HVTECK CU 1/C 420NLEPR TS PVC AIA PVC 35kV 133% CSA

Single Conductor, 420 Mils No Lead Ethylene Propylene Rubber (NL-EPR), 133% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

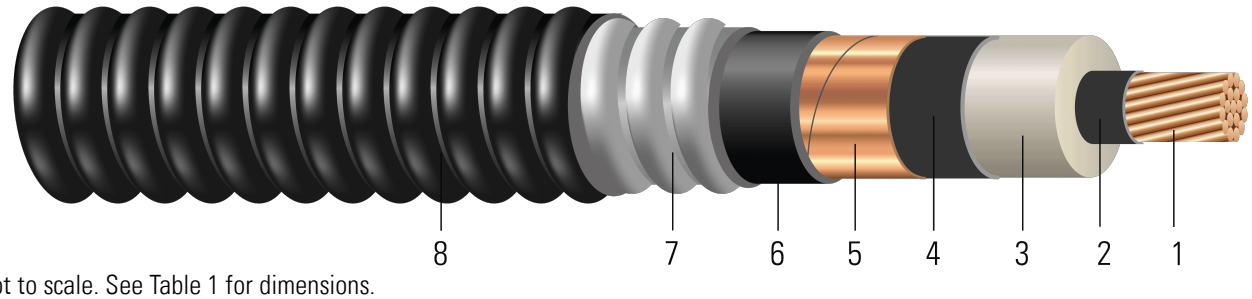


Image not to scale. See Table 1 for dimensions.

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:** 420 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 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. **Inner Jacket:** PVC inner jacket
7. **Armour:** Aluminum Interlocked Armour (AIA)
8. **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)
- 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 420 NLEPR AIA 35kV 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	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	1/0	19	0.362	1.24	420	1.3	80	1.79	60	1.91	433	1968	5
TBA	2/0	19	0.405	1.283	420	1.343	80	1.833	60	1.953	521	2114	5
TBA	3/0	19	0.456	1.334	420	1.394	80	1.884	60	2.004	633	2295	5
TBA	4/0	19	0.512	1.39	420	1.45	80	1.94	60	2.06	772	2510	5.5
TBA	250	37	0.558	1.444	420	1.504	110	2.054	60	2.174	896	2825	5.5
139088	350	37	0.661	1.547	420	1.607	110	2.191	60	2.311	1214	3104	6
TBA	500	37	0.789	1.675	420	1.735	110	2.285	75	2.435	1687	4007	6.5
TBA	750	61	0.968	1.864	420	1.924	110	2.474	75	2.624	2474	5075	7
579222	1000	61	1.117	2.013	420	2.073	110	2.637	83	2.803	3258	5738	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	13.4	844	0.102	0.139	0.059	0.06	0.478+j0.315	0.140+j0.065	4059	278	272
2/0	13.7	1064	0.082	0.112	0.055	0.058	0.449+j0.303	0.113+j0.063	4192	316	303
3/0	14	1342	0.064	0.087	0.052	0.056	0.420+j0.290	0.089+j0.061	4350	356	333
4/0	14.4	1692	0.051	0.07	0.048	0.054	0.399+j0.277	0.072+j0.059	4524	403	367
250	15.2	2000	0.043	0.059	0.045	0.053	0.384+j0.265	0.061+j0.058	4691	455	411
350	16.2	2800	0.031	0.043	0.041	0.05	0.360+j0.244	0.045+j0.056	5010	537	459
500	17	4000	0.021	0.03	0.036	0.048	0.337+j0.221	0.032+j0.053	5407	616	499
750	18.4	6000	0.014	0.021	0.031	0.045	0.313+j0.193	0.023+j0.050	5992	716	557
1000	19.6	8000	0.011	0.018	0.028	0.043	0.298+j0.175	0.020+j0.048	6454	825	608

* 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)

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	1/0	19	9.19	31.50	10.67	33.02	2.03	45.47	1.52	48.51	644	2929	5
TBA	2/0	19	10.29	32.59	10.67	34.11	2.03	46.56	1.52	49.61	775	3146	5
TBA	3/0	19	11.58	33.88	10.67	35.41	2.03	47.85	1.52	50.90	942	3415	5
TBA	4/0	19	13.00	35.31	10.67	36.83	2.03	49.28	1.52	52.32	1149	3735	5.5
TBA	250	37	14.17	36.68	10.67	38.20	2.79	52.17	1.52	55.22	1333	4204	5.5
139088	350	37	16.79	39.29	10.67	40.82	2.79	55.65	1.52	58.70	1807	4619	6
TBA	500	37	20.04	42.55	10.67	44.07	2.79	58.04	1.91	61.85	2511	5963	6.5
TBA	750	61	24.59	47.35	10.67	48.87	2.79	62.84	1.91	66.65	3682	7552	7
579222	1000	61	28.37	51.13	10.67	52.65	2.79	66.98	2.11	71.20	4848	8539	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	340.36	3756	0.3346	0.46	0.0180	0.1969	0.478+j0.315	0.140+j0.065	4059	278	272
2/0	347.98	4735	0.2690	0.37	0.0168	0.1903	0.449+j0.303	0.113+j0.063	4192	316	303
3/0	355.60	5972	0.2100	0.29	0.0158	0.1837	0.420+j0.290	0.089+j0.061	4350	356	333
4/0	365.76	7529	0.1673	0.23	0.0146	0.1772	0.399+j0.277	0.072+j0.059	4524	403	367
250	386.08	8900	0.1411	0.19	0.0137	0.1739	0.384+j0.265	0.061+j0.058	4691	455	411
350	411.48	12460	0.1017	0.14	0.0125	0.1640	0.360+j0.244	0.045+j0.056	5010	537	459
500	431.80	17800	0.0689	0.10	0.0110	0.1575	0.337+j0.221	0.032+j0.053	5407	616	499
750	467.36	26700	0.0459	0.07	0.0094	0.1476	0.313+j0.193	0.023+j0.050	5992	716	557
1000	497.84	35600	0.0361	0.06	0.0085	0.1411	0.298+j0.175	0.020+j0.048	6454	825	608

* 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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