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

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

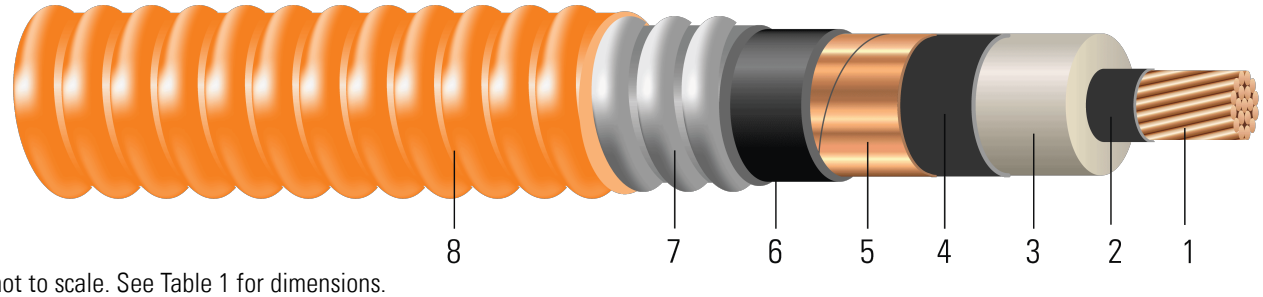


Image not to scale. See Table 1 for dimensions.

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:** 115 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:** 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)

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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 115 TRXLPE AIA 5kV 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	Conduit Size*
	AWG/ Kcmil	No.	inch	inch	mil	inch	mil	inch	mil	inch	lb/ 1000ft	lb/ 1000ft	inch
TBA	2	7	0.283	0.551	115	0.611	65	0.971	50	1.071	255	717	2.5
TBA	1	19	0.322	0.59	115	0.65	65	1.01	50	1.11	312	800	3
TBA	1/0	19	0.362	0.63	115	0.69	80	1.08	50	1.18	383	929	3
TBA	2/0	19	0.405	0.673	115	0.733	80	1.123	50	1.223	471	1048	3
TBA	3/0	19	0.456	0.724	115	0.784	80	1.174	50	1.274	583	1196	3
TBA	4/0	19	0.512	0.78	115	0.84	80	1.23	50	1.33	722	1374	3.5
TBA	250	37	0.558	0.834	115	0.894	80	1.284	50	1.384	846	1541	3.5
TBA	350	37	0.661	0.937	115	0.997	80	1.387	50	1.487	1163	1931	4
137803	500	37	0.789	1.042	115	1.102	80	1.614	60	1.734	1638	2502	4.5
TBA	500	37	0.789	1.065	115	1.125	80	1.615	60	1.735	1637	2675	4.5
TBA	750	61	0.968	1.254	115	1.314	80	1.804	60	1.924	2424	3625	5
TBA	1000	61	1.117	1.403	115	1.463	80	1.953	60	2.073	3208	4533	5.5

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	7.5	530	0.162	0.221	0.037	0.052	0.556+j0.543	0.222+j0.059	1924	215	221
1	7.8	669	0.128	0.175	0.034	0.05	0.516+j0.523	0.176+j0.056	2045	245	247
1/0	8.3	844	0.102	0.139	0.031	0.049	0.483+j0.503	0.140+j0.054	2169	278	275
2/0	8.6	1064	0.082	0.112	0.028	0.047	0.460+j0.484	0.113+j0.053	2302	317	306
3/0	8.9	1342	0.064	0.087	0.026	0.045	0.438+j0.461	0.088+j0.051	2460	357	335
4/0	9.3	1692	0.051	0.07	0.024	0.044	0.424+j0.438	0.071+j0.049	2634	404	369
250	9.7	2000	0.043	0.059	0.022	0.043	0.414+j0.417	0.060+j0.048	2801	456	412
350	10.4	2800	0.031	0.043	0.019	0.04	0.397+j0.380	0.044+j0.046	3120	537	456
500	12.1	4000	0.021	0.03	0.015	0.04	0.379+j0.345	0.031+j0.045	3445	616	497
500	12.1	4000	0.021	0.03	0.017	0.04	0.379+j0.339	0.031+j0.045	3517	616	497
750	13.5	6000	0.014	0.021	0.014	0.037	0.359+j0.289	0.022+j0.043	4102	706	551
1000	14.5	8000	0.011	0.018	0.012	0.036	0.346+j0.256	0.020+j0.041	4564	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)

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	Conduit Size*
	AWG/ Kcmil	No.	mm	mm	mm	mm	mm	mm	mm	mm	kg/km	kg/km	inch
TBA	2	7	7.19	14.00	2.92	15.52	1.65	24.66	1.27	27.20	379	1067	2.5
TBA	1	19	8.18	14.99	2.92	16.51	1.65	25.65	1.27	28.19	464	1191	3
TBA	1/0	19	9.19	16.00	2.92	17.53	2.03	27.43	1.27	29.97	570	1383	3
TBA	2/0	19	10.29	17.09	2.92	18.62	2.03	28.52	1.27	31.06	701	1560	3
TBA	3/0	19	11.58	18.39	2.92	19.91	2.03	29.82	1.27	32.36	868	1780	3
TBA	4/0	19	13.00	19.81	2.92	21.34	2.03	31.24	1.27	33.78	1074	2045	3.5
TBA	250	37	14.17	21.18	2.92	22.71	2.03	32.61	1.27	35.15	1259	2293	3.5
TBA	350	37	16.79	23.80	2.92	25.32	2.03	35.23	1.27	37.77	1731	2874	4
137803	500	37	20.04	26.47	2.92	27.99	2.03	41.00	1.52	44.04	2438	3723	4.5
TBA	500	37	20.04	27.05	2.92	28.58	2.03	41.02	1.52	44.07	2436	3981	4.5
TBA	750	61	24.59	31.85	2.92	33.38	2.03	45.82	1.52	48.87	3607	5395	5
TBA	1000	61	28.37	35.64	2.92	37.16	2.03	49.61	1.52	52.65	4774	6746	5.5

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 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	190.50	2359	0.5315	0.73	0.0113	0.1706	0.556+j0.543	0.222+j0.059	1924	215	221
1	198.12	2977	0.4199	0.57	0.0104	0.1640	0.516+j0.523	0.176+j0.056	2045	245	247
1/0	210.82	3756	0.3346	0.46	0.0094	0.1608	0.483+j0.503	0.140+j0.054	2169	278	275
2/0	218.44	4735	0.2690	0.37	0.0085	0.1542	0.460+j0.484	0.113+j0.053	2302	317	306
3/0	226.06	5972	0.2100	0.29	0.0079	0.1476	0.438+j0.461	0.088+j0.051	2460	357	335
4/0	236.22	7529	0.1673	0.23	0.0073	0.1444	0.424+j0.438	0.071+j0.049	2634	404	369
250	246.38	8900	0.1411	0.19	0.0067	0.1411	0.414+j0.417	0.060+j0.048	2801	456	412
350	264.16	12460	0.1017	0.14	0.0058	0.1312	0.397+j0.380	0.044+j0.046	3120	537	456
500	307.34	17800	0.0689	0.10	0.0046	0.1312	0.379+j0.345	0.031+j0.045	3445	616	497
500	307.34	17800	0.0689	0.10	0.0052	0.1312	0.379+j0.339	0.031+j0.045	3517	616	497
750	342.90	26700	0.0459	0.07	0.0043	0.1214	0.359+j0.289	0.022+j0.043	4102	706	551
1000	368.30	35600	0.0361	0.06	0.0037	0.1181	0.346+j0.256	0.020+j0.041	4564	813	596

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

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