HVTECK AL 1/C 175NLEPR TS PVC AIA PVC 15kV 100% CSA

Single Conductor, 175 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

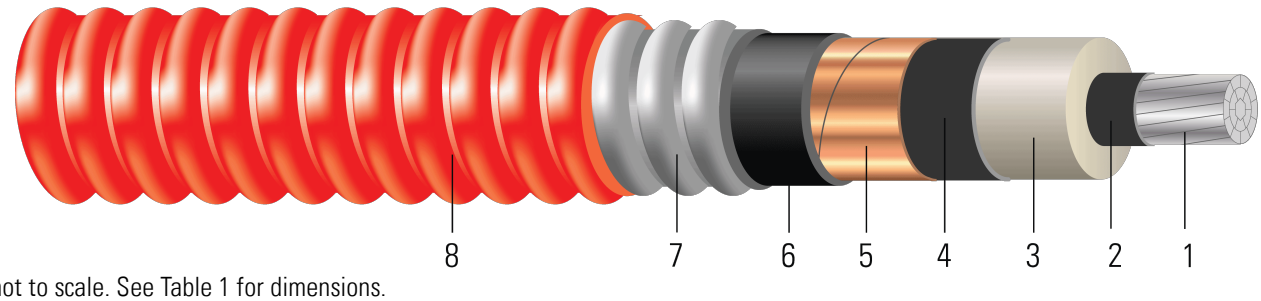


Image not to scale. See Table 1 for dimensions.

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:** 175 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:** 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 175 NLEPR AIA 15kV 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	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	0.656	175	0.716	80	1.106	50	1.206	59	722	3
1	19	0.299	0.687	175	0.747	80	1.137	50	1.237	62	766	3
1/0	19	0.336	0.724	175	0.784	80	1.174	50	1.274	65	819	3
2/0	19	0.376	0.764	175	0.824	80	1.214	50	1.314	68	882	3.5
3/0	19	0.423	0.811	175	0.871	80	1.261	50	1.361	72	957	3.5
4/0	19	0.475	0.863	175	0.923	80	1.313	50	1.413	76	1045	3.5
250	37	0.52	0.916	175	0.976	80	1.366	50	1.466	80	1133	4
350	37	0.616	1.012	175	1.072	80	1.562	60	1.682	88	1487	4.5
500	37	0.736	1.132	175	1.192	80	1.682	60	1.802	98	1751	4.5
750	61	0.908	1.314	175	1.374	80	1.864	60	1.984	113	2180	5
1000	61	1.117	1.523	175	1.583	110	2.133	60	2.253	130	2748	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	8.4	398	0.266	0.365	0.04	0.056	0.712+j0.499	0.366+j0.061	2249	169	176
1	8.7	502	0.211	0.289	0.037	0.054	0.638+j0.483	0.290+j0.058	2345	194	198
1/0	8.9	633	0.167	0.229	0.034	0.052	0.580+j0.467	0.230+j0.056	2460	222	223
2/0	9.2	798	0.133	0.182	0.032	0.05	0.535+j0.449	0.183+j0.054	2584	255	250
3/0	9.5	1006	0.105	0.144	0.029	0.049	0.499+j0.430	0.145+j0.052	2730	290	278
4/0	9.9	1269	0.084	0.115	0.027	0.047	0.470+j0.410	0.116+j0.051	2891	329	309
250	10.3	1500	0.07	0.096	0.025	0.046	0.451+j0.390	0.097+j0.049	3055	370	347
350	11.8	2100	0.051	0.07	0.022	0.045	0.421+j0.358	0.071+j0.049	3352	446	402
500	12.6	3000	0.036	0.05	0.019	0.042	0.396+j0.322	0.051+j0.046	3724	533	451
750	13.9	4500	0.023	0.033	0.016	0.04	0.367+j0.276	0.035+j0.043	4288	631	500
1000	15.8	6000	0.017	0.025	0.014	0.038	0.344+j0.235	0.027+j0.043	4936	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	16.66	4.44	18.19	2.03	28.09	1.27	30.63	88	1074	3
1	19	7.59	17.45	4.44	18.97	2.03	28.88	1.27	31.42	92	1140	3
1/0	19	8.53	18.39	4.44	19.91	2.03	29.82	1.27	32.36	97	1219	3
2/0	19	9.55	19.41	4.44	20.93	2.03	30.84	1.27	33.38	101	1313	3.5
3/0	19	10.74	20.60	4.44	22.12	2.03	32.03	1.27	34.57	107	1424	3.5
4/0	19	12.07	21.92	4.44	23.44	2.03	33.35	1.27	35.89	113	1555	3.5
250	37	13.21	23.27	4.44	24.79	2.03	34.70	1.27	37.24	119	1686	4
350	37	15.65	25.70	4.44	27.23	2.03	39.67	1.52	42.72	131	2213	4.5
500	37	18.69	28.75	4.44	30.28	2.03	42.72	1.52	45.77	146	2606	4.5
750	61	23.06	33.38	4.44	34.90	2.03	47.35	1.52	50.39	168	3244	5
1000	61	28.37	38.68	4.44	40.21	2.79	54.18	1.52	57.23	193	4089	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	213.36	1771	0.8727	1.20	0.0122	0.1837	0.712+j0.499	0.366+j0.061	2249	169	176
1	220.98	2234	0.6923	0.95	0.0113	0.1772	0.638+j0.483	0.290+j0.058	2345	194	198
1/0	226.06	2817	0.5479	0.75	0.0104	0.1706	0.580+j0.467	0.230+j0.056	2460	222	223
2/0	233.68	3551	0.4364	0.60	0.0098	0.1640	0.535+j0.449	0.183+j0.054	2584	255	250
3/0	241.30	4477	0.3445	0.47	0.0088	0.1608	0.499+j0.430	0.145+j0.052	2730	290	278
4/0	251.46	5647	0.2756	0.38	0.0082	0.1542	0.470+j0.410	0.116+j0.051	2891	329	309
250	261.62	6675	0.2297	0.31	0.0076	0.1509	0.451+j0.390	0.097+j0.049	3055	370	347
350	299.72	9345	0.1673	0.23	0.0067	0.1476	0.421+j0.358	0.071+j0.049	3352	446	402
500	320.04	13350	0.1181	0.16	0.0058	0.1378	0.396+j0.322	0.051+j0.046	3724	533	451
750	353.06	20025	0.0755	0.11	0.0049	0.1312	0.367+j0.276	0.035+j0.043	4288	631	500
1000	401.32	26700	0.0558	0.08	0.0043	0.1247	0.344+j0.235	0.027+j0.043	4936	707	539

* 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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