HVTECK CU 1/C 175NLEPR CB PVC AIA PVC 15kV 100% CSA

Single Conductor, 175 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

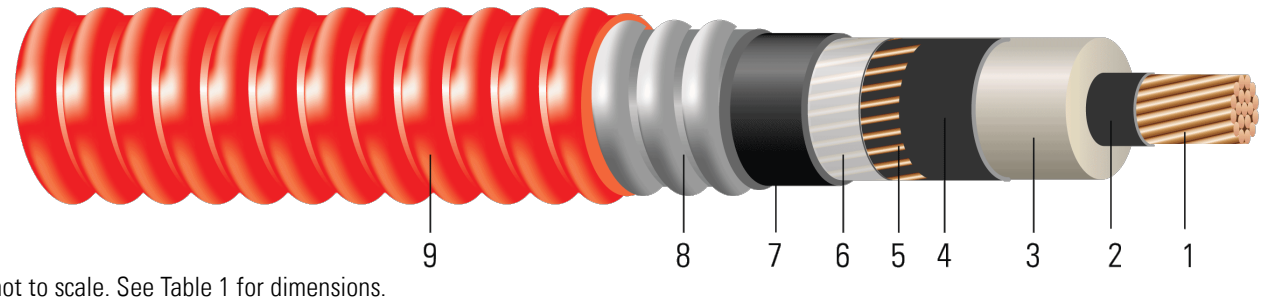


Image not to scale. See Table 1 for dimensions.

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:** 175 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:** 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)
- IEEE 383 Flame Test (70,000 btu)

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- 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 175 NLEPR AIA 15kV 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	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
2	7	0.283	0.671	175	0.731	5x12	80	1.391	50	1.491	346	1282	4
1	19	0.322	0.71	175	0.77	7x12	80	1.43	50	1.53	450	1427	4
1/0	19	0.362	0.75	175	0.81	7x12	80	1.57	60	1.69	522	1715	4.5
2/0	19	0.405	0.793	175	0.853	7x12	80	1.613	60	1.733	610	1853	4.5
3/0	19	0.456	0.844	175	0.904	9x12	80	1.664	60	1.784	755	2057	4.5
4/0	19	0.512	0.9	175	0.96	9x12	80	1.72	60	1.84	895	2262	5
250	37	0.558	0.954	175	1.014	11x12	80	1.774	60	1.894	1060	2493	5
350	37	0.661	1.057	175	1.117	13x12	80	1.877	60	1.997	1431	2984	5
500	37	0.789	1.185	175	1.245	17x12	110	2.065	60	2.185	1972	3789	5.5
750	61	0.968	1.374	175	1.434	21x12	110	2.254	75	2.404	2845	4965	6.5
1000	61	1.117	1.523	175	1.583	21x12	110	2.403	75	2.553	3629	5935	6.5

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	10.4	530	0.162	0.221	0.038	0.06	0.520+j0.198	0.224+j0.066	2770	215	221
1	10.7	669	0.128	0.175	0.035	0.058	0.419+j0.127	0.179+j0.063	3879	245	247
1/0	11.8	844	0.102	0.139	0.033	0.057	0.382+j0.126	0.143+j0.062	3879	278	275
2/0	12.1	1064	0.082	0.112	0.03	0.055	0.355+j0.125	0.116+j0.060	3879	317	306
3/0	12.5	1342	0.064	0.087	0.028	0.053	0.288+j0.088	0.092+j0.058	4987	357	335
4/0	12.9	1692	0.051	0.07	0.026	0.051	0.271+j0.087	0.075+j0.056	4987	404	369
250	13.3	2000	0.043	0.059	0.024	0.05	0.229+j0.067	0.065+j0.054	6095	456	412
350	14	2800	0.031	0.043	0.021	0.047	0.190+j0.053	0.050+j0.051	7203	537	456
500	15.3	4000	0.021	0.03	0.018	0.045	0.145+j0.038	0.038+j0.048	9420	616	497
750	16.8	6000	0.014	0.021	0.015	0.043	0.115+j0.030	0.030+j0.045	11636	706	551
1000	17.9	8000	0.011	0.018	0.014	0.041	0.112+j0.029	0.027+j0.043	11636	813	596

* Inductive impedance is based on non-ferrous conduit with one diameter spacing center-to-center.
***** CEC ampacities are based on:
3-1/C in air copper and aluminum: D17M
3-1/C direct buried copper and aluminum: D17A

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	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
2	7	7.19	17.04	4.44	18.57	5x12	2.03	35.33	1.27	37.87	515	1908	4
1	19	8.18	18.03	4.44	19.56	7x12	2.03	36.32	1.27	38.86	670	2124	4
1/0	19	9.19	19.05	4.44	20.57	7x12	2.03	39.88	1.52	42.93	777	2552	4.5
2/0	19	10.29	20.14	4.44	21.67	7x12	2.03	40.97	1.52	44.02	908	2758	4.5
3/0	19	11.58	21.44	4.44	22.96	9x12	2.03	42.27	1.52	45.31	1124	3061	4.5
4/0	19	13.00	22.86	4.44	24.38	9x12	2.03	43.69	1.52	46.74	1332	3366	5
250	37	14.17	24.23	4.44	25.76	11x12	2.03	45.06	1.52	48.11	1577	3710	5
350	37	16.79	26.85	4.44	28.37	13x12	2.03	47.68	1.52	50.72	2130	4441	5
500	37	20.04	30.10	4.44	31.62	17x12	2.79	52.45	1.52	55.50	2935	5639	5.5
750	61	24.59	34.90	4.44	36.42	21x12	2.79	57.25	1.91	61.06	4234	7389	6.5
1000	61	28.37	38.68	4.44	40.21	21x12	2.79	61.04	1.91	64.85	5401	8832	6.5

All dimensions are nominal and subject to normal manufacturing tolerances
◊ Cable marked with this symbol is a standard stock item
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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 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	264.16	2359	0.5315	0.73	0.0116	0.1969	0.520+j0.198	0.224+j0.066	2770	215	221
1	271.78	2977	0.4199	0.57	0.0107	0.1903	0.419+j0.127	0.179+j0.063	3879	245	247
1/0	299.72	3756	0.3346	0.46	0.0101	0.1870	0.382+j0.126	0.143+j0.062	3879	278	275
2/0	307.34	4735	0.2690	0.37	0.0091	0.1804	0.355+j0.125	0.116+j0.060	3879	317	306
3/0	317.50	5972	0.2100	0.29	0.0085	0.1739	0.288+j0.088	0.092+j0.058	4987	357	335
4/0	327.66	7529	0.1673	0.23	0.0079	0.1673	0.271+j0.087	0.075+j0.056	4987	404	369
250	337.82	8900	0.1411	0.19	0.0073	0.1640	0.229+j0.067	0.065+j0.054	6095	456	412
350	355.60	12460	0.1017	0.14	0.0064	0.1542	0.190+j0.053	0.050+j0.051	7203	537	456
500	388.62	17800	0.0689	0.10	0.0055	0.1476	0.145+j0.038	0.038+j0.048	9420	616	497
750	426.72	26700	0.0459	0.07	0.0046	0.1411	0.115+j0.030	0.030+j0.045	11636	706	551
1000	454.66	35600	0.0361	0.06	0.0043	0.1345	0.112+j0.029	0.027+j0.043	11636	813	596

* Inductive impedance is based on non-ferrous conduit with one diameter spacing center-to-center.
***** CEC ampacities are based on:
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3-1/C direct buried copper and aluminum: D17A

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