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

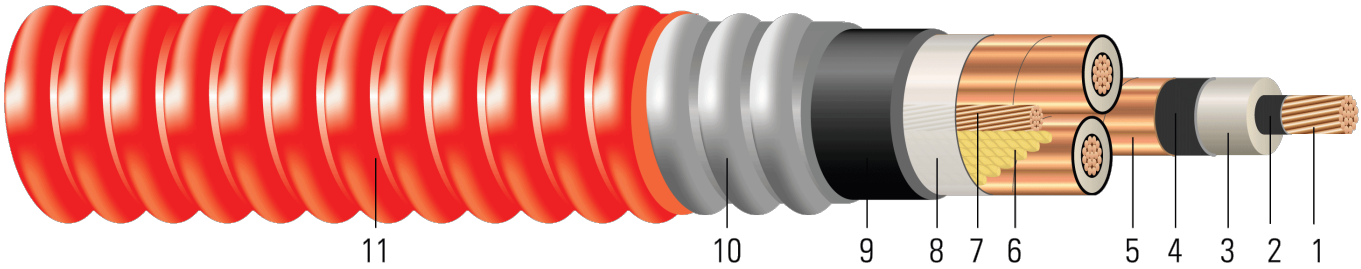

Image not to scale. See Table 1 for dimensions.

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)

- 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 Size	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Copper Weight	Approx. Weight
	AWG/ Kcmil	No.	inch	inch	mil	inch	AWG	mil	inch	mil	inch	lb/ 1000ft	lb/ 1000ft
596312^	2	7	0.282	0.755	220	0.815	6	110	2.387	75	2.537	906	2936
652980	2	7	0.282	0.755	220	0.815	6	110	2.387	75	2.537	906	2947
596307^	1	19	0.322	0.800	220	0.860	6	110	2.471	75	2.621	1076	3197
138160	1	19	0.322	0.800	220	0.860	6	110	2.471	75	2.621	1076	3207
596302^	1/0	19	0.361	0.840	220	0.900	6	110	2.557	75	2.707	1290	3547
138978	1/0	19	0.361	0.840	220	0.900	6	110	2.557	75	2.707	1290	3547
596297^	2/0	19	0.405	0.884	220	0.944	6	110	2.652	75	2.802	1557	3938
599521	2/0	19	0.405	0.884	220	0.944	6	110	2.652	75	2.802	1557	3949
TBA	3/0	19	0.456	0.934	220	0.994	4	110	2.766	75	2.916	1757	4476
592993^	4/0	19	0.512	0.990	220	1.050	4	110	2.881	75	3.031	2401	5072
599134	4/0	19	0.512	0.990	220	1.050	4	110	2.881	75	3.031	2401	5085
669259	250	37	0.558	1.044	220	1.104	4	110	2.998	75	3.148	2738	5613
596108^	350	37	0.661	1.147	220	1.207	3	125	3.270	85	3.440	3773	7140
599133	350	37	0.661	1.147	220	1.207	3	125	3.270	85	3.440	3773	7156
599107^^	500	37	0.789	1.275	220	1.335	1	135	3.547	85	3.717	5259	9027
456772*	500	37	0.789	1.275	220	1.335	1	125	3.547	85	3.717	5259	10441
592992^	500	37	0.789	1.275	220	1.335	1	125	3.547	85	3.717	5259	9032
599523	750	61	0.968	1.464	220	1.524	2	125	3.955	85	4.125	7586	11996
596289^	750	61	0.968	1.464	220	1.524	2	125	3.955	85	4.125	7586	11977

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.

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	0.204	0.062	0.047	0.579 + j0.421	0.204 + j0.048	2571	172	201
2	17.8	1592	0.162	0.204	0.062	0.047	0.579 + j0.421	0.204 + j0.048	2571	172	201
1	18.3	2008	0.128	0.162	0.058	0.045	0.535 + j0.402	0.162 + j0.045	2695	197	228
1	18.3	2008	0.128	0.162	0.058	0.045	0.535 + j0.402	0.162 + j0.045	2695	197	228
1/0	18.9	2534	0.102	0.128	0.053	0.043	0.500 + j0.385	0.128 + j0.043	2816	225	257
1/0	18.9	2534	0.102	0.128	0.053	0.043	0.500 + j0.385	0.128 + j0.043	2816	225	257
2/0	19.6	3194	0.081	0.102	0.050	0.042	0.471 + j0.367	0.102 + j0.042	2952	260	292
2/0	19.6	3194	0.081	0.102	0.050	0.042	0.471 + j0.367	0.102 + j0.042	2952	260	292
3/0	20.4	4027	0.064	0.081	0.046	0.040	0.447 + j0.347	0.081 + j0.040	3110	297	330
4/0	21.2	5078	0.051	0.065	0.042	0.039	0.426 + j0.328	0.065 + j0.039	3284	342	372
4/0	21.2	5078	0.051	0.065	0.042	0.039	0.426 + j0.328	0.065 + j0.039	3284	342	372
250	22.0	6000	0.043	0.056	0.039	0.038	0.413 + j0.310	0.056 + j0.038	3451	376	410
350	24.1	8400	0.031	0.041	0.035	0.036	0.388 + j0.280	0.041 + j0.036	3770	460	487
350	24.1	8400	0.031	0.041	0.035	0.036	0.388 + j0.280	0.041 + j0.036	3770	460	487
500	26.0	12000	0.022	0.030	0.030	0.034	0.365 + j0.248	0.030 + j0.034	4167	556	573
500	26.0	12000	0.022	0.030	0.030	0.034	0.365 + j0.248	0.030 + j0.034	4167	556	573
500	26.0	12000	0.022	0.030	0.030	0.034	0.365 + j0.248	0.030 + j0.034	4167	556	573
750	28.9	18000	0.014	0.023	0.026	0.032	0.339 + j0.210	0.024 + j0.032	4752	678	668
750	28.9	18000	0.014	0.023	0.026	0.032	0.339 + j0.210	0.024 + j0.032	4752	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

