



HVTECK CU 3/C 115TRXLPE TS PVC AIA PVC 8kV 100% CSA

3 Conductor, 115 Mils Tree Retardant Cross Linked Polyethylene, 100% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

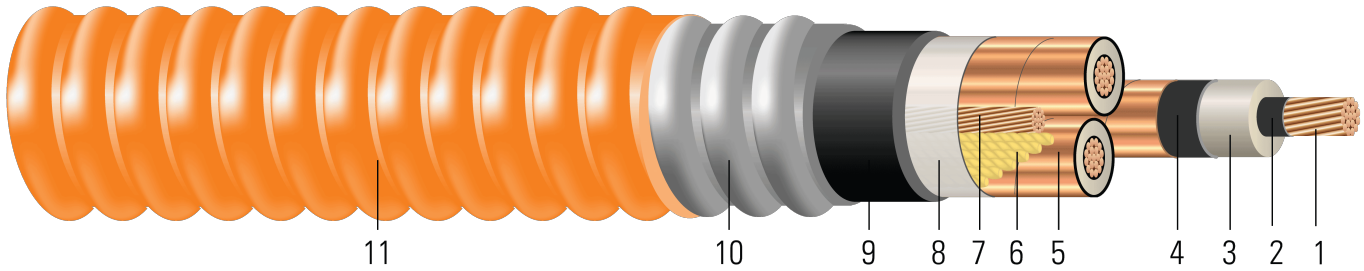


Image not to scale. See Table 1 for dimensions.

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:** 115 Mils Tree Retardant Cross Linked Polyethylene 100% 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 115 TRXLPE AIA 8kV 100% INS LEVEL 25% TS SUN RES 105°C FT4 HL (-40°C) LTGG RoHS YEAR [SEQUENTIAL METER MARKS]

Table 1 – Weights and Measurements

| 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 |
| 2 | 7 | 0.282 | 0.550 | 115 | 0.610 | 6 | 80 | 1.877 | 60 | 1.997 | 738 | 2028 |
| 1 | 19 | 0.322 | 0.590 | 115 | 0.650 | 6 | 80 | 1.963 | 60 | 2.083 | 902 | 2282 |
| 1/0 | 19 | 0.361 | 0.629 | 115 | 0.689 | 6 | 110 | 2.107 | 60 | 2.227 | 1108 | 2695 |
| 2/0 | 19 | 0.405 | 0.673 | 115 | 0.733 | 6 | 110 | 2.202 | 60 | 2.322 | 1368 | 3062 |
| 3/0 | 19 | 0.456 | 0.724 | 115 | 0.784 | 4 | 110 | 2.313 | 75 | 2.463 | 1744 | 3637 |
| 4/0 | 19 | 0.512 | 0.780 | 115 | 0.840 | 4 | 110 | 2.434 | 75 | 2.584 | 2156 | 4190 |
| 250 | 37 | 0.558 | 0.834 | 115 | 0.894 | 4 | 110 | 2.550 | 75 | 2.700 | 2519 | 4699 |
| 350 | 37 | 0.661 | 0.937 | 115 | 0.997 | 3 | 110 | 2.773 | 75 | 2.923 | 3495 | 5945 |
| 500 | 37 | 0.789 | 1.065 | 115 | 1.125 | 3 | 110 | 3.049 | 85 | 3.219 | 4904 | 7758 |
| 750 | 61 | 0.968 | 1.254 | 115 | 1.314 | 2 | 125 | 3.487 | 85 | 3.657 | 7294 | 10798 |
| 1000 | 61 | 1.117 | 1.403 | 115 | 1.463 | 1 | 125 | 3.809 | 85 | 3.979 | 9693 | 13639 |

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 @ 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 | 14.0 | 1592 | 0.162 | 0.204 | 0.040 | 0.040 | 0.574 + j0.516 | 0.204 + j0.041 | 1920 | 172 | 201 |
| 1 | 14.6 | 2008 | 0.128 | 0.162 | 0.037 | 0.039 | 0.535 + j0.492 | 0.162 + j0.039 | 2044 | 197 | 228 |
| 1/0 | 15.6 | 2534 | 0.102 | 0.128 | 0.030 | 0.037 | 0.502 + j0.471 | 0.128 + j0.037 | 2165 | 225 | 257 |
| 2/0 | 16.3 | 3194 | 0.081 | 0.102 | 0.030 | 0.036 | 0.477 + j0.449 | 0.102 + j0.036 | 2302 | 260 | 292 |
| 3/0 | 17.2 | 4027 | 0.064 | 0.081 | 0.030 | 0.030 | 0.456 + j0.424 | 0.081 + j0.035 | 2459 | 297 | 330 |
| 4/0 | 18.1 | 5078 | 0.051 | 0.065 | 0.030 | 0.030 | 0.439 + j0.399 | 0.065 + j0.034 | 2633 | 342 | 372 |
| 250 | 18.9 | 6000 | 0.043 | 0.056 | 0.020 | 0.030 | 0.428 + j0.376 | 0.056 + j0.033 | 2800 | 376 | 410 |
| 350 | 20.5 | 8400 | 0.030 | 0.041 | 0.020 | 0.030 | 0.406 + j0.338 | 0.410 + j0.032 | 3120 | 460 | 487 |
| 500 | 22.5 | 12000 | 0.020 | 0.030 | 0.020 | 0.030 | 0.385 + j0.297 | 0.030 + j0.030 | 3516 | 556 | 573 |
| 750 | 25.6 | 18000 | 0.014 | 0.020 | 0.020 | 0.030 | 0.360 + j0.248 | 0.023 + j0.029 | 4102 | 678 | 668 |
| 1000 | 27.9 | 24000 | 0.011 | 0.020 | 0.013 | 0.030 | 0.341 + j0.217 | 0.020 + j0.028 | 4563 | 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)

