HVTECK CU 3/C 220TRXLPE TS PVC AIA PVC 15kV 133% CSA

3 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

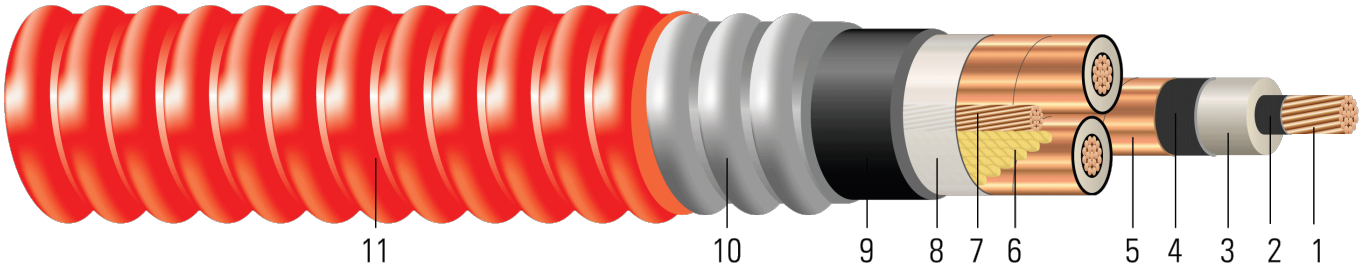

Image not to scale. See Table 1 for dimensions.

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. **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 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	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
652980	2	7	0.283	0.761	220	0.821	1x6	110	2.387	75	2.537	919	2960	3
596312^	2	7	0.283	0.761	220	0.821	1x6	110	2.387	75	2.537	919	2949	3
138160	1	19	0.322	0.8	220	0.86	1x6	110	2.471	75	2.621	1090	3221	3.5
596307^	1	19	0.322	0.8	220	0.86	1x6	110	2.471	75	2.621	1090	3210	3.5
138978	1/0	19	0.362	0.84	220	0.9	1x6	110	2.558	75	2.708	1304	3572	3.5
596302^	1/0	19	0.362	0.84	220	0.9	1x6	110	2.558	75	2.708	1304	3561	3.5
599521	2/0	19	0.405	0.884	220	0.944	1x6	110	2.653	75	2.803	1572	3964	3.5
596297^	2/0	19	0.405	0.884	220	0.944	1x6	110	2.653	75	2.803	1572	3952	3.5
TBA	3/0	19	0.456	0.934	220	0.994	1x4	110	2.703	75	2.853	1947	3899	3.5
669252	3/0	19	0.456	0.934	220	0.994	1x4	110	2.761	75	2.911	1961	4470	3.5
592993^	4/0	19	0.512	0.99	220	1.05	1x3	110	2.882	75	3.032	2417	5089	4
599134	4/0	19	0.512	0.99	220	1.05	1x3	110	2.882	75	3.032	2417	5101	4
669259	250	37	0.558	1.044	220	1.104	1x4	110	2.998	75	3.148	2755	5630	4
599133	350	37	0.661	1.147	220	1.207	1x2	125	3.271	85	3.441	3792	7174	4.5
596108^	350	37	0.661	1.147	220	1.207	1x2	125	3.271	85	3.441	3792	7158	4.5
592992^	500	37	0.789	1.275	220	1.335	1x1	125	3.547	85	3.717	5279	9029	5
456772*	500	37	0.789	1.275	220	1.335	1x1	125	3.547	85	3.717	5279	10461	5
599107^^	500	37	0.789	1.275	220	1.335	1x1	125	3.547	85	3.717	5279	9047	5
599523	750	61	0.968	1.464	220	1.524	1x2	125	3.956	85	4.126	7609	12019	5.5
596289^	750	61	0.968	1.464	220	1.524	1x2	125	3.956	85	4.126	7609	12000	5.5

