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

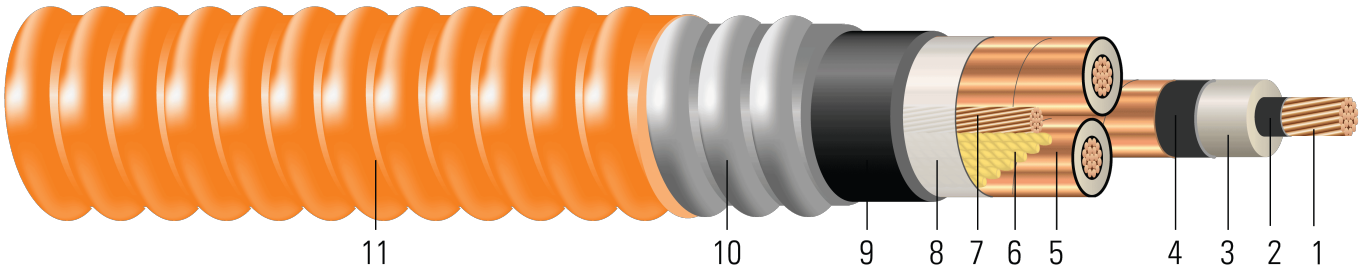

Image not to scale. See Table 1 for dimensions.

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 (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	Copper Weight	Approx. Weight
	AWG/ Kcmil	No.	inch	inch	mil	inch	AWG	mil	inch	mil	inch	lb/ 1000ft	lb/ 1000ft
582464^	2	7	0.282	0.551	115	0.611	6	80	1.797	65	1.929	856	2006
646923	2	7	0.282	0.545	115	0.605	6	80	1.860	60	1.980	866	2132
TBA	1	19	0.322	0.590	115	0.650	6	80	1.963	60	2.083	902	2282
644322^	1/0	19	0.361	0.630	115	0.690	6	110	2.104	60	2.224	1251	2814
457129	1/0	19	0.361	0.630	115	0.690	6	110	2.104	60	2.224	1251	2812
582463^	2/0	19	0.405	0.673	115	0.733	6	110	2.080	65	2.212	1559	2981
599626	2/0	19	0.405	0.674	115	0.734	6	110	2.199	60	2.319	1560	3230
TBA	3/0	19	0.456	0.724	115	0.784	4	110	2.313	75	2.463	1744	3637
TBA	4/0	19	0.512	0.780	115	0.840	4	110	2.434	75	2.584	2156	4190
646655^	250	37	0.558	0.834	115	0.894	4	110	2.510	75	2.660	2689	4776
646924	250	37	0.558	0.834	115	0.894	4	110	2.510	75	2.660	2689	4772
646645^	350	37	0.661	0.917	115	0.977	3	110	2.724	75	2.874	3680	6029
646640^	500	37	0.789	1.042	115	1.102	3	110	2.994	75	3.144	5111	7790
675407	500	37	0.789	1.042	115	1.102	3	110	2.994	75	3.144	5111	7824
671532	750	61	0.968	1.254	115	1.314	2	125	3.502	85	3.672	7539	11057
TBA	1000	61	1.117	1.403	115	1.463	1	125	3.809	85	3.979	9693	13639

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
^Yellow outer jacket
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.

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	13.5	1592	0.162	0.204	0.031	0.040	0.574 + j0.516	0.204 + j0.041	1920	172	201
2	13.9	1592	0.162	0.204	0.030	0.040	0.574 + j0.516	0.204 + j0.041	1920	172	201
1	14.6	2008	0.128	0.162	0.030	0.039	0.535 + j0.492	0.162 + j0.039	2044	197	228
1/0	15.6	2534	0.102	0.128	0.026	0.037	0.502 + j0.471	0.128 + j0.037	2165	225	257
1/0	15.6	2534	0.102	0.128	0.026	0.037	0.502 + j0.471	0.128 + j0.037	2165	225	257
2/0	15.5	3194	0.081	0.102	0.024	0.036	0.477 + j0.449	0.102 + j0.036	2302	260	292
2/0	16.2	3194	0.081	0.102	0.024	0.036	0.477 + j0.449	0.102 + j0.036	2302	260	292
3/0	17.2	4027	0.064	0.081	0.020	0.030	0.456 + j0.424	0.081 + j0.035	2459	297	330
4/0	18.1	5078	0.051	0.065	0.020	0.030	0.439 + j0.399	0.065 + j0.034	2633	342	372
250	18.6	6000	0.043	0.056	0.018	0.033	0.428 + j0.376	0.056 + j0.033	2800	376	410
250	18.6	6000	0.043	0.056	0.018	0.033	0.428 + j0.376	0.056 + j0.033	2800	376	410
350	20.1	8400	0.031	0.041	0.015	0.032	0.406 + j0.338	0.041 + j0.032	3120	460	487
500	22.0	12000	0.022	0.030	0.013	0.030	0.385 + j0.297	0.030 + j0.030	3516	556	573
500	22.0	12000	0.022	0.030	0.013	0.030	0.385 + j0.297	0.030 + j0.030	3516	556	573
750	25.7	18000	0.014	0.023	0.012	0.029	0.360 + j0.248	0.023 + j0.029	4102	678	668
1000	27.9	24000	0.011	0.020	0.010	0.030	0.341 + j0.217	0.020 + j0.028	4563	798	772

