



# HVTECK CU 3/C 115TRXLPE TS PVC AIA PVC 5kV 133% or 8kV 100% CSA

3 Conductor, 115 Mils Tree Retardant Cross Linked Polyethylene, 5kV 133% or 8kV 100% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

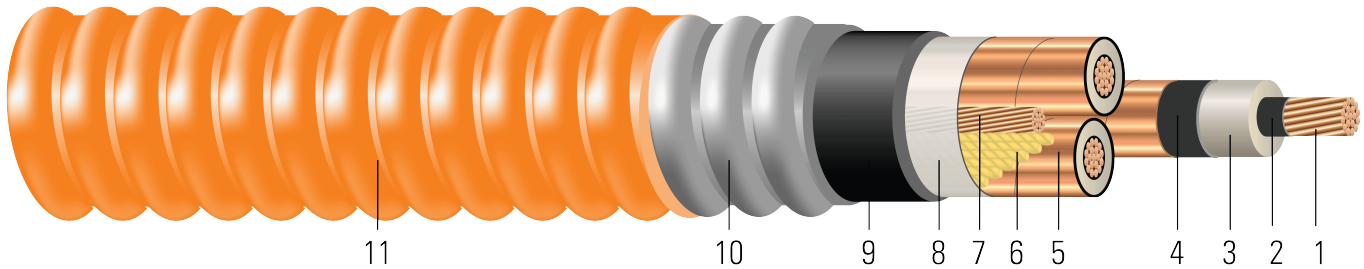


Image not to scale. See Table 1 for dimensions.

## 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. **Filler:** Interstices filled with non-hydroscoping/non-wicking fillers
7. **Grounding Conductor:** Class B compressed stranded bare copper ground per ASTM B3 and ASTM B8
8. **Binder:** Polypropylene tape
9. **Inner Jacket:** PVC inner jacket
10. **Armour:** Aluminum Interlocked Armour (AIA)
11. **Overall Jacket:** Orange Polyvinyl Chloride (PVC) Jacket

## APPLICATIONS AND FEATURES:

Southwire's 5kV / 8kV 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. For installation in cable trays, duct banks, direct burial, troughs, continuous rigid cable supports and concrete encaseable. 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
- 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:**

{SQMTR} {CSA} SOUTHWIRE® POWER CABLE {NESC} 3/C XXX KCMIL CU X.XXmm (115 mils) TR-XLPE AIA GW 1 X X AWG CU 5KV 133%/8KV 100% INS LEVEL 25%TS SUN. RES. 105°C FT4 HL (-40°C) LTGG RoHS

**Table 1 – Weights and Measurements**

Stock Number	Cond. Size	Strand	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Ground Size	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Copper Weight	Approx. Weight
	AWG/ Kcmil	No.	inch	inch	mil	inch	AWG	mil	inch	mil	inch	lb/ 1000ft	lb/ 1000ft
672897	2	7	0.282	0.545	115	0.605	6	80	1.873	60	1.993	876	2232
671975	1	19	0.322	0.590	115	0.650	6	80	1.957	60	2.077	1037	2356
672905	1/0	19	0.361	0.630	115	0.690	6	110	2.104	60	2.224	1257	2896
672947	2/0	19	0.405	0.674	115	0.734	6	110	2.199	60	2.319	1517	3134
TBA	3/0	19	0.456	0.724	115	0.784	4	110	2.313	75	2.463	1744	3637
599001	4/0	19	0.512	0.766	115	0.826	4	110	2.397	75	2.547	2319	4219
671984	250	37	0.558	0.818	115	0.878	4	110	2.510	75	2.660	2689	4697
640917	350	37	0.661	0.917	115	0.977	3	110	2.724	75	2.874	3680	5967
599006	500	37	0.789	1.042	115	1.102	3	110	2.994	75	3.144	5111	7708
674110 <sup>^</sup>	500	37	0.789	1.042	115	1.102	3	110	2.994	75	3.144	5111	7712
671381	750	61	0.968	1.254	115	1.314	2	125	3.502	85	3.672	7539	10935
TBA	1000	61	1.117	1.403	115	1.463	1	125	3.809	85	3.979	9693	13639

