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

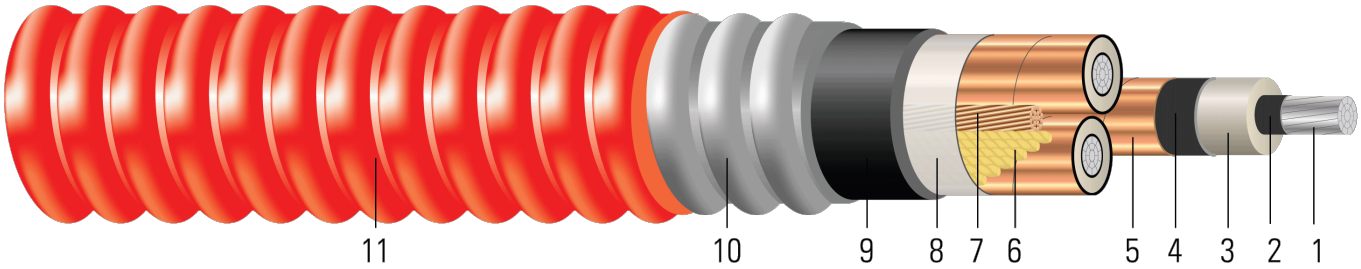

Image not to scale. See Table 1 for dimensions.

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	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Copper Weight	Approx. Weight	Conduit Size*
	AWG/ Kcmil	No.	inch	inch	mil	inch	No. x AWG	mil	inch	mil	inch	lb/ 1000ft	lb/ 1000ft	inch
TBA	2	7	0.268	0.746	220	0.806	1x8	110	2.297	75	2.447	255	1977	3
TBA	1	19	0.299	0.777	220	0.837	1x6	110	2.364	75	2.514	292	2131	3
669439	1/0	10	0.336	0.814	220	0.874	1x6	110	2.502	75	2.652	310	2821	3.5
TBA	2/0	19	0.376	0.854	220	0.914	1x6	110	2.53	75	2.68	312	2464	3.5
456294	2/0	12	0.376	0.854	220	0.914	1x6	110	2.588	75	2.738	324	2921	3.5
TBA	3/0	19	0.423	0.901	220	0.961	1x6	110	2.632	75	2.782	323	2680	3.5
TBA	4/0	19	0.475	0.953	220	1.013	1x6	110	2.744	75	2.894	336	2934	3.5
665718	4/0	19	0.475	0.953	220	1.013	1x6	110	2.81	75	2.96	347	3471	4
TBA	250	37	0.52	1.006	220	1.066	1x4	110	2.859	75	3.009	396	3234	4
664830	350	37	0.616	1.102	220	1.162	1x4	125	3.174	85	3.344	430	4547	4.5
456295	350	37	0.616	1.102	220	1.162	1x4	125	3.174	85	3.344	430	4562	4.5
665713	350	37	0.616	1.102	220	1.162	1x4	125	3.174	85	3.344	430	4562	4.5
664692	500	34	0.736	1.244	220	1.304	1x3	125	3.48	85	3.65	494	5392	5
456300	750	53	0.908	1.416	220	1.476	1x2	125	3.861	85	4.031	581	6660	5.5

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	17.1	1194	0.266	0.365	0.061	0.031	0.735+j0.471	0.365+j0.047	2528	135	157
1	17.6	1506	0.211	0.289	0.057	0.03	0.660+j0.455	0.289+j0.044	2624	154	178
1/0	18.6	1900	0.167	0.229	0.053	0.028	0.600+j0.439	0.229+j0.043	2739	176	202
2/0	18.8	2395	0.133	0.182	0.049	0.026	0.553+j0.422	0.182+j0.041	2863	204	229
2/0	19.2	2395	0.133	0.182	0.049	0.026	0.553+j0.422	0.182+j0.041	2863	204	229
3/0	19.5	3020	0.105	0.144	0.046	0.025	0.514+j0.403	0.144+j0.040	3009	234	260
4/0	20.3	3808	0.084	0.115	0.042	0.023	0.483+j0.383	0.115+j0.038	3170	268	294
4/0	20.7	3808	0.084	0.115	0.042	0.023	0.483+j0.383	0.115+j0.038	3170	268	294
250	21.1	4500	0.07	0.096	0.039	0.022	0.462+j0.365	0.096+j0.037	3334	296	323
350	23.4	6300	0.051	0.07	0.035	0.021	0.430+j0.334	0.070+j0.035	3631	363	386
350	23.4	6300	0.051	0.07	0.035	0.021	0.430+j0.334	0.070+j0.035	3631	363	386
350	23.4	6300	0.051	0.07	0.035	0.021	0.430+j0.334	0.070+j0.035	3631	363	386
500	25.6	9000	0.036	0.05	0.032	0.019	0.400+j0.295	0.050+j0.034	4071	447	465
750	28.2	13500	0.023	0.033	0.026	0.017	0.369+j0.255	0.033+j0.032	4604	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

