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

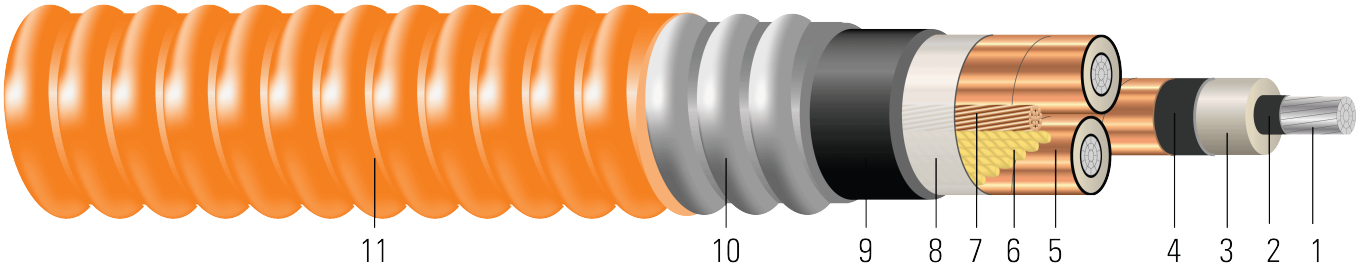


Image not to scale. See Table 1 for dimensions.

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-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:** 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

Copyright © 2024 Southwire Company, LLC. All Rights Reserved

- 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 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	1.847	60	1.967	1499
1	19	0.298	0.566	115	0.626	6	80	1.911	60	2.031	1625
1/0	19	0.336	0.604	115	0.664	6	80	1.993	60	2.113	1776
2/0	19	0.376	0.644	115	0.704	6	110	2.140	60	2.260	2072
3/0	19	0.422	0.690	115	0.750	6	110	2.239	60	2.359	2284
4/0	19	0.474	0.742	115	0.802	6	110	2.352	75	2.502	2613
250	37	0.520	0.796	115	0.856	4	110	2.468	75	2.618	2886
350	37	0.615	0.891	115	0.951	4	110	2.673	75	2.823	3419
500	37	0.735	1.011	115	1.071	3	110	2.933	75	3.083	4185
750	61	0.908	1.194	115	1.254	2	125	3.358	85	3.528	5606
1000	61	1.060	1.346	115	1.406	2	125	3.686	85	3.856	6770

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

Copyright © 2024 Southwire Company, LLC. All Rights Reserved

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	13.8	1194	0.267	0.336	0.030	0.041	0.705 + j0.524	0.336 + j0.041	1877	135	157
1	14.2	1506	0.211	0.266	0.030	0.039	0.637 + j0.504	0.266 + j0.038	1970	154	178
1/0	14.8	1900	0.168	0.211	0.030	0.038	0.584 + j0.483	0.211 + j0.037	2088	176	202
2/0	15.8	2395	0.133	0.167	0.030	0.037	0.542 + j0.462	0.167 + j0.035	2212	204	229
3/0	16.5	3020	0.105	0.133	0.020	0.035	0.509 + j0.438	0.133 + j0.034	2354	234	260
4/0	17.5	3808	0.084	0.105	0.020	0.030	0.548 + j0.414	0.105 + j0.033	2515	268	294
250	18.3	4500	0.071	0.090	0.020	0.030	0.464 + j0.390	0.090 + j0.032	2683	296	323
350	19.8	6300	0.050	0.065	0.020	0.030	0.434 + j0.353	0.065 + j0.031	2977	363	386
500	21.6	9000	0.035	0.046	0.014	0.030	0.406 + j0.312	0.046 + j0.029	3349	447	465
750	24.7	13500	0.020	0.030	0.012	0.030	0.376 + j0.261	0.033 + j0.028	3916	566	563
1000	27.0	18000	0.020	0.030	0.011	0.030	0.354 + j0.227	0.027 + j0.027	4387	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	46.91	1.52	49.96	2231
1	19	7.57	14.38	2.92	15.90	6	2.03	48.54	1.52	51.59	2418
1/0	19	8.53	15.34	2.92	16.87	6	2.03	50.62	1.52	53.67	2643
2/0	19	9.55	16.36	2.92	17.88	6	2.79	54.36	1.52	57.40	3083
3/0	19	10.72	17.53	2.92	19.05	6	2.79	56.87	1.52	59.92	3399
4/0	19	12.04	18.85	2.92	20.37	6	2.79	59.74	1.91	63.55	3889
250	37	13.21	20.22	2.92	21.74	4	2.79	62.69	1.91	66.50	4295
350	37	15.62	22.63	2.92	24.16	4	2.79	67.89	1.91	71.70	5088
500	37	18.67	25.68	2.92	27.20	3	2.79	74.50	1.91	78.31	6228
750	61	23.06	30.33	2.92	31.85	2	3.18	85.29	2.16	89.61	8343
1000	61	26.92	34.19	2.92	35.71	2	3.18	93.62	2.16	97.94	10075

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

Copyright © 2024 Southwire Company, LLC. All Rights Reserved

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	350.52	5313	0.8760	1.10	0.0091	0.1345	0.705 + j0.524	0.336 + j0.041	1877	135	157
1	360.68	6702	0.6923	0.87	0.0091	0.1280	0.637 + j0.504	0.266 + j0.038	1970	154	178
1/0	375.92	8455	0.5512	0.69	0.0091	0.1247	0.584 + j0.483	0.211 + j0.037	2088	176	202
2/0	401.32	10658	0.4364	0.55	0.0091	0.1214	0.542 + j0.462	0.167 + j0.035	2212	204	229
3/0	419.10	13439	0.3445	0.44	0.0061	0.1148	0.509 + j0.438	0.133 + j0.034	2354	234	260
4/0	444.50	16946	0.2756	0.34	0.0061	0.0984	0.548 + j0.414	0.105 + j0.033	2515	268	294
250	464.82	20025	0.2329	0.30	0.0061	0.0984	0.464 + j0.390	0.090 + j0.032	2683	296	323
350	502.92	28035	0.1640	0.21	0.0061	0.0984	0.434 + j0.353	0.065 + j0.031	2977	363	386
500	548.64	40050	0.1148	0.15	0.0043	0.0984	0.406 + j0.312	0.046 + j0.029	3349	447	465
750	627.38	60075	0.0656	0.10	0.0037	0.0984	0.376 + j0.261	0.033 + j0.028	3916	566	563
1000	685.80	80100	0.0656	0.10	0.0034	0.0984	0.354 + j0.227	0.027 + j0.027	4387	661	638

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