HVTECK AL 3/C 175NLEPR TS PVC AIA PVC 15kV 100% CSA

3 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

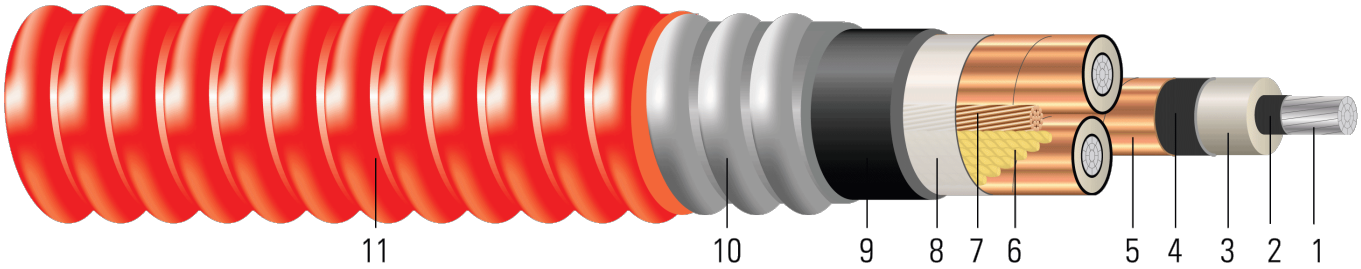


Image not to scale. See Table 1 for dimensions.

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. **Filler:** Interstices filled with non-hydroscoping/non-wicking fillers
7. **Grounding Conductor:** Class B compressed stranded bare copper ground per ASTM B3 and ASTM B8
8. **Binder:** Polypropylene tape
9. **Inner Jacket:** PVC inner jacket
10. **Armour:** Aluminum Interlocked Armour (AIA)
11. **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

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- 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
- 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# 3/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

Stock Number	Cond. Size	Strand	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Ground	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Copper Weight	Approx. Weight	Conduit Size*
	AWG/ Kcmil	No.	inch	inch	mil	inch	No. x AWG	mil	inch	mil	inch	lb/ 1000ft	lb/ 1000ft	inch
TBA	2	7	0.268	0.656	175	0.716	1x8	110	2.103	60	2.223	232	1634	3
TBA	1	19	0.299	0.687	175	0.747	1x6	110	2.17	60	2.29	270	1779	3
TBA	1/0	19	0.336	0.724	175	0.784	1x6	110	2.249	60	2.369	279	1920	3
TBA	2/0	19	0.376	0.764	175	0.824	1x6	110	2.336	75	2.486	289	2151	3
TBA	3/0	19	0.423	0.811	175	0.871	1x6	110	2.437	75	2.587	301	2356	3.5
578144^	4/0	18	0.475	0.863	175	0.923	1x4	110	2.607	60	2.727	370	3210	3.5
578135^	250	35	0.52	0.916	175	0.976	1x4	110	2.722	60	2.842	382	3527	3.5
TBA	350	37	0.616	1.012	175	1.072	1x4	110	2.872	75	3.022	398	3383	4
TBA	500	37	0.736	1.132	175	1.192	1x3	125	3.161	85	3.331	466	4189	4.5
578149^	750	58	0.908	1.326	175	1.406	1x1/0	125	3.701	70	3.841	687	6510	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	15.6	1194	0.266	0.365	0.04	0.029	0.731+j0.508	0.365+j0.045	2249	135	157
1	16	1506	0.211	0.289	0.037	0.027	0.657+j0.491	0.289+j0.042	2345	154	178
1/0	16.6	1900	0.167	0.229	0.034	0.026	0.599+j0.473	0.229+j0.040	2460	176	202
2/0	17.4	2395	0.133	0.182	0.032	0.024	0.553+j0.455	0.182+j0.039	2584	204	229
3/0	18.1	3020	0.105	0.144	0.029	0.023	0.515+j0.435	0.144+j0.037	2730	234	260
4/0	19.1	3808	0.084	0.115	0.027	0.021	0.485+j0.413	0.115+j0.036	2891	268	294
250	19.9	4500	0.07	0.096	0.025	0.02	0.465+j0.393	0.096+j0.035	3055	296	323
350	21.2	6300	0.051	0.07	0.022	0.019	0.435+j0.359	0.070+j0.033	3352	363	386
500	23.3	9000	0.036	0.05	0.019	0.017	0.408+j0.322	0.050+j0.032	3724	447	465
750	26.9	13500	0.023	0.033	0.017	0.016	0.375+j0.269	0.033+j0.031	4387	566	563

