



# HVTECK CU 3/C 320TRXLPE TS PVC AIA PVC 25kV 133% CSA

3 Conductor, 320 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:** 320 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. **Grounding Conductor:** Class B compressed stranded bare copper ground per ASTM B3 and ASTM B8
7. **Filler:** Non-wicking, non-hygroscopic and flame retardant polypropylene filler
8. **Binder:** Polypropylene tape
9. **Inner Jacket:** PVC inner jacket
10. **Armour:** Aluminum Interlocked Armour (AIA)
11. **Overall Jacket:** Black Polyvinyl Chloride (PVC) Jacket

## APPLICATIONS AND FEATURES:

Southwire's 25kV 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 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
- 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 320 TRXLPE AIA 25kV 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
TBA	1	19	0.322	1.000	320	1.060	6	110	2.909	75	3.059	927	4064
TBA	1/0	19	0.361	1.039	320	1.099	6	110	2.993	75	3.143	1133	4411
139407	2/0	19	0.405	1.083	320	1.143	6	125	3.134	85	3.304	1605	5034
TBA	3/0	19	0.456	1.134	320	1.194	4	125	3.228	85	3.398	1769	5559
678745	4/0	19	0.512	1.190	320	1.250	4	125	3.363	85	3.533	2411	6143
TBA	250	37	0.558	1.244	320	1.304	4	125	3.466	85	3.636	2543	6769
137995!	350	37	0.661	1.327	320	1.387	3	125	3.659	85	3.829	3771	7906
138182	350	37	0.661	1.327	320	1.387	3	135	3.660	85	3.830	3771	7895
678737	500	37	0.789	1.475	320	1.535	3	125	3.979	85	4.149	5207	9763

All dimensions are nominal and subject to normal manufacturing tolerances

◊ Cable marked with this symbol is a standard stock item

! Gray Jacket Color





**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
1	21.4	2008	0.128	0.162	0.073	0.050	0.523 + j0.335	0.162 + j0.05	3315	202	226
1/0	22.0	2534	0.102	0.128	0.068	0.048	0.485 + j0.322	0.128 + j0.048	3435	231	256
2/0	23.1	3194	0.081	0.102	0.063	0.046	0.455 + j0.307	0.102 + j0.046	3572	265	290
3/0	23.8	4027	0.064	0.081	0.059	0.044	0.430 + j0.292	0.081 + j0.044	3730	303	327
4/0	24.7	5078	0.051	0.065	0.054	0.043	0.408 + j0.276	0.065 + j0.043	3903	348	369
250	25.5	6000	0.043	0.056	0.051	0.042	0.394 + j0.263	0.056 + j0.042	4071	384	408
350	26.8	8400	0.031	0.041	0.045	0.039	0.368 + j0.239	0.042 + j0.039	4390	468	485
350	30.6	8400	0.030	0.041	0.046	0.039	0.368 + j0.239	0.042 + j0.039	4390	468	485
500	29.0	12000	0.022	0.030	0.040	0.037	0.345 + j0.213	0.031 + j0.037	4786	565	571

\* 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
TBA	1	19	8.18	25.40	8.13	26.92	6	2.79	73.89	1.91	77.70	1380	6048
TBA	1/0	19	9.17	26.39	8.13	27.91	6	2.79	76.02	1.91	79.83	1686	6564
139407	2/0	19	10.29	27.51	8.13	29.03	6	3.18	79.60	2.16	83.92	2389	7491
TBA	3/0	19	11.58	28.80	8.13	30.33	4	3.18	81.99	2.16	86.31	2633	8273
678745	4/0	19	13.00	30.23	8.13	31.75	4	3.18	85.42	2.16	89.74	3588	9142
TBA	250	37	14.17	31.60	8.13	33.12	4	3.18	88.04	2.16	92.35	3784	10073
137995!	350	37	16.79	33.71	8.13	35.23	3	3.18	92.94	2.16	97.26	5612	11765
138182	350	37	16.79	33.71	8.13	35.23	3	3.43	92.96	2.16	97.28	5612	11749
678737	500	37	20.04	37.47	8.13	38.99	3	3.18	101.07	2.16	105.38	7749	14529

All dimensions are nominal and subject to normal manufacturing tolerances

◇ Cable marked with this symbol is a standard stock item

! Gray Jacket Color





**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
1	543.56	8936	0.4199	0.53	0.0223	0.1640	0.523 + j0.335	0.162 + j0.05	3315	202	226
1/0	558.80	11276	0.3346	0.42	0.0207	0.1575	0.485 + j0.322	0.128 + j0.048	3435	231	256
2/0	586.74	14213	0.2657	0.33	0.0192	0.1509	0.455 + j0.307	0.102 + j0.046	3572	265	290
3/0	604.52	17920	0.2100	0.27	0.0180	0.1444	0.430 + j0.292	0.081 + j0.044	3730	303	327
4/0	627.38	22597	0.1673	0.21	0.0165	0.1411	0.408 + j0.276	0.065 + j0.043	3903	348	369
250	647.70	26700	0.1411	0.18	0.0155	0.1378	0.394 + j0.263	0.056 + j0.042	4071	384	408
350	680.72	37380	0.1017	0.13	0.0137	0.1280	0.368 + j0.239	0.042 + j0.039	4390	468	485
350	777.24	37380	0.0984	0.13	0.0140	0.1280	0.368 + j0.239	0.042 + j0.039	4390	468	485
500	736.60	53400	0.0722	0.10	0.0122	0.1214	0.345 + j0.213	0.031 + j0.037	4786	565	571

\* 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

