HVTECK AL 1/C 115NLEPR TS PVC AIA PVC 5kV 133% CSA

Single Conductor, 115 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

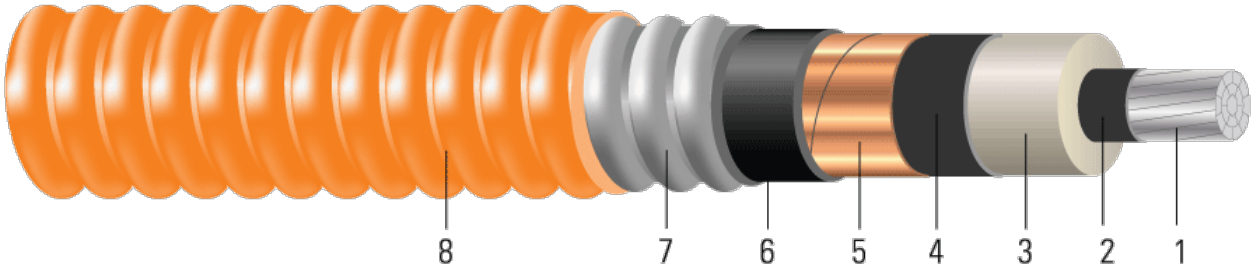


Image not to scale. See Table 1 for dimensions.

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:** 115 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:** 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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UPDATED: Dec. 31, 2024, 11:07 p.m.UTC REVISION: 1.000.000

- 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 115 NLEPR AIA 5kV 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
2	7	0.268	0.536	115	0.596	65	0.956	50	1.056	49	564	2.5
1	19	0.299	0.567	115	0.627	65	0.987	50	1.087	52	604	2.5
1/0	19	0.336	0.604	115	0.664	65	1.024	50	1.124	55	652	3
2/0	19	0.376	0.644	115	0.704	80	1.094	50	1.194	58	741	3
3/0	19	0.423	0.691	115	0.751	80	1.141	50	1.241	62	811	3
4/0	19	0.475	0.743	115	0.803	80	1.193	50	1.293	66	893	3.5
250	37	0.52	0.796	115	0.856	80	1.246	50	1.346	71	975	3.5
350	37	0.616	0.892	115	0.952	80	1.342	50	1.442	78	1147	3.5
500	37	0.736	1.012	115	1.072	80	1.562	60	1.682	88	1558	4.5
750	61	0.908	1.194	115	1.254	80	1.744	60	1.864	103	1968	5
1000	61	1.117	1.403	115	1.463	80	1.953	60	2.073	120	2396	5.5

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.

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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	7.4	398	0.266	0.365	0.029	0.053	0.698+j0.550	0.366+j0.058	1878	169	176
1	7.6	502	0.211	0.289	0.027	0.051	0.627+j0.533	0.290+j0.055	1974	194	198
1/0	7.9	633	0.167	0.229	0.025	0.049	0.571+j0.514	0.230+j0.053	2088	222	223
2/0	8.4	798	0.133	0.182	0.023	0.048	0.528+j0.495	0.183+j0.052	2212	255	250
3/0	8.7	1006	0.105	0.144	0.021	0.046	0.493+j0.474	0.145+j0.050	2358	290	278
4/0	9.1	1269	0.084	0.115	0.019	0.045	0.467+j0.452	0.116+j0.049	2519	329	309
250	9.4	1500	0.07	0.096	0.018	0.044	0.450+j0.430	0.097+j0.047	2683	370	347
350	10.1	2100	0.051	0.07	0.016	0.041	0.425+j0.394	0.071+j0.045	2981	446	402
500	11.8	3000	0.036	0.05	0.013	0.041	0.401+j0.354	0.051+j0.044	3352	533	451
750	13	4500	0.023	0.033	0.011	0.038	0.375+j0.302	0.034+j0.042	3916	631	500
1000	14.5	6000	0.017	0.025	0.009	0.036	0.353+j0.256	0.027+j0.041	4564	707	539

* 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
2	7	6.81	13.61	2.92	15.14	1.65	24.28	1.27	26.82	73	839	2.5
1	19	7.59	14.40	2.92	15.93	1.65	25.07	1.27	27.61	77	899	2.5
1/0	19	8.53	15.34	2.92	16.87	1.65	26.01	1.27	28.55	82	970	3
2/0	19	9.55	16.36	2.92	17.88	2.03	27.79	1.27	30.33	86	1103	3
3/0	19	10.74	17.55	2.92	19.08	2.03	28.98	1.27	31.52	92	1207	3
4/0	19	12.07	18.87	2.92	20.40	2.03	30.30	1.27	32.84	98	1329	3.5
250	37	13.21	20.22	2.92	21.74	2.03	31.65	1.27	34.19	106	1451	3.5
350	37	15.65	22.66	2.92	24.18	2.03	34.09	1.27	36.63	116	1707	3.5
500	37	18.69	25.70	2.92	27.23	2.03	39.67	1.52	42.72	131	2319	4.5
750	61	23.06	30.33	2.92	31.85	2.03	44.30	1.52	47.35	153	2929	5
1000	61	28.37	35.64	2.92	37.16	2.03	49.61	1.52	52.65	179	3566	5.5

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.

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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	187.96	1771	0.8727	1.20	0.0088	0.1739	0.698+j0.550	0.366+j0.058	1878	169	176
1	193.04	2234	0.6923	0.95	0.0082	0.1673	0.627+j0.533	0.290+j0.055	1974	194	198
1/0	200.66	2817	0.5479	0.75	0.0076	0.1608	0.571+j0.514	0.230+j0.053	2088	222	223
2/0	213.36	3551	0.4364	0.60	0.0070	0.1575	0.528+j0.495	0.183+j0.052	2212	255	250
3/0	220.98	4477	0.3445	0.47	0.0064	0.1509	0.493+j0.474	0.145+j0.050	2358	290	278
4/0	231.14	5647	0.2756	0.38	0.0058	0.1476	0.467+j0.452	0.116+j0.049	2519	329	309
250	238.76	6675	0.2297	0.31	0.0055	0.1444	0.450+j0.430	0.097+j0.047	2683	370	347
350	256.54	9345	0.1673	0.23	0.0049	0.1345	0.425+j0.394	0.071+j0.045	2981	446	402
500	299.72	13350	0.1181	0.16	0.0040	0.1345	0.401+j0.354	0.051+j0.044	3352	533	451
750	330.20	20025	0.0755	0.11	0.0034	0.1247	0.375+j0.302	0.034+j0.042	3916	631	500
1000	368.30	26700	0.0558	0.08	0.0027	0.1181	0.353+j0.256	0.027+j0.041	4564	707	539

* Inductive impedance is based on non-ferrous conduit with one diameter spacing center-to-center.
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3-1/C direct buried copper and aluminum: D17A

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