

## HVTECK CU 3/C 420TRXLPE TS PVC AIA PVC 35kV 133% CSA

3 Conductor, 420 Mils Tree Retardant Cross Linked Polyethylene, 133% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

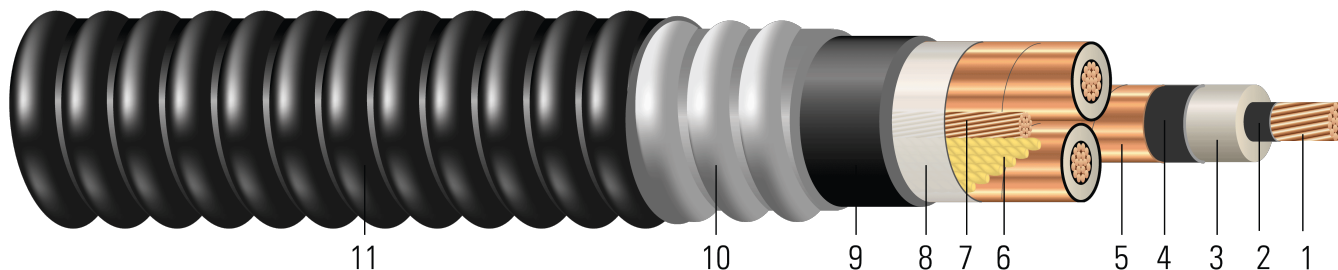


Image not to scale. See Table 1 for dimensions.

### 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:** 420 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:** Black Polyvinyl Chloride (PVC) Jacket

### APPLICATIONS AND FEATURES:

Southwire's 35kV 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

## SAMPLE PRINT LEGEND:

(CSA) SOUTHWIRE (NESC) #P# 3/C [#AWG or #kcmil] CU 420 TRXLPE AIA 35kV 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
669524	1/0	19	0.361	1.240	420	1.300	6	125	3.471	85	3.641	5319
653019	2/0	19	0.405	1.284	420	1.344	6	125	3.566	85	3.736	5789
TBA	3/0	19	0.456	1.334	420	1.394	4	125	3.660	85	3.830	6750
678719	4/0	19	0.512	1.390	420	1.450	4	125	3.795	85	3.965	6939
TBA	250	37	0.558	1.444	420	1.504	4	125	3.897	85	4.067	8041
TBA	350	37	0.661	1.547	420	1.607	3	125	4.120	85	4.290	9469

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

### 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
1/0	25.4	2534	0.102	0.128	0.083	0.051	0.467 + j0.276	0.128 + j0.052	4024	231	256
2/0	26.1	3194	0.081	0.102	0.078	0.050	0.437 + j0.264	0.102 + j0.05	4161	265	290
3/0	26.8	4027	0.064	0.081	0.073	0.048	0.411 + j0.252	0.082 + j0.048	4318	303	327
4/0	27.7	5078	0.051	0.065	0.067	0.046	0.389 + j0.239	0.066 + j0.046	4492	348	369
250	28.4	6000	0.043	0.056	0.064	0.045	0.375 + j0.228	0.057 + j0.045	4659	384	408
350	30	8400	0.031	0.041	0.057	0.042	0.349 + j0.208	0.042 + j0.042	4979	468	485

\* 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
669524	1/0	19	9.17	31.50	10.67	33.02	6	3.18	88.16	2.16	92.48	7916
653019	2/0	19	10.29	32.61	10.67	34.14	6	3.18	90.58	2.16	94.89	8615
TBA	3/0	19	11.58	33.88	10.67	35.41	4	3.18	92.96	2.16	97.28	10045
678719	4/0	19	13.00	35.31	10.67	36.83	4	3.18	96.39	2.16	100.71	10326
TBA	250	37	14.17	36.68	10.67	38.20	4	3.18	98.98	2.16	103.30	11966
TBA	350	37	16.79	39.29	10.67	40.82	3	3.18	104.65	2.16	108.97	14091

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

**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
1/0	645.16	11276	0.3346	0.42	0.0253	0.1673	0.467 + j0.276	0.128 + j0.052	4024	231	256
2/0	662.94	14213	0.2657	0.33	0.0238	0.1640	0.437 + j0.264	0.102 + j0.05	4161	265	290
3/0	680.72	17920	0.2100	0.27	0.0223	0.1575	0.411 + j0.252	0.082 + j0.048	4318	303	327
4/0	703.58	22597	0.1673	0.21	0.0204	0.1509	0.389 + j0.239	0.066 + j0.046	4492	348	369
250	721.36	26700	0.1411	0.18	0.0195	0.1476	0.375 + j0.228	0.057 + j0.045	4659	384	408
350	762.00	37380	0.1017	0.13	0.0174	0.1378	0.349 + j0.208	0.042 + j0.042	4979	468	485

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

