HVTECK CU 1/C 175TRXLPE TS PVC AIA PVC 15kV 100% CSA

Single Conductor, 175 Mils Tree Retardant Cross Linked Polyethylene, 100% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

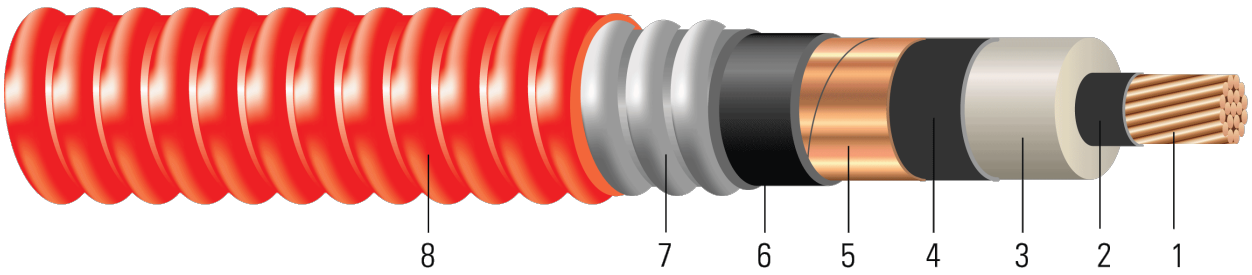

Image not to scale. See Table 1 for dimensions.

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:** 175 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:** Red Polyvinyl Chloride (PVC) Jacket

APPLICATIONS AND FEATURES:

Southwire's 15kV 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 175 TRXLPE AIA 15kV 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	Conduit Size*
	AWG/ Kcmil	No.	inch	inch	mil	inch	mil	inch	mil	inch	lb/ 1000ft	lb/ 1000ft	inch
TBA	2	7	0.283	0.671	175	0.731	80	1.121	50	1.221	265	877	3
TBA	1	19	0.322	0.71	175	0.77	80	1.16	50	1.26	321	965	3
TBA	1/0	19	0.362	0.75	175	0.81	80	1.2	50	1.3	393	1069	3.5
TBA	2/0	19	0.405	0.793	175	0.853	80	1.243	50	1.343	481	1192	3.5
672009	3/0	19	0.456	0.844	175	0.904	80	1.428	50	1.528	597	1376	4
668868	4/0	19	0.512	0.9	175	0.96	80	1.484	50	1.584	737	1559	4
TBA	250	37	0.558	0.954	175	1.014	80	1.404	50	1.504	855	1701	4
TBA	350	37	0.661	1.057	175	1.117	80	1.607	60	1.727	1173	2281	4.5
TBA	500	37	0.789	1.185	175	1.245	80	1.735	60	1.855	1646	2872	5
665710	750	61	0.968	1.374	175	1.434	80	1.958	60	2.078	2436	3675	5.5
TBA	1000	61	1.117	1.523	175	1.583	110	2.133	60	2.253	3218	4886	6

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	8.5	530	0.162	0.221	0.05	0.055	0.569+j0.494	0.222+j0.062	2296	215	221
1	8.8	669	0.128	0.175	0.046	0.053	0.526+j0.475	0.176+j0.059	2417	245	247
1/0	9.1	844	0.102	0.139	0.043	0.051	0.492+j0.457	0.140+j0.057	2541	278	275
2/0	9.4	1064	0.082	0.112	0.04	0.049	0.466+j0.439	0.113+j0.055	2674	317	306
3/0	10.7	1342	0.064	0.087	0.036	0.049	0.440+j0.418	0.088+j0.055	2832	357	335
4/0	11.1	1692	0.051	0.07	0.034	0.048	0.423+j0.397	0.071+j0.053	3005	404	369
250	10.5	2000	0.043	0.059	0.031	0.044	0.413+j0.379	0.060+j0.050	3173	456	412
350	12.1	2800	0.031	0.043	0.027	0.044	0.392+j0.345	0.044+j0.049	3492	537	456
500	13	4000	0.021	0.03	0.024	0.041	0.373+j0.309	0.031+j0.047	3888	616	497
750	14.5	6000	0.014	0.021	0.02	0.039	0.351+j0.265	0.023+j0.044	4474	706	551
1000	15.8	8000	0.011	0.018	0.018	0.038	0.337+j0.235	0.020+j0.043	4936	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	Conduit Size*
	AWG/ Kcmil	No.	mm	mm	mm	mm	mm	mm	mm	mm	kg/km	kg/km	inch
TBA	2	7	7.19	17.04	4.44	18.57	2.03	28.47	1.27	31.01	394	1305	3
TBA	1	19	8.18	18.03	4.44	19.56	2.03	29.46	1.27	32.00	478	1436	3
TBA	1/0	19	9.19	19.05	4.44	20.57	2.03	30.48	1.27	33.02	585	1591	3.5
TBA	2/0	19	10.29	20.14	4.44	21.67	2.03	31.57	1.27	34.11	716	1774	3.5
672009	3/0	19	11.58	21.44	4.44	22.96	2.03	36.27	1.27	38.81	888	2048	4
668868	4/0	19	13.00	22.86	4.44	24.38	2.03	37.69	1.27	40.23	1097	2320	4
TBA	250	37	14.17	24.23	4.44	25.76	2.03	35.66	1.27	38.20	1272	2531	4
TBA	350	37	16.79	26.85	4.44	28.37	2.03	40.82	1.52	43.87	1746	3395	4.5
TBA	500	37	20.04	30.10	4.44	31.62	2.03	44.07	1.52	47.12	2450	4274	5
665710	750	61	24.59	34.90	4.44	36.42	2.03	49.73	1.52	52.78	3625	5469	5.5
TBA	1000	61	28.37	38.68	4.44	40.21	2.79	54.18	1.52	57.23	4789	7271	6

All dimensions are nominal and subject to normal manufacturing tolerances
◊ Cable marked with this symbol is a standard stock item
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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	215.90	2359	0.5315	0.73	0.0152	0.1804	0.569+j0.494	0.222+j0.062	2296	215	221
1	223.52	2977	0.4199	0.57	0.0140	0.1739	0.526+j0.475	0.176+j0.059	2417	245	247
1/0	231.14	3756	0.3346	0.46	0.0131	0.1673	0.492+j0.457	0.140+j0.057	2541	278	275
2/0	238.76	4735	0.2690	0.37	0.0122	0.1608	0.466+j0.439	0.113+j0.055	2674	317	306
3/0	271.78	5972	0.2100	0.29	0.0110	0.1608	0.440+j0.418	0.088+j0.055	2832	357	335
4/0	281.94	7529	0.1673	0.23	0.0104	0.1575	0.423+j0.397	0.071+j0.053	3005	404	369
250	266.70	8900	0.1411	0.19	0.0094	0.1444	0.413+j0.379	0.060+j0.050	3173	456	412
350	307.34	12460	0.1017	0.14	0.0082	0.1444	0.392+j0.345	0.044+j0.049	3492	537	456
500	330.20	17800	0.0689	0.10	0.0073	0.1345	0.373+j0.309	0.031+j0.047	3888	616	497
750	368.30	26700	0.0459	0.07	0.0061	0.1280	0.351+j0.265	0.023+j0.044	4474	706	551
1000	401.32	35600	0.0361	0.06	0.0055	0.1247	0.337+j0.235	0.020+j0.043	4936	813	596

* Inductive impedance is based on non-ferrous conduit with one diameter spacing center-to-center.
***** CEC ampacities are based on:
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3-1/C direct buried copper and aluminum: D17A

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