

HVTECK CU 1/C 345NLEPR CB PVC AIA PVC 35kV 100% CSA

Single Conductor, 345 Mils No Lead Ethylene Propylene Rubber (NL-EPR), 100% Insulation Level, Concentric Bond, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

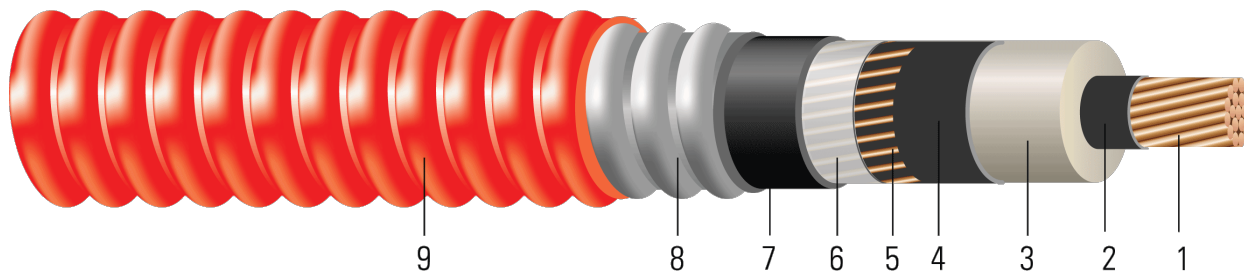


Image not to scale. See Table 1 for dimensions.

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:** 345 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 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:** 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)
- 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 345 NLEPR AIA 35kV 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
1/0	19	0.361	1.089	345	1.149	11 x 14	80	1.799	60	1.919	1665
2/0	19	0.405	1.133	345	1.193	11 x 14	80	1.843	60	1.963	1798
3/0	19	0.456	1.184	345	1.244	13 x 14	80	1.894	60	2.014	2082
4/0	19	0.512	1.240	345	1.300	13 x 14	80	1.950	60	2.070	2283
250	37	0.558	1.294	345	1.354	17 x 14	80	2.004	60	2.124	2520
350	37	0.661	1.397	345	1.457	21 x 14	110	2.167	60	2.287	3131
500	37	0.789	1.525	345	1.585	26 x 14	110	2.295	75	2.445	3891
750	61	0.968	1.714	345	1.774	21 x 12	110	2.518	75	2.668	5014

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
1/0	13.4	844	0.102	0.128	0.057	0.060	0.11 + j0.036	0.116 + j0.044	8577	278	272
2/0	13.7	1064	0.081	0.102	0.053	0.058	0.084 + j0.034	0.09 + j0.042	8577	316	303
3/0	14	1342	0.064	0.081	0.049	0.056	0.063 + j0.032	0.069 + j0.04	10137	356	333
4/0	14.4	1692	0.051	0.065	0.046	0.054	0.047 + j0.03	0.053 + j0.038	10137	403	367
250	14.8	2000	0.043	0.056	0.043	0.052	0.038 + j0.029	0.044 + j0.037	13256	455	411
350	16	2800	0.031	0.041	0.039	0.050	0.023 + j0.027	0.029 + j0.035	16376	537	459
500	17.1	4000	0.022	0.030	0.034	0.048	0.012 + j0.024	0.018 + j0.033	20275	616	499
750	18.6	6000	0.014	0.023	0.029	0.045	0.005 + j0.022	0.012 + j0.031	26018	716	557

* 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
1/0	19	9.17	27.66	8.76	29.18	11 x 14	2.03	45.69	1.52	48.74	2478
2/0	19	10.29	28.78	8.76	30.30	11 x 14	2.03	46.81	1.52	49.86	2676
3/0	19	11.58	30.07	8.76	31.60	13 x 14	2.03	48.11	1.52	51.16	3098
4/0	19	13.00	31.50	8.76	33.02	13 x 14	2.03	49.53	1.52	52.58	3397
250	37	14.17	32.87	8.76	34.39	17 x 14	2.03	50.90	1.52	53.95	3750
350	37	16.79	35.48	8.76	37.01	21 x 14	2.79	55.04	1.52	58.09	4659
500	37	20.04	38.73	8.76	40.26	26 x 14	2.79	58.29	1.91	62.10	5790
750	61	24.59	43.54	8.76	45.06	21 x 12	2.79	63.96	1.91	67.77	7462

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
1/0	340.36	3756	0.3346	0.42	0.0174	0.1969	0.11 + j0.036	0.116 + j0.044	8577	278	272
2/0	347.98	4735	0.2657	0.33	0.0162	0.1903	0.084 + j0.034	0.09 + j0.042	8577	316	303
3/0	355.60	5972	0.2100	0.27	0.0149	0.1837	0.063 + j0.032	0.069 + j0.04	10137	356	333
4/0	365.76	7529	0.1673	0.21	0.0140	0.1772	0.047 + j0.03	0.053 + j0.038	10137	403	367
250	375.92	8900	0.1411	0.18	0.0131	0.1706	0.038 + j0.029	0.044 + j0.037	13256	455	411
350	406.40	12460	0.1017	0.13	0.0119	0.1640	0.023 + j0.027	0.029 + j0.035	16376	537	459
500	434.34	17800	0.0722	0.10	0.0104	0.1575	0.012 + j0.024	0.018 + j0.033	20275	616	499
750	472.44	26700	0.0459	0.08	0.0088	0.1476	0.005 + j0.022	0.012 + j0.031	26018	716	557

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

