

## 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

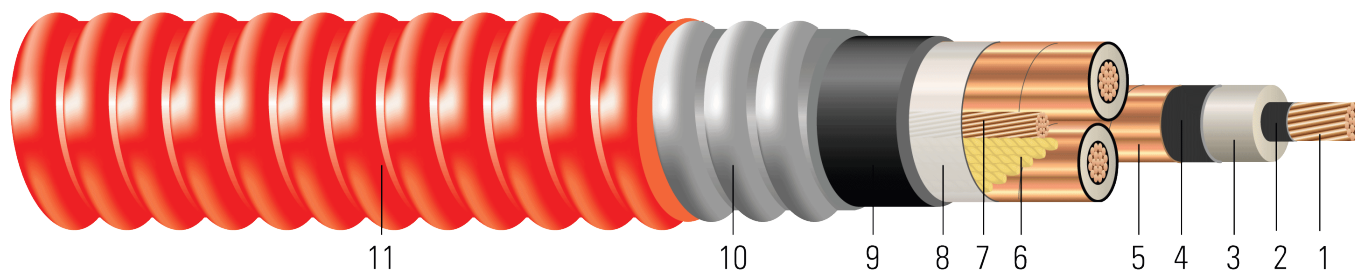


Image not to scale. See Table 1 for dimensions.

### 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-hydroscopic/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	Approx. Weight
	AWG/ Kcmil	No.	inch	inch	mil	inch	AWG	mil	inch	mil	inch	lb/1000ft
652980	2	7	0.282	0.755	220	0.815	6	110	2.387	75	2.537	2947
596312 <sup>^</sup>	2	7	0.282	0.755	220	0.815	6	110	2.387	75	2.537	2936
138160	1	19	0.322	0.800	220	0.860	6	110	2.471	75	2.621	3207
596307 <sup>^</sup>	1	19	0.322	0.800	220	0.860	6	110	2.471	75	2.621	3197
138978	1/0	19	0.361	0.840	220	0.900	6	110	2.557	75	2.707	3547
596302 <sup>^</sup>	1/0	19	0.361	0.840	220	0.900	6	110	2.557	75	2.707	3547
599521	2/0	19	0.405	0.884	220	0.944	6	110	2.652	75	2.802	3949
596297 <sup>^</sup>	2/0	19	0.405	0.884	220	0.944	6	110	2.652	75	2.802	3938
TBA	3/0	19	0.456	0.934	220	0.994	4	110	2.766	75	2.916	4533
599134	4/0	19	0.512	0.990	220	1.050	3	110	2.881	75	3.031	5085
592993 <sup>^</sup>	4/0	19	0.512	0.990	220	1.050	3	110	2.881	75	3.031	5072
669259	250	37	0.558	1.044	220	1.104	4	110	2.998	75	3.148	5613
599133	350	37	0.661	1.147	220	1.207	2	125	3.270	85	3.440	7156
596108 <sup>^</sup>	350	37	0.661	1.147	220	1.207	2	125	3.270	85	3.440	7140
592992 <sup>^</sup>	500	37	0.789	1.275	220	1.335	1	125	3.547	85	3.717	9009
599107	500	37	0.789	1.275	220	1.335	1	125	3.547	85	3.717	9032
599523	750	61	0.968	1.464	220	1.524	2	125	3.955	85	4.125	11996
596289 <sup>^</sup>	750	61	0.968	1.464	220	1.524	2	125	3.955	85	4.125	11977

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

<sup>^</sup> Black outer jacket



**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	17.7	1592	0.162	0.204	0.067	0.047	0.579 + j0.425	0.204 + j0.048	2540	172	201
2	17.7	1592	0.162	0.204	0.067	0.047	0.579 + j0.425	0.204 + j0.048	2540	172	201
1	18.3	2008	0.128	0.162	0.061	0.045	0.535 + j0.406	0.162 + j0.045	2664	197	228
1	18.3	2008	0.128	0.162	0.061	0.045	0.535 + j0.406	0.162 + j0.045	2664	197	228
1/0	18.9	2534	0.102	0.128	0.057	0.043	0.5 + j0.389	0.128 + j0.043	2785	225	257
1/0	18.9	2534	0.102	0.128	0.057	0.043	0.5 + j0.389	0.128 + j0.043	2785	225	257
2/0	19.6	3194	0.081	0.102	0.053	0.042	0.471 + j0.37	0.102 + j0.042	2921	260	292
2/0	19.6	3194	0.081	0.102	0.053	0.042	0.471 + j0.37	0.102 + j0.042	2921	260	292
3/0	20.4	4027	0.064	0.081	0.048	0.040	0.447 + j0.351	0.081 + j0.04	3079	297	330
4/0	21.2	5078	0.051	0.065	0.044	0.039	0.427 + j0.331	0.065 + j0.039	3253	342	372
4/0	21.2	5078	0.051	0.065	0.044	0.039	0.427 + j0.331	0.065 + j0.039	3253	342	372
250	22.0	6000	0.043	0.056	0.042	0.038	0.413 + j0.313	0.056 + j0.038	3420	376	410
350	24.0	8400	0.031	0.041	0.037	0.036	0.389 + j0.283	0.041 + j0.036	3739	460	487
350	24.0	8400	0.031	0.041	0.037	0.036	0.389 + j0.283	0.041 + j0.036	3739	460	487
500	26.0	12000	0.022	0.030	0.032	0.034	0.366 + j0.251	0.03 + j0.034	4136	556	573
500	26.0	12000	0.022	0.030	0.032	0.034	0.366 + j0.251	0.03 + j0.034	4136	556	573
750	28.8	18000	0.014	0.023	0.028	0.032	0.34 + j0.212	0.024 + j0.032	4721	678	668
750	28.8	18000	0.014	0.023	0.028	0.032	0.34 + j0.212	0.024 + j0.032	4721	678	668

