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

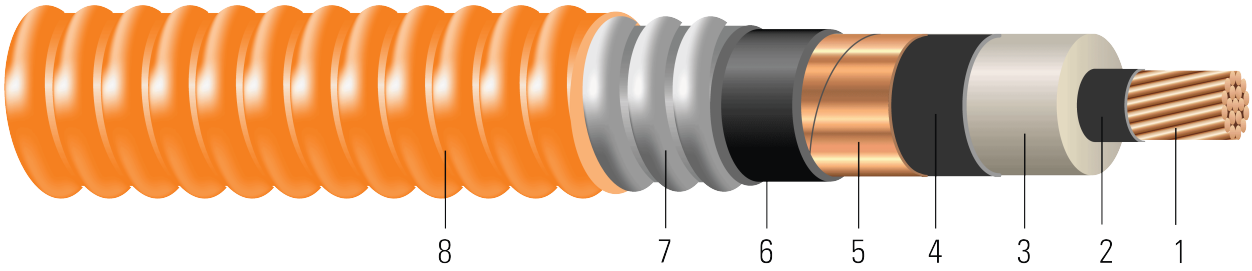

Image not to scale. See Table 1 for dimensions.

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)

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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 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	Copper Weight	Approx. Weight
	AWG/ Kcmil	No.	inch	inch	mil	inch	mil	inch	mil	inch	lb/1000ft	lb/1000ft
TBA	2	7	0.282	0.500	90	0.560	65	0.932	50	1.032	215	609
TBA	1	19	0.322	0.540	90	0.600	65	0.972	50	1.072	270	688
TBA	1/0	19	0.361	0.579	90	0.639	65	1.011	50	1.111	338	780
TBA	2/0	19	0.405	0.623	90	0.683	80	1.085	50	1.185	424	926
TBA	3/0	19	0.456	0.674	90	0.734	80	1.136	50	1.236	533	1067
TBA	4/0	19	0.512	0.730	90	0.790	80	1.192	50	1.292	669	1240
TBA	250	37	0.558	0.784	90	0.844	80	1.356	50	1.456	788	1407
TBA	350	37	0.661	0.887	90	0.947	80	1.459	50	1.559	1100	1786
TBA	500	37	0.789	1.015	90	1.075	80	1.587	60	1.707	1566	2368
TBA	750	61	0.968	1.204	90	1.264	80	1.800	60	1.920	2341	3317
599660	1000	61	1.117	1.353	90	1.413	80	1.937	60	2.057	3199	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 @ 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	12.4	530	0.162	0.204	0.034	0.051	0.553 + j0.534	0.205 + j0.052	1766	215	221
1	12.9	669	0.128	0.162	0.031	0.049	0.516 + j0.511	0.163 + j0.050	1889	245	247
1/0	13.3	844	0.102	0.128	0.028	0.047	0.486 + j0.489	0.129 + j0.048	2010	278	275
2/0	14.2	1064	0.081	0.102	0.026	0.046	0.463 + j0.466	0.103 + j0.047	2147	317	306
3/0	14.8	1342	0.064	0.081	0.023	0.045	0.444 + j0.442	0.082 + j0.045	2305	357	335
4/0	15.5	1692	0.051	0.065	0.021	0.043	0.429 + j0.416	0.066 + j0.043	2478	404	369
250	17.5	2000	0.043	0.056	0.020	0.044	0.418 + j0.393	0.057 + j0.044	2645	456	412
350	18.7	2800	0.031	0.041	0.017	0.041	0.400 + j0.353	0.042 + j0.041	2965	537	456
500	20.5	4000	0.022	0.030	0.015	0.039	0.381 + j0.311	0.031 + j0.040	3361	616	497
750	23.0	6000	0.014	0.023	0.012	0.037	0.358 + j0.259	0.024 + j0.037	3947	706	551
1000	24.7	8000	0.011	0.019	0.011	0.036	0.341 + j0.227	0.020 + j0.036	4408	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
	AWG/ Kcmil	No.	mm	mm	mm	mm	mm	mm	mm	mm	kg/km	kg/km
TBA	2	7	7.16	12.70	2.29	14.22	1.65	23.67	1.27	26.21	320	906
TBA	1	19	8.18	13.72	2.29	15.24	1.65	24.69	1.27	27.23	402	1024
TBA	1/0	19	9.17	14.71	2.29	16.23	1.65	25.68	1.27	28.22	503	1161
TBA	2/0	19	10.29	15.82	2.29	17.35	2.03	27.56	1.27	30.10	631	1378
TBA	3/0	19	11.58	17.12	2.29	18.64	2.03	28.85	1.27	31.39	793	1588
TBA	4/0	19	13.00	18.54	2.29	20.07	2.03	30.28	1.27	32.82	996	1845
TBA	250	37	14.17	19.91	2.29	21.44	2.03	34.44	1.27	36.98	1173	2094
TBA	350	37	16.79	22.53	2.29	24.05	2.03	37.06	1.27	39.60	1637	2658
TBA	500	37	20.04	25.78	2.29	27.30	2.03	40.31	1.52	43.36	2330	3524
TBA	750	61	24.59	30.58	2.29	32.11	2.03	45.72	1.52	48.77	3484	4936
599660	1000	61	28.37	34.37	2.29	35.89	2.03	49.20	1.52	52.25	4761	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 @ 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	314.96	2359	0.5315	0.67	0.0104	0.1673	0.553 + j0.534	0.205 + j0.052	1766	215	221
1	327.66	2977	0.4199	0.53	0.0094	0.1608	0.516 + j0.511	0.163 + j0.050	1889	245	247
1/0	337.82	3756	0.3346	0.42	0.0085	0.1542	0.486 + j0.489	0.129 + j0.048	2010	278	275
2/0	360.68	4735	0.2657	0.33	0.0079	0.1509	0.463 + j0.466	0.103 + j0.047	2147	317	306
3/0	375.92	5972	0.2100	0.27	0.0070	0.1476	0.444 + j0.442	0.082 + j0.045	2305	357	335
4/0	393.70	7529	0.1673	0.21	0.0064	0.1411	0.429 + j0.416	0.066 + j0.043	2478	404	369
250	444.50	8900	0.1411	0.18	0.0061	0.1444	0.418 + j0.393	0.057 + j0.044	2645	456	412
350	474.98	12460	0.1017	0.13	0.0052	0.1345	0.400 + j0.353	0.042 + j0.041	2965	537	456
500	520.70	17800	0.0722	0.10	0.0046	0.1280	0.381 + j0.311	0.031 + j0.040	3361	616	497
750	584.20	26700	0.0459	0.08	0.0037	0.1214	0.358 + j0.259	0.024 + j0.037	3947	706	551
1000	627.38	35600	0.0361	0.06	0.0034	0.1181	0.341 + j0.227	0.020 + j0.036	4408	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