HVTECK AL 3/C 345NLEPR TS PVC AIA PVC 28kV 133% CSA

3 Conductor, 345 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

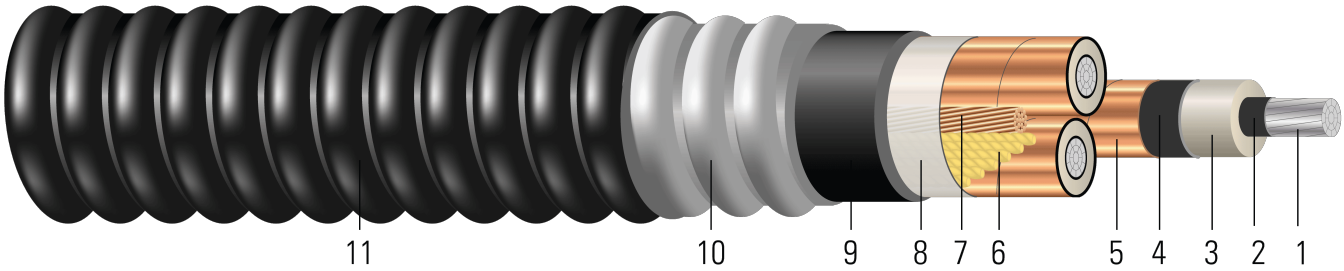

Image not to scale. See Table 1 for dimensions.

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:** 345 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. **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:** Black Polyvinyl Chloride (PVC) Jacket

APPLICATIONS AND FEATURES:

Southwire's 28kV 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
- 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 345 NLEPR AIA 28kV 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	Ground Size	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Approx. Weight
AWG/ Kcmil	No.	inch	inch	mil	inch	AWG	mil	inch	mil	inch	lb/1000ft
1	19	0.298	1.026	345	1.086	6	110	2.965	75	3.115	3599
1/0	19	0.336	1.064	345	1.124	6	110	3.047	85	3.217	3871
2/0	19	0.376	1.104	345	1.164	6	125	3.163	85	3.333	4197
3/0	19	0.422	1.150	345	1.210	6	125	3.263	85	3.433	4483
4/0	19	0.474	1.202	345	1.262	6	125	3.375	85	3.545	4815
250	37	0.520	1.256	345	1.316	4	125	3.492	85	3.662	5168
350	37	0.615	1.351	345	1.411	4	125	3.697	85	3.867	5841

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.

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
1	21.8	1506	0.211	0.266	0.061	0.052	0.624 + j0.328	0.266 + j0.05	3395	158	177
1/0	22.5	1900	0.168	0.211	0.057	0.050	0.566 + j0.315	0.211 + j0.048	3513	181	200
2/0	23.3	2395	0.133	0.167	0.053	0.048	0.518 + j0.302	0.167 + j0.047	3637	208	228
3/0	24.0	3020	0.105	0.133	0.049	0.046	0.548 + j0.288	0.133 + j0.045	3779	239	258
4/0	24.8	3808	0.084	0.105	0.046	0.045	0.447 + j0.274	0.105 + j0.043	3941	273	292
250	25.6	4500	0.071	0.090	0.043	0.043	0.427 + j0.260	0.090 + j0.042	4108	302	321
350	27.1	6300	0.050	0.065	0.039	0.041	0.392 + j0.238	0.066 + j0.040	4402	368	385

* 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)

Cond. Size	Strand	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Ground Size	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Approx. Weight
AWG/ Kcmil	No.	mm	mm	mm	mm	AWG	mm	mm	mm	mm	kg/km
1	19	7.57	26.06	8.76	27.58	6	2.79	75.31	1.91	79.12	5356
1/0	19	8.53	27.03	8.76	28.55	6	2.79	77.39	2.16	81.71	5761
2/0	19	9.55	28.04	8.76	29.57	6	3.18	80.34	2.16	84.66	6246
3/0	19	10.72	29.21	8.76	30.73	6	3.18	82.88	2.16	87.20	6671
4/0	19	12.04	30.53	8.76	32.05	6	3.18	85.73	2.16	90.04	7166
250	37	13.21	31.90	8.76	33.43	4	3.18	88.70	2.16	93.01	7691
350	37	15.62	34.32	8.76	35.84	4	3.18	93.90	2.16	98.22	8692

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.

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
1	553.72	6702	0.6923	0.87	0.0186	0.1706	0.624 + j0.328	0.266 + j0.05	3395	158	177
1/0	571.50	8455	0.5512	0.69	0.0174	0.1640	0.566 + j0.315	0.211 + j0.048	3513	181	200
2/0	591.82	10658	0.4364	0.55	0.0162	0.1575	0.518 + j0.302	0.167 + j0.047	3637	208	228
3/0	609.60	13439	0.3445	0.44	0.0149	0.1509	0.548 + j0.288	0.133 + j0.045	3779	239	258
4/0	629.92	16946	0.2756	0.34	0.0140	0.1476	0.447 + j0.274	0.105 + j0.043	3941	273	292
250	650.24	20025	0.2329	0.30	0.0131	0.1411	0.427 + j0.260	0.090 + j0.042	4108	302	321
350	688.34	28035	0.1640	0.21	0.0119	0.1345	0.392 + j0.238	0.066 + j0.040	4402	368	385

* 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