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

Single Conductor, 220 Mils Tree Retardant Cross Linked Polyethylene, 133% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

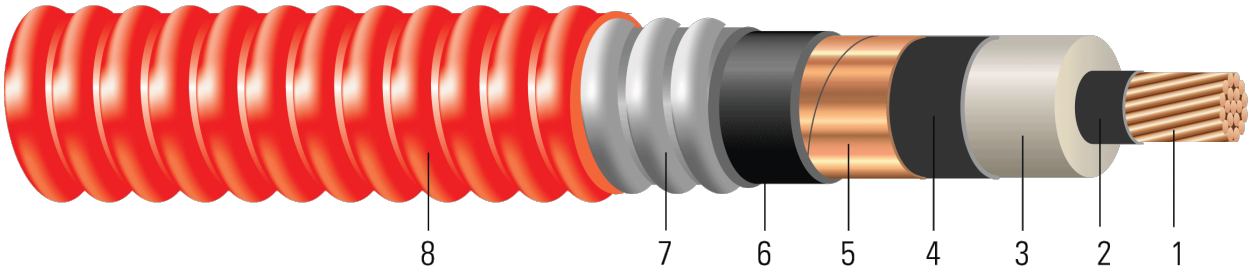

Image not to scale. See Table 1 for dimensions.

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 Tree Retardant Cross Linked Polyethylene 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
- 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)

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- 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 TRXLPE 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
670965	2/0	19	0.405	0.884	220	0.944	80	1.468	50	1.568	488	1322
TBA	3/0	19	0.456	0.934	220	0.994	80	1.506	60	1.626	538	1409
672441^	4/0	19	0.512	0.990	220	1.050	80	1.574	60	1.694	738	1687
TBA	250	37	0.558	1.044	220	1.104	80	1.616	60	1.736	793	1764
671319	350	37	0.661	1.147	220	1.207	80	1.731	60	1.851	1177	2267
672047	500	37	0.789	1.275	220	1.335	80	1.859	60	1.979	1649	2849
641194	750	61	0.968	1.464	220	1.524	110	2.108	60	2.228	2435	3920
672046	1000	61	1.117	1.613	220	1.673	110	2.257	75	2.407	3218	4910
672445^	1000	61	1.117	1.613	220	1.673	110	2.257	75	2.407	3218	4900
TBA	1250	91	1.250	1.750	220	1.810	110	2.406	75	2.556	3895	5886
TBA	1500	91	1.370	1.870	220	1.930	110	2.526	75	2.676	4670	6788
TBA	2000	127	1.583	2.083	220	2.143	110	2.739	75	2.889	6218	8563

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	17.2	530	0.162	0.204	0.062	0.059	0.566 + j0.418	0.205 + j0.060	2571	215	221
1	17.7	669	0.128	0.162	0.058	0.057	0.524 + j0.400	0.163 + j0.057	2695	245	247
1/0	18.1	844	0.102	0.128	0.053	0.055	0.488 + j0.383	0.129 + j0.055	2816	278	275
2/0	18.8	1064	0.081	0.102	0.050	0.053	0.461 + j0.366	0.103 + j0.053	2952	317	306
3/0	19.5	1342	0.064	0.081	0.046	0.051	0.437 + j0.347	0.082 + j0.051	3110	357	335
4/0	20.3	1692	0.051	0.065	0.042	0.049	0.417 + j0.328	0.066 + j0.049	3284	404	369
250	20.8	2000	0.043	0.056	0.039	0.048	0.405 + j0.311	0.057 + j0.048	3451	456	412
350	22.2	2800	0.031	0.041	0.035	0.045	0.381 + j0.281	0.042 + j0.045	3770	537	456
500	23.7	4000	0.022	0.030	0.030	0.043	0.359 + j0.250	0.031 + j0.043	4167	616	497
750	26.7	6000	0.014	0.023	0.026	0.041	0.334 + j0.211	0.024 + j0.041	4752	706	551
1000	28.9	8000	0.011	0.019	0.023	0.039	0.316 + j0.187	0.020 + j0.039	5214	813	596
1000	28.9	8000	0.011	0.019	0.023	0.039	0.316 + j0.187	0.020 + j0.039	5214	813	596
1250	30.7	10000	0.009	0.018	0.021	0.038	0.303 + j0.168	0.019 + j0.038	5638		
1500	32.1	12000	0.007	0.017	0.019	0.037	0.291 + j0.154	0.018 + j0.037	6010		
2000	34.7	16000	0.005	0.017	0.017	0.036	0.274 + j0.132	0.019 + j0.035	6670		

