

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

Single 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

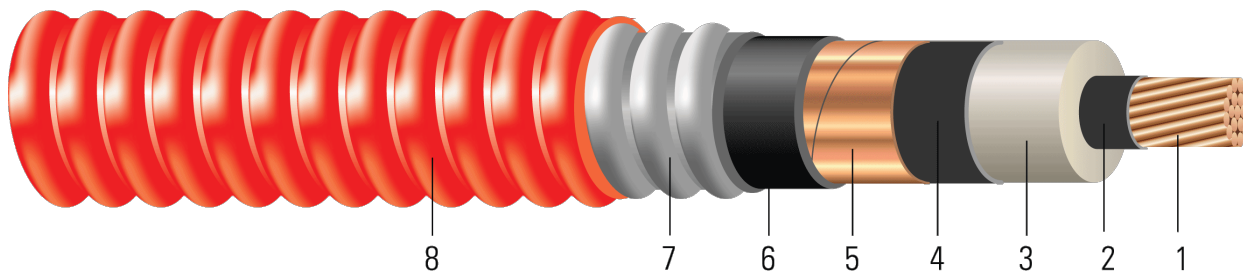


Image not to scale. See Table 1 for dimensions.

### 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. **Inner Jacket:** PVC inner jacket
7. **Armour:** Aluminum Interlocked Armour (AIA)
8. **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)
- 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

## SAMPLE PRINT LEGEND:

(CSA) SOUTHWIRE (NESC) #P# 1/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**

Cond. Size	Strand	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Approx. Weight
AWG/ Kcmil	No.	inch	inch	mil	inch	mil	inch	mil	inch	lb/1000ft
2	7	0.282	0.670	175	0.730	80	1.132	50	1.232	843
1	19	0.322	0.710	175	0.770	80	1.172	50	1.272	933
1/0	19	0.361	0.749	175	0.809	80	1.321	50	1.421	1044
2/0	19	0.405	0.793	175	0.853	80	1.365	50	1.465	1168
3/0	19	0.456	0.844	175	0.904	80	1.416	50	1.516	1320
4/0	19	0.512	0.900	175	0.960	80	1.472	50	1.572	1503
250	37	0.558	0.954	175	1.014	80	1.526	60	1.646	1704
350	37	0.661	1.057	175	1.117	80	1.653	60	1.773	2139
500	37	0.789	1.185	175	1.245	80	1.781	60	1.901	2718
750	61	0.968	1.374	175	1.434	80	1.970	60	2.090	3768
1000	61	1.117	1.523	175	1.583	110	2.179	60	2.299	4811

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	8.6	530	0.162	0.204	0.044	0.056	0.566 + j0.46	0.205 + j0.057	2261	215	221
1	8.9	669	0.128	0.162	0.041	0.053	0.525 + j0.439	0.163 + j0.053	2385	245	247
1/0	9.9	844	0.102	0.128	0.037	0.053	0.490 + j0.420	0.129 + j0.053	2506	278	275
2/0	10.2	1064	0.081	0.102	0.035	0.051	0.463 + j0.401	0.103 + j0.051	2642	317	306
3/0	10.6	1342	0.064	0.081	0.032	0.049	0.441 + j0.38	0.082 + j0.05	2800	357	335
4/0	11.0	1692	0.051	0.065	0.029	0.047	0.423 + j0.359	0.066 + j0.048	2974	404	369
250	11.5	2000	0.043	0.056	0.027	0.047	0.411 + j0.339	0.057 + j0.047	3141	456	412
350	12.4	2800	0.031	0.041	0.024	0.044	0.389 + j0.306	0.042 + j0.044	3460	537	456
500	13.3	4000	0.022	0.030	0.021	0.042	0.368 + j0.271	0.031 + j0.042	3857	616	497
750	14.6	6000	0.014	0.023	0.018	0.039	0.344 + j0.228	0.024 + j0.039	4443	706	551
1000	16.0	8000	0.011	0.019	0.016	0.038	0.325 + j0.201	0.02 + j0.038	4904	813	596

\* 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	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Approx. Weight
AWG/Kcmil	No.	mm	mm	mm	mm	mm	mm	mm	mm	kg/km
2	7	7.16	17.02	4.44	18.54	2.03	28.75	1.27	31.29	1255
1	19	8.18	18.03	4.44	19.56	2.03	29.77	1.27	32.31	1388
1/0	19	9.17	19.02	4.44	20.55	2.03	33.55	1.27	36.09	1554
2/0	19	10.29	20.14	4.44	21.67	2.03	34.67	1.27	37.21	1738
3/0	19	11.58	21.44	4.44	22.96	2.03	35.97	1.27	38.51	1964
4/0	19	13.00	22.86	4.44	24.38	2.03	37.39	1.27	39.93	2237
250	37	14.17	24.23	4.44	25.76	2.03	38.76	1.52	41.81	2536
350	37	16.79	26.85	4.44	28.37	2.03	41.99	1.52	45.03	3183
500	37	20.04	30.10	4.44	31.62	2.03	45.24	1.52	48.29	4045
750	61	24.59	34.90	4.44	36.42	2.03	50.04	1.52	53.09	5607
1000	61	28.37	38.68	4.44	40.21	2.79	55.35	1.52	58.39	7160

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	218.44	2359	0.5315	0.67	0.0134	0.1837	0.566 + j0.46	0.205 + j0.057	2261	215	221
1	226.06	2977	0.4199	0.53	0.0125	0.1739	0.525 + j0.439	0.163 + j0.053	2385	245	247
1/0	251.46	3756	0.3346	0.42	0.0113	0.1739	0.490 + j0.420	0.129 + j0.053	2506	278	275
2/0	259.08	4735	0.2657	0.33	0.0107	0.1673	0.463 + j0.401	0.103 + j0.051	2642	317	306
3/0	269.24	5972	0.2100	0.27	0.0098	0.1608	0.441 + j0.38	0.082 + j0.05	2800	357	335
4/0	279.40	7529	0.1673	0.21	0.0088	0.1542	0.423 + j0.359	0.066 + j0.048	2974	404	369
250	292.10	8900	0.1411	0.18	0.0082	0.1542	0.411 + j0.339	0.057 + j0.047	3141	456	412
350	314.96	12460	0.1017	0.13	0.0073	0.1444	0.389 + j0.306	0.042 + j0.044	3460	537	456
500	337.82	17800	0.0722	0.10	0.0064	0.1378	0.368 + j0.271	0.031 + j0.042	3857	616	497
750	370.84	26700	0.0459	0.08	0.0055	0.1280	0.344 + j0.228	0.024 + j0.039	4443	706	551
1000	406.40	35600	0.0361	0.06	0.0049	0.1247	0.325 + j0.201	0.02 + j0.038	4904	813	596

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

