

## 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

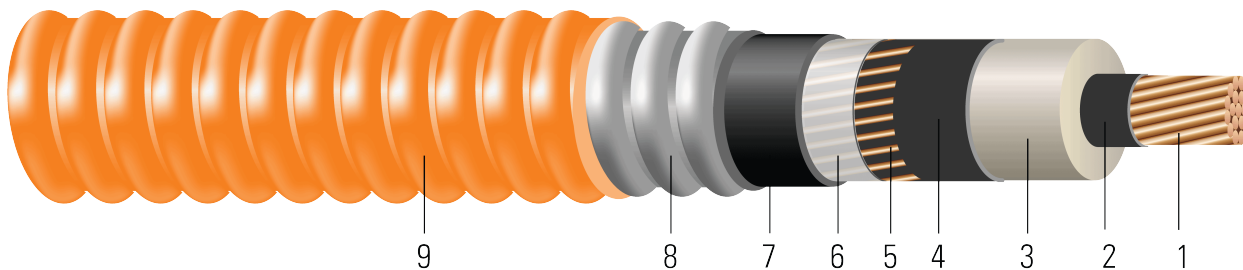


Image not to scale. See Table 1 for dimensions.

### 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.

