HVTECK AL 1/C 90NLEPR TS PVC AIA PVC 5kV 100% CSA

Single Conductor, 90 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

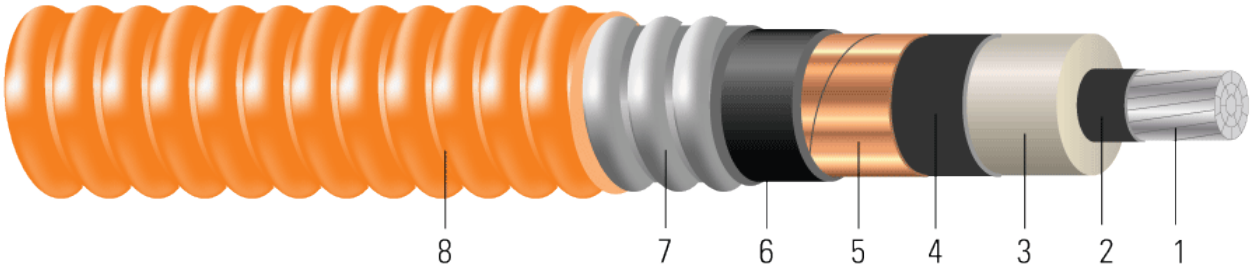


Image not to scale. See Table 1 for dimensions.

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:** 90 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:** Orange Polyvinyl Chloride (PVC) Jacket

APPLICATIONS AND FEATURES:

Southwire's 5kV 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 90 NLEPR AIA 5kV 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
2	7	0.268	0.486	90	0.546	65	0.918	50	1.018	458
1	19	0.298	0.516	90	0.576	65	0.948	50	1.048	493
1/0	19	0.336	0.554	90	0.614	65	0.986	50	1.086	537
2/0	19	0.376	0.594	90	0.654	65	1.026	50	1.126	589
3/0	19	0.422	0.640	90	0.700	80	1.102	50	1.202	684
4/0	19	0.474	0.692	90	0.752	80	1.154	50	1.254	760
250	37	0.520	0.746	90	0.806	80	1.208	50	1.308	835
350	37	0.615	0.841	90	0.901	80	1.413	50	1.513	1004
500	37	0.735	0.961	90	1.021	80	1.533	60	1.653	1259
750	61	0.908	1.144	90	1.204	80	1.740	60	1.860	1663
1000	61	1.060	1.296	90	1.356	80	1.892	60	2.012	2101

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

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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	12.2	398	0.267	0.336	0.027	0.052	0.683 + j0.541	0.337 + j0.052	1722	169	176
1	12.6	502	0.211	0.266	0.025	0.051	0.617 + j0.522	0.267 + j0.049	1815	194	198
1/0	13.0	633	0.168	0.211	0.023	0.049	0.567 + j0.501	0.212 + j0.047	1933	222	223
2/0	13.5	798	0.133	0.167	0.021	0.047	0.526 + j0.480	0.168 + j0.045	2057	255	250
3/0	14.4	1006	0.105	0.133	0.019	0.046	0.495 + j0.456	0.134 + j0.044	2199	290	278
4/0	15.0	1269	0.084	0.105	0.017	0.044	0.468 + j0.431	0.106 + j0.042	2360	329	309
250	15.7	1500	0.071	0.090	0.016	0.043	0.454 + j0.408	0.091 + j0.041	2528	370	347
350	18.2	2100	0.050	0.065	0.014	0.042	0.425 + j0.369	0.066 + j0.041	2822	446	402
500	19.8	3000	0.035	0.046	0.012	0.040	0.400 + j0.326	0.047 + j0.039	3194	533	451
750	22.3	4500	0.024	0.033	0.010	0.038	0.374 + j0.273	0.034 + j0.037	3761	631	500
1000	24.1	6000	0.018	0.026	0.009	0.036	0.353 + j0.237	0.027 + j0.035	4232	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	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
2	7	6.81	12.34	2.29	13.87	1.65	23.32	1.27	25.86	682
1	19	7.57	13.11	2.29	14.63	1.65	24.08	1.27	26.62	734
1/0	19	8.53	14.07	2.29	15.60	1.65	25.04	1.27	27.58	799
2/0	19	9.55	15.09	2.29	16.61	1.65	26.06	1.27	28.60	877
3/0	19	10.72	16.26	2.29	17.78	2.03	27.99	1.27	30.53	1018
4/0	19	12.04	17.58	2.29	19.10	2.03	29.31	1.27	31.85	1131
250	37	13.21	18.95	2.29	20.47	2.03	30.68	1.27	33.22	1243
350	37	15.62	21.36	2.29	22.89	2.03	35.89	1.27	38.43	1494
500	37	18.67	24.41	2.29	25.93	2.03	38.94	1.52	41.99	1874
750	61	23.06	29.06	2.29	30.58	2.03	44.20	1.52	47.24	2475
1000	61	26.92	32.92	2.29	34.44	2.03	48.06	1.52	51.10	3127

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

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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	309.88	1771	0.8760	1.10	0.0082	0.1706	0.683 + j0.541	0.337 + j0.052	1722	169	176
1	320.04	2234	0.6923	0.87	0.0076	0.1673	0.617 + j0.522	0.267 + j0.049	1815	194	198
1/0	330.20	2817	0.5512	0.69	0.0070	0.1608	0.567 + j0.501	0.212 + j0.047	1933	222	223
2/0	342.90	3551	0.4364	0.55	0.0064	0.1542	0.526 + j0.480	0.168 + j0.045	2057	255	250
3/0	365.76	4477	0.3445	0.44	0.0058	0.1509	0.495 + j0.456	0.134 + j0.044	2199	290	278
4/0	381.00	5647	0.2756	0.34	0.0052	0.1444	0.468 + j0.431	0.106 + j0.042	2360	329	309
250	398.78	6675	0.2329	0.30	0.0049	0.1411	0.454 + j0.408	0.091 + j0.041	2528	370	347
350	462.28	9345	0.1640	0.21	0.0043	0.1378	0.425 + j0.369	0.066 + j0.041	2822	446	402
500	502.92	13350	0.1148	0.15	0.0037	0.1312	0.400 + j0.326	0.047 + j0.039	3194	533	451
750	566.42	20025	0.0787	0.11	0.0030	0.1247	0.374 + j0.273	0.034 + j0.037	3761	631	500
1000	612.14	26700	0.0591	0.09	0.0027	0.1181	0.353 + j0.237	0.027 + j0.035	4232	707	539

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