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



**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	Approx. Weight
	AWG/Kcmil	No.	mm	mm	mm	mm	AWG	mm	mm	mm	mm	kg/km
652980	2	7	7.16	19.18	5.59	20.70	6	2.79	60.63	1.91	64.44	4386
596312^	2	7	7.16	19.18	5.59	20.70	6	2.79	60.63	1.91	64.44	4369
138160	1	19	8.18	20.32	5.59	21.84	6	2.79	62.76	1.91	66.57	4773
596307^	1	19	8.18	20.32	5.59	21.84	6	2.79	62.76	1.91	66.57	4758
138978	1/0	19	9.17	21.34	5.59	22.86	6	2.79	64.95	1.91	68.76	5279
596302^	1/0	19	9.17	21.34	5.59	22.86	6	2.79	64.95	1.91	68.76	5279
599521	2/0	19	10.29	22.45	5.59	23.98	6	2.79	67.36	1.91	71.17	5877
596297^	2/0	19	10.29	22.45	5.59	23.98	6	2.79	67.36	1.91	71.17	5860
TBA	3/0	19	11.58	23.72	5.59	25.25	4	2.79	70.26	1.91	74.07	6746
599134	4/0	19	13.00	25.15	5.59	26.67	3	2.79	73.18	1.91	76.99	7567
592993^	4/0	19	13.00	25.15	5.59	26.67	3	2.79	73.18	1.91	76.99	7548
669259	250	37	14.17	26.52	5.59	28.04	4	2.79	76.15	1.91	79.96	8353
599133	350	37	16.79	29.13	5.59	30.66	2	3.18	83.06	2.16	87.38	10649
596108^	350	37	16.79	29.13	5.59	30.66	2	3.18	83.06	2.16	87.38	10625
592992^	500	37	20.04	32.39	5.59	33.91	1	3.18	90.09	2.16	94.41	13407
599107	500	37	20.04	32.39	5.59	33.91	1	3.18	90.09	2.16	94.41	13441
599523	750	61	24.59	37.19	5.59	38.71	2	3.18	100.46	2.16	104.77	17852
596289^	750	61	24.59	37.19	5.59	38.71	2	3.18	100.46	2.16	104.77	17824

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

^ Black outer jacket



**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	449.58	7084	0.5315	0.67	0.0204	0.1542	0.579 + j0.425	0.204 + j0.048	2540	172	201
2	449.58	7084	0.5315	0.67	0.0204	0.1542	0.579 + j0.425	0.204 + j0.048	2540	172	201
1	464.82	8936	0.4199	0.53	0.0186	0.1476	0.535 + j0.406	0.162 + j0.045	2664	197	228
1	464.82	8936	0.4199	0.53	0.0186	0.1476	0.535 + j0.406	0.162 + j0.045	2664	197	228
1/0	480.06	11276	0.3346	0.42	0.0174	0.1411	0.5 + j0.389	0.128 + j0.043	2785	225	257
1/0	480.06	11276	0.3346	0.42	0.0174	0.1411	0.5 + j0.389	0.128 + j0.043	2785	225	257
2/0	497.84	14213	0.2657	0.33	0.0162	0.1378	0.471 + j0.37	0.102 + j0.042	2921	260	292
2/0	497.84	14213	0.2657	0.33	0.0162	0.1378	0.471 + j0.37	0.102 + j0.042	2921	260	292
3/0	518.16	17920	0.2100	0.27	0.0146	0.1312	0.447 + j0.351	0.081 + j0.04	3079	297	330
4/0	538.48	22597	0.1673	0.21	0.0134	0.1280	0.427 + j0.331	0.065 + j0.039	3253	342	372
4/0	538.48	22597	0.1673	0.21	0.0134	0.1280	0.427 + j0.331	0.065 + j0.039	3253	342	372
250	558.80	26700	0.1411	0.18	0.0128	0.1247	0.413 + j0.313	0.056 + j0.038	3420	376	410
350	609.60	37380	0.1017	0.13	0.0113	0.1181	0.389 + j0.283	0.041 + j0.036	3739	460	487
350	609.60	37380	0.1017	0.13	0.0113	0.1181	0.389 + j0.283	0.041 + j0.036	3739	460	487
500	660.40	53400	0.0722	0.10	0.0098	0.1115	0.366 + j0.251	0.03 + j0.034	4136	556	573
500	660.40	53400	0.0722	0.10	0.0098	0.1115	0.366 + j0.251	0.03 + j0.034	4136	556	573
750	731.52	80100	0.0459	0.08	0.0085	0.1050	0.34 + j0.212	0.024 + j0.032	4721	678	668
750	731.52	80100	0.0459	0.08	0.0085	0.1050	0.34 + j0.212	0.024 + j0.032	4721	678	668

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