| 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 |
| 2 | 7 | 7.16 | 13.97 | 2.92 | 15.49 | 6 | 2.03 | 47.68 | 1.52 | 50.72 | 1098 | 3018 |
| 1 | 19 | 8.18 | 14.99 | 2.92 | 16.51 | 6 | 2.03 | 49.86 | 1.52 | 52.91 | 1342 | 3396 |
| 1/0 | 19 | 9.17 | 15.98 | 2.92 | 17.50 | 6 | 2.79 | 53.52 | 1.52 | 56.57 | 1649 | 4011 |
| 2/0 | 19 | 10.29 | 17.09 | 2.92 | 18.62 | 6 | 2.79 | 55.93 | 1.52 | 58.98 | 2036 | 4557 |
| 3/0 | 19 | 11.58 | 18.39 | 2.92 | 19.91 | 4 | 2.79 | 58.75 | 1.91 | 62.56 | 2595 | 5412 |
| 4/0 | 19 | 13.00 | 19.81 | 2.92 | 21.34 | 4 | 2.79 | 61.82 | 1.91 | 65.63 | 3208 | 6235 |
| 250 | 37 | 14.17 | 21.18 | 2.92 | 22.71 | 4 | 2.79 | 64.77 | 1.91 | 68.58 | 3749 | 6993 |
| 350 | 37 | 16.79 | 23.80 | 2.92 | 25.32 | 3 | 2.79 | 70.43 | 1.91 | 74.24 | 5201 | 8847 |
| 500 | 37 | 20.04 | 27.05 | 2.92 | 28.58 | 3 | 2.79 | 77.44 | 2.16 | 81.76 | 7298 | 11545 |
| 750 | 61 | 24.59 | 31.85 | 2.92 | 33.38 | 2 | 3.18 | 88.57 | 2.16 | 92.89 | 10855 | 16069 |
| 1000 | 61 | 28.37 | 35.64 | 2.92 | 37.16 | 1 | 3.18 | 96.75 | 2.16 | 101.07 | 14425 | 20297 |





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 @ 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 | 355.60 | 7084 | 0.5315 | 0.67 | 0.0122 | 0.1312 | 0.574 + j0.516 | 0.204 + j0.041 | 1920 | 172 | 201 |
| 1 | 370.84 | 8936 | 0.4199 | 0.53 | 0.0113 | 0.1280 | 0.535 + j0.492 | 0.162 + j0.039 | 2044 | 197 | 228 |
| 1/0 | 396.24 | 11276 | 0.3346 | 0.42 | 0.0091 | 0.1214 | 0.502 + j0.471 | 0.128 + j0.037 | 2165 | 225 | 257 |
| 2/0 | 414.02 | 14213 | 0.2657 | 0.33 | 0.0091 | 0.1181 | 0.477 + j0.449 | 0.102 + j0.036 | 2302 | 260 | 292 |
| 3/0 | 436.88 | 17920 | 0.2100 | 0.27 | 0.0091 | 0.0984 | 0.456 + j0.424 | 0.081 + j0.035 | 2459 | 297 | 330 |
| 4/0 | 459.74 | 22597 | 0.1673 | 0.21 | 0.0091 | 0.0984 | 0.439 + j0.399 | 0.065 + j0.034 | 2633 | 342 | 372 |
| 250 | 480.06 | 26700 | 0.1411 | 0.18 | 0.0061 | 0.0984 | 0.428 + j0.376 | 0.056 + j0.033 | 2800 | 376 | 410 |
| 350 | 520.70 | 37380 | 0.0984 | 0.13 | 0.0061 | 0.0984 | 0.406 + j0.338 | 0.410 + j0.032 | 3120 | 460 | 487 |
| 500 | 571.50 | 53400 | 0.0656 | 0.10 | 0.0061 | 0.0984 | 0.385 + j0.297 | 0.030 + j0.030 | 3516 | 556 | 573 |
| 750 | 650.24 | 80100 | 0.0459 | 0.07 | 0.0061 | 0.0984 | 0.360 + j0.248 | 0.023 + j0.029 | 4102 | 678 | 668 |
| 1000 | 708.66 | 106800 | 0.0361 | 0.07 | 0.0040 | 0.0984 | 0.341 + j0.217 | 0.020 + j0.028 | 4563 | 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

