+j0.063	3359	221	219
2/0	307.34	3551	0.4364	0.60	0.0149	0.1870	0.531+j0.358	0.183+j0.060	3483	253	246
3/0	314.96	4477	0.3445	0.47	0.0137	0.1804	0.491+j0.343	0.145+j0.058	3628	288	275
4/0	325.12	5647	0.2756	0.38	0.0128	0.1739	0.460+j0.327	0.116+j0.056	3789	327	305
250	332.74	6675	0.2297	0.31	0.0119	0.1673	0.437+j0.312	0.097+j0.055	3954	367	343
350	350.52	9345	0.1673	0.23	0.0107	0.1575	0.405+j0.288	0.071+j0.052	4251	443	399
500	383.54	13350	0.1181	0.16	0.0094	0.1509	0.376+j0.261	0.052+j0.050	4623	529	451
750	414.02	20025	0.0755	0.11	0.0082	0.1411	0.345+j0.226	0.035+j0.047	5187	633	505
1000	457.20	26700	0.0558	0.08	0.0070	0.1345	0.321+j0.196	0.027+j0.046	5834	711	544

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