



HVTECK AL 1/C 140NLEPR TS PVC AIA PVC 8kV 133% CSA

Single Conductor, 140 Mil 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

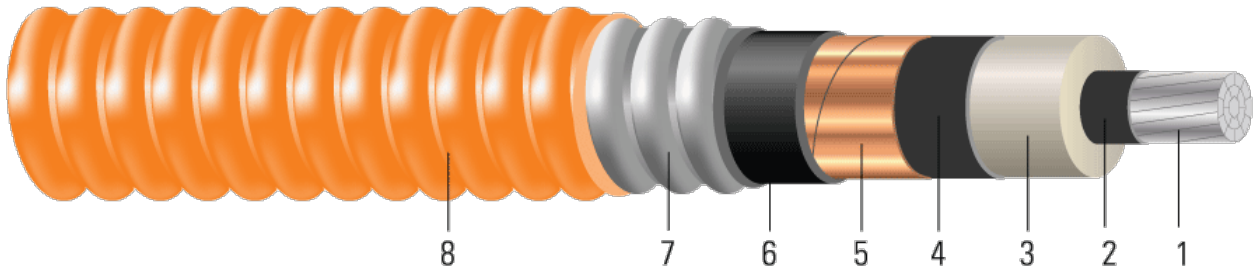


Image not to scale. See Table 1 for dimensions.

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:** 140 Mil 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 8kV 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)
- AIEC 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 140 NLEPR AIA 8kV 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	Approx. Weight
AWG/ Kcmil	No.	inch	inch	mil	inch	mil	inch	mil	inch	lb/1000ft
2	7	0.268	0.586	140	0.646	65	1.018	50	1.118	548
1	19	0.298	0.616	140	0.676	65	1.048	50	1.148	585
1/0	19	0.336	0.654	140	0.714	80	1.116	50	1.216	667
2/0	19	0.376	0.694	140	0.754	80	1.156	50	1.256	723
3/0	19	0.422	0.740	140	0.800	80	1.202	50	1.302	789
4/0	19	0.474	0.792	140	0.852	80	1.364	50	1.464	881
250	37	0.520	0.846	140	0.906	80	1.418	50	1.518	960
350	37	0.615	0.941	140	1.001	80	1.513	60	1.633	1159
500	37	0.735	1.061	140	1.121	80	1.657	60	1.777	1426
750	61	0.908	1.244	140	1.304	80	1.840	60	1.960	1814
1000	61	1.060	1.396	140	1.456	80	1.992	60	2.112	2271

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	13.4	398	0.267	0.336	0.037	0.055	0.695 + j0.493	0.337 + j0.054	2032	169	176
1	13.8	502	0.211	0.266	0.034	0.053	0.627 + j0.475	0.267 + j0.051	2125	194	198
1/0	14.6	633	0.168	0.211	0.031	0.051	0.573 + j0.456	0.212 + j0.050	2243	222	223
2/0	15.1	798	0.133	0.167	0.029	0.049	0.530 + j0.436	0.168 + j0.048	2367	255	250
3/0	15.6	1006	0.105	0.133	0.026	0.048	0.497 + j0.415	0.134 + j0.046	2509	290	278
4/0	17.6	1269	0.084	0.105	0.024	0.048	0.467 + j0.392	0.106 + j0.046	2670	329	309
250	18.2	1500	0.071	0.090	0.023	0.046	0.450 + j0.371	0.091 + j0.045	2838	370	347
350	19.6	2100	0.050	0.065	0.020	0.044	0.421 + j0.336	0.066 + j0.043	3132	446	402
500	21.3	3000	0.035	0.046	0.017	0.042	0.393 + j0.298	0.047 + j0.040	3504	533	451
750	23.5	4500	0.024	0.033	0.014	0.039	0.365 + j0.251	0.034 + j0.038	4071	631	500
1000	25.3	6000	0.018	0.026	0.013	0.038	0.344 + j0.219	0.027 + j0.036	4542	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	14.88	3.56	16.41	1.65	25.86	1.27	28.40	816
1	19	7.57	15.65	3.56	17.17	1.65	26.62	1.27	29.16	871
1/0	19	8.53	16.61	3.56	18.14	2.03	28.35	1.27	30.89	993
2/0	19	9.55	17.63	3.56	19.15	2.03	29.36	1.27	31.90	1076
3/0	19	10.72	18.80	3.56	20.32	2.03	30.53	1.27	33.07	1174
4/0	19	12.04	20.12	3.56	21.64	2.03	34.65	1.27	37.19	1311
250	37	13.21	21.49	3.56	23.01	2.03	36.02	1.27	38.56	1429
350	37	15.62	23.90	3.56	25.43	2.03	38.43	1.52	41.48	1725
500	37	18.67	26.95	3.56	28.47	2.03	42.09	1.52	45.14	2122
750	61	23.06	31.60	3.56	33.12	2.03	46.74	1.52	49.78	2700
1000	61	26.92	35.46	3.56	36.98	2.03	50.60	1.52	53.64	3380

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	340.36	1771	0.8760	1.10	0.0113	0.1804	0.695 + j0.493	0.337 + j0.054	2032	169	176
1	350.52	2234	0.6923	0.87	0.0104	0.1739	0.627 + j0.475	0.267 + j0.051	2125	194	198
1/0	370.84	2817	0.5512	0.69	0.0094	0.1673	0.573 + j0.456	0.212 + j0.050	2243	222	223
2/0	383.54	3551	0.4364	0.55	0.0088	0.1608	0.530 + j0.436	0.168 + j0.048	2367	255	250
3/0	396.24	4477	0.3445	0.44	0.0079	0.1575	0.497 + j0.415	0.134 + j0.046	2509	290	278
4/0	447.04	5647	0.2756	0.34	0.0073	0.1575	0.467 + j0.392	0.106 + j0.046	2670	329	309
250	462.28	6675	0.2329	0.30	0.0070	0.1509	0.450 + j0.371	0.091 + j0.045	2838	370	347
350	497.84	9345	0.1640	0.21	0.0061	0.1444	0.421 + j0.336	0.066 + j0.043	3132	446	402
500	541.02	13350	0.1148	0.15	0.0052	0.1378	0.393 + j0.298	0.047 + j0.040	3504	533	451
750	596.90	20025	0.0787	0.11	0.0043	0.1280	0.365 + j0.251	0.034 + j0.038	4071	631	500
1000	642.62	26700	0.0591	0.09	0.0040	0.1247	0.344 + j0.219	0.027 + j0.036	4542	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

