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

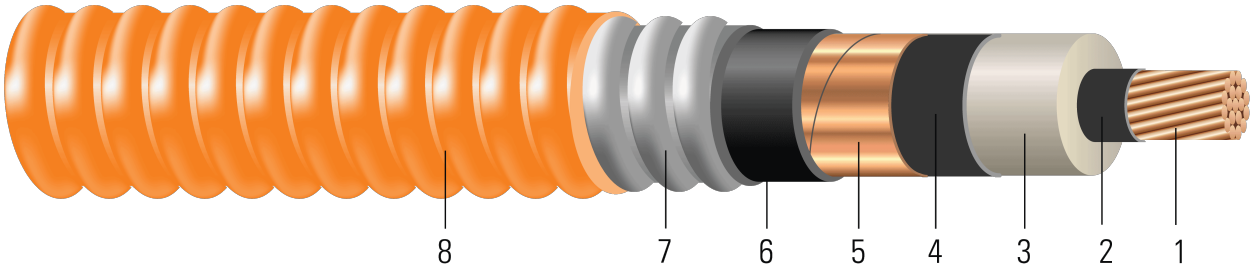

Image not to scale. See Table 1 for dimensions.

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
	AWG/ Kcmil	No.	inch	inch	mil	inch	mil	inch	mil	inch	lb/1000ft	lb/1000ft
TBA	2	7	0.282	0.550	115	0.610	65	0.982	50	1.082	216	653
TBA	1	19	0.322	0.590	115	0.650	65	1.022	50	1.122	271	734
TBA	1/0	19	0.361	0.629	115	0.689	80	1.091	50	1.191	339	861
TBA	2/0	19	0.405	0.673	115	0.733	80	1.135	50	1.235	425	976
TBA	3/0	19	0.456	0.724	115	0.784	80	1.186	50	1.286	534	1120
TBA	4/0	19	0.512	0.780	115	0.840	80	1.352	50	1.452	670	1306
TBA	250	37	0.558	0.834	115	0.894	80	1.406	50	1.506	789	1465
TBA	350	37	0.661	0.937	115	0.997	80	1.509	60	1.629	1101	1881
137803	500	37	0.789	1.042	115	1.102	80	1.614	60	1.734	1632	2497
TBA	500	37	0.789	1.065	115	1.125	80	1.661	60	1.781	1567	2471
TBA	750	61	0.968	1.254	115	1.314	80	1.850	60	1.970	2342	3483
TBA	1000	61	1.117	1.403	115	1.463	80	1.999	60	2.119	3117	4377

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	13.0	530	0.162	0.204	0.040	0.053	0.559 + j0.510	0.205 + j0.054	1920	215	221
1	13.5	669	0.128	0.162	0.037	0.050	0.521 + j0.487	0.163 + j0.051	2044	245	247
1/0	14.3	844	0.102	0.128	0.034	0.049	0.489 + j0.466	0.129 + j0.049	2165	278	275
2/0	14.8	1064	0.081	0.102	0.031	0.047	0.465 + j0.445	0.103 + j0.048	2302	317	306
3/0	15.4	1342	0.064	0.081	0.028	0.046	0.445 + j0.421	0.082 + j0.046	2459	357	335
4/0	17.4	1692	0.051	0.065	0.026	0.046	0.427 + j0.397	0.066 + j0.046	2633	404	369
250	18.1	2000	0.043	0.056	0.024	0.045	0.417 + j0.375	0.057 + j0.045	2800	456	412
350	19.5	2800	0.031	0.041	0.021	0.042	0.397 + j0.337	0.042 + j0.042	3120	537	456
500	21.4	4000	0.022	0.030	0.018	0.040	0.377 + j0.297	0.031 + j0.040	3516	616	497
500	21.4	4000	0.022	0.030	0.018	0.040	0.377 + j0.297	0.031 + j0.040	3516	616	497
750	23.6	6000	0.014	0.023	0.015	0.038	0.354 + j0.249	0.024 + j0.038	4102	706	551
1000	25.4	8000	0.011	0.019	0.013	0.036	0.336 + j0.218	0.020 + j0.036	4563	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

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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	2	7	7.16	13.97	2.92	15.49	1.65	24.94	1.27	27.48	321	972
TBA	1	19	8.18	14.99	2.92	16.51	1.65	25.96	1.27	28.50	403	1092
TBA	1/0	19	9.17	15.98	2.92	17.50	2.03	27.71	1.27	30.25	504	1281
TBA	2/0	19	10.29	17.09	2.92	18.62	2.03	28.83	1.27	31.37	632	1452
TBA	3/0	19	11.58	18.39	2.92	19.91	2.03	30.12	1.27	32.66	795	1667
TBA	4/0	19	13.00	19.81	2.92	21.34	2.03	34.34	1.27	36.88	997	1944
TBA	250	37	14.17	21.18	2.92	22.71	2.03	35.71	1.27	38.25	1174	2180
TBA	350	37	16.79	23.80	2.92	25.32	2.03	38.33	1.52	41.38	1638	2799
137803	500	37	20.04	26.47	2.92	27.99	2.03	41.00	1.52	44.04	2429	3716
TBA	500	37	20.04	27.05	2.92	28.58	2.03	42.19	1.52	45.24	2332	3677
TBA	750	61	24.59	31.85	2.92	33.38	2.03	46.99	1.52	50.04	3485	5183
TBA	1000	61	28.37	35.64	2.92	37.16	2.03	50.77	1.52	53.82	4639	6514

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
2	330.20	2359	0.5315	0.67	0.0122	0.1739	0.559 + j0.510	0.205 + j0.054	1920	215	221
1	342.90	2977	0.4199	0.53	0.0113	0.1640	0.521 + j0.487	0.163 + j0.051	2044	245	247
1/0	363.22	3756	0.3346	0.42	0.0104	0.1608	0.489 + j0.466	0.129 + j0.049	2165	278	275
2/0	375.92	4735	0.2657	0.33	0.0094	0.1542	0.465 + j0.445	0.103 + j0.048	2302	317	306
3/0	391.16	5972	0.2100	0.27	0.0085	0.1509	0.445 + j0.421	0.082 + j0.046	2459	357	335
4/0	441.96	7529	0.1673	0.21	0.0079	0.1509	0.427 + j0.397	0.066 + j0.046	2633	404	369
250	459.74	8900	0.1411	0.18	0.0073	0.1476	0.417 + j0.375	0.057 + j0.045	2800	456	412
350	495.30	12460	0.1017	0.13	0.0064	0.1378	0.397 + j0.337	0.042 + j0.042	3120	537	456
500	543.56	17800	0.0722	0.10	0.0055	0.1312	0.377 + j0.297	0.031 + j0.040	3516	616	497
500	543.56	17800	0.0722	0.10	0.0055	0.1312	0.377 + j0.297	0.031 + j0.040	3516	616	497
750	599.44	26700	0.0459	0.08	0.0046	0.1247	0.354 + j0.249	0.024 + j0.038	4102	706	551
1000	645.16	35600	0.0361	0.06	0.0040	0.1181	0.336 + j0.218	0.020 + j0.036	4563	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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