HVTECK CU 1/C 320TRXLPE TS PVC AIA PVC 25kV 133% CSA

Single 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

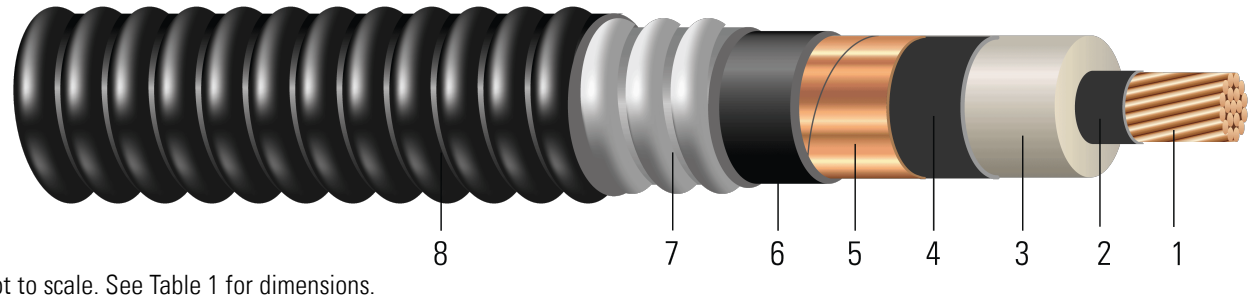

Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

1. **Conductor:** Class B compressed stranded bare copper per ASTM B3 and ASTM B8
2. **Conductor Shield:** Semi-conducting cross-linked copolymer
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. **Inner Jacket:** PVC inner jacket
7. **Armour:** Aluminum Interlocked Armour (AIA)
8. **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 B3 Soft or Annealed Copper Wire
- ASTM B8 Concentric-Lay-Stranded Copper 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 (1/0 and Larger)
- FT1 Flame Test (1,706 BTU/Hr nominal - Vertical Wire Flame Test)

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- 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# 1/C [#AWG or #kcmil] CU 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	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Copper Weight	Approx. Weight
	AWG/ Kcmil	No.	inch	inch	mil	inch	mil	inch	mil	inch	lb/1000ft	lb/1000ft
TBA	1	19	0.322	1.000	320	1.060	80	1.572	60	1.692	279	1277
TBA	1/0	19	0.361	1.039	320	1.099	80	1.611	60	1.731	347	1386
TBA	2/0	19	0.405	1.083	320	1.143	80	1.679	60	1.799	433	1551
TBA	3/0	19	0.456	1.134	320	1.194	80	1.730	60	1.850	542	1713
TBA	4/0	19	0.512	1.190	320	1.250	80	1.786	60	1.906	678	1910
672797	250	37	0.558	1.228	320	1.288	80	1.812	60	1.932	874	2105
TBA	350	37	0.661	1.347	320	1.407	80	1.943	60	2.063	1109	2608
TBA	500	37	0.789	1.475	320	1.535	110	2.131	60	2.251	1575	3341
672792	750	61	0.968	1.664	320	1.724	110	2.308	75	2.458	2450	4311
TBA	1000	61	1.117	1.813	320	1.873	110	2.469	75	2.619	3126	5378

All dimensions are nominal and subject to normal manufacturing tolerances
◊ Cable marked with this symbol is a standard stock item
1 Comply with ICEA S-93-639 Appendix C for jacket thickness determination
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
1	20.3	669	0.128	0.162	0.073	0.060	0.514 + j0.336	0.163 + j0.060	3315	245	244
1/0	20.8	844	0.102	0.128	0.068	0.058	0.477 + j0.322	0.129 + j0.058	3435	278	272
2/0	21.6	1064	0.081	0.102	0.063	0.056	0.448 + j0.308	0.103 + j0.056	3572	316	303
3/0	22.2	1342	0.064	0.081	0.059	0.054	0.422 + j0.293	0.082 + j0.054	3730	356	333
4/0	22.9	1692	0.051	0.065	0.054	0.052	0.402 + j0.277	0.066 + j0.052	3903	403	367
250	23.2	2000	0.043	0.056	0.050	0.050	0.388 + j0.264	0.057 + j0.050	4071	455	411
350	24.8	2800	0.031	0.041	0.046	0.048	0.363 + j0.240	0.042 + j0.048	4390	537	459
500	27.0	4000	0.022	0.030	0.040	0.046	0.340 + j0.215	0.031 + j0.046	4786	616	499
750	29.5	6000	0.014	0.023	0.034	0.043	0.315 + j0.184	0.024 + j0.043	5372	716	557
1000	31.4	8000	0.011	0.019	0.031	0.041	0.298 + j0.164	0.020 + j0.041	5834	825	608

