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

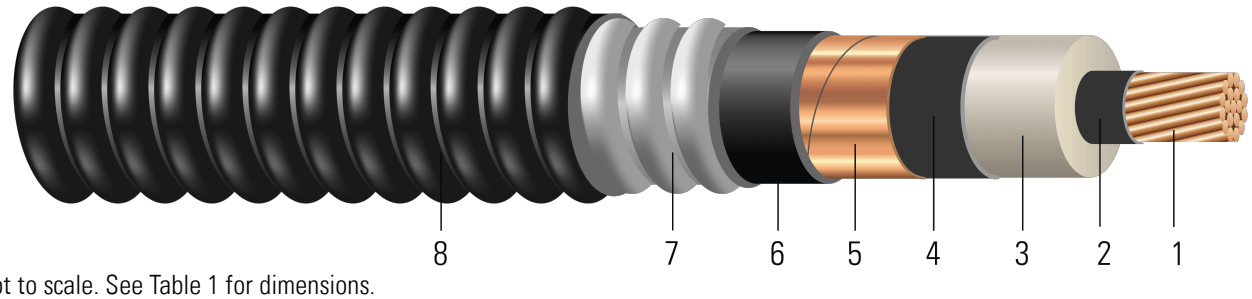

Image not to scale. See Table 1 for dimensions.

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
	AWG/ Kcmil	No.	inch	inch	mil	inch	mil	inch	mil	inch	lb/1000ft	lb/1000ft
TBA	1/0	19	0.361	1.239	420	1.299	80	1.835	60	1.955	351	1710
TBA	2/0	19	0.405	1.283	420	1.343	80	1.879	60	1.999	437	1942
TBA	3/0	19	0.456	1.334	420	1.394	80	1.930	60	2.050	546	2117
TBA	4/0	19	0.512	1.390	420	1.450	80	1.986	60	2.106	682	2326
TBA	250	37	0.558	1.444	420	1.504	110	2.100	60	2.220	801	2638
139088	350	37	0.661	1.547	420	1.607	110	2.191	60	2.311	1206	3095
TBA	500	37	0.789	1.675	420	1.735	110	2.331	75	2.481	1579	3801
TBA	750	61	0.968	1.864	420	1.924	110	2.520	75	2.670	2355	4845
579222	1000	61	1.117	2.013	420	2.073	110	2.637	75	2.803	3248	5734

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 @ 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	23.5	844	0.102	0.128	0.061	0.060	0.460 + j0.275	0.129 + j0.061	4055	278	272
2/0	24.0	1064	0.081	0.102	0.057	0.058	0.430 + j0.263	0.103 + j0.059	4192	316	303
3/0	24.6	1342	0.064	0.081	0.053	0.056	0.405 + j0.251	0.082 + j0.056	4350	356	333
4/0	25.3	1692	0.051	0.065	0.050	0.054	0.383 + j0.238	0.066 + j0.054	4523	403	367
250	26.6	2000	0.043	0.056	0.047	0.053	0.369 + j0.227	0.057 + j0.053	4690	455	411
350	27.9	2800	0.031	0.041	0.042	0.051	0.344 + j0.208	0.042 + j0.051	5009	537	459
500	29.8	4000	0.022	0.030	0.037	0.048	0.321 + j0.188	0.031 + j0.048	5406	616	499
750	32.0	6000	0.014	0.023	0.032	0.045	0.298 + j0.162	0.024 + j0.045	5992	716	557
1000	33.6	8000	0.011	0.019	0.029	0.043	0.282 + j0.146	0.021 + j0.043	6453	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

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
	AWG/ Kcmil	No.	mm	mm	mm	mm	mm	mm	mm	mm	kg/km	kg/km
TBA	1/0	19	9.17	31.47	10.67	32.99	2.03	46.61	1.52	49.66	522	2545
TBA	2/0	19	10.29	32.59	10.67	34.11	2.03	47.73	1.52	50.77	650	2890
TBA	3/0	19	11.58	33.88	10.67	35.41	2.03	49.02	1.52	52.07	813	3150
TBA	4/0	19	13.00	35.31	10.67	36.83	2.03	50.44	1.52	53.49	1015	3461
TBA	250	37	14.17	36.68	10.67	38.20	2.79	53.34	1.52	56.39	1192	3926
139088	350	37	16.79	39.29	10.67	40.82	2.79	55.65	1.52	58.70	1795	4606
TBA	500	37	20.04	42.55	10.67	44.07	2.79	59.21	1.91	63.02	2350	5657
TBA	750	61	24.59	47.35	10.67	48.87	2.79	64.01	1.91	67.82	3505	7210
579222	1000	61	28.37	51.13	10.67	52.65	2.79	66.98	1.91	71.20	4834	8533

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 @ 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	596.90	3756	0.3346	0.42	0.0186	0.1969	0.460 + j0.275	0.129 + j0.061	4055	278	272
2/0	609.60	4735	0.2657	0.33	0.0174	0.1903	0.430 + j0.263	0.103 + j0.059	4192	316	303
3/0	624.84	5972	0.2100	0.27	0.0162	0.1837	0.405 + j0.251	0.082 + j0.056	4350	356	333
4/0	642.62	7529	0.1673	0.21	0.0152	0.1772	0.383 + j0.238	0.066 + j0.054	4523	403	367
250	675.64	8900	0.1411	0.18	0.0143	0.1739	0.369 + j0.227	0.057 + j0.053	4690	455	411
350	708.66	12460	0.1017	0.13	0.0128	0.1673	0.344 + j0.208	0.042 + j0.051	5009	537	459
500	756.92	17800	0.0722	0.10	0.0113	0.1575	0.321 + j0.188	0.031 + j0.048	5406	616	499
750	812.80	26700	0.0459	0.08	0.0098	0.1476	0.298 + j0.162	0.024 + j0.045	5992	716	557
1000	853.44	35600	0.0361	0.06	0.0088	0.1411	0.282 + j0.146	0.021 + j0.043	6453	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