HVTECK AL 3/C 320TRXLPE TS PVC AIA PVC 25kV 133% CSA

3 Conductor, 320 Mils Tree Retardant Cross Linked Polyethylene, 133% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

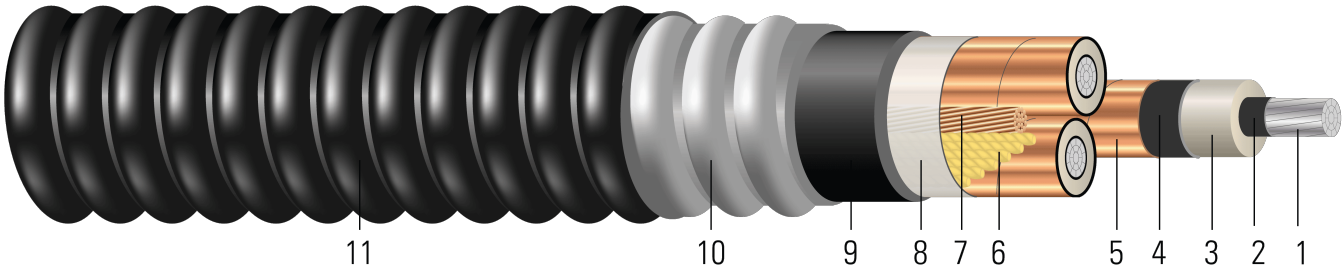

Image not to scale. See Table 1 for dimensions.

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:** 320 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:** Black Polyvinyl Chloride (PVC) Jacket

APPLICATIONS AND FEATURES:

Southwire's 25kV 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:

(CSA) SOUTHWIRE (NESC) #P# 3/C [#AWG or #kcmil] CPT AL 320 TRXLPE AIA 25kV 133% INS LEVEL 25% TS SUN RES 105°C FT4 HL (-40°C) LTGG RoHS YEAR [SEQUENTIAL METER MARKS]

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
599541	1	8	0.299	0.977	320	1.037	1x6	110	2.854	75	3.004	352	3378	4
TBA	1/0	19	0.336	1.014	320	1.074	1x6	110	2.876	75	3.026	351	3040	4
TBA	2/0	19	0.376	1.054	320	1.114	1x6	110	2.962	75	3.112	361	3242	4
TBA	3/0	19	0.423	1.101	320	1.161	1x6	125	3.094	85	3.264	373	3554	4
TBA	4/0	19	0.475	1.153	320	1.213	1x6	125	3.206	85	3.376	386	3840	4.5
TBA	250	37	0.52	1.206	320	1.266	1x4	125	3.321	85	3.491	446	4174	4.5
TBA	350	37	0.616	1.302	320	1.362	1x4	125	3.528	85	3.698	470	4761	5
TBA	500	37	0.736	1.422	320	1.482	1x3	125	3.787	85	3.957	538	5606	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
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 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
1	21	1506	0.211	0.289	0.072	0.035	0.656+j0.386	0.289+j0.049	3244	158	177
1/0	21.2	1900	0.167	0.229	0.068	0.033	0.594+j0.373	0.229+j0.047	3359	181	200
2/0	21.8	2395	0.133	0.182	0.064	0.031	0.545+j0.359	0.182+j0.046	3483	208	228
3/0	22.8	3020	0.105	0.144	0.059	0.029	0.504+j0.343	0.144+j0.044	3628	239	258
4/0	23.6	3808	0.084	0.115	0.055	0.028	0.472+j0.327	0.115+j0.042	3789	273	292
250	24.4	4500	0.07	0.096	0.051	0.026	0.449+j0.312	0.096+j0.041	3954	302	321
350	25.9	6300	0.051	0.07	0.046	0.024	0.415+j0.287	0.070+j0.039	4251	368	385
500	27.7	9000	0.036	0.05	0.041	0.022	0.386+j0.259	0.050+j0.037	4623	454	462

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

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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
599541	1	8	7.59	24.82	8.13	26.34	1x6	2.79	72.49	1.91	76.30	524	5027	4
TBA	1/0	19	8.53	25.76	8.13	27.28	1x6	2.79	73.05	1.91	76.86	522	4524	4
TBA	2/0	19	9.55	26.77	8.13	28.30	1x6	2.79	75.23	1.91	79.04	537	4825	4
TBA	3/0	19	10.74	27.97	8.13	29.49	1x6	3.18	78.59	2.16	82.91	555	5289	4
TBA	4/0	19	12.07	29.29	8.13	30.81	1x6	3.18	81.43	2.16	85.75	574	5715	4.5
TBA	250	37	13.21	30.63	8.13	32.16	1x4	3.18	84.35	2.16	88.67	664	6212	4.5
TBA	350	37	15.65	33.07	8.13	34.59	1x4	3.18	89.61	2.16	93.93	699	7085	5
TBA	500	37	18.69	36.12	8.13	37.64	1x3	3.18	96.19	2.16	100.51	801	8343	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
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
1	533.40	6702	0.6923	0.95	0.0219	0.1148	0.656+j0.386	0.289+j0.049	3244	158	177
1/0	538.48	8455	0.5479	0.75	0.0207	0.1083	0.594+j0.373	0.229+j0.047	3359	181	200
2/0	553.72	10658	0.4364	0.60	0.0195	0.1017	0.545+j0.359	0.182+j0.046	3483	208	228
3/0	579.12	13439	0.3445	0.47	0.0180	0.0951	0.504+j0.343	0.144+j0.044	3628	239	258
4/0	599.44	16946	0.2756	0.38	0.0168	0.0919	0.472+j0.327	0.115+j0.042	3789	273	292
250	619.76	20025	0.2297	0.31	0.0155	0.0853	0.449+j0.312	0.096+j0.041	3954	302	321
350	657.86	28035	0.1673	0.23	0.0140	0.0787	0.415+j0.287	0.070+j0.039	4251	368	385
500	703.58	40050	0.1181	0.16	0.0125	0.0722	0.386+j0.259	0.050+j0.037	4623	454	462

* 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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