# HVTECK CU 3/C 140TRXLPE TS PVC AIA PVC 8kV 133% CSA

3 Conductor, 140 Mils Tree Retardant Cross Linked Polyethylene, 133% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

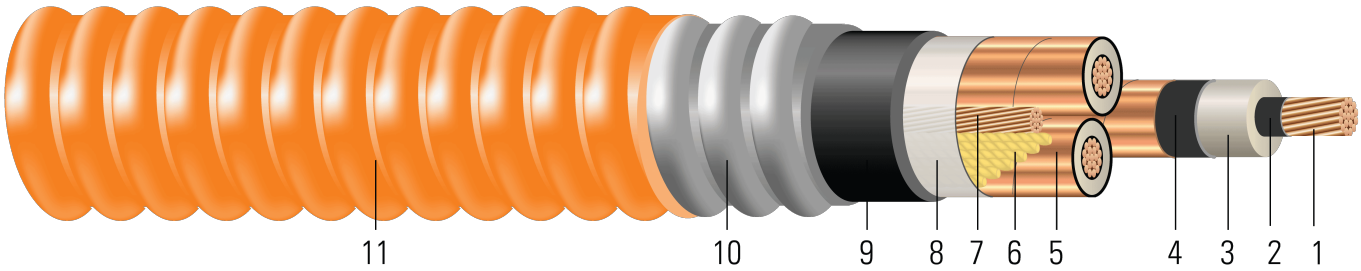


Image not to scale. See Table 1 for dimensions.

## 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:** 140 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:** Orange Polyvinyl Chloride (PVC) Jacket

## APPLICATIONS AND FEATURES:

Southwire's 8kV 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)
- 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 140 TRXLPE AIA 8kV 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 | 2 | 7 | 0.282 | 0.600 | 140 | 0.660 | 6 | 80 | 1.985 | 60 | 2.105 | 741 | 2181 |
| TBA | 1 | 19 | 0.322 | 0.640 | 140 | 0.700 | 6 | 110 | 2.131 | 60 | 2.251 | 905 | 2563 |
| TBA | 1/0 | 19 | 0.361 | 0.679 | 140 | 0.739 | 6 | 110 | 2.215 | 60 | 2.335 | 1111 | 2868 |
| TBA | 2/0 | 19 | 0.405 | 0.723 | 140 | 0.783 | 6 | 110 | 2.310 | 75 | 2.460 | 1371 | 3313 |
| TBA | 3/0 | 19 | 0.456 | 0.774 | 140 | 0.834 | 4 | 110 | 2.421 | 75 | 2.571 | 1747 | 3825 |
| TBA | 4/0 | 19 | 0.512 | 0.830 | 140 | 0.890 | 4 | 110 | 2.542 | 75 | 2.692 | 2159 | 4387 |
| TBA | 250 | 37 | 0.558 | 0.884 | 140 | 0.944 | 4 | 110 | 2.658 | 75 | 2.808 | 2522 | 4903 |
| 664670 | 350 | 37 | 0.661 | 0.987 | 140 | 1.047 | 3 | 110 | 3.875 | 75 | 3.025 | 3966 | 6183 |
| TBA | 500 | 37 | 0.789 | 1.115 | 140 | 1.175 | 3 | 125 | 3.187 | 85 | 3.357 | 4907 | 8092 |
| TBA | 750 | 61 | 0.968 | 1.304 | 140 | 1.364 | 2 | 125 | 3.595 | 85 | 3.765 | 7297 | 11070 |
| TBA | 1000 | 61 | 1.117 | 1.453 | 140 | 1.513 | 1 | 125 | 3.917 | 85 | 4.087 | 9696 | 13932 |

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
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 | 14.7 | 1592 | 0.162 | 0.204 | 0.046 | 0.042 | 0.577 + j0.491 | 0.204 + j0.043 | 2075 | 172 | 201 |
| 1 | 15.8 | 2008 | 0.128 | 0.162 | 0.042 | 0.040 | 0.537 + j0.469 | 0.162 + j0.040 | 2199 | 197 | 228 |
| 1/0 | 16.3 | 2534 | 0.102 | 0.128 | 0.039 | 0.039 | 0.504 + j0.449 | 0.128 + j0.039 | 2320 | 225 | 257 |
| 2/0 | 17.2 | 3194 | 0.081 | 0.102 | 0.036 | 0.037 | 0.477 + j0.427 | 0.102 + j0.038 | 2456 | 260 | 292 |
| 3/0 | 18.0 | 4027 | 0.064 | 0.081 | 0.030 | 0.036 | 0.455 + j0.404 | 0.081 + j0.036 | 2614 | 297 | 330 |
| 4/0 | 18.8 | 5078 | 0.051 | 0.065 | 0.030 | 0.030 | 0.437 + j0.380 | 0.065 + j0.035 | 2788 | 342 | 372 |
| 250 | 19.7 | 6000 | 0.043 | 0.056 | 0.030 | 0.030 | 0.425 + j0.359 | 0.056 + j0.034 | 2955 | 376 | 410 |
| 350 | 21.2 | 8400 | 0.030 | 0.041 | 0.020 | 0.030 | 0.403 + j0.323 | 0.410 + j0.033 | 3274 | 460 | 487 |
| 500 | 23.5 | 12000 | 0.020 | 0.030 | 0.020 | 0.030 | 0.380 + j0.284 | 0.030 + j0.031 | 3671 | 556 | 573 |
| 750 | 26.4 | 18000 | 0.014 | 0.020 | 0.020 | 0.030 | 0.355 + j0.238 | 0.023 + j0.030 | 4257 | 678 | 668 |
| 1000 | 28.6 | 24000 | 0.011 | 0.020 | 0.020 | 0.030 | 0.336 + j0.208 | 0.020 + j0.029 | 4718 | 798 | 772 |

