



HVTECK CU 3/C 115TRXLPE TS PVC AIA PVC 5kV 133% or 8kV 100% CSA

3 Conductor, 115 Mils Tree Retardant Cross Linked Polyethylene, 5kV 133% or 8kV 100% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

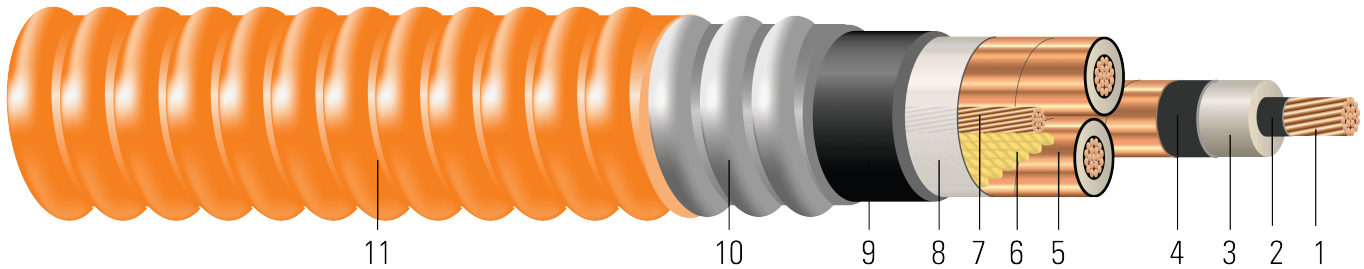


Image not to scale. See Table 1 for dimensions.

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 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 5kV / 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. For installation in cable trays, duct banks, direct burial, troughs, continuous rigid cable supports and concrete encaseable. 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 (Qualification Test Requirements)

SAMPLE PRINT LEGEND:

{SQMTR} {CSA} SOUTHWIRE® POWER CABLE {NESC} 3/C XXX KCMIL CU X.XXmm (115 mils) TR-XLPE AIA GW 1 X X AWG CU 5KV 133%/8KV 100% INS LEVEL 25%TS SUN. RES. 105°C FT4 HL (-40°C) LTGG RoHS

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 |
| 672897 | 2 | 7 | 0.282 | 0.545 | 115 | 0.605 | 6 | 80 | 1.873 | 60 | 1.993 | 876 | 2232 |
| 671975 | 1 | 19 | 0.322 | 0.590 | 115 | 0.650 | 6 | 80 | 1.957 | 60 | 2.077 | 1037 | 2356 |
| 672905 | 1/0 | 19 | 0.361 | 0.630 | 115 | 0.690 | 6 | 110 | 2.104 | 60 | 2.224 | 1257 | 2896 |
| 672947 | 2/0 | 19 | 0.405 | 0.674 | 115 | 0.734 | 6 | 110 | 2.199 | 60 | 2.319 | 1517 | 3134 |
| TBA | 3/0 | 19 | 0.456 | 0.724 | 115 | 0.784 | 4 | 110 | 2.313 | 75 | 2.463 | 1744 | 3637 |
| 599001 | 4/0 | 19 | 0.512 | 0.766 | 115 | 0.826 | 4 | 110 | 2.397 | 75 | 2.547 | 2319 | 4219 |
| 671984 | 250 | 37 | 0.558 | 0.818 | 115 | 0.878 | 4 | 110 | 2.510 | 75 | 2.660 | 2689 | 4697 |
| 640917 | 350 | 37 | 0.661 | 0.917 | 115 | 0.977 | 3 | 110 | 2.724 | 75 | 2.874 | 3680 | 5967 |
| 599006 | 500 | 37 | 0.789 | 1.042 | 115 | 1.102 | 3 | 110 | 2.994 | 75 | 3.144 | 5111 | 7708 |
| 674110 [^] | 500 | 37 | 0.789 | 1.042 | 115 | 1.102 | 3 | 110 | 2.994 | 75 | 3.144 | 5111 | 7712 |
| 671381 | 750 | 61 | 0.968 | 1.254 | 115 | 1.314 | 2 | 125 | 3.502 | 85 | 3.672 | 7539 | 10935 |
| TBA | 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

