

## HVTECK CU 3/C 90TRXLPE TS PVC AIA PVC 5kV 100% CSA

3 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

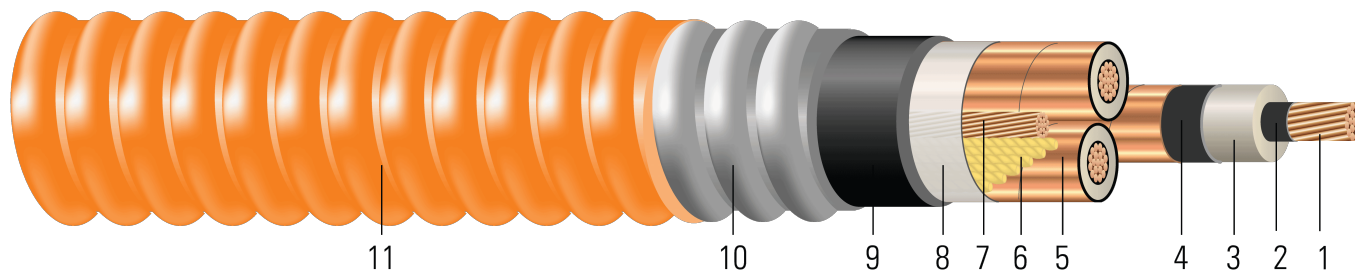


Image not to scale. See Table 1 for dimensions.

### 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. **Filler:** Non-wicking, non-hygroscopic and flame retardant polypropylene filler
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 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)



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Southwire

**CABLETECH  
SUPPORT™**

Services

- 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 (Meets Qualification Test Requirements)

### SAMPLE PRINT LEGEND:

(CSA) SOUTHWIRE (NESC) #P# 3/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	Ground Size	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Approx. Weight
	AWG/ Kcmil	No.	inch	inch	mil	inch	AWG	mil	inch	mil	inch	lb/1000ft
TBA	2	7	0.282	0.500	90	0.560	6	80	1.768	60	1.888	1817
TBA	1	19	0.322	0.540	90	0.600	6	80	1.855	60	1.975	2160
TBA	1/0	19	0.361	0.579	90	0.639	6	80	1.939	60	2.059	2457
TBA	2/0	19	0.405	0.623	90	0.683	6	110	2.094	60	2.214	2938
TBA	3/0	19	0.456	0.674	90	0.734	4	110	2.204	60	2.324	3392
TBA	4/0	19	0.512	0.730	90	0.790	4	110	2.325	75	2.475	4017
TBA	250	37	0.558	0.784	90	0.844	4	110	2.442	75	2.592	4530
590630	350	35	0.661	0.842	90	0.902	2	110	2.562	75	2.712	5732
TBA	500	37	0.789	1.015	90	1.075	3	110	2.941	75	3.091	7500
590631	750	61	0.968	1.144	90	1.204	1	125	3.250	85	3.420	10572
TBA	1000	61	1.117	1.353	90	1.413	1	125	3.701	85	3.871	13357

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	13.2	1592	0.162	0.204	0.038	0.038	0.567 + j0.548	0.204 + j0.039	1734	172	201
1	13.8	2008	0.128	0.162	0.035	0.037	0.529 + j0.523	0.162 + j0.037	1858	197	228
1/0	14.4	2534	0.102	0.128	0.031	0.035	0.499 + j0.5	0.128 + j0.036	1979	225	257
2/0	15.4	3194	0.081	0.102	0.029	0.034	0.475 + j0.476	0.102 + j0.035	2116	260	292
3/0	16.2	4027	0.064	0.081	0.026	0.033	0.456 + j0.45	0.081 + j0.034	2274	297	330
4/0	17.3	5078	0.051	0.065	0.024	0.032	0.44 + j0.423	0.065 + j0.032	2447	342	372
250	18.1	6000	0.043	0.056	0.023	0.032	0.43 + j0.399	0.056 + j0.032	2614	376	410
350	18.9	8400	0.031	0.041	0.020	0.030	0.41 + j0.358	0.041 + j0.031	2934	460	487
500	21.6	12000	0.022	0.030	0.017	0.029	0.39 + j0.314	0.03 + j0.029	3330	556	573
750	23.9	18000	0.014	0.023	0.014	0.028	0.366 + j0.261	0.023 + j0.028	3916	678	668
1000	27.0	24000	0.011	0.019	0.013	0.027	0.347 + j0.227	0.02 + j0.027	4377	798	772

\* 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	Ground Size	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Approx. Weight
	AWG/ Kcmil	No.	mm	mm	mm	mm	AWG	mm	mm	mm	mm	kg/km
TBA	2	7	7.16	12.70	2.29	14.22	6	2.03	44.91	1.52	47.96	2704
TBA	1	19	8.18	13.72	2.29	15.24	6	2.03	47.12	1.52	50.17	3214
TBA	1/0	19	9.17	14.71	2.29	16.23	6	2.03	49.25	1.52	52.30	3656
TBA	2/0	19	10.29	15.82	2.29	17.35	6	2.79	53.19	1.52	56.24	4372
TBA	3/0	19	11.58	17.12	2.29	18.64	4	2.79	55.98	1.52	59.03	5048
TBA	4/0	19	13.00	18.54	2.29	20.07	4	2.79	59.06	1.91	62.87	5978
TBA	250	37	14.17	19.91	2.29	21.44	4	2.79	62.03	1.91	65.84	6741
590630	350	35	16.79	21.39	2.29	22.91	2	2.79	65.07	1.91	68.88	8530
TBA	500	37	20.04	25.78	2.29	27.30	3	2.79	74.70	1.91	78.51	11161
590631	750	61	24.59	29.06	2.29	30.58	1	3.18	82.55	2.16	86.87	15733
TBA	1000	61	28.37	34.37	2.29	35.89	1	3.18	94.01	2.16	98.32	19877

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	335.28	7084	0.5315	0.67	0.0116	0.1247	0.567 + j0.548	0.204 + j0.039	1734	172	201
1	350.52	8936	0.4199	0.53	0.0107	0.1214	0.529 + j0.523	0.162 + j0.037	1858	197	228
1/0	365.76	11276	0.3346	0.42	0.0094	0.1148	0.499 + j0.5	0.128 + j0.036	1979	225	257
2/0	391.16	14213	0.2657	0.33	0.0088	0.1115	0.475 + j0.476	0.102 + j0.035	2116	260	292
3/0	411.48	17920	0.2100	0.27	0.0079	0.1083	0.456 + j0.45	0.081 + j0.034	2274	297	330
4/0	439.42	22597	0.1673	0.21	0.0073	0.1050	0.44 + j0.423	0.065 + j0.032	2447	342	372
250	459.74	26700	0.1411	0.18	0.0070	0.1050	0.43 + j0.399	0.056 + j0.032	2614	376	410
350	480.06	37380	0.1017	0.13	0.0061	0.0984	0.41 + j0.358	0.041 + j0.031	2934	460	487
500	548.64	53400	0.0722	0.10	0.0052	0.0951	0.39 + j0.314	0.03 + j0.029	3330	556	573
750	607.06	80100	0.0459	0.08	0.0043	0.0919	0.366 + j0.261	0.023 + j0.028	3916	678	668
1000	685.80	106800	0.0361	0.06	0.0040	0.0886	0.347 + j0.227	0.02 + j0.027	4377	798	772

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

