HVTECK CU 1/C 345NLEPR CB PVC AIA PVC 28kV 133% CSA

Single Conductor, 345 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

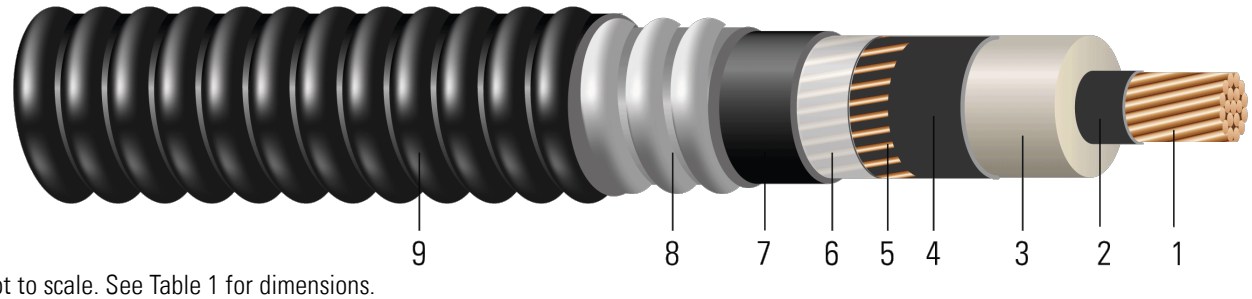

Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

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) 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 28kV 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 (Qualification Test Requirements)

SAMPLE PRINT LEGEND:

(CSA) SOUTHWIRE (NESC) #P# 1/C [#AWG or #kcmil] CU 345 NLEPR AIA 28kV 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
AWG/ Kcmil	No.	inch	inch	mil	inch	No. x AWG	mil	inch	mil	inch	lb/ 1000ft	lb/1000ft
1	19	0.322	1.050	345	1.110	11x14	80	1.754	60	1.874	407	1553
1/0	19	0.361	1.089	345	1.149	11x14	80	1.793	60	1.913	474	1663
2/0	19	0.405	1.133	345	1.193	11x14	80	1.837	60	1.957	559	1797
3/0	19	0.456	1.184	345	1.244	13x14	80	1.888	60	2.008	694	2082
4/0	19	0.512	1.240	345	1.300	13x14	80	1.944	60	2.064	829	2281
250	37	0.558	1.294	345	1.354	17x14	80	1.998	60	2.118	1001	2520
350	37	0.661	1.397	345	1.457	21x14	110	2.195	60	2.315	1365	3149
500	37	0.789	1.525	345	1.585	26x14	110	2.323	75	2.473	1896	3909
750	61	0.968	1.714	345	1.774	21x12	110	2.512	75	2.662	2753	5012

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	22.5	669	0.128	0.162	0.058	0.062	0.508 + j0.324	0.163 + j0.062	8577	245	244
1/0	23.0	844	0.102	0.128	0.054	0.060	0.471 + j0.311	0.129 + j0.060	8577	278	272
2/0	23.5	1064	0.081	0.102	0.051	0.058	0.442 + j0.298	0.103 + j0.058	8577	316	303
3/0	24.1	1342	0.064	0.081	0.047	0.056	0.417 + j0.283	0.082 + j0.056	10137	356	333
4/0	24.8	1692	0.051	0.065	0.044	0.054	0.396 + j0.269	0.066 + j0.054	10137	403	367
250	25.4	2000	0.043	0.056	0.041	0.052	0.382 + j0.256	0.057 + j0.052	13256	455	411
350	27.8	2800	0.031	0.041	0.037	0.051	0.357 + j0.234	0.042 + j0.051	16376	537	459
500	29.7	4000	0.022	0.030	0.032	0.048	0.334 + j0.210	0.031 + j0.048	20275	616	499
750	31.9	6000	0.014	0.023	0.028	0.045	0.310 + j0.180	0.024 + j0.045	26018	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

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
AWG/ Kcmil	No.	mm	mm	mm	mm	No. x AWG	mm	mm	mm	mm	kg/km	kg/km
1	19	8.18	26.67	8.76	28.19	11x14	2.03	44.55	1.52	47.60	606	2311
1/0	19	9.17	27.66	8.76	29.18	11x14	2.03	45.54	1.52	48.59	705	2475
2/0	19	10.29	28.78	8.76	30.30	11x14	2.03	46.66	1.52	49.71	832	2674
3/0	19	11.58	30.07	8.76	31.60	13x14	2.03	47.96	1.52	51.00	1033	3098
4/0	19	13.00	31.50	8.76	33.02	13x14	2.03	49.38	1.52	52.43	1234	3395
250	37	14.17	32.87	8.76	34.39	17x14	2.03	50.75	1.52	53.80	1490	3750
350	37	16.79	35.48	8.76	37.01	21x14	2.79	55.75	1.52	58.80	2031	4686
500	37	20.04	38.73	8.76	40.26	26x14	2.79	59.00	1.91	62.81	2822	5817
750	61	24.59	43.54	8.76	45.06	21x12	2.79	63.80	1.91	67.61	4097	7459

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	571.50	2977	0.4199	0.53	0.0177	0.2034	0.508 + j0.324	0.163 + j0.062	8577	245	244
1/0	584.20	3756	0.3346	0.42	0.0165	0.1969	0.471 + j0.311	0.129 + j0.060	8577	278	272
2/0	596.90	4735	0.2657	0.33	0.0155	0.1903	0.442 + j0.298	0.103 + j0.058	8577	316	303
3/0	612.14	5972	0.2100	0.27	0.0143	0.1837	0.417 + j0.283	0.082 + j0.056	10137	356	333
4/0	629.92	7529	0.1673	0.21	0.0134	0.1772	0.396 + j0.269	0.066 + j0.054	10137	403	367
250	645.16	8900	0.1411	0.18	0.0125	0.1706	0.382 + j0.256	0.057 + j0.052	13256	455	411
350	706.12	12460	0.1017	0.13	0.0113	0.1673	0.357 + j0.234	0.042 + j0.051	16376	537	459
500	754.38	17800	0.0722	0.10	0.0098	0.1575	0.334 + j0.210	0.031 + j0.048	20275	616	499
750	810.26	26700	0.0459	0.08	0.0085	0.1476	0.310 + j0.180	0.024 + j0.045	26018	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