All dimensions are nominal and subject to normal manufacturing tolerances
◊ Cable marked with this symbol is a standard stock item
^ Black outer jacket
^^ Red outer jacket
* Galvanized Steel Interlocked Armour
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	17.8	1592	0.162	0.221	0.059	0.031	0.591+j0.465	0.221+j0.048	2575	172	201
2	17.8	1592	0.162	0.221	0.059	0.031	0.591+j0.465	0.221+j0.048	2575	172	201
1	18.3	2008	0.128	0.175	0.054	0.029	0.546+j0.447	0.175+j0.045	2696	197	228
1	18.3	2008	0.128	0.175	0.054	0.029	0.546+j0.447	0.175+j0.045	2696	197	228
1/0	19	2534	0.102	0.139	0.05	0.027	0.510+j0.429	0.139+j0.043	2820	225	257
1/0	19	2534	0.102	0.139	0.05	0.027	0.510+j0.429	0.139+j0.043	2820	225	257
2/0	19.6	3194	0.082	0.112	0.047	0.025	0.482+j0.411	0.112+j0.042	2956	260	292
2/0	19.6	3194	0.082	0.112	0.047	0.025	0.482+j0.411	0.112+j0.042	2956	260	292
3/0	20	4027	0.064	0.087	0.043	0.024	0.456+j0.392	0.087+j0.040	3111	297	330
3/0	20.4	4027	0.064	0.087	0.043	0.024	0.456+j0.392	0.087+j0.040	3111	297	330
4/0	21.2	5078	0.051	0.07	0.04	0.022	0.436+j0.372	0.070+j0.039	3284	342	372
4/0	21.2	5078	0.051	0.07	0.04	0.022	0.436+j0.372	0.070+j0.039	3284	342	372
250	22	6000	0.043	0.059	0.037	0.022	0.423+j0.354	0.059+j0.038	3452	376	410
350	24.1	8400	0.031	0.043	0.033	0.02	0.400+j0.322	0.043+j0.036	3771	460	487
350	24.1	8400	0.031	0.043	0.033	0.02	0.400+j0.322	0.043+j0.036	3771	460	487
500	26	12000	0.021	0.03	0.029	0.018	0.378+j0.289	0.030+j0.034	4167	556	573
500	26	12000	0.021	0.03	0.029	0.018	0.378+j0.289	0.030+j0.034	4167	556	573
500	26	12000	0.021	0.03	0.029	0.018	0.378+j0.289	0.030+j0.034	4167	556	573
750	28.9	18000	0.014	0.021	0.024	0.016	0.353+j0.247	0.021+j0.032	4753	678	668
750	28.9	18000	0.014	0.021	0.024	0.016	0.353+j0.247	0.021+j0.032	4753	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

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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	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
652980	2	7	7.19	19.33	5.59	20.85	1x6	2.79	60.63	1.91	64.44	1368	4405	3
596312^	2	7	7.19	19.33	5.59	20.85	1x6	2.79	60.63	1.91	64.44	1368	4389	3
138160	1	19	8.18	20.32	5.59	21.84	1x6	2.79	62.76	1.91	66.57	1622	4793	3.5
596307^	1	19	8.18	20.32	5.59	21.84	1x6	2.79	62.76	1.91	66.57	1622	4777	3.5
138978	1/0	19	9.19	21.34	5.59	22.86	1x6	2.79	64.97	1.91	68.78	1941	5316	3.5
596302^	1/0	19	9.19	21.34	5.59	22.86	1x6	2.79	64.97	1.91	68.78	1941	5299	3.5
599521	2/0	19	10.29	22.45	5.59	23.98	1x6	2.79	67.39	1.91	71.20	2339	5899	3.5
596297^	2/0	19	10.29	22.45	5.59	23.98	1x6	2.79	67.39	1.91	71.20	2339	5881	3.5
TBA	3/0	19	11.58	23.72	5.59	25.25	1x4	2.79	68.66	1.91	72.47	2897	5802	3.5
669252	3/0	19	11.58	23.72	5.59	25.25	1x4	2.79	70.13	1.91	73.94	2918	6652	3.5
592993^	4/0	19	13.00	25.15	5.59	26.67	1x3	2.79	73.20	1.91	77.01	3597	7573	4
599134	4/0	19	13.00	25.15	5.59	26.67	1x3	2.79	73.20	1.91	77.01	3597	7591	4
669259	250	37	14.17	26.52	5.59	28.04	1x4	2.79	76.15	1.91	79.96	4100	8378	4
599133	350	37	16.79	29.13	5.59	30.66	1x2	3.18	83.08	2.16	87.40	5643	10676	4.5
596108^	350	37	16.79	29.13	5.59	30.66	1x2	3.18	83.08	2.16	87.40	5643	10652	4.5
592992^	500	37	20.04	32.39	5.59	33.91	1x1	3.18	90.09	2.16	94.41	7856	13437	5
456772*	500	37	20.04	32.39	5.59	33.91	1x1	3.18	90.09	2.16	94.41	7856	15568	5
599107^^	500	37	20.04	32.39	5.59	33.91	1x1	3.18	90.09	2.16	94.41	7856	13463	5
599523	750	61	24.59	37.19	5.59	38.71	1x2	3.18	100.48	2.16	104.80	11323	17886	5.5
596289^	750	61	24.59	37.19	5.59	38.71	1x2	3.18	100.48	2.16	104.80	11323	17858	5.5