* Inductive impedance is based on non-ferrous conduit with one diameter spacing center-to-center.
* Calculations are based on 5 mil 25 % over lapping copper tape shield / Conductor temperature of 90°C / Shield temperature of 45°C / Earth resistivity of 100 ohms-meter
* Ampacities are based on Table D17N of the Canadian Electrical Code Part I (40°C Ambient Air Temperature, indoor installation)
* Ampacities are based on Table D17E of the Canadian Electrical Code Part I
* CEC ampacities are based on:
3/C in air copper and aluminum: D17N
3/C direct buried copper and aluminum: D17E

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	Copper Weight	Approx. Weight
	AWG/ Kcmil	No.	mm	mm	mm	mm	AWG	mm	mm	mm	mm	kg/km	kg/km
582464^	2	7	7.16	14.00	2.92	15.52	6	2.03	45.64	1.65	49.00	1274	2985
646923	2	7	7.16	13.84	2.92	15.37	6	2.03	47.24	1.52	50.29	1289	3173
TBA	1	19	8.18	14.99	2.92	16.51	6	2.03	49.86	1.52	52.91	1342	3396
644322^	1/0	19	9.17	16.00	2.92	17.53	6	2.79	53.44	1.52	56.49	1862	4188
457129	1/0	19	9.17	16.00	2.92	17.53	6	2.79	53.44	1.52	56.49	1862	4185
582463^	2/0	19	10.29	17.09	2.92	18.62	6	2.79	52.83	1.65	56.18	2320	4436
599626	2/0	19	10.29	17.12	2.92	18.64	6	2.79	55.85	1.52	58.90	2322	4807
TBA	3/0	19	11.58	18.39	2.92	19.91	4	2.79	58.75	1.91	62.56	2595	5412
TBA	4/0	19	13.00	19.81	2.92	21.34	4	2.79	61.82	1.91	65.63	3208	6235
646655^	250	37	14.17	21.18	2.92	22.71	4	2.79	63.75	1.91	67.56	4002	7107
646924	250	37	14.17	21.18	2.92	22.71	4	2.79	63.75	1.91	67.56	4002	7102
646645^	350	37	16.79	23.29	2.92	24.82	3	2.79	69.19	1.91	73.00	5476	8972
646640^	500	37	20.04	26.47	2.92	27.99	3	2.79	76.05	1.91	79.86	7606	11593
675407	500	37	20.04	26.47	2.92	27.99	3	2.79	76.05	1.91	79.86	7606	11643
671532	750	61	24.59	31.85	2.92	33.38	2	3.18	88.95	2.16	93.27	11219	16455
TBA	1000	61	28.37	35.64	2.92	37.16	1	3.18	96.75	2.16	101.07	14425	20297

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
^Yellow outer jacket
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.

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	342.90	7084	0.5315	0.67	0.0094	0.1312	0.574 + j0.516	0.204 + j0.041	1920	172	201
2	353.06	7084	0.5315	0.67	0.0091	0.1312	0.574 + j0.516	0.204 + j0.041	1920	172	201
1	370.84	8936	0.4199	0.53	0.0091	0.1280	0.535 + j0.492	0.162 + j0.039	2044	197	228
1/0	396.24	11276	0.3346	0.42	0.0079	0.1214	0.502 + j0.471	0.128 + j0.037	2165	225	257
1/0	396.24	11276	0.3346	0.42	0.0079	0.1214	0.502 + j0.471	0.128 + j0.037	2165	225	257
2/0	393.70	14213	0.2657	0.33	0.0073	0.1181	0.477 + j0.449	0.102 + j0.036	2302	260	292
2/0	411.48	14213	0.2657	0.33	0.0073	0.1181	0.477 + j0.449	0.102 + j0.036	2302	260	292
3/0	436.88	17920	0.2100	0.27	0.0061	0.0984	0.456 + j0.424	0.081 + j0.035	2459	297	330
4/0	459.74	22597	0.1673	0.21	0.0061	0.0984	0.439 + j0.399	0.065 + j0.034	2633	342	372
250	472.44	26700	0.1411	0.18	0.0055	0.1083	0.428 + j0.376	0.056 + j0.033	2800	376	410
250	472.44	26700	0.1411	0.18	0.0055	0.1083	0.428 + j0.376	0.056 + j0.033	2800	376	410
350	510.54	37380	0.1017	0.13	0.0046	0.1050	0.406 + j0.338	0.041 + j0.032	3120	460	487
500	558.80	53400	0.0722	0.10	0.0040	0.0984	0.385 + j0.297	0.030 + j0.030	3516	556	573
500	558.80	53400	0.0722	0.10	0.0040	0.0984	0.385 + j0.297	0.030 + j0.030	3516	556	573
750	652.78	80100	0.0459	0.08	0.0037	0.0951	0.360 + j0.248	0.023 + j0.029	4102	678	668
1000	708.66	106800	0.0361	0.07	0.0030	0.0984	0.341 + j0.217	0.020 + j0.028	4563	798	772

* Inductive impedance is based on non-ferrous conduit with one diameter spacing center-to-center.
* Calculations are based on 5 mil 25 % over lapping copper tape shield / Conductor temperature of 90°C / Shield temperature of 45°C / Earth resistivity of 100 ohms-meter
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