HVTECK CU 1/C 140NLEPR CB PVC AIA PVC 8kV 133% CSA

Single Conductor, 140 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

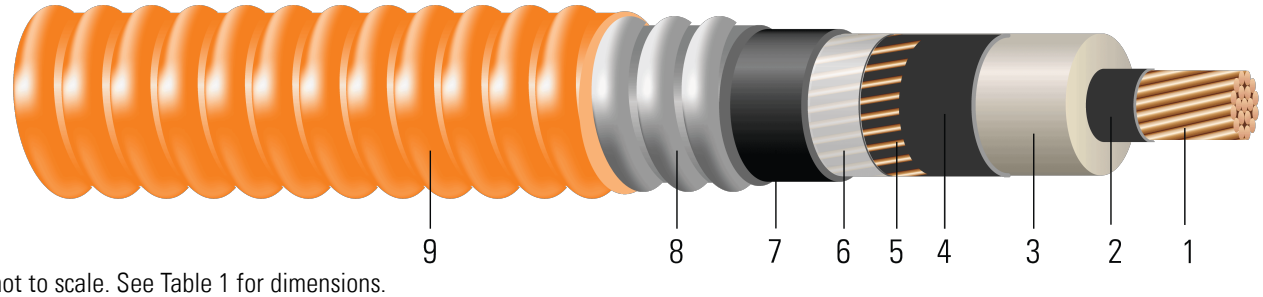


Image not to scale. See Table 1 for dimensions.

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:** 140 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:** Orange Polyvinyl Chloride (PVC) Jacket

APPLICATIONS AND FEATURES:

Southwire's 8kV 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)

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- 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 140 NLEPR AIA 8kV 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	Conduit Size*
AWG/ Kcmil	No.	inch	inch	mil	inch	No. x AWG	mil	inch	mil	inch	lb/ 1000ft	lb/ 1000ft	inch
2	7	0.283	0.601	140	0.661	5x12	80	1.321	50	1.421	341	1188	3.5
1	19	0.322	0.64	140	0.7	7x12	80	1.36	50	1.46	445	1331	3.5
1/0	19	0.362	0.68	140	0.74	7x12	80	1.4	50	1.5	516	1441	4
2/0	19	0.405	0.723	140	0.783	7x12	80	1.443	50	1.543	605	1573	4
3/0	19	0.456	0.774	140	0.834	9x12	80	1.594	60	1.714	750	1944	4.5
4/0	19	0.512	0.83	140	0.89	9x12	80	1.65	60	1.77	889	2145	4.5
250	37	0.558	0.884	140	0.944	11x12	80	1.704	60	1.824	1055	2374	4.5
350	37	0.661	0.987	140	1.047	13x12	80	1.807	60	1.927	1425	2858	5
500	37	0.789	1.115	140	1.175	17x12	80	1.935	60	2.055	1967	3541	5.5
750	61	0.968	1.304	140	1.364	21x12	110	2.184	60	2.304	2839	4751	6
1000	61	1.117	1.453	140	1.513	21x12	110	2.333	75	2.483	3623	5775	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
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.

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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
2	9.9	530	0.162	0.221	0.033	0.059	0.521+j0.196	0.224+j0.065	2770	215	221
1	10.2	669	0.128	0.175	0.03	0.056	0.419+j0.125	0.179+j0.061	3879	245	247
1/0	10.5	844	0.102	0.139	0.028	0.054	0.383+j0.123	0.143+j0.059	3879	278	275
2/0	10.8	1064	0.082	0.112	0.026	0.052	0.355+j0.122	0.116+j0.058	3879	317	306
3/0	12	1342	0.064	0.087	0.023	0.052	0.288+j0.086	0.092+j0.057	4987	357	335
4/0	12.4	1692	0.051	0.07	0.021	0.05	0.271+j0.085	0.075+j0.055	4987	404	369
250	12.8	2000	0.043	0.059	0.02	0.049	0.229+j0.065	0.065+j0.053	6095	456	412
350	13.5	2800	0.031	0.043	0.017	0.046	0.190+j0.051	0.050+j0.050	7203	537	456
500	14.4	4000	0.021	0.03	0.015	0.044	0.145+j0.037	0.038+j0.047	9420	616	497
750	16.1	6000	0.014	0.021	0.013	0.042	0.115+j0.028	0.030+j0.044	11636	706	551
1000	17.4	8000	0.011	0.018	0.011	0.04	0.112+j0.027	0.027+j0.042	11636	813	596

* 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	Conduit Size*
AWG/ Kcmil	No.	mm	mm	mm	mm	No. x AWG	mm	mm	mm	mm	kg/km	kg/km	inch
2	7	7.19	15.27	3.56	16.79	5x12	2.03	33.55	1.27	36.09	507	1768	3.5
1	19	8.18	16.26	3.56	17.78	7x12	2.03	34.54	1.27	37.08	662	1981	3.5
1/0	19	9.19	17.27	3.56	18.80	7x12	2.03	35.56	1.27	38.10	768	2144	4
2/0	19	10.29	18.36	3.56	19.89	7x12	2.03	36.65	1.27	39.19	900	2341	4
3/0	19	11.58	19.66	3.56	21.18	9x12	2.03	40.49	1.52	43.54	1116	2893	4.5
4/0	19	13.00	21.08	3.56	22.61	9x12	2.03	41.91	1.52	44.96	1323	3192	4.5
250	37	14.17	22.45	3.56	23.98	11x12	2.03	43.28	1.52	46.33	1570	3533	4.5
350	37	16.79	25.07	3.56	26.59	13x12	2.03	45.90	1.52	48.95	2121	4253	5
500	37	20.04	28.32	3.56	29.85	17x12	2.03	49.15	1.52	52.20	2927	5270	5.5
750	61	24.59	33.12	3.56	34.65	21x12	2.79	55.47	1.52	58.52	4225	7070	6
1000	61	28.37	36.91	3.56	38.43	21x12	2.79	59.26	1.91	63.07	5392	8594	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
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.

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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
2	251.46	2359	0.5315	0.73	0.0101	0.1936	0.521+j0.196	0.224+j0.065	2770	215	221
1	259.08	2977	0.4199	0.57	0.0091	0.1837	0.419+j0.125	0.179+j0.061	3879	245	247
1/0	266.70	3756	0.3346	0.46	0.0085	0.1772	0.383+j0.123	0.143+j0.059	3879	278	275
2/0	274.32	4735	0.2690	0.37	0.0079	0.1706	0.355+j0.122	0.116+j0.058	3879	317	306
3/0	304.80	5972	0.2100	0.29	0.0070	0.1706	0.288+j0.086	0.092+j0.057	4987	357	335
4/0	314.96	7529	0.1673	0.23	0.0064	0.1640	0.271+j0.085	0.075+j0.055	4987	404	369
250	325.12	8900	0.1411	0.19	0.0061	0.1608	0.229+j0.065	0.065+j0.053	6095	456	412
350	342.90	12460	0.1017	0.14	0.0052	0.1509	0.190+j0.051	0.050+j0.050	7203	537	456
500	365.76	17800	0.0689	0.10	0.0046	0.1444	0.145+j0.037	0.038+j0.047	9420	616	497
750	408.94	26700	0.0459	0.07	0.0040	0.1378	0.115+j0.028	0.030+j0.044	11636	706	551
1000	441.96	35600	0.0361	0.06	0.0034	0.1312	0.112+j0.027	0.027+j0.042	11636	813	596

* Inductive impedance is based on non-ferrous conduit with one diameter spacing center-to-center.
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3-1/C in air copper and aluminum: D17M
3-1/C direct buried copper and aluminum: D17A

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