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

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

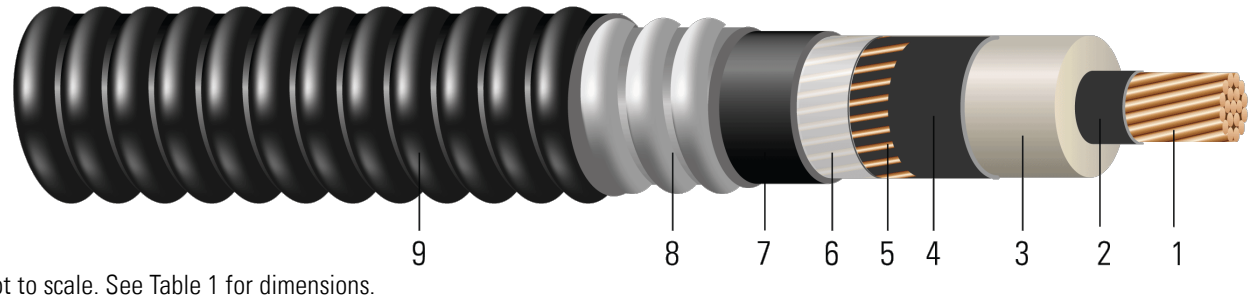


Image not to scale. See Table 1 for dimensions.

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. **Concentric Shield:** Concentrically applied copper bond / shield wires. Complies with greater than the minimum requirement as per Table 44, CSA Standard C68.10 and Table 16A, Canadian Electrical Code Part 1
6. **Neutral Separator:** Mylar tape
7. **Inner Jacket:** PVC inner jacket
8. **Armour:** Aluminum Interlocked Armour (AIA)
9. **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)

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- 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)
- 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 CB [No. x SIZE] AWG 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	Concentric Neutral	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
1	19	0.322	1	320	1.06	7x12	80	1.82	60	1.94	474	2076	5
1/0	19	0.362	1.04	320	1.1	7x12	80	1.86	60	1.98	546	2205	5
2/0	19	0.405	1.083	320	1.143	7x12	80	1.903	60	2.023	634	2354	5.5
3/0	19	0.456	1.134	320	1.194	9x12	80	1.954	60	2.074	779	2571	5.5
4/0	19	0.512	1.19	320	1.25	9x12	110	2.07	60	2.19	919	2905	5.5
250	37	0.558	1.244	320	1.304	11x12	110	2.124	60	2.244	1084	3154	6
350	37	0.661	1.347	320	1.407	13x12	110	2.227	60	2.347	1455	3677	6
500	37	0.789	1.475	320	1.535	17x12	110	2.355	75	2.505	1996	4473	6.5
750	61	0.968	1.664	320	1.724	21x12	110	2.544	75	2.694	2869	5638	7
1000	61	1.117	1.813	320	1.873	21x12	110	2.693	75	2.843	3653	6648	7.5

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	13.6	669	0.128	0.175	0.07	0.063	0.416+j0.136	0.179+j0.068	3879	245	244
1/0	13.9	844	0.102	0.139	0.065	0.061	0.380+j0.134	0.143+j0.066	3879	278	272
2/0	14.2	1064	0.082	0.112	0.061	0.059	0.353+j0.133	0.116+j0.064	3879	316	303
3/0	14.5	1342	0.064	0.087	0.057	0.057	0.287+j0.096	0.092+j0.061	4987	356	333
4/0	15.3	1692	0.051	0.07	0.053	0.055	0.270+j0.094	0.075+j0.060	4987	403	367
250	15.7	2000	0.043	0.059	0.049	0.054	0.228+j0.073	0.064+j0.058	6095	455	411
350	16.4	2800	0.031	0.043	0.044	0.051	0.190+j0.059	0.049+j0.055	7203	537	459
500	17.5	4000	0.021	0.03	0.039	0.048	0.145+j0.043	0.038+j0.052	9420	616	499
750	18.9	6000	0.014	0.021	0.033	0.045	0.115+j0.034	0.030+j0.048	11636	716	557
1000	19.9	8000	0.011	0.018	0.03	0.043	0.112+j0.033	0.026+j0.046	11636	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)

Cond. Size	Strand	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Concentric Neutral	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
1	19	8.18	25.40	8.13	26.92	7x12	2.03	46.23	1.52	49.28	705	3089	5
1/0	19	9.19	26.42	8.13	27.94	7x12	2.03	47.24	1.52	50.29	813	3281	5
2/0	19	10.29	27.51	8.13	29.03	7x12	2.03	48.34	1.52	51.38	943	3503	5.5
3/0	19	11.58	28.80	8.13	30.33	9x12	2.03	49.63	1.52	52.68	1159	3826	5.5
4/0	19	13.00	30.23	8.13	31.75	9x12	2.79	52.58	1.52	55.63	1368	4323	5.5
250	37	14.17	31.60	8.13	33.12	11x12	2.79	53.95	1.52	57.00	1613	4694	6
350	37	16.79	34.21	8.13	35.74	13x12	2.79	56.57	1.52	59.61	2165	5472	6
500	37	20.04	37.47	8.13	38.99	17x12	2.79	59.82	1.91	63.63	2970	6657	6.5
750	61	24.59	42.27	8.13	43.79	21x12	2.79	64.62	1.91	68.43	4270	8390	7
1000	61	28.37	46.05	8.13	47.57	21x12	2.79	68.40	1.91	72.21	5436	9893	7.5

All dimensions are nominal and subject to normal manufacturing tolerances
◊ Cable marked with this symbol is a standard stock item
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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
1	345.44	2977	0.4199	0.57	0.0213	0.2067	0.416+j0.136	0.179+j0.068	3879	245	244
1/0	353.06	3756	0.3346	0.46	0.0198	0.2001	0.380+j0.134	0.143+j0.066	3879	278	272
2/0	360.68	4735	0.2690	0.37	0.0186	0.1936	0.353+j0.133	0.116+j0.064	3879	316	303
3/0	368.30	5972	0.2100	0.29	0.0174	0.1870	0.287+j0.096	0.092+j0.061	4987	356	333
4/0	388.62	7529	0.1673	0.23	0.0162	0.1804	0.270+j0.094	0.075+j0.060	4987	403	367
250	398.78	8900	0.1411	0.19	0.0149	0.1772	0.228+j0.073	0.064+j0.058	6095	455	411
350	416.56	12460	0.1017	0.14	0.0134	0.1673	0.190+j0.059	0.049+j0.055	7203	537	459
500	444.50	17800	0.0689	0.10	0.0119	0.1575	0.145+j0.043	0.038+j0.052	9420	616	499
750	480.06	26700	0.0459	0.07	0.0101	0.1476	0.115+j0.034	0.030+j0.048	11636	716	557
1000	505.46	35600	0.0361	0.06	0.0091	0.1411	0.112+j0.033	0.026+j0.046	11636	825	608

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

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