HVTECK CU 1/C 115NLEPR CB PVC AIA PVC 5kV 133% CSA

Single Conductor, 115 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

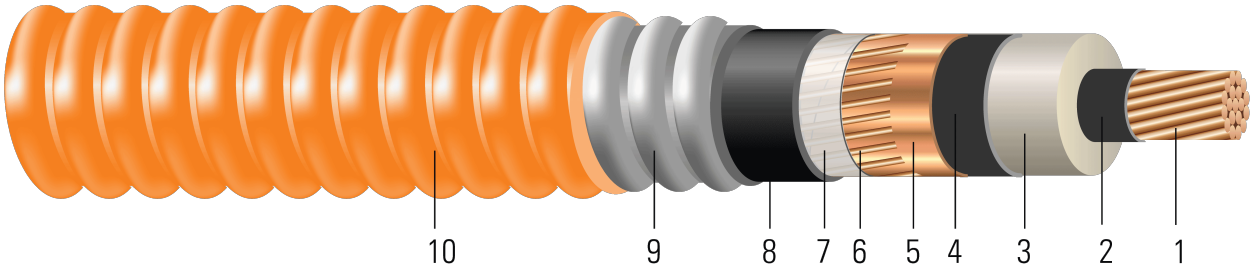

Image not to scale. See Table 1 for dimensions.

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:** 115 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% insulation level
4. **Insulation Shield:** Strippable semi-conducting cross-linked copolymer
5. **Tape Shield:** 5 mil tape shield
6. **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
7. **Neutral Separator:** Mylar tape
8. **Inner Jacket:** PVC inner jacket
9. **Armour:** Aluminum Interlocked Armour (AIA)
10. **Overall Jacket:** Orange Polyvinyl Chloride (PVC) Jacket

APPLICATIONS AND FEATURES:

Southwire's 5kV 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)

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- 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:

{SQMTR} {CSA} SOUTHWIRE® POWER CABLE {NESC} 1/C XXX KCMIL CU X.XX mm (115 mils) NL-EPR AIA 5KV 133% INS LEVEL 25%TS CB XX X XX AWG SUN RES 105°C FT4 (-40°C) LTGG RoHS

Table 1 – Weights and Measurements

Stock Number	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
TBA	2	7	0.282	0.550	115	0.610	7x14	80	1.120	50	1.220	299	812
TBA	1	19	0.322	0.590	115	0.650	11x14	80	1.160	50	1.260	407	947
TBA	1/0	19	0.361	0.629	115	0.689	11x14	80	1.199	50	1.299	474	1041
TBA	2/0	19	0.405	0.673	115	0.733	11x14	80	1.353	50	1.453	559	1167
TBA	3/0	19	0.456	0.724	115	0.784	13x14	80	1.404	50	1.504	694	1337
TBA	4/0	19	0.512	0.780	115	0.840	13x14	80	1.460	50	1.560	829	1510
TBA	250	37	0.558	0.834	115	0.894	17x14	80	1.514	60	1.634	1001	1755
588055	350	37	0.661	0.917	115	0.977	21x14	80	1.632	60	1.745	1365	2313
TBA	500	37	0.789	1.065	115	1.125	26x14	80	1.803	60	1.923	1896	2866
TBA	750	61	0.968	1.254	115	1.314	21x12	80	1.992	60	2.112	2753	3968
TBA	1000	61	1.117	1.403	115	1.463	21x12	110	2.201	60	2.321	3525	4985