Table 3 – Weights and Measurements (Metric)

Stock Number	Cond. Size	Strand	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Ground Size	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Copper Weight	Approx. Weight
	AWG/ Kcmil	No.	mm	mm	mm	mm	AWG	mm	mm	mm	mm	kg/km	kg/km
596312^	2	7	7.16	19.18	5.59	20.70	6	2.79	60.63	1.91	64.44	1348	4369
652980	2	7	7.16	19.18	5.59	20.70	6	2.79	60.63	1.91	64.44	1348	4386
596307^	1	19	8.18	20.32	5.59	21.84	6	2.79	62.76	1.91	66.57	1601	4758
138160	1	19	8.18	20.32	5.59	21.84	6	2.79	62.76	1.91	66.57	1601	4773
596302^	1/0	19	9.17	21.34	5.59	22.86	6	2.79	64.95	1.91	68.76	1920	5279
138978	1/0	19	9.17	21.34	5.59	22.86	6	2.79	64.95	1.91	68.76	1920	5279
596297^	2/0	19	10.29	22.45	5.59	23.98	6	2.79	67.36	1.91	71.17	2317	5860
599521	2/0	19	10.29	22.45	5.59	23.98	6	2.79	67.36	1.91	71.17	2317	5877
TBA	3/0	19	11.58	23.72	5.59	25.25	4	2.79	70.26	1.91	74.07	2615	6661
592993^	4/0	19	13.00	25.15	5.59	26.67	4	2.79	73.18	1.91	76.99	3573	7548
599134	4/0	19	13.00	25.15	5.59	26.67	4	2.79	73.18	1.91	76.99	3573	7567
669259	250	37	14.17	26.52	5.59	28.04	4	2.79	76.15	1.91	79.96	4075	8353
596108^	350	37	16.79	29.13	5.59	30.66	3	3.18	83.06	2.16	87.38	5615	10625
599133	350	37	16.79	29.13	5.59	30.66	3	3.18	83.06	2.16	87.38	5615	10649
599107^^	500	37	20.04	32.39	5.59	33.91	1	3.43	90.09	2.16	94.41	7826	13434
456772*	500	37	20.04	32.39	5.59	33.91	1	3.18	90.09	2.16	94.41	7826	15538
592992^	500	37	20.04	32.39	5.59	33.91	1	3.18	90.09	2.16	94.41	7826	13441
599523	750	61	24.59	37.19	5.59	38.71	2	3.18	100.46	2.16	104.77	11289	17852
596289^	750	61	24.59	37.19	5.59	38.71	2	3.18	100.46	2.16	104.77	11289	17824

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.

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	0.67	0.0189	0.1542	0.579 + j0.421	0.204 + j0.048	2571	172	201
2	452.12	7084	0.5315	0.67	0.0189	0.1542	0.579 + j0.421	0.204 + j0.048	2571	172	201
1	464.82	8936	0.4199	0.53	0.0177	0.1476	0.535 + j0.402	0.162 + j0.045	2695	197	228
1	464.82	8936	0.4199	0.53	0.0177	0.1476	0.535 + j0.402	0.162 + j0.045	2695	197	228
1/0	480.06	11276	0.3346	0.42	0.0162	0.1411	0.500 + j0.385	0.128 + j0.043	2816	225	257
1/0	480.06	11276	0.3346	0.42	0.0162	0.1411	0.500 + j0.385	0.128 + j0.043	2816	225	257
2/0	497.84	14213	0.2657	0.33	0.0152	0.1378	0.471 + j0.367	0.102 + j0.042	2952	260	292
2/0	497.84	14213	0.2657	0.33	0.0152	0.1378	0.471 + j0.367	0.102 + j0.042	2952	260	292
3/0	518.16	17920	0.2100	0.27	0.0140	0.1312	0.447 + j0.347	0.081 + j0.040	3110	297	330
4/0	538.48	22597	0.1673	0.21	0.0128	0.1280	0.426 + j0.328	0.065 + j0.039	3284	342	372
4/0	538.48	22597	0.1673	0.21	0.0128	0.1280	0.426 + j0.328	0.065 + j0.039	3284	342	372
250	558.80	26700	0.1411	0.18	0.0119	0.1247	0.413 + j0.310	0.056 + j0.038	3451	376	410
350	612.14	37380	0.1017	0.13	0.0107	0.1181	0.388 + j0.280	0.041 + j0.036	3770	460	487
350	612.14	37380	0.1017	0.13	0.0107	0.1181	0.388 + j0.280	0.041 + j0.036	3770	460	487
500	660.40	53400	0.0722	0.10	0.0091	0.1115	0.365 + j0.248	0.030 + j0.034	4167	556	573
500	660.40	53400	0.0722	0.10	0.0091	0.1115	0.365 + j0.248	0.030 + j0.034	4167	556	573
500	660.40	53400	0.0722	0.10	0.0091	0.1115	0.365 + j0.248	0.030 + j0.034	4167	556	573
750	734.06	80100	0.0459	0.08	0.0079	0.1050	0.339 + j0.210	0.024 + j0.032	4752	678	668
750	734.06	80100	0.0459	0.08	0.0079	0.1050	0.339 + j0.210	0.024 + j0.032	4752	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