

## 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

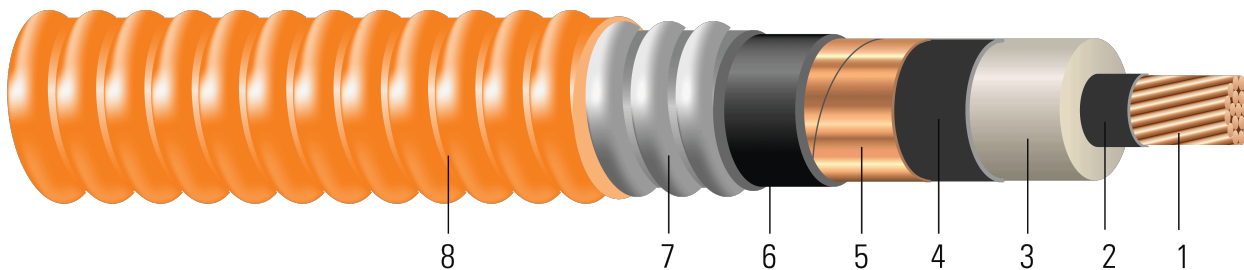


Image not to scale. See Table 1 for dimensions.

### 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)



- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV

## 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**

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	Approx. Weight
AWG/ Kcmil	No.	inch	inch	mil	inch	mil	inch	mil	inch	lb/1000ft
2	7	0.282	0.550	115	0.610	65	0.982	50	1.082	689
1	19	0.322	0.590	115	0.650	65	1.022	50	1.122	772
1/0	19	0.361	0.629	115	0.689	80	1.091	50	1.191	899
2/0	19	0.405	0.673	115	0.733	80	1.135	50	1.235	1019
3/0	19	0.456	0.724	115	0.784	80	1.186	50	1.286	1166
4/0	19	0.512	0.780	115	0.840	80	1.352	50	1.452	1356
250	37	0.558	0.834	115	0.894	80	1.406	50	1.506	1517
350	37	0.661	0.937	115	0.997	80	1.509	60	1.629	1939
500	37	0.789	1.065	115	1.125	80	1.661	60	1.781	2537
750	61	0.968	1.254	115	1.314	80	1.850	60	1.970	3560
1000	61	1.117	1.403	115	1.463	80	1.999	60	2.119	4465

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 @ 60Hz	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	0.204	0.045	0.053	0.558 + j0.514	0.205 + j0.054	1889	215	221
1	7.8	669	0.128	0.162	0.041	0.050	0.52 + j0.492	0.163 + j0.051	2013	245	247
1/0	8.3	844	0.102	0.128	0.037	0.049	0.488 + j0.471	0.129 + j0.049	2134	278	275
2/0	8.6	1064	0.081	0.102	0.034	0.047	0.464 + j0.449	0.103 + j0.048	2270	317	306
3/0	9.0	1342	0.064	0.081	0.031	0.046	0.444 + j0.425	0.082 + j0.046	2429	357	335
4/0	10.1	1692	0.051	0.065	0.028	0.046	0.427 + j0.4	0.066 + j0.046	2602	404	369
250	10.5	2000	0.043	0.056	0.027	0.045	0.417 + j0.379	0.057 + j0.045	2769	456	412
350	11.4	2800	0.031	0.041	0.023	0.042	0.397 + j0.341	0.042 + j0.042	3088	537	456
500	12.4	4000	0.022	0.030	0.020	0.040	0.378 + j0.3	0.031 + j0.04	3485	616	497
750	13.7	6000	0.014	0.023	0.017	0.038	0.355 + j0.251	0.024 + j0.038	4071	706	551
1000	14.8	8000	0.011	0.019	0.015	0.036	0.337 + j0.22	0.02 + j0.036	4532	813	596

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

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

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	Approx. Weight
AWG/Kcmil	No.	mm	mm	mm	mm	mm	mm	mm	mm	kg/km
2	7	7.16	13.97	2.92	15.49	1.65	24.94	1.27	27.48	1025
1	19	8.18	14.99	2.92	16.51	1.65	25.96	1.27	28.50	1149
1/0	19	9.17	15.98	2.92	17.50	2.03	27.71	1.27	30.25	1338
2/0	19	10.29	17.09	2.92	18.62	2.03	28.83	1.27	31.37	1516
3/0	19	11.58	18.39	2.92	19.91	2.03	30.12	1.27	32.66	1735
4/0	19	13.00	19.81	2.92	21.34	2.03	34.34	1.27	36.88	2018
250	37	14.17	21.18	2.92	22.71	2.03	35.71	1.27	38.25	2258
350	37	16.79	23.80	2.92	25.32	2.03	38.33	1.52	41.38	2886
500	37	20.04	27.05	2.92	28.58	2.03	42.19	1.52	45.24	3775
750	61	24.59	31.85	2.92	33.38	2.03	46.99	1.52	50.04	5298
1000	61	28.37	35.64	2.92	37.16	2.03	50.77	1.52	53.82	6645

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 @ 60Hz	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	0.67	0.0137	0.1739	0.558 + j0.514	0.205 + j0.054	1889	215	221
1	198.12	2977	0.4199	0.53	0.0125	0.1640	0.52 + j0.492	0.163 + j0.051	2013	245	247
1/0	210.82	3756	0.3346	0.42	0.0113	0.1608	0.488 + j0.471	0.129 + j0.049	2134	278	275
2/0	218.44	4735	0.2657	0.33	0.0104	0.1542	0.464 + j0.449	0.103 + j0.048	2270	317	306
3/0	228.60	5972	0.2100	0.27	0.0094	0.1509	0.444 + j0.425	0.082 + j0.046	2429	357	335
4/0	256.54	7529	0.1673	0.21	0.0085	0.1509	0.427 + j0.4	0.066 + j0.046	2602	404	369
250	266.70	8900	0.1411	0.18	0.0082	0.1476	0.417 + j0.379	0.057 + j0.045	2769	456	412
350	289.56	12460	0.1017	0.13	0.0070	0.1378	0.397 + j0.341	0.042 + j0.042	3088	537	456
500	314.96	17800	0.0722	0.10	0.0061	0.1312	0.378 + j0.3	0.031 + j0.04	3485	616	497
750	347.98	26700	0.0459	0.08	0.0052	0.1247	0.355 + j0.251	0.024 + j0.038	4071	706	551
1000	375.92	35600	0.0361	0.06	0.0046	0.1181	0.337 + j0.22	0.02 + j0.036	4532	813	596

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