* 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 | 2 | 7 | 7.16 | 15.24 | 3.56 | 16.76 | 6 | 2.03 | 50.42 | 1.52 | 53.47 | 1103 | 3246 |
| TBA | 1 | 19 | 8.18 | 16.26 | 3.56 | 17.78 | 6 | 2.79 | 54.13 | 1.52 | 57.18 | 1347 | 3814 |
| TBA | 1/0 | 19 | 9.17 | 17.25 | 3.56 | 18.77 | 6 | 2.79 | 56.26 | 1.52 | 59.31 | 1653 | 4268 |
| TBA | 2/0 | 19 | 10.29 | 18.36 | 3.56 | 19.89 | 6 | 2.79 | 58.67 | 1.91 | 62.48 | 2040 | 4930 |
| TBA | 3/0 | 19 | 11.58 | 19.66 | 3.56 | 21.18 | 4 | 2.79 | 61.49 | 1.91 | 65.30 | 2600 | 5692 |
| TBA | 4/0 | 19 | 13.00 | 21.08 | 3.56 | 22.61 | 4 | 2.79 | 64.57 | 1.91 | 68.38 | 3213 | 6529 |
| TBA | 250 | 37 | 14.17 | 22.45 | 3.56 | 23.98 | 4 | 2.79 | 67.51 | 1.91 | 71.32 | 3753 | 7296 |
| 664670 | 350 | 37 | 16.79 | 25.07 | 3.56 | 26.59 | 3 | 2.79 | 98.43 | 1.91 | 76.84 | 5902 | 9201 |
| TBA | 500 | 37 | 20.04 | 28.32 | 3.56 | 29.85 | 3 | 3.18 | 80.95 | 2.16 | 85.27 | 7302 | 12042 |
| TBA | 750 | 61 | 24.59 | 33.12 | 3.56 | 34.65 | 2 | 3.18 | 91.31 | 2.16 | 95.63 | 10859 | 16474 |
| TBA | 1000 | 61 | 28.37 | 36.91 | 3.56 | 38.43 | 1 | 3.18 | 99.49 | 2.16 | 103.81 | 14429 | 20733 |

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◊ Cable marked with this symbol is a standard stock item
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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 | 373.38 | 7084 | 0.5315 | 0.67 | 0.0140 | 0.1378 | 0.577 + j0.491 | 0.204 + j0.043 | 2075 | 172 | 201 |
| 1 | 401.32 | 8936 | 0.4199 | 0.53 | 0.0128 | 0.1312 | 0.537 + j0.469 | 0.162 + j0.040 | 2199 | 197 | 228 |
| 1/0 | 414.02 | 11276 | 0.3346 | 0.42 | 0.0119 | 0.1280 | 0.504 + j0.449 | 0.128 + j0.039 | 2320 | 225 | 257 |
| 2/0 | 436.88 | 14213 | 0.2657 | 0.33 | 0.0110 | 0.1214 | 0.477 + j0.427 | 0.102 + j0.038 | 2456 | 260 | 292 |
| 3/0 | 457.20 | 17920 | 0.2100 | 0.27 | 0.0091 | 0.1181 | 0.455 + j0.404 | 0.081 + j0.036 | 2614 | 297 | 330 |
| 4/0 | 477.52 | 22597 | 0.1673 | 0.21 | 0.0091 | 0.0984 | 0.437 + j0.380 | 0.065 + j0.035 | 2788 | 342 | 372 |
| 250 | 500.38 | 26700 | 0.1411 | 0.18 | 0.0091 | 0.0984 | 0.425 + j0.359 | 0.056 + j0.034 | 2955 | 376 | 410 |
| 350 | 538.48 | 37380 | 0.0984 | 0.13 | 0.0061 | 0.0984 | 0.403 + j0.323 | 0.410 + j0.033 | 3274 | 460 | 487 |
| 500 | 596.90 | 53400 | 0.0656 | 0.10 | 0.0061 | 0.0984 | 0.380 + j0.284 | 0.030 + j0.031 | 3671 | 556 | 573 |
| 750 | 670.56 | 80100 | 0.0459 | 0.07 | 0.0061 | 0.0984 | 0.355 + j0.238 | 0.023 + j0.030 | 4257 | 678 | 668 |
| 1000 | 726.44 | 106800 | 0.0361 | 0.07 | 0.0061 | 0.0984 | 0.336 + j0.208 | 0.020 + j0.029 | 4718 | 798 | 772 |

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