



HVTECK CU 1/C 115TRXLPE CB PVC AIA PVC 8kV 100% CSA

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

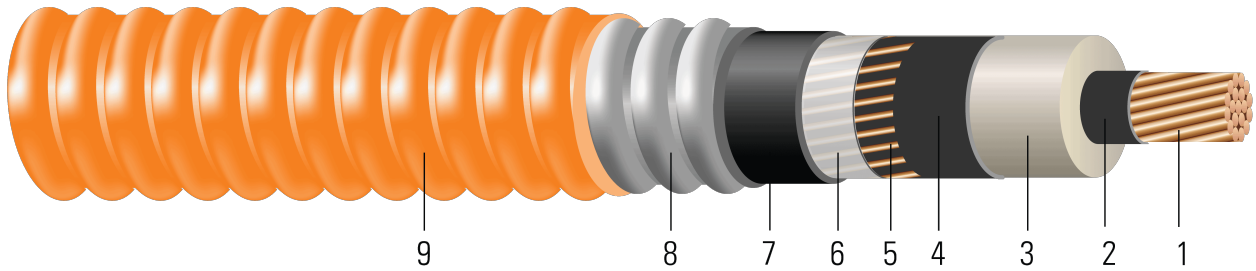


Image not to scale. See Table 1 for dimensions.

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. **Concentric Shield:** Concentrically applied copper bond / shield wires. Complies with greater than the minimum requirement as per Table 44, CSA Standard C68.10 and Table 16A, Canadian Electrical Code Part 1
6. **Neutral Separator:** Mylar tape
7. **Inner Jacket:** PVC inner jacket
8. **Armour:** Aluminum Interlocked Armour (AIA)
9. **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)
- 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# 1/C [#AWG or #kcmil] CU 115 TRXLPE AIA 8KV 100% INS LEVEL CB [No. x SIZE] AWG 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 | Concentric Neutral | Inner Jacket Thickness | Dia. Over Armour | Overall Jacket Thickness | Approx. OD | Copper Weight | Approx. Weight |
|------------|--------|-------------------------|--------------------------|------------------|---------------------------------|--------------------|------------------------|------------------|--------------------------|------------|---------------|----------------|
| AWG/ Kcmil | No. | inch | inch | mil | inch | No. x AWG | mil | inch | mil | inch | lb/ 1000ft | lb/1000ft |
| 2 | 7 | 0.282 | 0.550 | 115 | 0.610 | 7x14 | 80 | 1.120 | 50 | 1.220 | 299 | 812 |
| 1 | 19 | 0.322 | 0.590 | 115 | 0.650 | 11x14 | 80 | 1.160 | 50 | 1.260 | 407 | 947 |
| 1/0 | 19 | 0.361 | 0.629 | 115 | 0.689 | 11x14 | 80 | 1.199 | 50 | 1.299 | 474 | 1041 |
| 2/0 | 19 | 0.405 | 0.673 | 115 | 0.733 | 11x14 | 80 | 1.353 | 50 | 1.453 | 559 | 1167 |
| 3/0 | 19 | 0.456 | 0.724 | 115 | 0.784 | 13x14 | 80 | 1.404 | 50 | 1.504 | 694 | 1337 |
| 4/0 | 19 | 0.512 | 0.780 | 115 | 0.840 | 13x14 | 80 | 1.460 | 50 | 1.560 | 829 | 1510 |
| 250 | 37 | 0.558 | 0.834 | 115 | 0.894 | 17x14 | 80 | 1.514 | 60 | 1.634 | 1001 | 1755 |
| 350 | 37 | 0.661 | 0.937 | 115 | 0.997 | 21x14 | 80 | 1.675 | 60 | 1.795 | 1365 | 2241 |
| 500 | 37 | 0.789 | 1.065 | 115 | 1.125 | 26x14 | 80 | 1.803 | 60 | 1.923 | 1896 | 2866 |
| 750 | 61 | 0.968 | 1.254 | 115 | 1.314 | 21x12 | 80 | 1.992 | 60 | 2.112 | 2753 | 3968 |
| 1000 | 61 | 1.117 | 1.403 | 115 | 1.463 | 21x12 | 110 | 2.201 | 60 | 2.321 | 3525 | 4985 |

