HVTECK CU 1/C 220NLEPR TS PVC AIA PVC 15kV 133% CSA

Single Conductor, 220 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

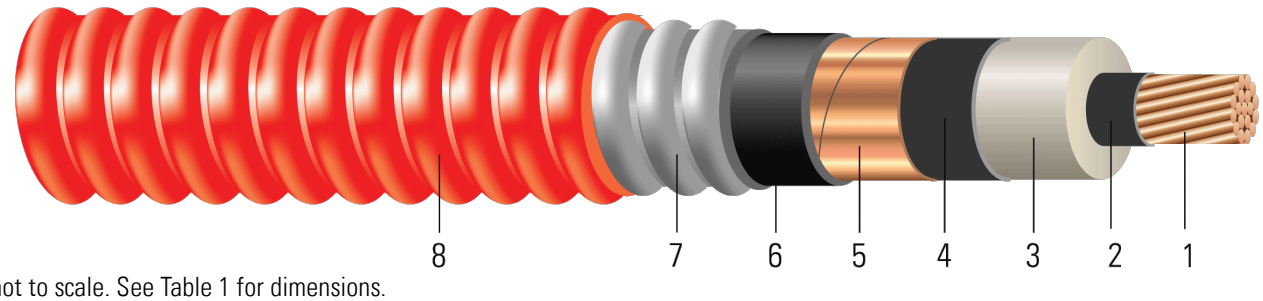

Image not to scale. See Table 1 for dimensions.

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:** 220 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. **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
- ASTM B33 Standard Specification for Tin-Coated Soft or Annealed Copper Wire
- 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 (Qualification Test Requirements)

SAMPLE PRINT LEGEND:

(CSA) SOUTHWIRE (NESC) #P# 1/C [#AWG or #kcmil] CU 220 NLEPR AIA 15kV 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	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Copper Weight	Approx. Weight
	AWG/ Kcmil	No.	inch	inch	mil	inch	mil	inch	mil	inch	lb/ 1000ft	lb/1000ft
TBA	2	7	0.282	0.760	220	0.820	80	1.332	50	1.432	220	909
TBA	1	19	0.322	0.800	220	0.860	80	1.372	50	1.472	275	999
TBA	1/0	19	0.361	0.839	220	0.899	80	1.411	50	1.511	343	1099
TBA	2/0	19	0.405	0.883	220	0.943	80	1.455	50	1.555	429	1224
TBA	3/0	19	0.456	0.934	220	0.994	80	1.506	60	1.626	538	1409
582434^^	4/0	19	0.512	0.990	220	1.050	80	1.424	60	1.534	738	1582
586051	250	37	0.558	1.044	220	1.124	80	1.620	60	1.740	861	1880
TBA	350	37	0.661	1.147	220	1.207	80	1.743	60	1.863	1105	2202
576699	500	37	0.789	1.252	220	1.312	80	1.836	60	1.956	1648	2890
582433^^	500	37	0.789	1.275	220	1.335	80	1.839	60	1.971	1649	2846
TBA	750	61	0.968	1.464	220	1.524	110	2.120	60	2.240	2347	3963
586535	1000	61	1.117	1.613	220	1.673	110	2.237	75	2.369	3218	4832
679247	1000	61	1.117	1.613	220	1.673	110	2.237	75	2.369	3218	4835
586714	1250	91	1.250	1.780	220	1.880	110	2.464	75	2.614	4005	6044
674567	1250	91	1.250	1.780	220	1.880	110	2.464	75	2.614	4005	6055

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
^^ Tinned Conductors

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	17.2	530	0.162	0.204	0.048	0.059	0.566 + j0.418	0.205 + j0.060	2571	215	221
1	17.7	669	0.128	0.162	0.044	0.057	0.524 + j0.400	0.163 + j0.057	2695	245	247
1/0	18.1	844	0.102	0.128	0.041	0.055	0.488 + j0.383	0.129 + j0.055	2816	278	275
2/0	18.7	1064	0.081	0.102	0.038	0.053	0.461 + j0.366	0.103 + j0.053	2952	317	306
3/0	19.5	1342	0.064	0.081	0.035	0.051	0.437 + j0.347	0.082 + j0.051	3110	357	335
4/0	18.4	1692	0.051	0.065	0.032	0.047	0.419 + j0.328	0.066 + j0.047	3284	404	369
250	20.9	2000	0.043	0.056	0.030	0.048	0.405 + j0.311	0.057 + j0.048	3451	456	412
350	22.4	2800	0.031	0.041	0.026	0.046	0.381 + j0.281	0.042 + j0.046	3770	537	456
500	23.5	4000	0.022	0.030	0.022	0.043	0.359 + j0.249	0.031 + j0.043	4167	616	497
500	23.7	4000	0.022	0.030	0.023	0.043	0.359 + j0.249	0.031 + j0.043	4167	616	497
750	26.9	6000	0.014	0.023	0.020	0.041	0.334 + j0.211	0.024 + j0.041	4752	706	551
1000	28.4	8000	0.011	0.019	0.017	0.039	0.316 + j0.187	0.020 + j0.039	5214	813	596
1000	28.4	8000	0.011	0.019	0.017	0.039	0.316 + j0.187	0.020 + j0.039	5214	813	596
1250	31.4	10000	0.009	0.018	0.017	0.039	0.303 + j0.168	0.020 + j0.039	5638		
1250	31.4	10000	0.009	0.018	0.017	0.039	0.303 + j0.168	0.020 + j0.039	5638		