* Inductive impedance is based on non-ferrous conduit with one diameter spacing center-to-center.
***** CEC ampacities are based on:
3/C in air copper and aluminum: D17N
3/C direct buried copper and aluminum: D17E

Table 3 – Weights and Measurements (Metric)

Stock Number	Cond. Size	Strand	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Ground	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Copper Weight	Approx. Weight	Conduit Size*
	AWG/ Kcmil	No.	mm	mm	mm	mm	No. x AWG	mm	mm	mm	mm	kg/km	kg/km	inch
TBA	2	7	6.81	16.66	4.44	18.19	1x8	2.79	53.42	1.52	56.46	345	2432	3
TBA	1	19	7.59	17.45	4.44	18.97	1x6	2.79	55.12	1.52	58.17	402	2647	3
TBA	1/0	19	8.53	18.39	4.44	19.91	1x6	2.79	57.12	1.52	60.17	415	2857	3
TBA	2/0	19	9.55	19.41	4.44	20.93	1x6	2.79	59.33	1.91	63.14	430	3201	3
TBA	3/0	19	10.74	20.60	4.44	22.12	1x6	2.79	61.90	1.91	65.71	448	3506	3.5
578144^	4/0	18	12.07	21.92	4.44	23.44	1x4	2.79	66.22	1.52	69.27	551	4777	3.5
578135^	250	35	13.21	23.27	4.44	24.79	1x4	2.79	69.14	1.52	72.19	568	5249	3.5
TBA	350	37	15.65	25.70	4.44	27.23	1x4	2.79	72.95	1.91	76.76	592	5034	4
TBA	500	37	18.69	28.75	4.44	30.28	1x3	3.18	80.29	2.16	84.61	693	6234	4.5
578149^	750	58	23.06	33.68	4.44	35.71	1x1/0	3.18	94.01	1.78	97.56	1022	9688	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	396.24	5313	0.8727	1.20	0.0122	0.0951	0.731+j0.508	0.365+j0.045	2249	135	157
1	406.40	6702	0.6923	0.95	0.0113	0.0886	0.657+j0.491	0.289+j0.042	2345	154	178
1/0	421.64	8455	0.5479	0.75	0.0104	0.0853	0.599+j0.473	0.229+j0.040	2460	176	202
2/0	441.96	10658	0.4364	0.60	0.0098	0.0787	0.553+j0.455	0.182+j0.039	2584	204	229
3/0	459.74	13439	0.3445	0.47	0.0088	0.0755	0.515+j0.435	0.144+j0.037	2730	234	260
4/0	485.14	16946	0.2756	0.38	0.0082	0.0689	0.485+j0.413	0.115+j0.036	2891	268	294
250	505.46	20025	0.2297	0.31	0.0076	0.0656	0.465+j0.393	0.096+j0.035	3055	296	323
350	538.48	28035	0.1673	0.23	0.0067	0.0623	0.435+j0.359	0.070+j0.033	3352	363	386
500	591.82	40050	0.1181	0.16	0.0058	0.0558	0.408+j0.322	0.050+j0.032	3724	447	465
750	683.26	60075	0.0755	0.11	0.0052	0.0525	0.375+j0.269	0.033+j0.031	4387	566	563

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