# HVTECK CU 1/C 320TRXLPE TS PVC AIA PVC 25kV 133% CSA

Single 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

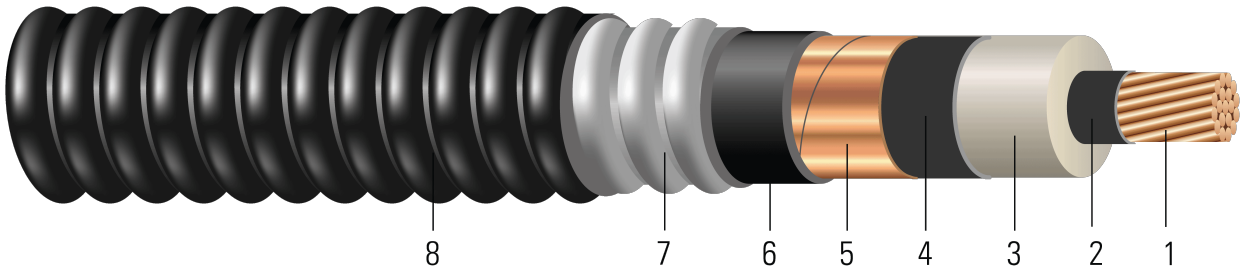


Image not to scale. See Table 1 for dimensions.

## 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. **Inner Jacket:** PVC inner jacket
7. **Armour:** Aluminum Interlocked Armour (AIA)
8. **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 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 (1/0 and Larger)
- FT1 Flame Test (1,706 BTU/Hr nominal - Vertical Wire Flame Test)





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- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV

## SAMPLE PRINT LEGEND:

(CSA) SOUTHWIRE (NESC) #P# 1/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 | Inner Jacket Thickness | Dia. Over Armour | Overall Jacket Thickness | Approx. OD | Approx. Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AWG/ Kcmil | No. | inch | inch | mil | inch | mil | inch | mil | inch | lb/1000ft |
| TBA | 1 | 19 | 0.322 | 1.000 | 320 | 1.060 | 80 | 1.572 | 60 | 1.692 | 1339 |
| TBA | 1/0 | 19 | 0.361 | 1.039 | 320 | 1.099 | 80 | 1.611 | 60 | 1.731 | 1450 |
| TBA | 2/0 | 19 | 0.405 | 1.083 | 320 | 1.143 | 80 | 1.679 | 60 | 1.799 | 1618 |
| TBA | 3/0 | 19 | 0.456 | 1.134 | 320 | 1.194 | 80 | 1.730 | 60 | 1.850 | 1785 |
| TBA | 4/0 | 19 | 0.512 | 1.190 | 320 | 1.250 | 80 | 1.786 | 60 | 1.906 | 1983 |
| 672797 | 250 | 37 | 0.558 | 1.228 | 320 | 1.288 | 80 | 1.812 | 60 | 1.932 | 2105 |
| TBA | 350 | 37 | 0.661 | 1.347 | 320 | 1.407 | 80 | 1.943 | 60 | 2.063 | 2691 |
| TBA | 500 | 37 | 0.789 | 1.475 | 320 | 1.535 | 110 | 2.131 | 60 | 2.251 | 3431 |
| 672792 | 750 | 61 | 0.968 | 1.664 | 320 | 1.724 | 110 | 2.308 | 75 | 2.458 | 4311 |
| TBA | 1000 | 61 | 1.117 | 1.813 | 320 | 1.873 | 110 | 2.469 | 75 | 2.619 | 5489 |

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 | 11.8 | 669 | 0.128 | 0.162 | 0.077 | 0.060 | 0.514 + j0.339 | 0.163 + j0.06 | 3284 | 245 | 244 |
| 1/0 | 12.1 | 844 | 0.102 | 0.128 | 0.071 | 0.058 | 0.478 + j0.325 | 0.129 + j0.058 | 3405 | 278 | 272 |
| 2/0 | 12.5 | 1064 | 0.081 | 0.102 | 0.066 | 0.056 | 0.448 + j0.311 | 0.103 + j0.056 | 3541 | 316 | 303 |
| 3/0 | 12.9 | 1342 | 0.064 | 0.081 | 0.061 | 0.054 | 0.423 + j0.296 | 0.082 + j0.054 | 3699 | 356 | 333 |
| 4/0 | 13.3 | 1692 | 0.051 | 0.065 | 0.057 | 0.052 | 0.402 + j0.28 | 0.066 + j0.052 | 3872 | 403 | 367 |
| 250 | 13.5 | 2000 | 0.043 | 0.056 | 0.054 | 0.051 | 0.389 + j0.266 | 0.057 + j0.051 | 4040 | 455 | 411 |
| 350 | 14.4 | 2800 | 0.031 | 0.041 | 0.048 | 0.048 | 0.364 + j0.242 | 0.042 + j0.048 | 4359 | 537 | 459 |
| 500 | 15.7 | 4000 | 0.022 | 0.030 | 0.042 | 0.046 | 0.341 + j0.216 | 0.031 + j0.046 | 4755 | 616 | 499 |
| 750 | 17.2 | 6000 | 0.014 | 0.023 | 0.036 | 0.043 | 0.316 + j0.185 | 0.024 + j0.043 | 5341 | 716 | 557 |
| 1000 | 18.3 | 8000 | 0.011 | 0.019 | 0.032 | 0.041 | 0.299 + j0.165 | 0.02 + j0.041 | 5803 | 825 | 608 |

