HVTECK CU 3/C 140TRXLPE TS PVC AIA PVC 8kV 133% CSA

3 Conductor, 140 Mils Tree Retardant Cross Linked Polyethylene, 133% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

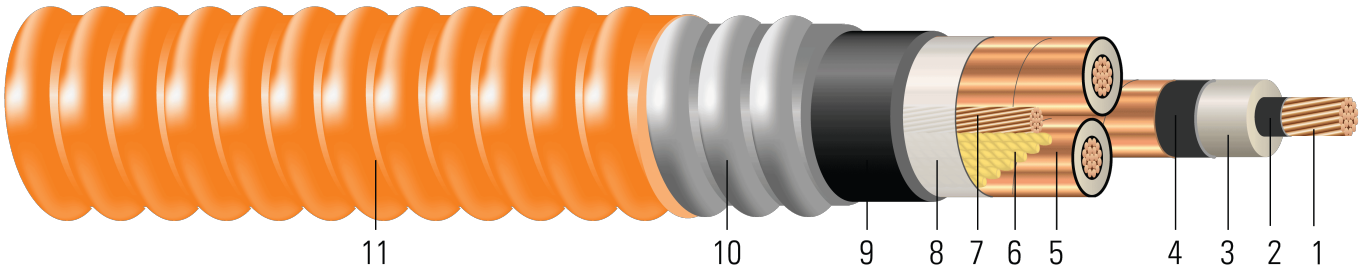

Image not to scale. See Table 1 for dimensions.

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:** 140 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 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. 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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- IEEE 383 Flame Test (70,000 btu)
- IEEE 1202 FT4 Flame Test (70,000) BTU/hr Vertical Tray Test (1/0 and Larger)
- 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:

(CSA) SOUTHWIRE (NESC) #P# 3/C [#AWG or #kcmil] CU 140 TRXLPE AIA 8kV 133% 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	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Copper Weight	Approx. Weight	Conduit Size*
	AWG/ Kcmil	No.	inch	inch	mil	inch	No. x AWG	mil	inch	mil	inch	lb/ 1000ft	lb/ 1000ft	inch
TBA	2	7	0.283	0.601	140	0.661	1x6	80	1.924	60	2.044	868	1905	2.5
668932	2	7	0.283	0.601	140	0.661	1x6	80	1.982	60	2.102	897	2364	2.5
TBA	1	19	0.322	0.64	140	0.7	1x6	110	2.068	60	2.188	1039	2159	3
TBA	1/0	19	0.362	0.68	140	0.74	1x6	110	2.154	60	2.274	1255	2443	3
TBA	2/0	19	0.405	0.723	140	0.783	1x6	110	2.247	60	2.367	1523	2785	3
TBA	3/0	19	0.456	0.774	140	0.834	1x4	110	2.357	75	2.507	1908	3323	3
TBA	4/0	19	0.512	0.83	140	0.89	1x4	110	2.478	75	2.628	2331	3845	3.5
666021	4/0	19	0.512	0.83	140	0.89	1x4	110	2.536	75	2.686	2347	4441	3.5
TBA	250	37	0.558	0.884	140	0.944	1x4	110	2.595	75	2.745	2705	4328	3.5
664670	350	37	0.661	0.987	140	1.047	1x3	110	2.875	75	3.025	3712	6199	4
TBA	500	37	0.789	1.115	140	1.175	1x3	125	3.124	85	3.294	5135	7240	4.5
672305	500	37	0.789	1.092	140	1.152	1x3	125	3.13	85	3.3	5139	7782	4.5
675794	500	37	0.789	1.092	140	1.152	1x3	125	3.13	85	3.3	5139	7771	4.5
TBA	750	61	0.968	1.304	140	1.364	1x2	125	3.532	85	3.702	7563	10042	5
TBA	1000	61	1.117	1.453	140	1.513	1x1	125	3.854	85	4.024	9993	12750	5.5

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
TBA stock codes are estimations only and actual product may vary. Please wait until a stock code is assigned to purchase connectors and/or fittings.

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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	14.3	1592	0.162	0.221	0.043	0.026	0.583+j0.533	0.221+j0.043	2079	172	201
2	14.7	1592	0.162	0.221	0.043	0.026	0.583+j0.533	0.221+j0.043	2079	172	201
1	15.3	2008	0.128	0.175	0.039	0.024	0.540+j0.512	0.175+j0.040	2200	197	228
1/0	15.9	2534	0.102	0.139	0.036	0.023	0.507+j0.492	0.139+j0.039	2324	225	257
2/0	16.6	3194	0.082	0.112	0.033	0.021	0.481+j0.471	0.112+j0.038	2457	260	292
3/0	17.5	4027	0.064	0.087	0.031	0.02	0.458+j0.448	0.087+j0.036	2615	297	330
4/0	18.4	5078	0.051	0.07	0.028	0.019	0.441+j0.425	0.070+j0.035	2789	342	372
4/0	18.8	5078	0.051	0.07	0.028	0.019	0.441+j0.425	0.070+j0.035	2789	342	372
250	19.2	6000	0.043	0.059	0.026	0.018	0.429+j0.404	0.059+j0.034	2956	376	410
350	21.2	8400	0.031	0.043	0.023	0.017	0.409+j0.367	0.043+j0.033	3275	460	487
500	23.1	12000	0.021	0.03	0.02	0.015	0.389+j0.327	0.030+j0.031	3672	556	573
500	23.1	12000	0.021	0.03	0.018	0.015	0.391+j0.333	0.030+j0.031	3600	556	573
500	23.1	12000	0.021	0.03	0.018	0.015	0.391+j0.333	0.030+j0.031	3600	556	573
750	25.9	18000	0.014	0.021	0.016	0.014	0.366+j0.277	0.021+j0.030	4257	678	668
1000	28.2	24000	0.011	0.018	0.015	0.013	0.351+j0.246	0.018+j0.029	4719	798	772