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	14.6	530	0.162	0.204	0.031	0.055	0.554 + j0.511	0.205 + j0.056	5458	215	221
1	15.1	669	0.128	0.162	0.028	0.053	0.516 + j0.488	0.163 + j0.053	8577	245	247
1/0	15.6	844	0.102	0.128	0.026	0.051	0.485 + j0.468	0.129 + j0.051	8577	278	275
2/0	17.4	1064	0.081	0.102	0.024	0.051	0.459 + j0.446	0.103 + j0.051	8577	317	306
3/0	18.0	1342	0.064	0.081	0.021	0.049	0.439 + j0.423	0.082 + j0.049	10137	357	335
4/0	18.7	1692	0.051	0.065	0.020	0.047	0.424 + j0.399	0.066 + j0.048	10137	404	369
250	19.6	2000	0.043	0.056	0.018	0.046	0.414 + j0.377	0.057 + j0.046	13256	456	412
350	20.9	2800	0.031	0.041	0.015	0.044	0.394 + j0.340	0.042 + j0.044	16376	537	456
500	23.1	4000	0.022	0.030	0.014	0.042	0.374 + j0.300	0.031 + j0.042	20275	616	497
750	25.3	6000	0.014	0.023	0.012	0.040	0.352 + j0.252	0.024 + j0.040	26018	706	551
1000	27.9	8000	0.011	0.019	0.010	0.039	0.334 + j0.221	0.020 + j0.038	26018	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

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Table 3 – Weights and Measurements (Metric)

Stock Number	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
TBA	2	7	7.16	13.97	2.92	15.49	7x14	2.03	28.45	1.27	30.99	445	1208
TBA	1	19	8.18	14.99	2.92	16.51	11x14	2.03	29.46	1.27	32.00	606	1409
TBA	1/0	19	9.17	15.98	2.92	17.50	11x14	2.03	30.45	1.27	32.99	705	1549
TBA	2/0	19	10.29	17.09	2.92	18.62	11x14	2.03	34.37	1.27	36.91	832	1737
TBA	3/0	19	11.58	18.39	2.92	19.91	13x14	2.03	35.66	1.27	38.20	1033	1990
TBA	4/0	19	13.00	19.81	2.92	21.34	13x14	2.03	37.08	1.27	39.62	1234	2247
TBA	250	37	14.17	21.18	2.92	22.71	17x14	2.03	38.46	1.52	41.50	1490	2612
588055	350	37	16.79	23.29	2.92	24.82	21x14	2.03	41.45	1.52	44.32	2031	3442
TBA	500	37	20.04	27.05	2.92	28.58	26x14	2.03	45.80	1.52	48.84	2822	4265
TBA	750	61	24.59	31.85	2.92	33.38	21x12	2.03	50.60	1.52	53.64	4097	5905
TBA	1000	61	28.37	35.64	2.92	37.16	21x12	2.79	55.91	1.52	58.95	5246	7418

All dimensions are nominal and subject to normal manufacturing tolerances
◊ Cable marked with this symbol is a standard stock item
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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	370.84	2359	0.5315	0.67	0.0094	0.1804	0.554 + j0.511	0.205 + j0.056	5458	215	221
1	383.54	2977	0.4199	0.53	0.0085	0.1739	0.516 + j0.488	0.163 + j0.053	8577	245	247
1/0	396.24	3756	0.3346	0.42	0.0079	0.1673	0.485 + j0.468	0.129 + j0.051	8577	278	275
2/0	441.96	4735	0.2657	0.33	0.0073	0.1673	0.459 + j0.446	0.103 + j0.051	8577	317	306
3/0	457.20	5972	0.2100	0.27	0.0064	0.1608	0.439 + j0.423	0.082 + j0.049	10137	357	335
4/0	474.98	7529	0.1673	0.21	0.0061	0.1542	0.424 + j0.399	0.066 + j0.048	10137	404	369
250	497.84	8900	0.1411	0.18	0.0055	0.1509	0.414 + j0.377	0.057 + j0.046	13256	456	412
350	530.86	12460	0.1017	0.13	0.0046	0.1444	0.394 + j0.340	0.042 + j0.044	16376	537	456
500	586.74	17800	0.0722	0.10	0.0043	0.1378	0.374 + j0.300	0.031 + j0.042	20275	616	497
750	642.62	26700	0.0459	0.08	0.0037	0.1312	0.352 + j0.252	0.024 + j0.040	26018	706	551
1000	708.66	35600	0.0361	0.06	0.0030	0.1280	0.334 + j0.221	0.020 + j0.038	26018	813	596

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