All dimensions are nominal and subject to normal manufacturing tolerances
◊ Cable marked with this symbol is a standard stock item
^ Black outer jacket
^^ Red outer jacket
* Galvanized Steel Interlocked Armour
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	452.12	7084	0.5315	0.73	0.0180	0.1017	0.591+j0.465	0.221+j0.048	2575	172	201
2	452.12	7084	0.5315	0.73	0.0180	0.1017	0.591+j0.465	0.221+j0.048	2575	172	201
1	464.82	8936	0.4199	0.57	0.0165	0.0951	0.546+j0.447	0.175+j0.045	2696	197	228
1	464.82	8936	0.4199	0.57	0.0165	0.0951	0.546+j0.447	0.175+j0.045	2696	197	228
1/0	482.60	11276	0.3346	0.46	0.0152	0.0886	0.510+j0.429	0.139+j0.043	2820	225	257
1/0	482.60	11276	0.3346	0.46	0.0152	0.0886	0.510+j0.429	0.139+j0.043	2820	225	257
2/0	497.84	14213	0.2690	0.37	0.0143	0.0820	0.482+j0.411	0.112+j0.042	2956	260	292
2/0	497.84	14213	0.2690	0.37	0.0143	0.0820	0.482+j0.411	0.112+j0.042	2956	260	292
3/0	508.00	17920	0.2100	0.29	0.0131	0.0787	0.456+j0.392	0.087+j0.040	3111	297	330
3/0	518.16	17920	0.2100	0.29	0.0131	0.0787	0.456+j0.392	0.087+j0.040	3111	297	330
4/0	538.48	22597	0.1673	0.23	0.0122	0.0722	0.436+j0.372	0.070+j0.039	3284	342	372
4/0	538.48	22597	0.1673	0.23	0.0122	0.0722	0.436+j0.372	0.070+j0.039	3284	342	372
250	558.80	26700	0.1411	0.19	0.0113	0.0722	0.423+j0.354	0.059+j0.038	3452	376	410
350	612.14	37380	0.1017	0.14	0.0101	0.0656	0.400+j0.322	0.043+j0.036	3771	460	487
350	612.14	37380	0.1017	0.14	0.0101	0.0656	0.400+j0.322	0.043+j0.036	3771	460	487
500	660.40	53400	0.0689	0.10	0.0088	0.0591	0.378+j0.289	0.030+j0.034	4167	556	573
500	660.40	53400	0.0689	0.10	0.0088	0.0591	0.378+j0.289	0.030+j0.034	4167	556	573
500	660.40	53400	0.0689	0.10	0.0088	0.0591	0.378+j0.289	0.030+j0.034	4167	556	573
750	734.06	80100	0.0459	0.07	0.0073	0.0525	0.353+j0.247	0.021+j0.032	4753	678	668
750	734.06	80100	0.0459	0.07	0.0073	0.0525	0.353+j0.247	0.021+j0.032	4753	678	668

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