

## HVTECK CU 1/C 320NLEPR CB PVC AIA PVC 25kV 133% CSA

Single Conductor, 320 Mils No Lead Ethylene Propylene Rubber (NL-EPR), 133% Insulation Level, Concentric Bond, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

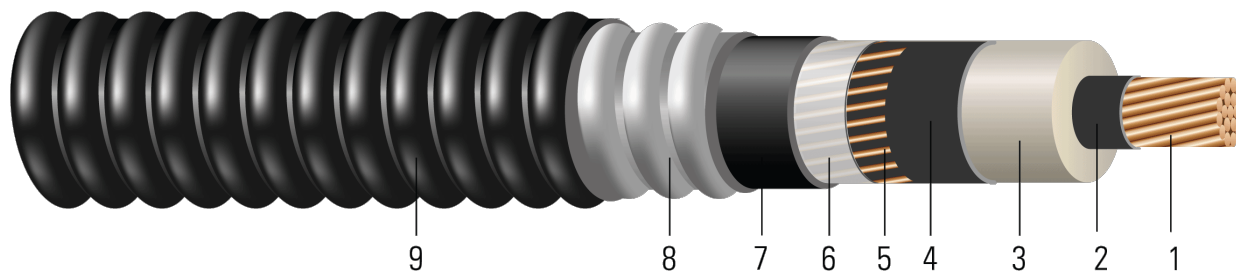


Image not to scale. See Table 1 for dimensions.

### CONSTRUCTION:

- Conductor:** Class B compressed stranded bare copper per ASTM B3 and ASTM B8
- Conductor Shield:** Semi-conducting cross-linked copolymer
- Insulation:** 320 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% insulation level
- Insulation Shield:** Strippable semi-conducting cross-linked copolymer
- 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
- Neutral Separator:** Mylar tape
- Inner Jacket:** PVC inner jacket
- Armour:** Aluminum Interlocked Armour (AIA)
- Overall Jacket:** Black Polyvinyl Chloride (PVC) Jacket

### APPLICATIONS AND FEATURES:

Southwire's 25kV 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

### SAMPLE PRINT LEGEND:

(CSA) SOUTHWIRE (NESC) #P# 1/C [#AWG or #kcmil] CU 320 NLEPR AIA 25kV 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	Approx. Weight
AWG/ Kcmil	No.	inch	inch	mil	inch	No. x AWG	mil	inch	mil	inch	lb/1000ft
1	19	0.322	1.000	320	1.060	11 x 14	80	1.710	60	1.830	1487
1/0	19	0.361	1.039	320	1.099	11 x 14	80	1.749	60	1.869	1595
2/0	19	0.405	1.083	320	1.143	11 x 14	80	1.793	60	1.913	1726
3/0	19	0.456	1.134	320	1.194	13 x 14	80	1.844	60	1.964	1917
4/0	19	0.512	1.190	320	1.250	13 x 14	80	1.900	60	2.020	2204
250	37	0.558	1.244	320	1.304	17 x 14	80	1.954	60	2.074	2440
350	37	0.661	1.347	320	1.407	21 x 14	110	2.117	60	2.237	3042
500	37	0.789	1.475	320	1.535	26 x 14	110	2.245	60	2.365	3725
750	61	0.968	1.664	320	1.724	21 x 12	110	2.468	75	2.618	4911
1000	61	1.117	1.813	320	1.873	21 x 12	110	2.617	75	2.767	5865

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
1	12.8	669	0.128	0.162	0.059	0.062	0.144 + j0.037	0.15 + j0.045	8577	245	244
1/0	13.0	844	0.102	0.128	0.055	0.059	0.11 + j0.035	0.116 + j0.043	8577	278	272
2/0	13.3	1064	0.081	0.102	0.051	0.057	0.084 + j0.033	0.09 + j0.041	8577	316	303
3/0	13.7	1342	0.064	0.081	0.047	0.055	0.063 + j0.031	0.069 + j0.039	10137	356	333
4/0	14.1	1692	0.051	0.065	0.044	0.053	0.047 + j0.029	0.053 + j0.038	10137	403	367
250	14.5	2000	0.043	0.056	0.041	0.052	0.038 + j0.028	0.044 + j0.036	13256	455	411
350	15.6	2800	0.031	0.041	0.037	0.050	0.023 + j0.026	0.029 + j0.034	16376	537	459
500	16.5	4000	0.022	0.030	0.032	0.047	0.012 + j0.024	0.018 + j0.032	20275	616	499
750	18.3	6000	0.014	0.023	0.028	0.045	0.005 + j0.022	0.012 + j0.03	26018	716	557
1000	19.3	8000	0.011	0.019	0.025	0.043	0.001 + j0.02	0.008 + j0.028	26018	825	608

\* 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
1	19	8.18	25.40	8.13	26.92	11 x 14	2.03	43.43	1.52	46.48	2213
1/0	19	9.17	26.39	8.13	27.91	11 x 14	2.03	44.42	1.52	47.47	2374
2/0	19	10.29	27.51	8.13	29.03	11 x 14	2.03	45.54	1.52	48.59	2569
3/0	19	11.58	28.80	8.13	30.33	13 x 14	2.03	46.84	1.52	49.89	2853
4/0	19	13.00	30.23	8.13	31.75	13 x 14	2.03	48.26	1.52	51.31	3280
250	37	14.17	31.60	8.13	33.12	17 x 14	2.03	49.63	1.52	52.68	3631
350	37	16.79	34.21	8.13	35.74	21 x 14	2.79	53.77	1.52	56.82	4527
500	37	20.04	37.47	8.13	38.99	26 x 14	2.79	57.02	1.52	60.07	5543
750	61	24.59	42.27	8.13	43.79	21 x 12	2.79	62.69	1.91	66.50	7308
1000	61	28.37	46.05	8.13	47.57	21 x 12	2.79	66.47	1.91	70.28	8728

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
1	325.12	2977	0.4199	0.53	0.0180	0.2034	0.144 + j0.037	0.15 + j0.045	8577	245	244
1/0	330.20	3756	0.3346	0.42	0.0168	0.1936	0.11 + j0.035	0.116 + j0.043	8577	278	272
2/0	337.82	4735	0.2657	0.33	0.0155	0.1870	0.084 + j0.033	0.09 + j0.041	8577	316	303
3/0	347.98	5972	0.2100	0.27	0.0143	0.1804	0.063 + j0.031	0.069 + j0.039	10137	356	333
4/0	358.14	7529	0.1673	0.21	0.0134	0.1739	0.047 + j0.029	0.053 + j0.038	10137	403	367
250	368.30	8900	0.1411	0.18	0.0125	0.1706	0.038 + j0.028	0.044 + j0.036	13256	455	411
350	396.24	12460	0.1017	0.13	0.0113	0.1640	0.023 + j0.026	0.029 + j0.034	16376	537	459
500	419.10	17800	0.0722	0.10	0.0098	0.1542	0.012 + j0.024	0.018 + j0.032	20275	616	499
750	464.82	26700	0.0459	0.08	0.0085	0.1476	0.005 + j0.022	0.012 + j0.03	26018	716	557
1000	490.22	35600	0.0361	0.06	0.0076	0.1411	0.001 + j0.02	0.008 + j0.028	26018	825	608

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