Table 3 – Weights and Measurements (Metric)

Stock Number	Cond. Size	Strand	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Ground	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Copper Weight	Approx. Weight	Conduit Size*
	AWG/ Kcmil	No.	mm	mm	mm	mm	No. x AWG	mm	mm	mm	mm	kg/km	kg/km	inch
TBA	2	7	6.81	18.95	5.59	20.47	1x8	2.79	58.34	1.91	62.15	379	2942	3
TBA	1	19	7.59	19.74	5.59	21.26	1x6	2.79	60.05	1.91	63.86	435	3171	3
669439	1/0	10	8.53	20.68	5.59	22.20	1x6	2.79	63.55	1.91	67.36	461	4198	3.5
TBA	2/0	19	9.55	21.69	5.59	23.22	1x6	2.79	64.26	1.91	68.07	464	3667	3.5
456294	2/0	12	9.55	21.69	5.59	23.22	1x6	2.79	65.74	1.91	69.55	482	4347	3.5
TBA	3/0	19	10.74	22.89	5.59	24.41	1x6	2.79	66.85	1.91	70.66	481	3988	3.5
TBA	4/0	19	12.07	24.21	5.59	25.73	1x6	2.79	69.70	1.91	73.51	500	4366	3.5
665718	4/0	19	12.07	24.21	5.59	25.73	1x6	2.79	71.37	1.91	75.18	516	5165	4
TBA	250	37	13.21	25.55	5.59	27.08	1x4	2.79	72.62	1.91	76.43	589	4813	4
664830	350	37	15.65	27.99	5.59	29.51	1x4	3.18	80.62	2.16	84.94	640	6767	4.5
456295	350	37	15.65	27.99	5.59	29.51	1x4	3.18	80.62	2.16	84.94	640	6789	4.5
665713	350	37	15.65	27.99	5.59	29.51	1x4	3.18	80.62	2.16	84.94	640	6789	4.5
664692	500	34	18.69	31.60	5.59	33.12	1x3	3.18	88.39	2.16	92.71	735	8024	5
456300	750	53	23.06	35.97	5.59	37.49	1x2	3.18	98.07	2.16	102.39	865	9911	5.5

All dimensions are nominal and subject to normal manufacturing tolerances

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◊ 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.

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	434.34	5313	0.8727	1.20	0.0186	0.1017	0.735+j0.471	0.365+j0.047	2528	135	157
1	447.04	6702	0.6923	0.95	0.0174	0.0984	0.660+j0.455	0.289+j0.044	2624	154	178
1/0	472.44	8455	0.5479	0.75	0.0162	0.0919	0.600+j0.439	0.229+j0.043	2739	176	202
2/0	477.52	10658	0.4364	0.60	0.0149	0.0853	0.553+j0.422	0.182+j0.041	2863	204	229
2/0	487.68	10658	0.4364	0.60	0.0149	0.0853	0.553+j0.422	0.182+j0.041	2863	204	229
3/0	495.30	13439	0.3445	0.47	0.0140	0.0820	0.514+j0.403	0.144+j0.040	3009	234	260
4/0	515.62	16946	0.2756	0.38	0.0128	0.0755	0.483+j0.383	0.115+j0.038	3170	268	294
4/0	525.78	16946	0.2756	0.38	0.0128	0.0755	0.483+j0.383	0.115+j0.038	3170	268	294
250	535.94	20025	0.2297	0.31	0.0119	0.0722	0.462+j0.365	0.096+j0.037	3334	296	323
350	594.36	28035	0.1673	0.23	0.0107	0.0689	0.430+j0.334	0.070+j0.035	3631	363	386
350	594.36	28035	0.1673	0.23	0.0107	0.0689	0.430+j0.334	0.070+j0.035	3631	363	386
350	594.36	28035	0.1673	0.23	0.0107	0.0689	0.430+j0.334	0.070+j0.035	3631	363	386
500	650.24	40050	0.1181	0.16	0.0098	0.0623	0.400+j0.295	0.050+j0.034	4071	447	465
750	716.28	60075	0.0755	0.11	0.0079	0.0558	0.369+j0.255	0.033+j0.032	4604	566	563

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