

## 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

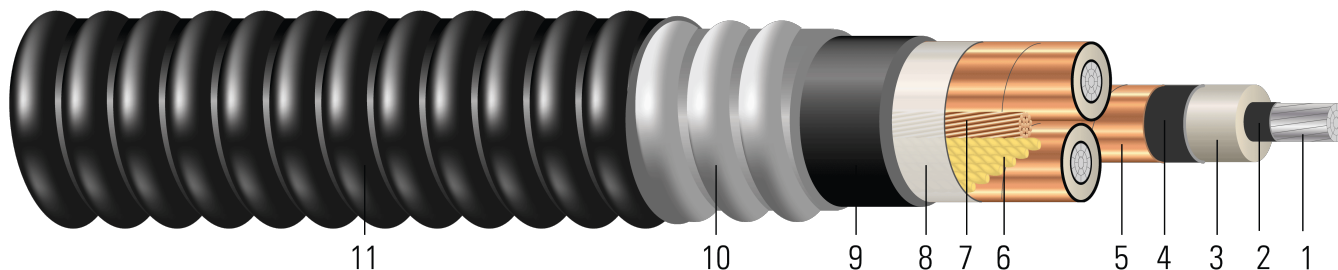


Image not to scale. See Table 1 for dimensions.

### 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-hydrating/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

### 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	2.964	75	3.114	3772
1/0	19	0.336	1.064	345	1.124	6	110	3.047	85	3.217	4056
2/0	19	0.376	1.104	345	1.164	6	125	3.163	85	3.333	4389
3/0	19	0.422	1.150	345	1.210	6	125	3.262	85	3.432	4679
4/0	19	0.474	1.202	345	1.262	6	125	3.375	85	3.545	5024
250	37	0.520	1.256	345	1.316	4	125	3.491	85	3.661	5372
350	37	0.615	1.351	345	1.411	4	125	3.696	85	3.866	6061

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 @ 60Hz	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	21.7	1506	0.211	0.266	0.064	0.052	0.625 + j0.331	0.266 + j0.05	3364	158	177
1/0	22.5	1900	0.168	0.211	0.060	0.050	0.567 + j0.318	0.211 + j0.048	3482	181	200
2/0	23.3	2395	0.133	0.167	0.056	0.048	0.519 + j0.305	0.167 + j0.047	3606	208	228
3/0	24	3020	0.105	0.133	0.052	0.046	0.481 + j0.291	0.133 + j0.045	3749	239	258
4/0	24.8	3808	0.084	0.105	0.048	0.045	0.448 + j0.276	0.105 + j0.043	3910	273	292
250	25.6	4500	0.071	0.090	0.046	0.043	0.427 + j0.262	0.09 + j0.042	4077	302	321
350	27	6300	0.050	0.065	0.040	0.041	0.393 + j0.24	0.066 + j0.04	4371	368	385

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



**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	75.29	1.91	79.10	5613
1/0	19	8.53	27.03	8.76	28.55	6	2.79	77.39	2.16	81.71	6036
2/0	19	9.55	28.04	8.76	29.57	6	3.18	80.34	2.16	84.66	6532
3/0	19	10.72	29.21	8.76	30.73	6	3.18	82.85	2.16	87.17	6963
4/0	19	12.04	30.53	8.76	32.05	6	3.18	85.73	2.16	90.04	7477
250	37	13.21	31.90	8.76	33.43	4	3.18	88.67	2.16	92.99	7994
350	37	15.62	34.32	8.76	35.84	4	3.18	93.88	2.16	98.20	9020

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 @ 60Hz	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	551.18	6702	0.6923	0.87	0.0195	0.1706	0.625 + j0.331	0.266 + j0.05	3364	158	177
1/0	571.50	8455	0.5512	0.69	0.0183	0.1640	0.567 + j0.318	0.211 + j0.048	3482	181	200
2/0	591.82	10658	0.4364	0.55	0.0171	0.1575	0.519 + j0.305	0.167 + j0.047	3606	208	228
3/0	609.60	13439	0.3445	0.44	0.0158	0.1509	0.481 + j0.291	0.133 + j0.045	3749	239	258
4/0	629.92	16946	0.2756	0.34	0.0146	0.1476	0.448 + j0.276	0.105 + j0.043	3910	273	292
250	650.24	20025	0.2329	0.30	0.0140	0.1411	0.427 + j0.262	0.09 + j0.042	4077	302	321
350	685.80	28035	0.1640	0.21	0.0122	0.1345	0.393 + j0.24	0.066 + j0.04	4371	368	385

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

