HVTECK AL 3/C 220TRXLPE TS PVC AIA PVC 15kV 133% CSA

3 Conductor, 220 Mils Tree Retardant Cross Linked Polyethylene, 133% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

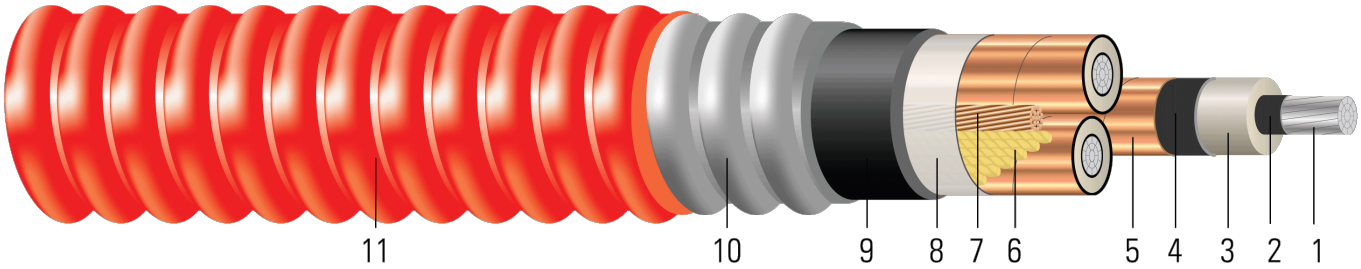

Image not to scale. See Table 1 for dimensions.

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:** 220 Mils Tree Retardant Cross Linked Polyethylene 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:** Red Polyvinyl Chloride (PVC) Jacket

APPLICATIONS AND FEATURES:

Southwire's 15kV 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

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- 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:

{SQMTR_DUAL} {CSA} SOUTHWIRE® POWER CABLE {NESC} 3/C XXX AWG COMPACT AL.--- {ALUMAFLEX}® AA8176 XXX mm (220 mils) TR-XLPE AIA GW X x X AWG CU 15KV 133% INS LEVEL 25%TS MV68.10 SUN. RES. 105°C FT4 HL (-40°C) LTGG RoHS

Table 1 – Weights and Measurements

Stock Number	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
TBA	2	7	0.268	0.746	220	0.806	8	110	2.360	75	2.510	2392
TBA	1	19	0.298	0.776	220	0.836	6	110	2.425	75	2.575	2546
669439	1/0	10	0.336	0.814	220	0.874	6	110	2.501	75	2.651	2807
TBA	2/0	19	0.376	0.854	220	0.914	6	110	2.593	75	2.743	2929
456294	2/0	12	0.376	0.854	220	0.914	6	110	2.588	75	2.743	2920
TBA	3/0	19	0.422	0.900	220	0.960	6	110	2.693	75	2.843	3176
TBA	4/0	19	0.474	0.952	220	1.012	6	110	2.805	75	2.955	3463
665718	4/0	19	0.474	0.953	220	1.013	6	110	2.81	75	2.957	3471
TBA	250	37	0.520	1.006	220	1.066	4	110	2.922	75	3.072	3772
456295	350	37	0.615	1.102	220	1.162	4	125	3.173	85	3.329	4562
665713	350	37	0.615	1.102	220	1.162	4	125	3.173	85	3.329	4562
664830	350	37	0.615	1.102	220	1.162	4	125	3.173	85	3.343	4529
664692	500	34	0.735	1.244	220	1.304	3	135	3.480	85	3.650	5373
456300	750	53	0.908	1.416	220	1.476	2	125	3.860	85	4.030	6826

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
^Yellow jacket
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.

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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	17.6	1194	0.267	0.336	0.065	0.048	0.711 + j0.427	0.336 + j0.047	2528	135	157
1	18.0	1506	0.211	0.266	0.060	0.046	0.640 + j0.411	0.266 + j0.044	2621	154	178
1/0	18.6	1900	0.168	0.211	0.056	0.044	0.584 + j0.394	0.211 + j0.043	2738	176	202
2/0	19.2	2395	0.133	0.167	0.052	0.043	0.538 + j0.377	0.167 + j0.041	2862	204	229
2/0	19.2	2395	0.133	0.182	0.06	0.026	0.538 + j0.423	0.167 + j0.043	2862	190	229
3/0	19.9	3020	0.105	0.133	0.048	0.041	0.501 + j0.358	0.133 + j0.040	3005	234	260
4/0	20.7	3808	0.084	0.105	0.044	0.040	0.469 + j0.339	0.105 + j0.038	3166	268	294
4/0	20.7	3808	0.084	0.115	0.052	0.023	0.473 + j0.385	0.105 + j0.040	3169	255	294
250	21.5	4500	0.071	0.090	0.041	0.039	0.450 + j0.321	0.090 + j0.037	3333	296	323
350	23.3	6300	0.051	0.071	0.043	0.021	0.425 + j0.336	0.065 + j0.037	3631	345	386
350	23.3	6300	0.051	0.071	0.043	0.021	0.425 + j0.336	0.065 + j0.037	3631	345	386
350	23.4	6300	0.050	0.065	0.037	0.037	0.417 + j0.291	0.065 + j0.035	3628	363	386
500	25.6	9000	0.035	0.046	0.032	0.035	0.387 + j0.297	0.047 + j0.036	4071	447	465
750	28.2	13500	0.020	0.030	0.030	0.030	0.355 + j0.220	0.034 + j0.031	4566	566	563