* 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)

Stock Number	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	Copper Weight	Approx. Weight
	AWG/ Kcmil	No.	mm	mm	mm	mm	mm	mm	mm	mm	kg/km	kg/km
TBA	2	7	7.16	19.30	5.59	20.83	2.03	33.83	1.27	36.37	327	1353
TBA	1	19	8.18	20.32	5.59	21.84	2.03	34.85	1.27	37.39	409	1487
TBA	1/0	19	9.17	21.31	5.59	22.83	2.03	35.84	1.27	38.38	510	1635
TBA	2/0	19	10.29	22.43	5.59	23.95	2.03	36.96	1.27	39.50	638	1822
TBA	3/0	19	11.58	23.72	5.59	25.25	2.03	38.25	1.52	41.30	801	2097
582434^^	4/0	19	13.00	25.15	5.59	26.67	2.03	36.17	1.52	38.96	1098	2354
586051	250	37	14.17	26.52	5.59	28.55	2.03	41.15	1.52	44.20	1281	2798
TBA	350	37	16.79	29.13	5.59	30.66	2.03	44.27	1.52	47.32	1644	3277
576699	500	37	20.04	31.80	5.59	33.32	2.03	46.63	1.52	49.68	2452	4301
582433^^	500	37	20.04	32.39	5.59	33.91	2.03	46.71	1.52	50.06	2454	4235
TBA	750	61	24.59	37.19	5.59	38.71	2.79	53.85	1.52	56.90	3493	5898
586535	1000	61	28.37	40.97	5.59	42.49	2.79	56.82	1.91	60.17	4789	7191
679247	1000	61	28.37	40.97	5.59	42.49	2.79	56.82	1.91	60.17	4789	7195
586714	1250	91	31.75	45.21	5.59	47.75	2.79	62.59	1.91	66.40	5960	8994
674567	1250	91	31.75	45.21	5.59	47.75	2.79	62.59	1.91	66.40	5960	9011

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
^^ Tinned Conductors

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	436.88	2359	0.5315	0.67	0.0146	0.1936	0.566 + j0.418	0.205 + j0.060	2571	215	221
1	449.58	2977	0.4199	0.53	0.0134	0.1870	0.524 + j0.400	0.163 + j0.057	2695	245	247
1/0	459.74	3756	0.3346	0.42	0.0125	0.1804	0.488 + j0.383	0.129 + j0.055	2816	278	275
2/0	474.98	4735	0.2657	0.33	0.0116	0.1739	0.461 + j0.366	0.103 + j0.053	2952	317	306
3/0	495.30	5972	0.2100	0.27	0.0107	0.1673	0.437 + j0.347	0.082 + j0.051	3110	357	335
4/0	467.36	7529	0.1673	0.21	0.0098	0.1542	0.419 + j0.328	0.066 + j0.047	3284	404	369
250	530.86	8900	0.1411	0.18	0.0091	0.1575	0.405 + j0.311	0.057 + j0.048	3451	456	412
350	568.96	12460	0.1017	0.13	0.0079	0.1509	0.381 + j0.281	0.042 + j0.046	3770	537	456
500	596.90	17800	0.0722	0.10	0.0067	0.1411	0.359 + j0.249	0.031 + j0.043	4167	616	497
500	601.98	17800	0.0722	0.10	0.0070	0.1411	0.359 + j0.249	0.031 + j0.043	4167	616	497
750	683.26	26700	0.0459	0.08	0.0061	0.1345	0.334 + j0.211	0.024 + j0.041	4752	706	551
1000	721.36	35600	0.0361	0.06	0.0052	0.1280	0.316 + j0.187	0.020 + j0.039	5214	813	596
1000	721.36	35600	0.0361	0.06	0.0052	0.1280	0.316 + j0.187	0.020 + j0.039	5214	813	596
1250	797.56	44500	0.0295	0.06	0.0052	0.1280	0.303 + j0.168	0.020 + j0.039	5638		
1250	797.56	44500	0.0295	0.06	0.0052	0.1280	0.303 + j0.168	0.020 + j0.039	5638		

* 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