

HVTECK CU 1/C 115NLEPR CB PVC AIA PVC 8kV 100% CSA

Single Conductor, 115 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

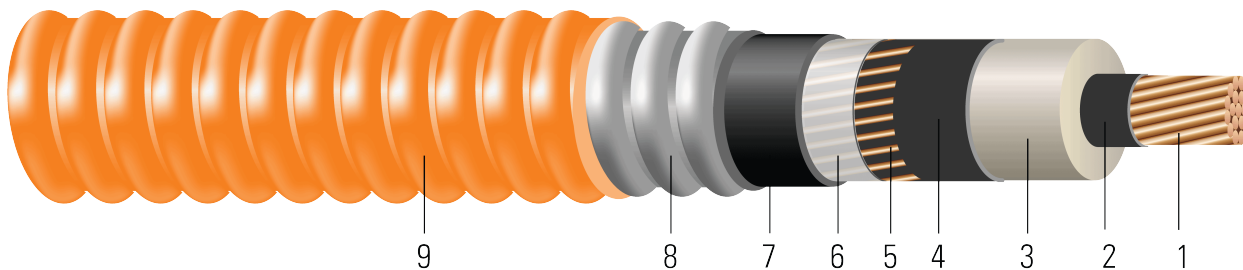


Image not to scale. See Table 1 for dimensions.

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:** 115 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:** 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)



- 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 115 NLEPR AIA 8kV 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
2	7	0.282	0.550	115	0.610	7 x 14	80	1.126	50	1.226	812
1	19	0.322	0.590	115	0.650	11 x 14	80	1.166	50	1.266	947
1/0	19	0.361	0.629	115	0.689	11 x 14	80	1.205	50	1.305	1041
2/0	19	0.405	0.673	115	0.733	11 x 14	80	1.359	50	1.459	1167
3/0	19	0.456	0.724	115	0.784	13 x 14	80	1.410	50	1.510	1337
4/0	19	0.512	0.780	115	0.840	13 x 14	80	1.466	50	1.566	1511
250	37	0.558	0.834	115	0.894	17 x 14	80	1.520	60	1.640	1755
350	37	0.661	0.937	115	0.997	21 x 14	80	1.647	60	1.767	2225
500	37	0.789	1.065	115	1.125	26 x 14	80	1.775	60	1.895	2850
750	61	0.968	1.254	115	1.314	21 x 12	80	1.998	60	2.118	3969
1000	61	1.117	1.403	115	1.463	21 x 12	110	2.207	60	2.327	4988

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
2	8.5	530	0.162	0.204	0.034	0.055	0.186 + j0.03	0.191 + j0.037	5458	215	221
1	8.8	669	0.128	0.162	0.031	0.053	0.144 + j0.027	0.15 + j0.035	8577	245	247
1/0	9.1	844	0.102	0.128	0.028	0.051	0.11 + j0.025	0.116 + j0.033	8577	278	275
2/0	10.2	1064	0.081	0.102	0.026	0.051	0.084 + j0.024	0.089 + j0.032	8577	317	306
3/0	10.5	1342	0.064	0.081	0.024	0.049	0.063 + j0.023	0.068 + j0.03	10137	357	335
4/0	10.9	1692	0.051	0.065	0.021	0.047	0.047 + j0.021	0.053 + j0.029	10137	404	369
250	11.4	2000	0.043	0.056	0.020	0.046	0.038 + j0.02	0.044 + j0.028	13256	456	412
350	12.3	2800	0.031	0.041	0.018	0.044	0.023 + j0.019	0.029 + j0.027	16376	537	456
500	13.2	4000	0.022	0.030	0.015	0.042	0.012 + j0.017	0.018 + j0.025	20275	616	497
750	14.8	6000	0.014	0.023	0.013	0.040	0.005 + j0.016	0.011 + j0.024	26018	706	551
1000	16.2	8000	0.011	0.019	0.011	0.039	0.001 + j0.015	0.007 + j0.023	26018	813	596

* 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
2	7	7.16	13.97	2.92	15.49	7 x 14	2.03	28.60	1.27	31.14	1208
1	19	8.18	14.99	2.92	16.51	11 x 14	2.03	29.62	1.27	32.16	1409
1/0	19	9.17	15.98	2.92	17.50	11 x 14	2.03	30.61	1.27	33.15	1549
2/0	19	10.29	17.09	2.92	18.62	11 x 14	2.03	34.52	1.27	37.06	1737
3/0	19	11.58	18.39	2.92	19.91	13 x 14	2.03	35.81	1.27	38.35	1990
4/0	19	13.00	19.81	2.92	21.34	13 x 14	2.03	37.24	1.27	39.78	2249
250	37	14.17	21.18	2.92	22.71	17 x 14	2.03	38.61	1.52	41.66	2612
350	37	16.79	23.80	2.92	25.32	21 x 14	2.03	41.83	1.52	44.88	3311
500	37	20.04	27.05	2.92	28.58	26 x 14	2.03	45.08	1.52	48.13	4241
750	61	24.59	31.85	2.92	33.38	21 x 12	2.03	50.75	1.52	53.80	5907
1000	61	28.37	35.64	2.92	37.16	21 x 12	2.79	56.06	1.52	59.11	7423

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
2	215.90	2359	0.5315	0.67	0.0104	0.1804	0.186 + j0.03	0.191 + j0.037	5458	215	221
1	223.52	2977	0.4199	0.53	0.0094	0.1739	0.144 + j0.027	0.15 + j0.035	8577	245	247
1/0	231.14	3756	0.3346	0.42	0.0085	0.1673	0.11 + j0.025	0.116 + j0.033	8577	278	275
2/0	259.08	4735	0.2657	0.33	0.0079	0.1673	0.084 + j0.024	0.089 + j0.032	8577	317	306
3/0	266.70	5972	0.2100	0.27	0.0073	0.1608	0.063 + j0.023	0.068 + j0.03	10137	357	335
4/0	276.86	7529	0.1673	0.21	0.0064	0.1542	0.047 + j0.021	0.053 + j0.029	10137	404	369
250	289.56	8900	0.1411	0.18	0.0061	0.1509	0.038 + j0.02	0.044 + j0.028	13256	456	412
350	312.42	12460	0.1017	0.13	0.0055	0.1444	0.023 + j0.019	0.029 + j0.027	16376	537	456
500	335.28	17800	0.0722	0.10	0.0046	0.1378	0.012 + j0.017	0.018 + j0.025	20275	616	497
750	375.92	26700	0.0459	0.08	0.0040	0.1312	0.005 + j0.016	0.011 + j0.024	26018	706	551
1000	411.48	35600	0.0361	0.06	0.0034	0.1280	0.001 + j0.015	0.007 + j0.023	26018	813	596

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