* Inductive impedance is based on non-ferrous conduit with one diameter spacing center-to-center.
***** CEC ampacities are based on:
3/C in air copper and aluminum: D17N
3/C direct buried copper and aluminum: D17E

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Table 3 – Weights and Measurements (Metric)

Stock Number	Cond. Size	Strand	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Ground	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Copper Weight	Approx. Weight	Conduit Size*
	AWG/ Kcmil	No.	mm	mm	mm	mm	No. x AWG	mm	mm	mm	mm	kg/km	kg/km	inch
TBA	2	7	7.19	15.27	3.56	16.79	1x6	2.03	48.87	1.52	51.92	1292	2835	2.5
668932	2	7	7.19	15.27	3.56	16.79	1x6	2.03	50.34	1.52	53.39	1335	3518	2.5
TBA	1	19	8.18	16.26	3.56	17.78	1x6	2.79	52.53	1.52	55.58	1546	3213	3
TBA	1/0	19	9.19	17.27	3.56	18.80	1x6	2.79	54.71	1.52	57.76	1868	3636	3
TBA	2/0	19	10.29	18.36	3.56	19.89	1x6	2.79	57.07	1.52	60.12	2266	4145	3
TBA	3/0	19	11.58	19.66	3.56	21.18	1x4	2.79	59.87	1.91	63.68	2839	4945	3
TBA	4/0	19	13.00	21.08	3.56	22.61	1x4	2.79	62.94	1.91	66.75	3469	5722	3.5
666021	4/0	19	13.00	21.08	3.56	22.61	1x4	2.79	64.41	1.91	68.22	3493	6609	3.5
TBA	250	37	14.17	22.45	3.56	23.98	1x4	2.79	65.91	1.91	69.72	4025	6441	3.5
664670	350	37	16.79	25.07	3.56	26.59	1x3	2.79	73.02	1.91	76.84	5524	9225	4
TBA	500	37	20.04	28.32	3.56	29.85	1x3	3.18	79.35	2.16	83.67	7642	10774	4.5
672305	500	37	20.04	27.74	3.56	29.26	1x3	3.18	79.50	2.16	83.82	7648	11581	4.5
675794	500	37	20.04	27.74	3.56	29.26	1x3	3.18	79.50	2.16	83.82	7648	11565	4.5
TBA	750	61	24.59	33.12	3.56	34.65	1x2	3.18	89.71	2.16	94.03	11255	14944	5
TBA	1000	61	28.37	36.91	3.56	38.43	1x1	3.18	97.89	2.16	102.21	14871	18974	5.5

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
TBA stock codes are estimations only and actual product may vary. Please wait until a stock code is assigned to purchase connectors and/or fittings.

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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	363.22	7084	0.5315	0.73	0.0131	0.0853	0.583+j0.533	0.221+j0.043	2079	172	201
2	373.38	7084	0.5315	0.73	0.0131	0.0853	0.583+j0.533	0.221+j0.043	2079	172	201
1	388.62	8936	0.4199	0.57	0.0119	0.0787	0.540+j0.512	0.175+j0.040	2200	197	228
1/0	403.86	11276	0.3346	0.46	0.0110	0.0755	0.507+j0.492	0.139+j0.039	2324	225	257
2/0	421.64	14213	0.2690	0.37	0.0101	0.0689	0.481+j0.471	0.112+j0.038	2457	260	292
3/0	444.50	17920	0.2100	0.29	0.0094	0.0656	0.458+j0.448	0.087+j0.036	2615	297	330
4/0	467.36	22597	0.1673	0.23	0.0085	0.0623	0.441+j0.425	0.070+j0.035	2789	342	372
4/0	477.52	22597	0.1673	0.23	0.0085	0.0623	0.441+j0.425	0.070+j0.035	2789	342	372
250	487.68	26700	0.1411	0.19	0.0079	0.0591	0.429+j0.404	0.059+j0.034	2956	376	410
350	538.48	37380	0.1017	0.14	0.0070	0.0558	0.409+j0.367	0.043+j0.033	3275	460	487
500	586.74	53400	0.0689	0.10	0.0061	0.0492	0.389+j0.327	0.030+j0.031	3672	556	573
500	586.74	53400	0.0689	0.10	0.0055	0.0492	0.391+j0.333	0.030+j0.031	3600	556	573
500	586.74	53400	0.0689	0.10	0.0055	0.0492	0.391+j0.333	0.030+j0.031	3600	556	573
750	657.86	80100	0.0459	0.07	0.0049	0.0459	0.366+j0.277	0.021+j0.030	4257	678	668
1000	716.28	106800	0.0361	0.06	0.0046	0.0427	0.351+j0.246	0.018+j0.029	4719	798	772

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