



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

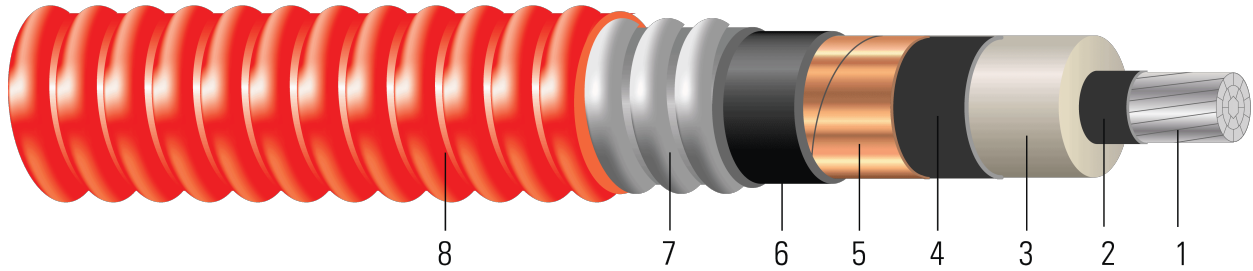


Image not to scale. See Table 1 for dimensions.

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)





- 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	Approx. Weight
AWG/ Kcmil	No.	inch	inch	mil	inch	mil	inch	mil	inch	lb/1000ft
2	7	0.268	0.656	175	0.716	80	1.118	50	1.218	649
1	19	0.298	0.686	175	0.746	80	1.148	50	1.248	688
1/0	19	0.336	0.724	175	0.784	80	1.186	50	1.286	740
2/0	19	0.376	0.764	175	0.824	80	1.336	50	1.436	809
3/0	19	0.422	0.810	175	0.870	80	1.382	50	1.482	880
4/0	19	0.474	0.862	175	0.922	80	1.434	50	1.534	962
250	37	0.520	0.916	175	0.976	80	1.488	50	1.588	1045
350	37	0.615	1.011	175	1.071	80	1.583	60	1.703	1248
500	37	0.735	1.131	175	1.191	80	1.727	60	1.847	1525
750	61	0.908	1.314	175	1.374	80	1.910	60	2.030	2018
1000	61	1.060	1.466	175	1.526	110	2.122	60	2.242	2515

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



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	14.6	398	0.267	0.336	0.043	0.057	0.698 + j0.461	0.337 + j0.056	2249	169	176
1	15.0	502	0.211	0.266	0.040	0.055	0.629 + j0.445	0.267 + j0.053	2342	194	198
1/0	15.4	633	0.168	0.211	0.037	0.053	0.575 + j0.427	0.212 + j0.051	2459	222	223
2/0	17.2	798	0.133	0.167	0.034	0.053	0.529 + j0.408	0.168 + j0.051	2584	255	250
3/0	17.8	1006	0.105	0.133	0.031	0.051	0.494 + j0.388	0.134 + j0.049	2726	290	278
4/0	18.4	1269	0.084	0.105	0.029	0.049	0.465 + j0.368	0.106 + j0.047	2887	329	309
250	19.1	1500	0.071	0.090	0.027	0.047	0.447 + j0.348	0.091 + j0.046	3054	370	347
350	20.4	2100	0.050	0.065	0.023	0.045	0.416 + j0.316	0.066 + j0.043	3349	446	402
500	22.2	3000	0.035	0.046	0.020	0.043	0.388 + j0.281	0.047 + j0.041	3721	533	451
750	24.4	4500	0.024	0.033	0.017	0.040	0.358 + j0.237	0.034 + j0.039	4288	631	500
1000	26.9	6000	0.018	0.026	0.015	0.039	0.337 + j0.208	0.027 + j0.038	4758	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	Approx. Weight
AWG/Kcmil	No.	mm	mm	mm	mm	mm	mm	mm	mm	kg/km
2	7	6.81	16.66	4.44	18.19	2.03	28.40	1.27	30.94	966
1	19	7.57	17.42	4.44	18.95	2.03	29.16	1.27	31.70	1024
1/0	19	8.53	18.39	4.44	19.91	2.03	30.12	1.27	32.66	1101
2/0	19	9.55	19.41	4.44	20.93	2.03	33.93	1.27	36.47	1204
3/0	19	10.72	20.57	4.44	22.10	2.03	35.10	1.27	37.64	1310
4/0	19	12.04	21.89	4.44	23.42	2.03	36.42	1.27	38.96	1432
250	37	13.21	23.27	4.44	24.79	2.03	37.80	1.27	40.34	1555
350	37	15.62	25.68	4.44	27.20	2.03	40.21	1.52	43.26	1857
500	37	18.67	28.73	4.44	30.25	2.03	43.87	1.52	46.91	2269
750	61	23.06	33.38	4.44	34.90	2.03	48.51	1.52	51.56	3003
1000	61	26.92	37.24	4.44	38.76	2.79	53.90	1.52	56.95	3743

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

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	370.84	1771	0.8760	1.10	0.0131	0.1870	0.698 + j0.461	0.337 + j0.056	2249	169	176
1	381.00	2234	0.6923	0.87	0.0122	0.1804	0.629 + j0.445	0.267 + j0.053	2342	194	198
1/0	391.16	2817	0.5512	0.69	0.0113	0.1739	0.575 + j0.427	0.212 + j0.051	2459	222	223
2/0	436.88	3551	0.4364	0.55	0.0104	0.1739	0.529 + j0.408	0.168 + j0.051	2584	255	250
3/0	452.12	4477	0.3445	0.44	0.0094	0.1673	0.494 + j0.388	0.134 + j0.049	2726	290	278
4/0	467.36	5647	0.2756	0.34	0.0088	0.1608	0.465 + j0.368	0.106 + j0.047	2887	329	309
250	485.14	6675	0.2329	0.30	0.0082	0.1542	0.447 + j0.348	0.091 + j0.046	3054	370	347
350	518.16	9345	0.1640	0.21	0.0070	0.1476	0.416 + j0.316	0.066 + j0.043	3349	446	402
500	563.88	13350	0.1148	0.15	0.0061	0.1411	0.388 + j0.281	0.047 + j0.041	3721	533	451
750	619.76	20025	0.0787	0.11	0.0052	0.1312	0.358 + j0.237	0.034 + j0.039	4288	631	500
1000	683.26	26700	0.0591	0.09	0.0046	0.1280	0.337 + j0.208	0.027 + j0.038	4758	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

