HVTECK CU 1/C 90TRXLPE CB PVC AIA PVC 5kV 100% CSA

Single Conductor, 90 Mils Tree Retardant Cross Linked Polyethylene, 100% Insulation Level, Concentric Bond, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

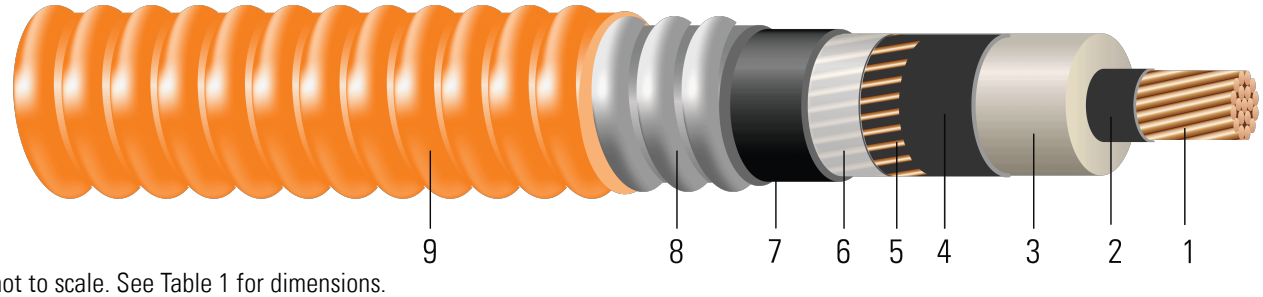

Image not to scale. See Table 1 for dimensions.

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:** 90 Mils Tree Retardant Cross Linked Polyethylene 100% 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:** Orange Polyvinyl Chloride (PVC) Jacket

APPLICATIONS AND FEATURES:

Southwire's 5kV 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)
- 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 90 TRXLPE AIA 5kV 100% 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
AWG/ Kcmil	No.	inch	inch	mil	inch	No. x AWG	mil	inch	mil	inch	lb/ 1000ft	lb/1000ft
2	7	0.282	0.500	90	0.560	7x14	65	1.040	50	1.140	299	735
1	19	0.322	0.540	90	0.600	11x14	80	1.110	50	1.210	407	901
1/0	19	0.361	0.579	90	0.639	11x14	80	1.149	50	1.249	474	992
2/0	19	0.405	0.623	90	0.683	11x14	80	1.193	50	1.293	559	1107
3/0	19	0.456	0.674	90	0.734	13x14	80	1.354	50	1.454	694	1285
4/0	19	0.512	0.730	90	0.790	13x14	80	1.410	50	1.510	829	1455
250	37	0.558	0.784	90	0.844	17x14	80	1.464	50	1.564	1001	1666
350	37	0.661	0.887	90	0.947	21x14	80	1.601	60	1.721	1365	2145
500	37	0.789	1.015	90	1.075	26x14	80	1.753	60	1.873	1896	2796
750	61	0.968	1.204	90	1.264	21x12	80	1.942	60	2.062	2753	3890
1000	61	1.117	1.353	90	1.413	21x12	110	2.151	60	2.271	3525	4898

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

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	13.7	530	0.162	0.204	0.034	0.054	0.548 + j0.535	0.205 + j0.055	5458	215	221
1	14.5	669	0.128	0.162	0.031	0.052	0.511 + j0.511	0.163 + j0.052	8577	245	247
1/0	15.0	844	0.102	0.128	0.028	0.050	0.481 + j0.491	0.129 + j0.050	8577	278	275
2/0	15.5	1064	0.081	0.102	0.026	0.048	0.459 + j0.468	0.103 + j0.049	8577	317	306
3/0	17.4	1342	0.064	0.081	0.023	0.048	0.438 + j0.443	0.082 + j0.049	10137	357	335
4/0	18.1	1692	0.051	0.065	0.021	0.047	0.424 + j0.418	0.066 + j0.047	10137	404	369
250	18.8	2000	0.043	0.056	0.020	0.045	0.415 + j0.395	0.057 + j0.045	13256	456	412
350	20.7	2800	0.031	0.041	0.017	0.044	0.396 + j0.356	0.042 + j0.044	16376	537	456
500	22.5	4000	0.022	0.030	0.015	0.042	0.378 + j0.314	0.031 + j0.042	20275	616	497
750	24.7	6000	0.014	0.023	0.012	0.039	0.356 + j0.262	0.024 + j0.039	26018	706	551
1000	27.3	8000	0.011	0.019	0.011	0.038	0.339 + j0.229	0.020 + j0.038	26018	813	596

* 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
AWG/ Kcmil	No.	mm	mm	mm	mm	No. x AWG	mm	mm	mm	mm	kg/km	kg/km
2	7	7.16	12.70	2.29	14.22	7x14	1.65	26.42	1.27	28.96	445	1094
1	19	8.18	13.72	2.29	15.24	11x14	2.03	28.19	1.27	30.73	606	1341
1/0	19	9.17	14.71	2.29	16.23	11x14	2.03	29.18	1.27	31.72	705	1476
2/0	19	10.29	15.82	2.29	17.35	11x14	2.03	30.30	1.27	32.84	832	1647
3/0	19	11.58	17.12	2.29	18.64	13x14	2.03	34.39	1.27	36.93	1033	1912
4/0	19	13.00	18.54	2.29	20.07	13x14	2.03	35.81	1.27	38.35	1234	2165
250	37	14.17	19.91	2.29	21.44	17x14	2.03	37.19	1.27	39.73	1490	2479
350	37	16.79	22.53	2.29	24.05	21x14	2.03	40.67	1.52	43.71	2031	3192
500	37	20.04	25.78	2.29	27.30	26x14	2.03	44.53	1.52	47.57	2822	4161
750	61	24.59	30.58	2.29	32.11	21x12	2.03	49.33	1.52	52.37	4097	5789
1000	61	28.37	34.37	2.29	35.89	21x12	2.79	54.64	1.52	57.68	5246	7289

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

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	347.98	2359	0.5315	0.67	0.0104	0.1772	0.548 + j0.535	0.205 + j0.055	5458	215	221
1	368.30	2977	0.4199	0.53	0.0094	0.1706	0.511 + j0.511	0.163 + j0.052	8577	245	247
1/0	381.00	3756	0.3346	0.42	0.0085	0.1640	0.481 + j0.491	0.129 + j0.050	8577	278	275
2/0	393.70	4735	0.2657	0.33	0.0079	0.1575	0.459 + j0.468	0.103 + j0.049	8577	317	306
3/0	441.96	5972	0.2100	0.27	0.0070	0.1575	0.438 + j0.443	0.082 + j0.049	10137	357	335
4/0	459.74	7529	0.1673	0.21	0.0064	0.1542	0.424 + j0.418	0.066 + j0.047	10137	404	369
250	477.52	8900	0.1411	0.18	0.0061	0.1476	0.415 + j0.395	0.057 + j0.045	13256	456	412
350	525.78	12460	0.1017	0.13	0.0052	0.1444	0.396 + j0.356	0.042 + j0.044	16376	537	456
500	571.50	17800	0.0722	0.10	0.0046	0.1378	0.378 + j0.314	0.031 + j0.042	20275	616	497
750	627.38	26700	0.0459	0.08	0.0037	0.1280	0.356 + j0.262	0.024 + j0.039	26018	706	551
1000	693.42	35600	0.0361	0.06	0.0034	0.1247	0.339 + j0.229	0.020 + j0.038	26018	813	596

* 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