

## HVTECK CU 3/C 115NLEPR TS PVC AIA PVC 5kV 133% CSA

3 Conductor, 115 Mils No Lead Ethylene Propylene Rubber (NL-EPR), 133% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

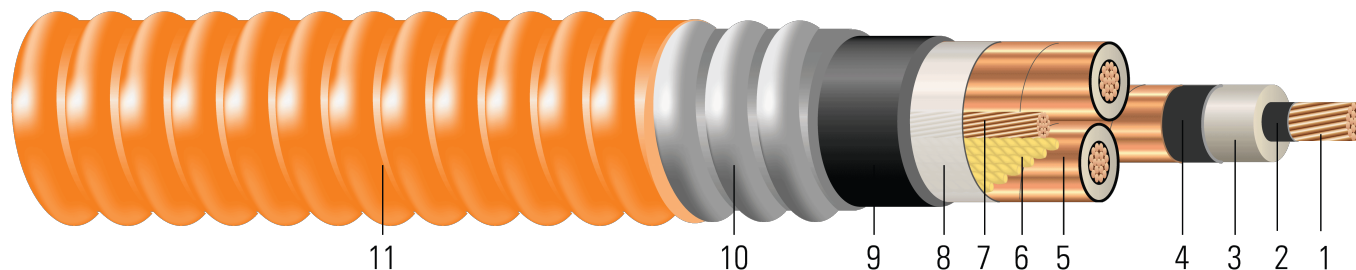


Image not to scale. See Table 1 for dimensions.

### 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) 133% 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-hydroscoping/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 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)



- IEEE 383 Flame Test (70,000 btu)
- 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 (Meets Qualification Test Requirements)

### SAMPLE PRINT LEGEND:

(CSA) SOUTHWIRE (NESC) #P# 3/C [#AWG or #kcmil] CU 115 NLEPR AIA 5kV 133% INS LEVEL 25% TS SUN RES 105°C FT4 HL (-40°C) LTGG RoHS YEAR [SEQUENTIAL METER MARKS]

**Table 1 – Weights and Measurements**

Stock Number	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
582464 <sup>^</sup>	2	7	0.282	0.551	115	0.611	6	80	1.797	65	1.929	2006
646923	2	7	0.282	0.545	115	0.605	6	80	1.860	60	1.980	2132
TBA	1	19	0.322	0.590	115	0.650	6	80	1.963	60	2.083	2322
644322 <sup>^</sup>	1/0	19	0.361	0.630	115	0.690	6	110	2.104	60	2.224	2814
582463 <sup>^</sup>	2/0	19	0.405	0.673	115	0.733	4	110	2.080	65	2.212	2981
599626	2/0	19	0.405	0.674	115	0.734	4	110	2.199	60	2.319	3230
TBA	3/0	19	0.456	0.724	115	0.784	4	110	2.312	75	2.462	3652
TBA	4/0	19	0.512	0.780	115	0.840	4	110	2.433	75	2.583	4216
646655 <sup>^</sup>	250	37	0.558	0.834	115	0.894	4	110	2.510	75	2.660	4776
646924	250	37	0.558	0.834	115	0.894	4	110	2.510	75	2.660	4772
646645 <sup>^</sup>	350	37	0.661	0.917	115	0.977	3	110	2.724	75	2.874	6029
646640 <sup>^</sup>	500	37	0.789	1.042	115	1.102	3	110	2.994	75	3.144	7790
675407	500	37	0.789	1.042	115	1.102	3	110	2.994	75	3.144	7824
671532	750	61	0.968	1.254	115	1.314	2	125	3.502	85	3.672	11057
TBA	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

<sup>^</sup>Yellow outer jacket



**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	13.5	1592	0.162	0.204	0.034	0.040	0.572 + j0.522	0.204 + j0.041	1889	172	201
2	13.8	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	15.4	3194	0.081	0.102	0.026	0.036	0.477 + j0.453	0.102 + j0.036	2270	260	292
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	18.6	6000	0.043	0.056	0.020	0.033	0.428 + j0.38	0.056 + j0.033	2769	376	410
250	18.6	6000	0.043	0.056	0.020	0.033	0.428 + j0.38	0.056 + j0.033	2769	376	410
350	20.1	8400	0.031	0.041	0.018	0.032	0.407 + j0.341	0.041 + j0.032	3088	460	487
500	22.0	12000	0.022	0.030	0.015	0.030	0.386 + j0.3	0.03 + j0.03	3485	556	573
500	22.0	12000	0.022	0.030	0.015	0.030	0.386 + j0.3	0.03 + j0.03	3485	556	573
750	25.7	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)**

Stock Number	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
582464 <sup>^</sup>	2	7	7.16	14.00	2.92	15.52	6	2.03	45.64	1.65	49.00	2985
646923	2	7	7.16	13.84	2.92	15.37	6	2.03	47.24	1.52	50.29	3173
TBA	1	19	8.18	14.99	2.92	16.51	6	2.03	49.86	1.52	52.91	3456
644322 <sup>^</sup>	1/0	19	9.17	16.00	2.92	17.53	6	2.79	53.44	1.52	56.49	4188
582463 <sup>^</sup>	2/0	19	10.29	17.09	2.92	18.62	4	2.79	52.83	1.65	56.18	4436
599626	2/0	19	10.29	17.12	2.92	18.64	4	2.79	55.85	1.52	58.90	4807
TBA	3/0	19	11.58	18.39	2.92	19.91	4	2.79	58.72	1.91	62.53	5435
TBA	4/0	19	13.00	19.81	2.92	21.34	4	2.79	61.80	1.91	65.61	6274
646655 <sup>^</sup>	250	37	14.17	21.18	2.92	22.71	4	2.79	63.75	1.91	67.56	7107
646924	250	37	14.17	21.18	2.92	22.71	4	2.79	63.75	1.91	67.56	7102
646645 <sup>^</sup>	350	37	16.79	23.29	2.92	24.82	3	2.79	69.19	1.91	73.00	8972
646640 <sup>^</sup>	500	37	20.04	26.47	2.92	27.99	3	2.79	76.05	1.91	79.86	11593
675407	500	37	20.04	26.47	2.92	27.99	3	2.79	76.05	1.91	79.86	11643
671532	750	61	24.59	31.85	2.92	33.38	2	3.18	88.95	2.16	93.27	16455
TBA	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

<sup>^</sup>Yellow outer jacket



**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	342.90	7084	0.5315	0.67	0.0104	0.1312	0.572 + j0.522	0.204 + j0.041	1889	172	201
2	350.52	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	391.16	14213	0.2657	0.33	0.0079	0.1181	0.477 + j0.453	0.102 + j0.036	2270	260	292
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	472.44	26700	0.1411	0.18	0.0061	0.1083	0.428 + j0.38	0.056 + j0.033	2769	376	410
250	472.44	26700	0.1411	0.18	0.0061	0.1083	0.428 + j0.38	0.056 + j0.033	2769	376	410
350	510.54	37380	0.1017	0.13	0.0055	0.1050	0.407 + j0.341	0.041 + j0.032	3088	460	487
500	558.80	53400	0.0722	0.10	0.0046	0.0984	0.386 + j0.3	0.03 + j0.03	3485	556	573
500	558.80	53400	0.0722	0.10	0.0046	0.0984	0.386 + j0.3	0.03 + j0.03	3485	556	573
750	652.78	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.

