

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

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

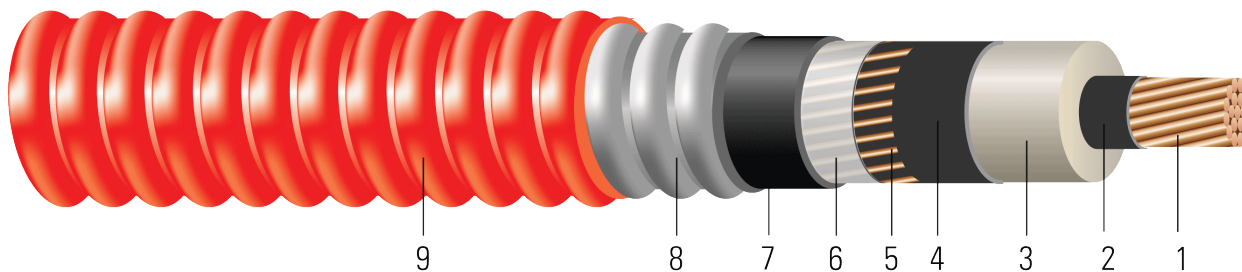


Image not to scale. See Table 1 for dimensions.

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. **Concentric Shield:** Concentrically applied copper bond / shield wires. Complies with greater than the minimum requirement as per Table 44, CSA Standard C68.10 and Table 16A, Canadian Electrical Code Part 1
6. **Neutral Separator:** Mylar tape
7. **Inner Jacket:** PVC inner jacket
8. **Armour:** Aluminum Interlocked Armour (AIA)
9. **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)
- 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 CB [No. x SIZE] AWG SUN RES 105°C FT4 HL (-40°C) LTGG RoHS YEAR [SEQUENTIAL METER MARKS]

Table 1 – Weights and Measurements

Cond. Size	Strand	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Concentric Neutral	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Approx. Weight
AWG/ Kcmil	No.	inch	inch	mil	inch	No. x AWG	mil	inch	mil	inch	lb/1000ft
2	7	0.282	0.670	175	0.730	7 x 14	80	1.356	50	1.456	939
1	19	0.322	0.710	175	0.770	11 x 14	80	1.396	50	1.496	1078
1/0	19	0.361	0.749	175	0.809	11 x 14	80	1.435	50	1.535	1175
2/0	19	0.405	0.793	175	0.853	11 x 14	80	1.479	50	1.579	1296
3/0	19	0.456	0.844	175	0.904	13 x 14	80	1.530	60	1.650	1503
4/0	19	0.512	0.900	175	0.960	13 x 14	80	1.586	60	1.706	1682
250	37	0.558	0.954	175	1.014	17 x 14	80	1.664	60	1.784	1935
350	37	0.661	1.057	175	1.117	21 x 14	80	1.767	60	1.887	2385
500	37	0.789	1.185	175	1.245	26 x 14	80	1.895	60	2.015	3115
750	61	0.968	1.374	175	1.434	21 x 12	110	2.178	60	2.298	4291
1000	61	1.117	1.523	175	1.583	21 x 12	110	2.327	75	2.477	5280

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	10.1	530	0.162	0.204	0.058	0.059	0.186 + j0.033	0.191 + j0.041	5458	215	221
1	10.4	669	0.128	0.162	0.053	0.057	0.144 + j0.03	0.149 + j0.038	8577	245	247
1/0	10.7	844	0.102	0.128	0.049	0.055	0.11 + j0.029	0.115 + j0.036	8577	278	275
2/0	11.0	1064	0.081	0.102	0.045	0.053	0.084 + j0.027	0.09 + j0.035	8577	317	306
3/0	11.5	1342	0.064	0.081	0.041	0.051	0.063 + j0.025	0.069 + j0.033	10137	357	335
4/0	11.9	1692	0.051	0.065	0.038	0.049	0.047 + j0.024	0.053 + j0.032	10137	404	369
250	12.4	2000	0.043	0.056	0.036	0.048	0.038 + j0.023	0.044 + j0.031	13256	456	412
350	13.2	2800	0.031	0.041	0.031	0.046	0.023 + j0.021	0.029 + j0.029	16376	537	456
500	14.1	4000	0.022	0.030	0.027	0.043	0.012 + j0.019	0.018 + j0.027	20275	616	497
750	16.0	6000	0.014	0.023	0.023	0.042	0.005 + j0.018	0.011 + j0.026	26018	706	551
1000	17.3	8000	0.011	0.019	0.021	0.040	0.001 + j0.017	0.007 + j0.025	26018	813	596

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

Table 3 – Weights and Measurements (Metric)

Cond. Size	Strand	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Concentric Neutral	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Approx. Weight
AWG/Kcmil	No.	mm	mm	mm	mm	No. x AWG	mm	mm	mm	mm	kg/km
2	7	7.16	17.02	4.44	18.54	7 x 14	2.03	34.44	1.27	36.98	1397
1	19	8.18	18.03	4.44	19.56	11 x 14	2.03	35.46	1.27	38.00	1604
1/0	19	9.17	19.02	4.44	20.55	11 x 14	2.03	36.45	1.27	38.99	1749
2/0	19	10.29	20.14	4.44	21.67	11 x 14	2.03	37.57	1.27	40.11	1929
3/0	19	11.58	21.44	4.44	22.96	13 x 14	2.03	38.86	1.52	41.91	2237
4/0	19	13.00	22.86	4.44	24.38	13 x 14	2.03	40.28	1.52	43.33	2503
250	37	14.17	24.23	4.44	25.76	17 x 14	2.03	42.27	1.52	45.31	2880
350	37	16.79	26.85	4.44	28.37	21 x 14	2.03	44.88	1.52	47.93	3549
500	37	20.04	30.10	4.44	31.62	26 x 14	2.03	48.13	1.52	51.18	4636
750	61	24.59	34.90	4.44	36.42	21 x 12	2.79	55.32	1.52	58.37	6386
1000	61	28.37	38.68	4.44	40.21	21 x 12	2.79	59.11	1.91	62.92	7858

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	256.54	2359	0.5315	0.67	0.0177	0.1936	0.186 + j0.033	0.191 + j0.041	5458	215	221
1	264.16	2977	0.4199	0.53	0.0162	0.1870	0.144 + j0.03	0.149 + j0.038	8577	245	247
1/0	271.78	3756	0.3346	0.42	0.0149	0.1804	0.11 + j0.029	0.115 + j0.036	8577	278	275
2/0	279.40	4735	0.2657	0.33	0.0137	0.1739	0.084 + j0.027	0.09 + j0.035	8577	317	306
3/0	292.10	5972	0.2100	0.27	0.0125	0.1673	0.063 + j0.025	0.069 + j0.033	10137	357	335
4/0	302.26	7529	0.1673	0.21	0.0116	0.1608	0.047 + j0.024	0.053 + j0.032	10137	404	369
250	314.96	8900	0.1411	0.18	0.0110	0.1575	0.038 + j0.023	0.044 + j0.031	13256	456	412
350	335.28	12460	0.1017	0.13	0.0094	0.1509	0.023 + j0.021	0.029 + j0.029	16376	537	456
500	358.14	17800	0.0722	0.10	0.0082	0.1411	0.012 + j0.019	0.018 + j0.027	20275	616	497
750	406.40	26700	0.0459	0.08	0.0070	0.1378	0.005 + j0.018	0.011 + j0.026	26018	706	551
1000	439.42	35600	0.0361	0.06	0.0064	0.1312	0.001 + j0.017	0.007 + j0.025	26018	813	596

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