* 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

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Table 3 – Weights and Measurements (Metric)

Stock Number	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
TBA	2	7	6.81	18.95	5.59	20.47	8	2.79	59.94	1.91	63.75	3560
TBA	1	19	7.57	19.71	5.59	21.23	6	2.79	61.59	1.91	65.41	3789
669439	1/0	10	8.53	20.68	5.59	22.20	6	2.79	63.53	1.91	67.34	4177
TBA	2/0	19	9.55	21.69	5.59	23.22	6	2.79	65.86	1.91	69.67	4359
456294	2/0	12	9.55	21.69	5.59	23.22	6	2.79	65.74	1.91	69.67	4345
TBA	3/0	19	10.72	22.86	5.59	24.38	6	2.79	68.40	1.91	72.21	4726
TBA	4/0	19	12.04	24.18	5.59	25.70	6	2.79	71.25	1.91	75.06	5154
665718	4/0	19	12.04	24.21	5.59	25.73	6	2.79	71.37	1.91	75.11	5165
TBA	250	37	13.21	25.55	5.59	27.08	4	2.79	74.22	1.91	78.03	5613
456295	350	37	15.62	27.99	5.59	29.51	4	3.18	80.59	2.16	84.56	6789
665713	350	37	15.62	27.99	5.59	29.51	4	3.18	80.59	2.16	84.56	6789
664830	350	37	15.62	27.99	5.59	29.51	4	3.18	80.59	2.16	84.91	6740
664692	500	34	18.67	31.60	5.59	33.12	3	3.43	88.39	2.16	92.71	7996
456300	750	53	23.06	35.97	5.59	37.49	2	3.18	98.04	2.16	102.36	10158

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
^Yellow jacket
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.

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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	447.04	5313	0.8760	1.10	0.0198	0.1575	0.711 + j0.427	0.336 + j0.047	2528	135	157
1	457.20	6702	0.6923	0.87	0.0183	0.1509	0.640 + j0.411	0.266 + j0.044	2621	154	178
1/0	472.44	8455	0.5512	0.69	0.0171	0.1444	0.584 + j0.394	0.211 + j0.043	2738	176	202
2/0	487.68	10658	0.4364	0.55	0.0158	0.1411	0.538 + j0.377	0.167 + j0.041	2862	204	229
2/0	487.68	10658	0.4364	0.60	0.0183	0.0853	0.538 + j0.423	0.167 + j0.043	2862	190	229
3/0	505.46	13439	0.3445	0.44	0.0146	0.1345	0.501 + j0.358	0.133 + j0.040	3005	234	260
4/0	525.78	16946	0.2756	0.34	0.0134	0.1312	0.469 + j0.339	0.105 + j0.038	3166	268	294
4/0	525.78	16946	0.2756	0.38	0.0158	0.0755	0.473 + j0.385	0.105 + j0.040	3169	255	294
250	546.10	20025	0.2329	0.30	0.0125	0.1280	0.450 + j0.321	0.090 + j0.037	3333	296	323
350	591.82	28035	0.1673	0.23	0.0131	0.0689	0.425 + j0.336	0.065 + j0.037	3631	345	386
350	591.82	28035	0.1673	0.23	0.0131	0.0689	0.425 + j0.336	0.065 + j0.037	3631	345	386
350	594.36	28035	0.1640	0.21	0.0113	0.1214	0.417 + j0.291	0.065 + j0.035	3628	363	386
500	650.24	40050	0.1148	0.15	0.0098	0.1148	0.387 + j0.297	0.047 + j0.036	4071	447	465
750	716.28	60075	0.0656	0.10	0.0091	0.0984	0.355 + j0.220	0.034 + j0.031	4566	566	563

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