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 | 14.6 | 530 | 0.162 | 0.204 | 0.040 | 0.055 | 0.554 + j0.511 | 0.205 + j0.056 | 5458 | 215 | 221 |
| 1 | 15.1 | 669 | 0.128 | 0.162 | 0.037 | 0.053 | 0.516 + j0.488 | 0.163 + j0.053 | 8577 | 245 | 247 |
| 1/0 | 15.6 | 844 | 0.102 | 0.128 | 0.034 | 0.051 | 0.485 + j0.468 | 0.129 + j0.051 | 8577 | 278 | 275 |
| 2/0 | 17.4 | 1064 | 0.081 | 0.102 | 0.031 | 0.051 | 0.459 + j0.446 | 0.103 + j0.051 | 8577 | 317 | 306 |
| 3/0 | 18.0 | 1342 | 0.064 | 0.081 | 0.028 | 0.049 | 0.439 + j0.423 | 0.082 + j0.049 | 10137 | 357 | 335 |
| 4/0 | 18.7 | 1692 | 0.051 | 0.065 | 0.026 | 0.047 | 0.424 + j0.399 | 0.066 + j0.048 | 10137 | 404 | 369 |
| 250 | 19.6 | 2000 | 0.043 | 0.056 | 0.024 | 0.046 | 0.414 + j0.377 | 0.057 + j0.046 | 13256 | 456 | 412 |
| 350 | 21.5 | 2800 | 0.031 | 0.041 | 0.021 | 0.045 | 0.393 + j0.340 | 0.042 + j0.045 | 16376 | 537 | 456 |
| 500 | 23.1 | 4000 | 0.022 | 0.030 | 0.018 | 0.042 | 0.374 + j0.300 | 0.031 + j0.042 | 20275 | 616 | 497 |
| 750 | 25.3 | 6000 | 0.014 | 0.023 | 0.015 | 0.040 | 0.352 + j0.252 | 0.024 + j0.040 | 26018 | 706 | 551 |
| 1000 | 27.9 | 8000 | 0.011 | 0.019 | 0.013 | 0.039 | 0.334 + j0.221 | 0.020 + j0.038 | 26018 | 813 | 596 |

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

* CEC ampacities are based on:

3-1/C in air copper and aluminum: D17M

3-1/C direct buried copper and aluminum: D17A

Table 3 – Weights and Measurements (Metric)

