HVTECK CU 1/C 115TRXLPE CB PVC AIA PVC 5kV 133% CSA

Single Conductor, 115 Mils Tree Retardant Cross Linked Polyethylene, 133% Insulation Level, Concentric Bond, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

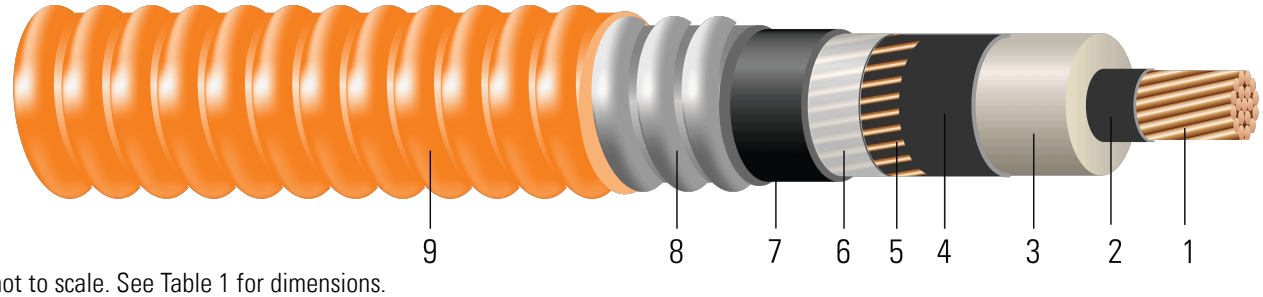


Image not to scale. See Table 1 for dimensions.

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:** 115 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:** 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)

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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 115 TRXLPE AIA 5kV 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
2	7	0.283	0.551	115	0.611	5x12	80	1.271	50	1.371	336	1122	3.5
1	19	0.322	0.59	115	0.65	7x12	80	1.31	50	1.41	441	1264	3.5
1/0	19	0.362	0.63	115	0.69	7x12	80	1.35	50	1.45	512	1373	3.5
2/0	19	0.405	0.673	115	0.733	7x12	80	1.393	50	1.493	600	1502	4
3/0	19	0.456	0.724	115	0.784	9x12	80	1.444	50	1.544	746	1696	4
4/0	19	0.512	0.78	115	0.84	9x12	80	1.6	60	1.72	885	2064	4.5
250	37	0.558	0.834	115	0.894	11x12	80	1.654	60	1.774	1051	2291	4.5
500	37	0.789	1.065	115	1.125	17x12	80	1.885	60	2.005	1963	3448	5
750	61	0.968	1.254	115	1.314	21x12	110	2.134	60	2.254	2835	4647	6
1000	61	1.117	1.403	115	1.463	21x12	110	2.283	75	2.433	3619	5663	6.5

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
2	9.6	530	0.162	0.221	0.037	0.058	0.522+j0.194	0.224+j0.064	2770	215	221
1	9.9	669	0.128	0.175	0.034	0.056	0.420+j0.123	0.179+j0.061	3879	245	247
1/0	10.2	844	0.102	0.139	0.031	0.054	0.383+j0.122	0.143+j0.059	3879	278	275
2/0	10.5	1064	0.082	0.112	0.028	0.052	0.356+j0.120	0.116+j0.057	3879	317	306
3/0	10.8	1342	0.064	0.087	0.026	0.05	0.289+j0.085	0.092+j0.055	4987	357	335
4/0	12	1692	0.051	0.07	0.024	0.05	0.271+j0.084	0.075+j0.054	4987	404	369
250	12.4	2000	0.043	0.059	0.022	0.048	0.230+j0.064	0.065+j0.053	6095	456	412
500	14	4000	0.021	0.03	0.017	0.043	0.145+j0.036	0.038+j0.046	9420	616	497
750	15.8	6000	0.014	0.021	0.014	0.041	0.116+j0.027	0.031+j0.043	11636	706	551
1000	17	8000	0.011	0.018	0.012	0.04	0.112+j0.027	0.027+j0.042	11636	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	Conduit Size*
AWG/ Kcmil	No.	mm	mm	mm	mm	No. x AWG	mm	mm	mm	mm	kg/km	kg/km	inch
2	7	7.19	14.00	2.92	15.52	5x12	2.03	32.28	1.27	34.82	500	1670	3.5
1	19	8.18	14.99	2.92	16.51	7x12	2.03	33.27	1.27	35.81	656	1881	3.5
1/0	19	9.19	16.00	2.92	17.53	7x12	2.03	34.29	1.27	36.83	762	2043	3.5
2/0	19	10.29	17.09	2.92	18.62	7x12	2.03	35.38	1.27	37.92	893	2235	4
3/0	19	11.58	18.39	2.92	19.91	9x12	2.03	36.68	1.27	39.22	1110	2524	4
4/0	19	13.00	19.81	2.92	21.34	9x12	2.03	40.64	1.52	43.69	1317	3072	4.5
250	37	14.17	21.18	2.92	22.71	11x12	2.03	42.01	1.52	45.06	1564	3409	4.5
500	37	20.04	27.05	2.92	28.58	17x12	2.03	47.88	1.52	50.93	2921	5131	5
750	61	24.59	31.85	2.92	33.38	21x12	2.79	54.20	1.52	57.25	4219	6915	6
1000	61	28.37	35.64	2.92	37.16	21x12	2.79	57.99	1.91	61.80	5386	8427	6.5

All dimensions are nominal and subject to normal manufacturing tolerances
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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
2	243.84	2359	0.5315	0.73	0.0113	0.1903	0.522+j0.194	0.224+j0.064	2770	215	221
1	251.46	2977	0.4199	0.57	0.0104	0.1837	0.420+j0.123	0.179+j0.061	3879	245	247
1/0	259.08	3756	0.3346	0.46	0.0094	0.1772	0.383+j0.122	0.143+j0.059	3879	278	275
2/0	266.70	4735	0.2690	0.37	0.0085	0.1706	0.356+j0.120	0.116+j0.057	3879	317	306
3/0	274.32	5972	0.2100	0.29	0.0079	0.1640	0.289+j0.085	0.092+j0.055	4987	357	335
4/0	304.80	7529	0.1673	0.23	0.0073	0.1640	0.271+j0.084	0.075+j0.054	4987	404	369
250	314.96	8900	0.1411	0.19	0.0067	0.1575	0.230+j0.064	0.065+j0.053	6095	456	412
500	355.60	17800	0.0689	0.10	0.0052	0.1411	0.145+j0.036	0.038+j0.046	9420	616	497
750	401.32	26700	0.0459	0.07	0.0043	0.1345	0.116+j0.027	0.031+j0.043	11636	706	551
1000	431.80	35600	0.0361	0.06	0.0037	0.1312	0.112+j0.027	0.027+j0.042	11636	813	596

* 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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