HVTECK AL 1/C 220NLEPR TS PVC AIA PVC 15kV 133% CSA

Single Conductor, 220 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

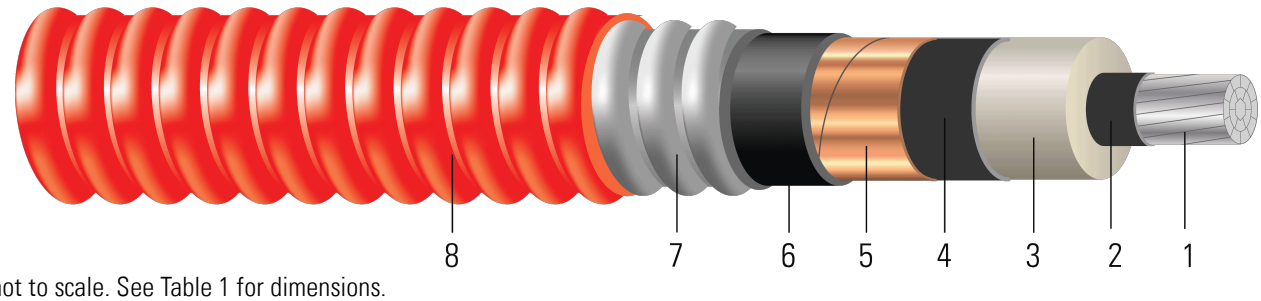


Image not to scale. See Table 1 for dimensions.

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:** 220 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:** Red Polyvinyl Chloride (PVC) Jacket

APPLICATIONS AND FEATURES:

Southwire's 15kV 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 220 NLEPR AIA 15kV 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	0.746	220	0.806	80	1.196	50	1.296	66	828	3.5
1	19	0.299	0.777	220	0.837	80	1.227	50	1.327	69	874	3.5
1/0	19	0.336	0.814	220	0.874	80	1.264	50	1.364	72	930	3.5
2/0	19	0.376	0.854	220	0.914	80	1.304	50	1.404	75	996	3.5
3/0	19	0.423	0.901	220	0.961	80	1.351	50	1.451	79	1075	3.5
4/0	19	0.475	0.953	220	1.013	80	1.403	50	1.503	83	1167	4
250	37	0.52	1.006	220	1.066	80	1.456	50	1.556	88	1259	4
350	37	0.616	1.102	220	1.162	80	1.652	60	1.772	96	1630	4.5
500	37	0.736	1.222	220	1.282	80	1.772	60	1.892	105	1904	5
750	61	0.908	1.404	220	1.464	80	1.954	60	2.074	120	2348	5.5
1000	61	1.117	1.613	220	1.673	110	2.223	60	2.343	138	2937	6

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	9.1	398	0.266	0.365	0.046	0.058	0.718+j0.465	0.366+j0.063	2528	169	176
1	9.3	502	0.211	0.289	0.044	0.056	0.643+j0.450	0.290+j0.060	2624	194	198
1/0	9.5	633	0.167	0.229	0.041	0.054	0.584+j0.434	0.230+j0.058	2739	222	223
2/0	9.8	798	0.133	0.182	0.038	0.052	0.537+j0.418	0.183+j0.056	2863	255	250
3/0	10.2	1006	0.105	0.144	0.035	0.05	0.499+j0.400	0.145+j0.054	3009	290	278
4/0	10.5	1269	0.084	0.115	0.032	0.048	0.469+j0.381	0.116+j0.052	3170	329	309
250	10.9	1500	0.07	0.096	0.03	0.047	0.449+j0.364	0.097+j0.051	3334	370	347
350	12.4	2100	0.051	0.07	0.027	0.046	0.417+j0.334	0.071+j0.050	3631	446	402
500	13.2	3000	0.036	0.05	0.023	0.043	0.391+j0.301	0.051+j0.047	4003	533	451
750	14.5	4500	0.023	0.033	0.02	0.041	0.361+j0.259	0.035+j0.044	4567	631	500
1000	16.4	6000	0.017	0.025	0.017	0.039	0.337+j0.222	0.027+j0.044	5215	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	18.95	5.59	20.47	2.03	30.38	1.27	32.92	98	1232	3.5
1	19	7.59	19.74	5.59	21.26	2.03	31.17	1.27	33.71	103	1301	3.5
1/0	19	8.53	20.68	5.59	22.20	2.03	32.11	1.27	34.65	107	1384	3.5
2/0	19	9.55	21.69	5.59	23.22	2.03	33.12	1.27	35.66	112	1482	3.5
3/0	19	10.74	22.89	5.59	24.41	2.03	34.32	1.27	36.86	118	1600	3.5
4/0	19	12.07	24.21	5.59	25.73	2.03	35.64	1.27	38.18	124	1737	4
250	37	13.21	25.55	5.59	27.08	2.03	36.98	1.27	39.52	131	1874	4
350	37	15.65	27.99	5.59	29.51	2.03	41.96	1.52	45.01	143	2426	4.5
500	37	18.69	31.04	5.59	32.56	2.03	45.01	1.52	48.06	156	2833	5
750	61	23.06	35.66	5.59	37.19	2.03	49.63	1.52	52.68	179	3494	5.5
1000	61	28.37	40.97	5.59	42.49	2.79	56.46	1.52	59.51	205	4371	6

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	231.14	1771	0.8727	1.20	0.0140	0.1903	0.718+j0.465	0.366+j0.063	2528	169	176
1	236.22	2234	0.6923	0.95	0.0134	0.1837	0.643+j0.450	0.290+j0.060	2624	194	198
1/0	241.30	2817	0.5479	0.75	0.0125	0.1772	0.584+j0.434	0.230+j0.058	2739	222	223
2/0	248.92	3551	0.4364	0.60	0.0116	0.1706	0.537+j0.418	0.183+j0.056	2863	255	250
3/0	259.08	4477	0.3445	0.47	0.0107	0.1640	0.499+j0.400	0.145+j0.054	3009	290	278
4/0	266.70	5647	0.2756	0.38	0.0098	0.1575	0.469+j0.381	0.116+j0.052	3170	329	309
250	276.86	6675	0.2297	0.31	0.0091	0.1542	0.449+j0.364	0.097+j0.051	3334	370	347
350	314.96	9345	0.1673	0.23	0.0082	0.1509	0.417+j0.334	0.071+j0.050	3631	446	402
500	335.28	13350	0.1181	0.16	0.0070	0.1411	0.391+j0.301	0.051+j0.047	4003	533	451
750	368.30	20025	0.0755	0.11	0.0061	0.1345	0.361+j0.259	0.035+j0.044	4567	631	500
1000	416.56	26700	0.0558	0.08	0.0052	0.1280	0.337+j0.222	0.027+j0.044	5215	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

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