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

<sup>^</sup> Stock Code: 674110. Yellow Jacket





**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	14.0	1592	0.162	0.204	0.040	0.040	0.574 + j0.516	0.204 + j0.041	1920	172	201
1	14.5	2008	0.128	0.162	0.037	0.039	0.535 + j0.492	0.162 + j0.039	2044	197	228
1/0	15.6	2534	0.102	0.128	0.034	0.037	0.502 + j0.471	0.128 + j0.037	2165	225	257
2/0	16.2	3194	0.081	0.102	0.031	0.036	0.477 + j0.449	0.102 + j0.036	2302	260	292
3/0	17.2	4027	0.064	0.081	0.030	0.030	0.456 + j0.424	0.081 + j0.035	2459	297	330
4/0	17.8	5078	0.051	0.065	0.024	0.034	0.439 + j0.399	0.065 + j0.034	2633	342	372
250	18.6	6000	0.043	0.056	0.023	0.033	0.428 + j0.376	0.056 + j0.033	2800	376	410
350	20.1	8400	0.031	0.041	0.019	0.032	0.406 + j0.338	0.041 + j0.032	3120	460	487
500	22.0	12000	0.022	0.030	0.016	0.030	0.385 + j0.297	0.030 + j0.030	3516	556	573
500	22.0	12000	0.022	0.030	0.016	0.030	0.385 + j0.297	0.030 + j0.030	3516	556	573
750	25.7	18000	0.014	0.023	0.015	0.029	0.360 + j0.248	0.023 + j0.029	4102	678	668
1000	27.9	24000	0.011	0.020	0.013	0.030	0.341 + j0.217	0.020 + j0.028	4563	798	772

\* Inductive impedance is based on non-ferrous conduit with one diameter spacing center-to-center.

\* Calculations are based on 5 mil 25 % over lapping copper tape shield / Conductor temperature of 90°C / Shield temperature of 45°C / Earth resistivity of 100 ohm-meter

\* Ampacities are based on Table D17N of the Canadian Electrical Code Part I (40°C Ambient Air Temperature, indoor installation)

\* Ampacities are based on Table D17E of the Canadian Electrical Code Part I

\* CEC ampacities are based on:

3/C in air copper and aluminum: D17N

3/C direct buried copper and aluminum: D17E





**Table 3 – Weights and Measurements (Metric)**

Stock Number	Cond. Size	Strand	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Ground Size	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Copper Weight	Approx. Weight
	AWG/ Kcmil	No.	mm	mm	mm	mm	AWG	mm	mm	mm	mm	kg/km	kg/km
672897	2	7	7.16	13.84	2.92	15.37	6	2.03	47.57	1.52	50.62	1304	3322
671975	1	19	8.18	14.99	2.92	16.51	6	2.03	49.71	1.52	52.76	1543	3506
672905	1/0	19	9.17	16.00	2.92	17.53	6	2.79	53.44	1.52	56.49	1871	4310
672947	2/0	19	10.29	17.12	2.92	18.64	6	2.79	55.85	1.52	58.90	2258	4664
TBA	3/0	19	11.58	18.39	2.92	19.91	4	2.79	58.75	1.91	62.56	2595	5412
599001	4/0	19	13.00	19.46	2.92	20.98	4	2.79	60.88	1.91	64.69	3451	6279
671984	250	37	14.17	20.78	2.92	22.30	4	2.79	63.75	1.91	67.56	4002	6990
640917	350	37	16.79	23.29	2.92	24.82	3	2.79	69.19	1.91	73.00	5476	8880
599006	500	37	20.04	26.47	2.92	27.99	3	2.79	76.05	1.91	79.86	7606	11471
674110 <sup>^</sup>	500	37	20.04	26.47	2.92	27.99	3	2.79	76.05	1.91	79.86	7606	11477
671381	750	61	24.59	31.85	2.92	33.38	2	3.18	88.95	2.16	93.27	11219	16273
TBA	1000	61	28.37	35.64	2.92	37.16	1	3.18	96.75	2.16	101.07	14425	20297

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

<sup>^</sup> Stock Code: 674110. Yellow Jacket





**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	355.60	7084	0.5315	0.67	0.0122	0.1312	0.574 + j0.516	0.204 + j0.041	1920	172	201
1	368.30	8936	0.4199	0.53	0.0113	0.1280	0.535 + j0.492	0.162 + j0.039	2044	197	228
1/0	396.24	11276	0.3346	0.42	0.0104	0.1214	0.502 + j0.471	0.128 + j0.037	2165	225	257
2/0	411.48	14213	0.2657	0.33	0.0094	0.1181	0.477 + j0.449	0.102 + j0.036	2302	260	292
3/0	436.88	17920	0.2100	0.27	0.0091	0.0984	0.456 + j0.424	0.081 + j0.035	2459	297	330
4/0	452.12	22597	0.1673	0.21	0.0073	0.1115	0.439 + j0.399	0.065 + j0.034	2633	342	372
250	472.44	26700	0.1411	0.18	0.0070	0.1083	0.428 + j0.376	0.056 + j0.033	2800	376	410
350	510.54	37380	0.1017	0.13	0.0058	0.1050	0.406 + j0.338	0.041 + j0.032	3120	460	487
500	558.80	53400	0.0722	0.10	0.0049	0.0984	0.385 + j0.297	0.030 + j0.030	3516	556	573
500	558.80	53400	0.0722	0.10	0.0049	0.0984	0.385 + j0.297	0.030 + j0.030	3516	556	573
750	652.78	80100	0.0459	0.08	0.0046	0.0951	0.360 + j0.248	0.023 + j0.029	4102	678	668
1000	708.66	106800	0.0361	0.07	0.0040	0.0984	0.341 + j0.217	0.020 + j0.028	4563	798	772

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