

## HVTECK CU 3/C 115NLEPR TS PVC AIA PVC 8kV 100% CSA

3 Conductor, 115 Mils No Lead Ethylene Propylene Rubber (NL-EPR), 100% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

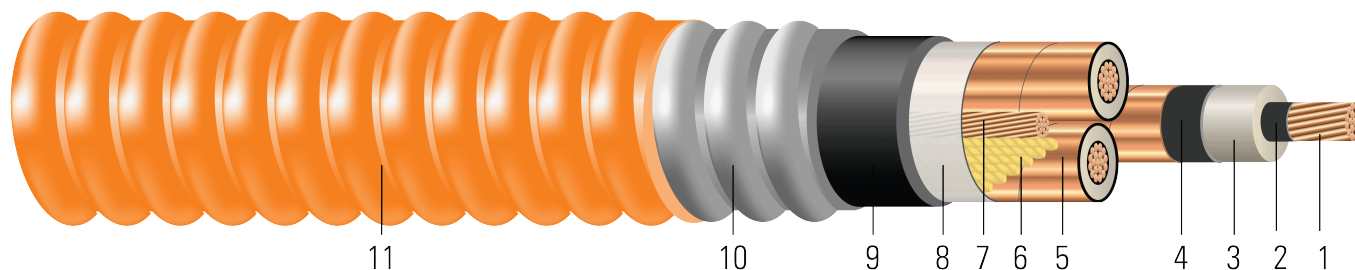


Image not to scale. See Table 1 for dimensions.

### 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:** 115 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 100% 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. **Filler:** Interstices filled with non-hydroscopic/non-wicking fillers
7. **Grounding Conductor:** Class B compressed stranded bare copper ground per ASTM B3 and ASTM B8
8. **Binder:** Polypropylene tape
9. **Inner Jacket:** PVC inner jacket
10. **Armour:** Aluminum Interlocked Armour (AIA)
11. **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)
- IEEE 1202 FT4 Flame Test (70,000) BTU/hr Vertical Tray Test
- 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# 3/C [#AWG or #kcmil] CU 115 NLEPR AIA 8kV 100% INS LEVEL 25% TS 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	Ground Size	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Approx. Weight
AWG/ Kcmil	No.	inch	inch	mil	inch	AWG	mil	inch	mil	inch	lb/1000ft
2	7	0.282	0.550	115	0.610	6	80	1.876	60	1.996	2059
1	19	0.322	0.590	115	0.650	6	80	1.963	60	2.083	2322
1/0	19	0.361	0.629	115	0.689	6	110	2.107	60	2.227	2744
2/0	19	0.405	0.673	115	0.733	6	110	2.202	60	2.322	3118
3/0	19	0.456	0.724	115	0.784	4	110	2.312	75	2.462	3652
4/0	19	0.512	0.780	115	0.840	4	110	2.433	75	2.583	4216
250	37	0.558	0.834	115	0.894	4	110	2.550	75	2.700	4738
350	37	0.661	0.937	115	0.997	3	110	2.772	75	2.922	5967
500	37	0.789	1.065	115	1.125	3	110	3.049	85	3.219	7804
750	61	0.968	1.254	115	1.314	2	125	3.487	85	3.657	10838
1000	61	1.117	1.403	115	1.463	1	125	3.809	85	3.979	13652

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	13.9	1592	0.162	0.204	0.034	0.040	0.572 + j0.522	0.204 + j0.041	1889	172	201
1	14.5	2008	0.128	0.162	0.031	0.039	0.534 + j0.498	0.162 + j0.039	2013	197	228
1/0	15.5	2534	0.102	0.128	0.028	0.037	0.502 + j0.476	0.128 + j0.037	2134	225	257
2/0	16.2	3194	0.081	0.102	0.026	0.036	0.477 + j0.453	0.102 + j0.036	2270	260	292
3/0	17.2	4027	0.064	0.081	0.024	0.035	0.456 + j0.428	0.081 + j0.035	2429	297	330
4/0	18.0	5078	0.051	0.065	0.021	0.034	0.439 + j0.403	0.065 + j0.034	2602	342	372
250	18.9	6000	0.043	0.056	0.020	0.033	0.428 + j0.38	0.056 + j0.033	2769	376	410
350	20.4	8400	0.031	0.041	0.018	0.032	0.407 + j0.341	0.041 + j0.032	3088	460	487
500	22.5	12000	0.022	0.030	0.015	0.030	0.386 + j0.3	0.03 + j0.03	3485	556	573
750	25.5	18000	0.014	0.023	0.013	0.029	0.361 + j0.25	0.023 + j0.029	4071	678	668
1000	27.8	24000	0.011	0.019	0.011	0.028	0.342 + j0.219	0.02 + j0.028	4532	798	772

\* 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	Ground Size	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Approx. Weight
AWG/Kcmil	No.	mm	mm	mm	mm	AWG	mm	mm	mm	mm	kg/km
2	7	7.16	13.97	2.92	15.49	6	2.03	47.65	1.52	50.70	3064
1	19	8.18	14.99	2.92	16.51	6	2.03	49.86	1.52	52.91	3456
1/0	19	9.17	15.98	2.92	17.50	6	2.79	53.52	1.52	56.57	4084
2/0	19	10.29	17.09	2.92	18.62	6	2.79	55.93	1.52	58.98	4640
3/0	19	11.58	18.39	2.92	19.91	4	2.79	58.72	1.91	62.53	5435
4/0	19	13.00	19.81	2.92	21.34	4	2.79	61.80	1.91	65.61	6274
250	37	14.17	21.18	2.92	22.71	4	2.79	64.77	1.91	68.58	7051
350	37	16.79	23.80	2.92	25.32	3	2.79	70.41	1.91	74.22	8880
500	37	20.04	27.05	2.92	28.58	3	2.79	77.44	2.16	81.76	11614
750	61	24.59	31.85	2.92	33.38	2	3.18	88.57	2.16	92.89	16129
1000	61	28.37	35.64	2.92	37.16	1	3.18	96.75	2.16	101.07	20316

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	353.06	7084	0.5315	0.67	0.0104	0.1312	0.572 + j0.522	0.204 + j0.041	1889	172	201
1	368.30	8936	0.4199	0.53	0.0094	0.1280	0.534 + j0.498	0.162 + j0.039	2013	197	228
1/0	393.70	11276	0.3346	0.42	0.0085	0.1214	0.502 + j0.476	0.128 + j0.037	2134	225	257
2/0	411.48	14213	0.2657	0.33	0.0079	0.1181	0.477 + j0.453	0.102 + j0.036	2270	260	292
3/0	436.88	17920	0.2100	0.27	0.0073	0.1148	0.456 + j0.428	0.081 + j0.035	2429	297	330
4/0	457.20	22597	0.1673	0.21	0.0064	0.1115	0.439 + j0.403	0.065 + j0.034	2602	342	372
250	480.06	26700	0.1411	0.18	0.0061	0.1083	0.428 + j0.38	0.056 + j0.033	2769	376	410
350	518.16	37380	0.1017	0.13	0.0055	0.1050	0.407 + j0.341	0.041 + j0.032	3088	460	487
500	571.50	53400	0.0722	0.10	0.0046	0.0984	0.386 + j0.3	0.03 + j0.03	3485	556	573
750	647.70	80100	0.0459	0.08	0.0040	0.0951	0.361 + j0.25	0.023 + j0.029	4071	678	668
1000	706.12	106800	0.0361	0.06	0.0034	0.0919	0.342 + j0.219	0.02 + j0.028	4532	798	772

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