| Cond. Size | Strand | Diameter Over Conductor | Diameter Over Insulation | Insul. Thickness | Diameter Over Insulation Shield | Concentric Neutral | Inner Jacket Thickness | Dia. Over Armour | Overall Jacket Thickness | Approx. OD | Copper Weight | Approx. Weight |
|------------|--------|-------------------------|--------------------------|------------------|---------------------------------|--------------------|------------------------|------------------|--------------------------|------------|---------------|----------------|
| AWG/Kcmil | No. | mm | mm | mm | mm | No. x AWG | mm | mm | mm | mm | kg/km | kg/km |
| 2 | 7 | 7.16 | 13.97 | 2.92 | 15.49 | 7x14 | 2.03 | 28.45 | 1.27 | 30.99 | 445 | 1208 |
| 1 | 19 | 8.18 | 14.99 | 2.92 | 16.51 | 11x14 | 2.03 | 29.46 | 1.27 | 32.00 | 606 | 1409 |
| 1/0 | 19 | 9.17 | 15.98 | 2.92 | 17.50 | 11x14 | 2.03 | 30.45 | 1.27 | 32.99 | 705 | 1549 |
| 2/0 | 19 | 10.29 | 17.09 | 2.92 | 18.62 | 11x14 | 2.03 | 34.37 | 1.27 | 36.91 | 832 | 1737 |
| 3/0 | 19 | 11.58 | 18.39 | 2.92 | 19.91 | 13x14 | 2.03 | 35.66 | 1.27 | 38.20 | 1033 | 1990 |
| 4/0 | 19 | 13.00 | 19.81 | 2.92 | 21.34 | 13x14 | 2.03 | 37.08 | 1.27 | 39.62 | 1234 | 2247 |
| 250 | 37 | 14.17 | 21.18 | 2.92 | 22.71 | 17x14 | 2.03 | 38.46 | 1.52 | 41.50 | 1490 | 2612 |
| 350 | 37 | 16.79 | 23.80 | 2.92 | 25.32 | 21x14 | 2.03 | 42.55 | 1.52 | 45.59 | 2031 | 3335 |
| 500 | 37 | 20.04 | 27.05 | 2.92 | 28.58 | 26x14 | 2.03 | 45.80 | 1.52 | 48.84 | 2822 | 4265 |
| 750 | 61 | 24.59 | 31.85 | 2.92 | 33.38 | 21x12 | 2.03 | 50.60 | 1.52 | 53.64 | 4097 | 5905 |
| 1000 | 61 | 28.37 | 35.64 | 2.92 | 37.16 | 21x12 | 2.79 | 55.91 | 1.52 | 58.95 | 5246 | 7418 |





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 | 370.84 | 2359 | 0.5315 | 0.67 | 0.0122 | 0.1804 | 0.554 + j0.511 | 0.205 + j0.056 | 5458 | 215 | 221 |
| 1 | 383.54 | 2977 | 0.4199 | 0.53 | 0.0113 | 0.1739 | 0.516 + j0.488 | 0.163 + j0.053 | 8577 | 245 | 247 |
| 1/0 | 396.24 | 3756 | 0.3346 | 0.42 | 0.0104 | 0.1673 | 0.485 + j0.468 | 0.129 + j0.051 | 8577 | 278 | 275 |
| 2/0 | 441.96 | 4735 | 0.2657 | 0.33 | 0.0094 | 0.1673 | 0.459 + j0.446 | 0.103 + j0.051 | 8577 | 317 | 306 |
| 3/0 | 457.20 | 5972 | 0.2100 | 0.27 | 0.0085 | 0.1608 | 0.439 + j0.423 | 0.082 + j0.049 | 10137 | 357 | 335 |
| 4/0 | 474.98 | 7529 | 0.1673 | 0.21 | 0.0079 | 0.1542 | 0.424 + j0.399 | 0.066 + j0.048 | 10137 | 404 | 369 |
| 250 | 497.84 | 8900 | 0.1411 | 0.18 | 0.0073 | 0.1509 | 0.414 + j0.377 | 0.057 + j0.046 | 13256 | 456 | 412 |
| 350 | 546.10 | 12460 | 0.1017 | 0.13 | 0.0064 | 0.1476 | 0.393 + j0.340 | 0.042 + j0.045 | 16376 | 537 | 456 |
| 500 | 586.74 | 17800 | 0.0722 | 0.10 | 0.0055 | 0.1378 | 0.374 + j0.300 | 0.031 + j0.042 | 20275 | 616 | 497 |
| 750 | 642.62 | 26700 | 0.0459 | 0.08 | 0.0046 | 0.1312 | 0.352 + j0.252 | 0.024 + j0.040 | 26018 | 706 | 551 |
| 1000 | 708.66 | 35600 | 0.0361 | 0.06 | 0.0040 | 0.1280 | 0.334 + j0.221 | 0.020 + j0.038 | 26018 | 813 | 596 |

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

* CEC ampacities are based on:

3-1/C in air copper and aluminum: D17M

3-1/C direct buried copper and aluminum: D17A

