

## HVTECK CU 1/C 90TRXLPE TS PVC AIA PVC 5kV 100% CSA

Single Conductor, 90 Mils Tree Retardant Cross Linked Polyethylene, 100% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

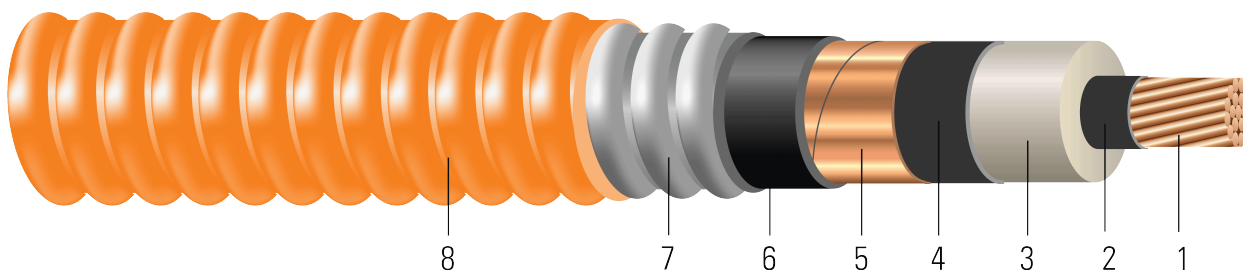


Image not to scale. See Table 1 for dimensions.

### 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:** 90 Mils Tree Retardant Cross Linked Polyethylene 100% 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 (Qualification Test Requirements)

## SAMPLE PRINT LEGEND:

(CSA) SOUTHWIRE (NESC) #P# 1/C [#AWG or #kcmil] CU 90 TRXLPE AIA 5kV 100% 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	Approx. Weight
	AWG/ Kcmil	No.	inch	inch	mil	inch	mil	inch	mil	inch	lb/1000ft
TBA	2	7	0.282	0.500	90	0.560	65	0.932	50	1.032	641
TBA	1	19	0.322	0.540	90	0.600	65	0.972	50	1.072	724
TBA	1/0	19	0.361	0.579	90	0.639	65	1.011	50	1.111	817
TBA	2/0	19	0.405	0.623	90	0.683	80	1.085	50	1.185	965
TBA	3/0	19	0.456	0.674	90	0.734	80	1.136	50	1.236	1110
TBA	4/0	19	0.512	0.730	90	0.790	80	1.192	50	1.292	1286
TBA	250	37	0.558	0.784	90	0.844	80	1.356	50	1.456	1458
TBA	350	37	0.661	0.887	90	0.947	80	1.459	50	1.559	1843
TBA	500	37	0.789	1.015	90	1.075	80	1.587	60	1.707	2433
TBA	750	61	0.968	1.204	90	1.264	80	1.800	60	1.920	3391
599660	1000	61	1.117	1.353	90	1.413	80	1.937	60	2.057	4311

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	7.2	530	0.162	0.204	0.038	0.051	0.551 + j0.539	0.205 + j0.052	1734	215	221
1	7.5	669	0.128	0.162	0.035	0.049	0.514 + j0.515	0.163 + j0.05	1858	245	247
1/0	7.7	844	0.102	0.128	0.031	0.047	0.485 + j0.494	0.129 + j0.048	1979	278	275
2/0	8.2	1064	0.081	0.102	0.029	0.046	0.462 + j0.471	0.103 + j0.047	2116	317	306
3/0	8.6	1342	0.064	0.081	0.026	0.045	0.443 + j0.446	0.082 + j0.045	2274	357	335
4/0	9.0	1692	0.051	0.065	0.024	0.043	0.429 + j0.42	0.066 + j0.043	2447	404	369
250	10.1	2000	0.043	0.056	0.023	0.044	0.418 + j0.397	0.057 + j0.044	2614	456	412
350	10.9	2800	0.031	0.041	0.020	0.041	0.4 + j0.357	0.042 + j0.041	2934	537	456
500	11.9	4000	0.022	0.030	0.017	0.039	0.381 + j0.314	0.031 + j0.04	3330	616	497
750	13.4	6000	0.014	0.023	0.014	0.037	0.359 + j0.262	0.024 + j0.037	3916	706	551
1000	14.3	8000	0.011	0.019	0.013	0.036	0.342 + j0.229	0.02 + j0.036	4377	813	596

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

**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	Approx. Weight
	AWG/Kcmil	No.	mm	mm	mm	mm	mm	mm	mm	mm	kg/km
TBA	2	7	7.16	12.70	2.29	14.22	1.65	23.67	1.27	26.21	954
TBA	1	19	8.18	13.72	2.29	15.24	1.65	24.69	1.27	27.23	1077
TBA	1/0	19	9.17	14.71	2.29	16.23	1.65	25.68	1.27	28.22	1216
TBA	2/0	19	10.29	15.82	2.29	17.35	2.03	27.56	1.27	30.10	1436
TBA	3/0	19	11.58	17.12	2.29	18.64	2.03	28.85	1.27	31.39	1652
TBA	4/0	19	13.00	18.54	2.29	20.07	2.03	30.28	1.27	32.82	1914
TBA	250	37	14.17	19.91	2.29	21.44	2.03	34.44	1.27	36.98	2170
TBA	350	37	16.79	22.53	2.29	24.05	2.03	37.06	1.27	39.60	2743
TBA	500	37	20.04	25.78	2.29	27.30	2.03	40.31	1.52	43.36	3621
TBA	750	61	24.59	30.58	2.29	32.11	2.03	45.72	1.52	48.77	5046
599660	1000	61	28.37	34.37	2.29	35.89	2.03	49.20	1.52	52.25	6415

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	182.88	2359	0.5315	0.67	0.0116	0.1673	0.551 + j0.539	0.205 + j0.052	1734	215	221
1	190.50	2977	0.4199	0.53	0.0107	0.1608	0.514 + j0.515	0.163 + j0.05	1858	245	247
1/0	195.58	3756	0.3346	0.42	0.0094	0.1542	0.485 + j0.494	0.129 + j0.048	1979	278	275
2/0	208.28	4735	0.2657	0.33	0.0088	0.1509	0.462 + j0.471	0.103 + j0.047	2116	317	306
3/0	218.44	5972	0.2100	0.27	0.0079	0.1476	0.443 + j0.446	0.082 + j0.045	2274	357	335
4/0	228.60	7529	0.1673	0.21	0.0073	0.1411	0.429 + j0.42	0.066 + j0.043	2447	404	369
250	256.54	8900	0.1411	0.18	0.0070	0.1444	0.418 + j0.397	0.057 + j0.044	2614	456	412
350	276.86	12460	0.1017	0.13	0.0061	0.1345	0.4 + j0.357	0.042 + j0.041	2934	537	456
500	302.26	17800	0.0722	0.10	0.0052	0.1280	0.381 + j0.314	0.031 + j0.04	3330	616	497
750	340.36	26700	0.0459	0.08	0.0043	0.1214	0.359 + j0.262	0.024 + j0.037	3916	706	551
1000	363.22	35600	0.0361	0.06	0.0040	0.1181	0.342 + j0.229	0.02 + j0.036	4377	813	596

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

