HVTECK CU 1/C 420TRXLPE CB PVC AIA PVC 35kV 133% CSA

Single Conductor, 420 Mils Tree Retardant Cross Linked Polyethylene, 133% Insulation Level, Concentric Bond, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

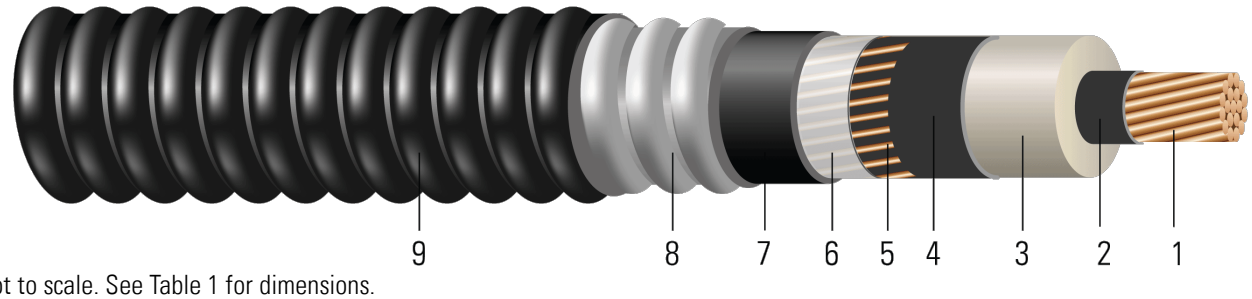


Image not to scale. See Table 1 for dimensions.

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:** 420 Mils Tree Retardant Cross Linked Polyethylene 133% 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:** Black Polyvinyl Chloride (PVC) Jacket

APPLICATIONS AND FEATURES:

Southwire's 35kV 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)

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- 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 420 TRXLPE AIA 35kV 133% 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	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
1/0	19	0.362	1.24	420	1.3	7x12	110	2.12	60	2.24	562	2704	6
2/0	19	0.405	1.283	420	1.343	7x12	110	2.163	60	2.283	650	2862	6
3/0	19	0.456	1.334	420	1.394	9x12	110	2.214	60	2.334	796	3092	6
4/0	19	0.512	1.39	420	1.45	9x12	110	2.27	75	2.42	935	3387	6.5
250	37	0.558	1.444	420	1.504	11x12	110	2.324	75	2.474	1101	3648	6.5
350	37	0.661	1.547	420	1.607	13x12	110	2.427	75	2.577	1471	4191	7
500	37	0.789	1.675	420	1.735	17x12	110	2.555	75	2.705	2013	4948	7
750	61	0.968	1.864	420	1.924	21x12	110	2.744	75	2.894	2885	6146	7.5

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.

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
1/0	15.7	844	0.102	0.139	0.077	0.064	0.378+j0.139	0.143+j0.069	3879	278	272
2/0	16	1064	0.082	0.112	0.072	0.061	0.351+j0.137	0.115+j0.067	3879	316	303
3/0	16.3	1342	0.064	0.087	0.068	0.059	0.286+j0.100	0.091+j0.064	4987	356	333
4/0	16.9	1692	0.051	0.07	0.063	0.057	0.269+j0.098	0.074+j0.062	4987	403	367
250	17.3	2000	0.043	0.059	0.059	0.056	0.228+j0.077	0.064+j0.060	6095	455	411
350	18	2800	0.031	0.043	0.053	0.053	0.189+j0.062	0.049+j0.057	7203	537	459
500	18.9	4000	0.021	0.03	0.047	0.05	0.145+j0.046	0.037+j0.054	9420	616	499
750	20.3	6000	0.014	0.021	0.041	0.047	0.115+j0.037	0.029+j0.050	11636	716	557

* 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

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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	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
1/0	19	9.19	31.50	10.67	33.02	7x12	2.79	53.85	1.52	56.90	836	4024	6
2/0	19	10.29	32.59	10.67	34.11	7x12	2.79	54.94	1.52	57.99	967	4259	6
3/0	19	11.58	33.88	10.67	35.41	9x12	2.79	56.24	1.52	59.28	1185	4601	6
4/0	19	13.00	35.31	10.67	36.83	9x12	2.79	57.66	1.91	61.47	1391	5040	6.5
250	37	14.17	36.68	10.67	38.20	11x12	2.79	59.03	1.91	62.84	1638	5429	6.5
350	37	16.79	39.29	10.67	40.82	13x12	2.79	61.65	1.91	65.46	2189	6237	7
500	37	20.04	42.55	10.67	44.07	17x12	2.79	64.90	1.91	68.71	2996	7363	7
750	61	24.59	47.35	10.67	48.87	21x12	2.79	69.70	1.91	73.51	4293	9146	7.5

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.

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
1/0	398.78	3756	0.3346	0.46	0.0235	0.2100	0.378+j0.139	0.143+j0.069	3879	278	272
2/0	406.40	4735	0.2690	0.37	0.0219	0.2001	0.351+j0.137	0.115+j0.067	3879	316	303
3/0	414.02	5972	0.2100	0.29	0.0207	0.1936	0.286+j0.100	0.091+j0.064	4987	356	333
4/0	429.26	7529	0.1673	0.23	0.0192	0.1870	0.269+j0.098	0.074+j0.062	4987	403	367
250	439.42	8900	0.1411	0.19	0.0180	0.1837	0.228+j0.077	0.064+j0.060	6095	455	411
350	457.20	12460	0.1017	0.14	0.0162	0.1739	0.189+j0.062	0.049+j0.057	7203	537	459
500	480.06	17800	0.0689	0.10	0.0143	0.1640	0.145+j0.046	0.037+j0.054	9420	616	499
750	515.62	26700	0.0459	0.07	0.0125	0.1542	0.115+j0.037	0.029+j0.050	11636	716	557

* 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

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