* 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

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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
670965	2/0	19	10.29	22.45	5.59	23.98	2.03	37.29	1.27	39.83	726	1967
TBA	3/0	19	11.58	23.72	5.59	25.25	2.03	38.25	1.52	41.30	801	2097
672441^	4/0	19	13.00	25.15	5.59	26.67	2.03	39.98	1.52	43.03	1098	2511
TBA	250	37	14.17	26.52	5.59	28.04	2.03	41.05	1.52	44.09	1180	2625
671319	350	37	16.79	29.13	5.59	30.66	2.03	43.97	1.52	47.02	1752	3374
672047	500	37	20.04	32.39	5.59	33.91	2.03	47.22	1.52	50.27	2454	4240
641194	750	61	24.59	37.19	5.59	38.71	2.79	53.54	1.52	56.59	3624	5834
672046	1000	61	28.37	40.97	5.59	42.49	2.79	57.33	1.91	61.14	4789	7307
672445^	1000	61	28.37	40.97	5.59	42.49	2.79	57.33	1.91	61.14	4789	7292
TBA	1250	91	31.75	44.45	5.59	45.97	2.79	61.11	1.91	64.92	5796	8759
TBA	1500	91	34.80	47.50	5.59	49.02	2.79	64.16	1.91	67.97	6950	10102
TBA	2000	127	40.21	52.91	5.59	54.43	2.79	69.57	1.91	73.38	9253	12743

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	436.88	2359	0.5315	0.67	0.0189	0.1936	0.566 + j0.418	0.205 + j0.060	2571	215	221
1	449.58	2977	0.4199	0.53	0.0177	0.1870	0.524 + j0.400	0.163 + j0.057	2695	245	247
1/0	459.74	3756	0.3346	0.42	0.0162	0.1804	0.488 + j0.383	0.129 + j0.055	2816	278	275
2/0	477.52	4735	0.2657	0.33	0.0152	0.1739	0.461 + j0.366	0.103 + j0.053	2952	317	306
3/0	495.30	5972	0.2100	0.27	0.0140	0.1673	0.437 + j0.347	0.082 + j0.051	3110	357	335
4/0	515.62	7529	0.1673	0.21	0.0128	0.1608	0.417 + j0.328	0.066 + j0.049	3284	404	369
250	528.32	8900	0.1411	0.18	0.0119	0.1575	0.405 + j0.311	0.057 + j0.048	3451	456	412
350	563.88	12460	0.1017	0.13	0.0107	0.1476	0.381 + j0.281	0.042 + j0.045	3770	537	456
500	601.98	17800	0.0722	0.10	0.0091	0.1411	0.359 + j0.250	0.031 + j0.043	4167	616	497
750	678.18	26700	0.0459	0.08	0.0079	0.1345	0.334 + j0.211	0.024 + j0.041	4752	706	551
1000	734.06	35600	0.0361	0.06	0.0070	0.1280	0.316 + j0.187	0.020 + j0.039	5214	813	596
1000	734.06	35600	0.0361	0.06	0.0070	0.1280	0.316 + j0.187	0.020 + j0.039	5214	813	596
1250	779.78	44500	0.0295	0.06	0.0064	0.1247	0.303 + j0.168	0.019 + j0.038	5638		
1500	815.34	53400	0.0230	0.06	0.0058	0.1214	0.291 + j0.154	0.018 + j0.037	6010		
2000	881.38	71200	0.0164	0.06	0.0052	0.1181	0.274 + j0.132	0.019 + j0.035	6670		

* 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

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