* Inductive impedance is based on non-ferrous conduit with one diameter spacing center-to-center.
***** CEC ampacities are based on:
3-1/C in air copper and aluminum: D17M
3-1/C direct buried copper and aluminum: D17A

Table 3 – Weights and Measurements (Metric)

Stock Number	Cond. Size	Strand	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Copper Weight	Approx. Weight
	AWG/ Kcmil	No.	mm	mm	mm	mm	mm	mm	mm	mm	kg/km	kg/km
TBA	1	19	8.18	25.40	8.13	26.92	2.03	39.93	1.52	42.98	415	1900
TBA	1/0	19	9.17	26.39	8.13	27.91	2.03	40.92	1.52	43.97	516	2063
TBA	2/0	19	10.29	27.51	8.13	29.03	2.03	42.65	1.52	45.69	644	2308
TBA	3/0	19	11.58	28.80	8.13	30.33	2.03	43.94	1.52	46.99	807	2549
TBA	4/0	19	13.00	30.23	8.13	31.75	2.03	45.36	1.52	48.41	1009	2842
672797	250	37	14.17	31.19	8.13	32.72	2.03	46.02	1.52	49.07	1301	3133
TBA	350	37	16.79	34.21	8.13	35.74	2.03	49.35	1.52	52.40	1650	3881
TBA	500	37	20.04	37.47	8.13	38.99	2.79	54.13	1.52	57.18	2344	4972
672792	750	61	24.59	42.27	8.13	43.79	2.79	58.62	1.91	62.43	3646	6415
TBA	1000	61	28.37	46.05	8.13	47.57	2.79	62.71	1.91	66.52	4652	8003

All dimensions are nominal and subject to normal manufacturing tolerances
◊ Cable marked with this symbol is a standard stock item

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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
1	515.62	2977	0.4199	0.53	0.0223	0.1969	0.514 + j0.336	0.163 + j0.060	3315	245	244
1/0	528.32	3756	0.3346	0.42	0.0207	0.1903	0.477 + j0.322	0.129 + j0.058	3435	278	272
2/0	548.64	4735	0.2657	0.33	0.0192	0.1837	0.448 + j0.308	0.103 + j0.056	3572	316	303
3/0	563.88	5972	0.2100	0.27	0.0180	0.1772	0.422 + j0.293	0.082 + j0.054	3730	356	333
4/0	581.66	7529	0.1673	0.21	0.0165	0.1706	0.402 + j0.277	0.066 + j0.052	3903	403	367
250	589.28	8900	0.1411	0.18	0.0152	0.1640	0.388 + j0.264	0.057 + j0.050	4071	455	411
350	629.92	12460	0.1017	0.13	0.0140	0.1575	0.363 + j0.240	0.042 + j0.048	4390	537	459
500	685.80	17800	0.0722	0.10	0.0122	0.1509	0.340 + j0.215	0.031 + j0.046	4786	616	499
750	749.30	26700	0.0459	0.08	0.0104	0.1411	0.315 + j0.184	0.024 + j0.043	5372	716	557
1000	797.56	35600	0.0361	0.06	0.0094	0.1345	0.298 + j0.164	0.020 + j0.041	5834	825	608

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