

## HVTECK AL 3/C 115NLEPR TS PVC AIA PVC 5kV 133% CSA

3 Conductor, 115 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

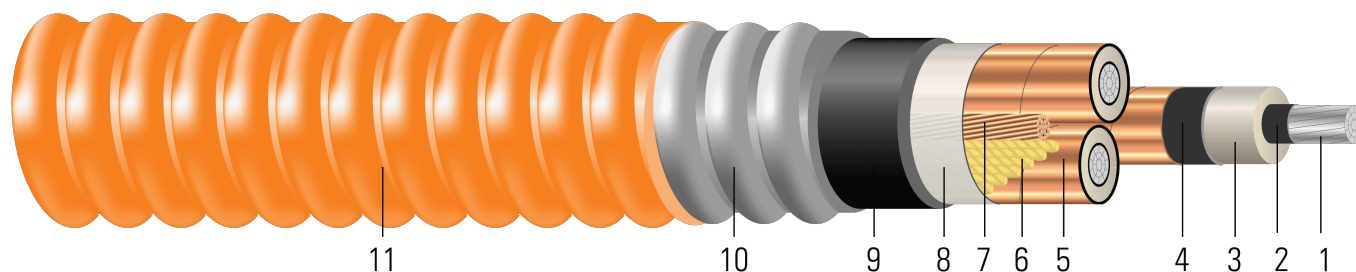


Image not to scale. See Table 1 for dimensions.

### 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:** 115 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:** Orange Polyvinyl Chloride (PVC) Jacket

### APPLICATIONS AND FEATURES:

Southwire's 5kV 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 115 NLEPR AIA 5kV 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
2	7	0.268	0.536	115	0.596	8	80	1.846	60	1.966	1593
1	19	0.298	0.566	115	0.626	6	80	1.911	60	2.031	1717
1/0	19	0.336	0.604	115	0.664	6	80	1.993	60	2.113	1874
2/0	19	0.376	0.644	115	0.704	6	110	2.139	60	2.259	2174
3/0	19	0.422	0.690	115	0.750	6	110	2.239	60	2.359	2398
4/0	19	0.474	0.742	115	0.802	6	110	2.351	75	2.501	2735
250	37	0.520	0.796	115	0.856	4	110	2.468	75	2.618	3005
350	37	0.615	0.891	115	0.951	4	110	2.673	75	2.823	3557
500	37	0.735	1.011	115	1.071	3	110	2.932	75	3.082	4332
750	61	0.908	1.194	115	1.254	2	125	3.357	85	3.527	5775
1000	61	1.060	1.346	115	1.406	2	125	3.686	85	3.856	6970

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
2	13.7	1194	0.267	0.336	0.036	0.041	0.703 + j0.529	0.336 + j0.041	1846	135	157
1	14.2	1506	0.211	0.266	0.033	0.039	0.636 + j0.51	0.266 + j0.038	1939	154	178
1/0	14.7	1900	0.168	0.211	0.030	0.038	0.583 + j0.488	0.211 + j0.037	2057	176	202
2/0	15.8	2395	0.133	0.167	0.028	0.037	0.541 + j0.466	0.167 + j0.035	2181	204	229
3/0	16.5	3020	0.105	0.133	0.025	0.035	0.508 + j0.443	0.133 + j0.034	2323	234	260
4/0	17.5	3808	0.084	0.105	0.023	0.034	0.48 + j0.418	0.105 + j0.033	2484	268	294
250	18.3	4500	0.071	0.090	0.022	0.034	0.463 + j0.395	0.09 + j0.032	2652	296	323
350	19.7	6300	0.050	0.065	0.019	0.032	0.434 + j0.356	0.065 + j0.031	2946	363	386
500	21.5	9000	0.035	0.046	0.016	0.031	0.406 + j0.315	0.046 + j0.029	3318	447	465
750	24.6	13500	0.024	0.033	0.014	0.029	0.377 + j0.263	0.033 + j0.028	3885	566	563
1000	26.9	18000	0.018	0.026	0.012	0.029	0.354 + j0.229	0.027 + j0.027	4356	661	638

\* 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
2	7	6.81	13.61	2.92	15.14	8	2.03	46.89	1.52	49.94	2371
1	19	7.57	14.38	2.92	15.90	6	2.03	48.54	1.52	51.59	2555
1/0	19	8.53	15.34	2.92	16.87	6	2.03	50.62	1.52	53.67	2789
2/0	19	9.55	16.36	2.92	17.88	6	2.79	54.33	1.52	57.38	3235
3/0	19	10.72	17.53	2.92	19.05	6	2.79	56.87	1.52	59.92	3569
4/0	19	12.04	18.85	2.92	20.37	6	2.79	59.72	1.91	63.53	4070
250	37	13.21	20.22	2.92	21.74	4	2.79	62.69	1.91	66.50	4472
350	37	15.62	22.63	2.92	24.16	4	2.79	67.89	1.91	71.70	5293
500	37	18.67	25.68	2.92	27.20	3	2.79	74.47	1.91	78.28	6447
750	61	23.06	30.33	2.92	31.85	2	3.18	85.27	2.16	89.59	8594
1000	61	26.92	34.19	2.92	35.71	2	3.18	93.62	2.16	97.94	10373

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
2	347.98	5313	0.8760	1.10	0.0110	0.1345	0.703 + j0.529	0.336 + j0.041	1846	135	157
1	360.68	6702	0.6923	0.87	0.0101	0.1280	0.636 + j0.51	0.266 + j0.038	1939	154	178
1/0	373.38	8455	0.5512	0.69	0.0091	0.1247	0.583 + j0.488	0.211 + j0.037	2057	176	202
2/0	401.32	10658	0.4364	0.55	0.0085	0.1214	0.541 + j0.466	0.167 + j0.035	2181	204	229
3/0	419.10	13439	0.3445	0.44	0.0076	0.1148	0.508 + j0.443	0.133 + j0.034	2323	234	260
4/0	444.50	16946	0.2756	0.34	0.0070	0.1115	0.48 + j0.418	0.105 + j0.033	2484	268	294
250	464.82	20025	0.2329	0.30	0.0067	0.1115	0.463 + j0.395	0.09 + j0.032	2652	296	323
350	500.38	28035	0.1640	0.21	0.0058	0.1050	0.434 + j0.356	0.065 + j0.031	2946	363	386
500	546.10	40050	0.1148	0.15	0.0049	0.1017	0.406 + j0.315	0.046 + j0.029	3318	447	465
750	624.84	60075	0.0787	0.11	0.0043	0.0951	0.377 + j0.263	0.033 + j0.028	3885	566	563
1000	683.26	80100	0.0591	0.09	0.0037	0.0951	0.354 + j0.229	0.027 + j0.027	4356	661	638

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

