HVTECK CU 3/C 175NLEPR TS PVC AIA PVC 15kV 100% CSA

3 Conductor, 175 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

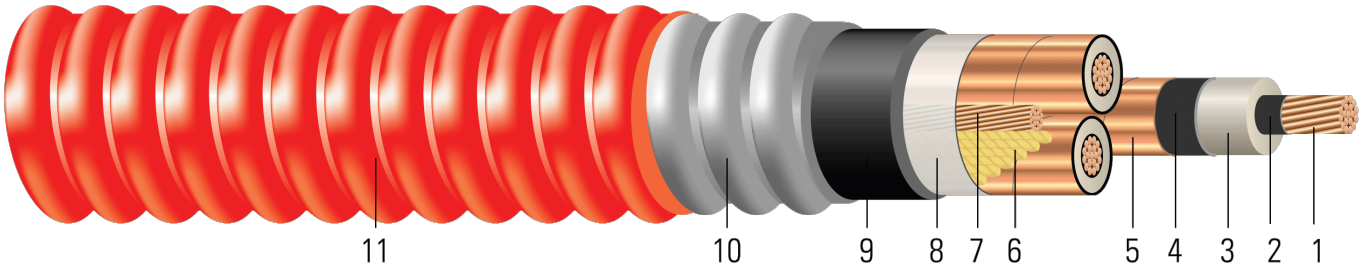

Image not to scale. See Table 1 for dimensions.

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:** 175 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-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:** Red Polyvinyl Chloride (PVC) Jacket

APPLICATIONS AND FEATURES:

Southwire's 15kV 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)

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- 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 175 NLEPR AIA 15kV 100% 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	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Copper Weight	Approx. Weight	Conduit Size*
	AWG/ Kcmil	No.	inch	inch	mil	inch	No. x AWG	mil	inch	mil	inch	lb/ 1000ft	lb/ 1000ft	inch
TBA	2	7	0.283	0.671	175	0.731	1x6	110	2.135	60	2.255	886	2125	3
TBA	1	19	0.322	0.71	175	0.77	1x6	110	2.219	60	2.339	1056	2369	3
TBA	1/0	19	0.362	0.75	175	0.81	1x6	110	2.306	75	2.456	1272	2727	3
583752	2/0	19	0.405	0.794	175	0.854	1x4	110	2.458	75	2.608	1599	3756	3.5
TBA	3/0	19	0.456	0.844	175	0.904	1x4	110	2.509	75	2.659	1925	3566	3.5
TBA	4/0	19	0.512	0.9	175	0.96	1x4	110	2.63	75	2.78	2348	4100	3.5
TBA	250	37	0.558	0.954	175	1.014	1x4	110	2.746	75	2.896	2722	4593	3.5
TBA	350	37	0.661	1.057	175	1.117	1x3	110	2.969	75	3.119	3718	5795	4
TBA	500	37	0.789	1.185	175	1.245	1x3	125	3.275	85	3.445	5153	7556	4.5
TBA	750	61	0.968	1.374	175	1.434	1x2	125	3.683	85	3.853	7581	10398	5

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
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.

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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	15.8	1592	0.162	0.221	0.038	0.028	0.588+j0.502	0.221+j0.045	2296	172	201
1	16.4	2008	0.128	0.175	0.035	0.026	0.544+j0.482	0.175+j0.043	2417	197	228
1/0	17.2	2534	0.102	0.139	0.033	0.025	0.509+j0.463	0.139+j0.041	2541	225	257
2/0	18.3	3194	0.082	0.112	0.03	0.023	0.483+j0.444	0.112+j0.040	2677	260	292
3/0	18.6	4027	0.064	0.087	0.028	0.022	0.458+j0.423	0.087+j0.038	2832	297	330
4/0	19.5	5078	0.051	0.07	0.026	0.02	0.440+j0.401	0.070+j0.037	3005	342	372
250	20.3	6000	0.043	0.059	0.024	0.02	0.427+j0.381	0.059+j0.036	3173	376	410
350	21.8	8400	0.031	0.043	0.021	0.018	0.406+j0.346	0.043+j0.034	3492	460	487
500	24.1	12000	0.021	0.03	0.018	0.016	0.384+j0.309	0.030+j0.033	3888	556	573
750	27	18000	0.014	0.021	0.015	0.015	0.361+j0.263	0.021+j0.031	4474	678	668

* Inductive impedance is based on non-ferrous conduit with one diameter spacing center-to-center.
***** 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	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Copper Weight	Approx. Weight	Conduit Size*
	AWG/ Kcmil	No.	mm	mm	mm	mm	No. x AWG	mm	mm	mm	mm	kg/km	kg/km	inch
TBA	2	7	7.19	17.04	4.44	18.57	1x6	2.79	54.23	1.52	57.28	1319	3162	3
TBA	1	19	8.18	18.03	4.44	19.56	1x6	2.79	56.36	1.52	59.41	1572	3525	3
TBA	1/0	19	9.19	19.05	4.44	20.57	1x6	2.79	58.57	1.91	62.38	1893	4058	3
583752	2/0	19	10.29	20.17	4.44	21.69	1x4	2.79	62.43	1.91	66.24	2380	5590	3.5
TBA	3/0	19	11.58	21.44	4.44	22.96	1x4	2.79	63.73	1.91	67.54	2865	5307	3.5
TBA	4/0	19	13.00	22.86	4.44	24.38	1x4	2.79	66.80	1.91	70.61	3494	6101	3.5
TBA	250	37	14.17	24.23	4.44	25.76	1x4	2.79	69.75	1.91	73.56	4051	6835	3.5
TBA	350	37	16.79	26.85	4.44	28.37	1x3	2.79	75.41	1.91	79.22	5533	8624	4
TBA	500	37	20.04	30.10	4.44	31.62	1x3	3.18	83.18	2.16	87.50	7669	11245	4.5
TBA	750	61	24.59	34.90	4.44	36.42	1x2	3.18	93.55	2.16	97.87	11282	15474	5

All dimensions are nominal and subject to normal manufacturing tolerances
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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	401.32	7084	0.5315	0.73	0.0116	0.0919	0.588+j0.502	0.221+j0.045	2296	172	201
1	416.56	8936	0.4199	0.57	0.0107	0.0853	0.544+j0.482	0.175+j0.043	2417	197	228
1/0	436.88	11276	0.3346	0.46	0.0101	0.0820	0.509+j0.463	0.139+j0.041	2541	225	257
2/0	464.82	14213	0.2690	0.37	0.0091	0.0755	0.483+j0.444	0.112+j0.040	2677	260	292
3/0	472.44	17920	0.2100	0.29	0.0085	0.0722	0.458+j0.423	0.087+j0.038	2832	297	330
4/0	495.30	22597	0.1673	0.23	0.0079	0.0656	0.440+j0.401	0.070+j0.037	3005	342	372
250	515.62	26700	0.1411	0.19	0.0073	0.0656	0.427+j0.381	0.059+j0.036	3173	376	410
350	553.72	37380	0.1017	0.14	0.0064	0.0591	0.406+j0.346	0.043+j0.034	3492	460	487
500	612.14	53400	0.0689	0.10	0.0055	0.0525	0.384+j0.309	0.030+j0.033	3888	556	573
750	685.80	80100	0.0459	0.07	0.0046	0.0492	0.361+j0.263	0.021+j0.031	4474	678	668

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