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

Single Conductor, 345 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

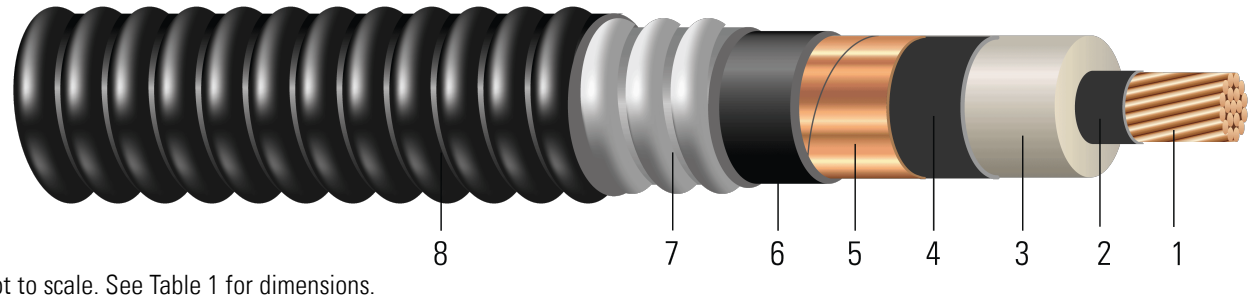

Image not to scale. See Table 1 for dimensions.

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:** 345 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 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)

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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 345 NLEPR AIA 28kV 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	19	0.322	1.05	345	1.11	80	1.6	60	1.72	349	1594	4.5
TBA	1/0	19	0.362	1.09	345	1.15	80	1.64	60	1.76	421	1715	4.5
TBA	2/0	19	0.405	1.133	345	1.193	80	1.683	60	1.803	509	1855	4.5
TBA	3/0	19	0.456	1.184	345	1.244	80	1.734	60	1.854	620	2028	5
TBA	4/0	19	0.512	1.24	345	1.3	80	1.79	60	1.91	760	2237	5
TBA	250	37	0.558	1.294	345	1.354	80	1.844	60	1.964	883	2430	5
577263^	350	37	0.661	1.377	345	1.437	80	2.072	60	2.192	1203	2844	6
TBA	500	37	0.789	1.525	345	1.585	110	2.135	60	2.255	1674	3623	6
TBA	750	61	0.968	1.714	345	1.774	110	2.324	75	2.474	2462	4727	6.5

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
^Yellow outer jacket
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	12	669	0.128	0.175	0.056	0.06	0.524+j0.364	0.176+j0.066	3470	245	244
1/0	12.3	844	0.102	0.139	0.052	0.058	0.487+j0.351	0.140+j0.064	3594	278	272
2/0	12.6	1064	0.082	0.112	0.049	0.056	0.458+j0.337	0.113+j0.061	3727	316	303
3/0	13	1342	0.064	0.087	0.046	0.054	0.430+j0.322	0.088+j0.059	3885	356	333
4/0	13.4	1692	0.051	0.07	0.042	0.052	0.409+j0.307	0.071+j0.057	4059	403	367
250	13.7	2000	0.043	0.059	0.04	0.051	0.395+j0.293	0.060+j0.056	4226	455	411
350	15.3	2800	0.031	0.043	0.035	0.049	0.372+j0.273	0.045+j0.055	4483	537	459
500	15.8	4000	0.021	0.03	0.031	0.046	0.348+j0.243	0.032+j0.051	4942	616	499
750	17.3	6000	0.014	0.021	0.027	0.043	0.325+j0.211	0.023+j0.048	5528	716	557

* 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 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	Conduit Size*
	AWG/ Kcmil	No.	mm	mm	mm	mm	mm	mm	mm	mm	kg/km	kg/km	inch
TBA	1	19	8.18	26.67	8.76	28.19	2.03	40.64	1.52	43.69	519	2372	4.5
TBA	1/0	19	9.19	27.69	8.76	29.21	2.03	41.66	1.52	44.70	627	2552	4.5
TBA	2/0	19	10.29	28.78	8.76	30.30	2.03	42.75	1.52	45.80	757	2761	4.5
TBA	3/0	19	11.58	30.07	8.76	31.60	2.03	44.04	1.52	47.09	923	3018	5
TBA	4/0	19	13.00	31.50	8.76	33.02	2.03	45.47	1.52	48.51	1131	3329	5
TBA	250	37	14.17	32.87	8.76	34.39	2.03	46.84	1.52	49.89	1314	3616	5
577263^	350	37	16.79	34.98	8.76	36.50	2.03	52.63	1.52	55.68	1790	4232	6
TBA	500	37	20.04	38.73	8.76	40.26	2.79	54.23	1.52	57.28	2491	5392	6
TBA	750	61	24.59	43.54	8.76	45.06	2.79	59.03	1.91	62.84	3664	7035	6.5

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
^Yellow outer jacket
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	304.80	2977	0.4199	0.57	0.0171	0.1969	0.524+j0.364	0.176+j0.066	3470	245	244
1/0	312.42	3756	0.3346	0.46	0.0158	0.1903	0.487+j0.351	0.140+j0.064	3594	278	272
2/0	320.04	4735	0.2690	0.37	0.0149	0.1837	0.458+j0.337	0.113+j0.061	3727	316	303
3/0	330.20	5972	0.2100	0.29	0.0140	0.1772	0.430+j0.322	0.088+j0.059	3885	356	333
4/0	340.36	7529	0.1673	0.23	0.0128	0.1706	0.409+j0.307	0.071+j0.057	4059	403	367
250	347.98	8900	0.1411	0.19	0.0122	0.1673	0.395+j0.293	0.060+j0.056	4226	455	411
350	388.62	12460	0.1017	0.14	0.0107	0.1608	0.372+j0.273	0.045+j0.055	4483	537	459
500	401.32	17800	0.0689	0.10	0.0094	0.1509	0.348+j0.243	0.032+j0.051	4942	616	499
750	439.42	26700	0.0459	0.07	0.0082	0.1411	0.325+j0.211	0.023+j0.048	5528	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

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