* 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 | Inner Jacket Thickness | Dia. Over Armour | Overall Jacket Thickness | Approx. OD | Approx. Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AWG/ Kcmil | No. | mm | mm | mm | mm | mm | mm | mm | mm | kg/km |
| TBA | 1 | 19 | 8.18 | 25.40 | 8.13 | 26.92 | 2.03 | 39.93 | 1.52 | 42.98 | 1993 |
| TBA | 1/0 | 19 | 9.17 | 26.39 | 8.13 | 27.91 | 2.03 | 40.92 | 1.52 | 43.97 | 2158 |
| TBA | 2/0 | 19 | 10.29 | 27.51 | 8.13 | 29.03 | 2.03 | 42.65 | 1.52 | 45.69 | 2408 |
| TBA | 3/0 | 19 | 11.58 | 28.80 | 8.13 | 30.33 | 2.03 | 43.94 | 1.52 | 46.99 | 2656 |
| TBA | 4/0 | 19 | 13.00 | 30.23 | 8.13 | 31.75 | 2.03 | 45.36 | 1.52 | 48.41 | 2951 |
| 672797 | 250 | 37 | 14.17 | 31.19 | 8.13 | 32.72 | 2.03 | 46.02 | 1.52 | 49.07 | 3133 |
| TBA | 350 | 37 | 16.79 | 34.21 | 8.13 | 35.74 | 2.03 | 49.35 | 1.52 | 52.40 | 4005 |
| TBA | 500 | 37 | 20.04 | 37.47 | 8.13 | 38.99 | 2.79 | 54.13 | 1.52 | 57.18 | 5106 |
| 672792 | 750 | 61 | 24.59 | 42.27 | 8.13 | 43.79 | 2.79 | 58.62 | 1.91 | 62.43 | 6415 |
| TBA | 1000 | 61 | 28.37 | 46.05 | 8.13 | 47.57 | 2.79 | 62.71 | 1.91 | 66.52 | 8169 |

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 | 299.72 | 2977 | 0.4199 | 0.53 | 0.0235 | 0.1969 | 0.514 + j0.339 | 0.163 + j0.06 | 3284 | 245 | 244 |
| 1/0 | 307.34 | 3756 | 0.3346 | 0.42 | 0.0216 | 0.1903 | 0.478 + j0.325 | 0.129 + j0.058 | 3405 | 278 | 272 |
| 2/0 | 317.50 | 4735 | 0.2657 | 0.33 | 0.0201 | 0.1837 | 0.448 + j0.311 | 0.103 + j0.056 | 3541 | 316 | 303 |
| 3/0 | 327.66 | 5972 | 0.2100 | 0.27 | 0.0186 | 0.1772 | 0.423 + j0.296 | 0.082 + j0.054 | 3699 | 356 | 333 |
| 4/0 | 337.82 | 7529 | 0.1673 | 0.21 | 0.0174 | 0.1706 | 0.402 + j0.28 | 0.066 + j0.052 | 3872 | 403 | 367 |
| 250 | 342.90 | 8900 | 0.1411 | 0.18 | 0.0165 | 0.1673 | 0.389 + j0.266 | 0.057 + j0.051 | 4040 | 455 | 411 |
| 350 | 365.76 | 12460 | 0.1017 | 0.13 | 0.0146 | 0.1575 | 0.364 + j0.242 | 0.042 + j0.048 | 4359 | 537 | 459 |
| 500 | 398.78 | 17800 | 0.0722 | 0.10 | 0.0128 | 0.1509 | 0.341 + j0.216 | 0.031 + j0.046 | 4755 | 616 | 499 |
| 750 | 436.88 | 26700 | 0.0459 | 0.08 | 0.0110 | 0.1411 | 0.316 + j0.185 | 0.024 + j0.043 | 5341 | 716 | 557 |
| 1000 | 464.82 | 35600 | 0.0361 | 0.06 | 0.0098 | 0.1345 | 0.299 + j0.165 | 0.02 + j0.041 | 5803 | 825 | 608 |

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