[^] Stock Code: 674110. Yellow Jacket





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 | 14.5 | 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 | 0.034 | 0.037 | 0.502 + j0.471 | 0.128 + j0.037 | 2165 | 225 | 257 |
| 2/0 | 16.2 | 3194 | 0.081 | 0.102 | 0.031 | 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 | 17.8 | 5078 | 0.051 | 0.065 | 0.024 | 0.034 | 0.439 + j0.399 | 0.065 + j0.034 | 2633 | 342 | 372 |
| 250 | 18.6 | 6000 | 0.043 | 0.056 | 0.023 | 0.033 | 0.428 + j0.376 | 0.056 + j0.033 | 2800 | 376 | 410 |
| 350 | 20.1 | 8400 | 0.031 | 0.041 | 0.019 | 0.032 | 0.406 + j0.338 | 0.041 + j0.032 | 3120 | 460 | 487 |
| 500 | 22.0 | 12000 | 0.022 | 0.030 | 0.016 | 0.030 | 0.385 + j0.297 | 0.030 + j0.030 | 3516 | 556 | 573 |
| 500 | 22.0 | 12000 | 0.022 | 0.030 | 0.016 | 0.030 | 0.385 + j0.297 | 0.030 + j0.030 | 3516 | 556 | 573 |
| 750 | 25.7 | 18000 | 0.014 | 0.023 | 0.015 | 0.029 | 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.

* Calculations are based on 5 mil 25 % over lapping copper tape shield / Conductor temperature of 90°C / Shield temperature of 45°C / Earth resistivity of 100 ohm-meter

* Ampacities are based on Table D17N of the Canadian Electrical Code Part I (40°C Ambient Air Temperature, indoor installation)

* Ampacities are based on Table D17E of the Canadian Electrical Code Part I

* 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 |
| 672897 | 2 | 7 | 7.16 | 13.84 | 2.92 | 15.37 | 6 | 2.03 | 47.57 | 1.52 | 50.62 | 1304 | 3322 |
| 671975 | 1 | 19 | 8.18 | 14.99 | 2.92 | 16.51 | 6 | 2.03 | 49.71 | 1.52 | 52.76 | 1543 | 3506 |
| 672905 | 1/0 | 19 | 9.17 | 16.00 | 2.92 | 17.53 | 6 | 2.79 | 53.44 | 1.52 | 56.49 | 1871 | 4310 |
| 672947 | 2/0 | 19 | 10.29 | 17.12 | 2.92 | 18.64 | 6 | 2.79 | 55.85 | 1.52 | 58.90 | 2258 | 4664 |
| TBA | 3/0 | 19 | 11.58 | 18.39 | 2.92 | 19.91 | 4 | 2.79 | 58.75 | 1.91 | 62.56 | 2595 | 5412 |
| 599001 | 4/0 | 19 | 13.00 | 19.46 | 2.92 | 20.98 | 4 | 2.79 | 60.88 | 1.91 | 64.69 | 3451 | 6279 |
| 671984 | 250 | 37 | 14.17 | 20.78 | 2.92 | 22.30 | 4 | 2.79 | 63.75 | 1.91 | 67.56 | 4002 | 6990 |
| 640917 | 350 | 37 | 16.79 | 23.29 | 2.92 | 24.82 | 3 | 2.79 | 69.19 | 1.91 | 73.00 | 5476 | 8880 |
| 599006 | 500 | 37 | 20.04 | 26.47 | 2.92 | 27.99 | 3 | 2.79 | 76.05 | 1.91 | 79.86 | 7606 | 11471 |
| 674110 [^] | 500 | 37 | 20.04 | 26.47 | 2.92 | 27.99 | 3 | 2.79 | 76.05 | 1.91 | 79.86 | 7606 | 11477 |
| 671381 | 750 | 61 | 24.59 | 31.85 | 2.92 | 33.38 | 2 | 3.18 | 88.95 | 2.16 | 93.27 | 11219 | 16273 |
| TBA | 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

[^] Stock Code: 674110. Yellow Jacket





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 | 368.30 | 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 | 0.0104 | 0.1214 | 0.502 + j0.471 | 0.128 + j0.037 | 2165 | 225 | 257 |
| 2/0 | 411.48 | 14213 | 0.2657 | 0.33 | 0.0094 | 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 | 452.12 | 22597 | 0.1673 | 0.21 | 0.0073 | 0.1115 | 0.439 + j0.399 | 0.065 + j0.034 | 2633 | 342 | 372 |
| 250 | 472.44 | 26700 | 0.1411 | 0.18 | 0.0070 | 0.1083 | 0.428 + j0.376 | 0.056 + j0.033 | 2800 | 376 | 410 |
| 350 | 510.54 | 37380 | 0.1017 | 0.13 | 0.0058 | 0.1050 | 0.406 + j0.338 | 0.041 + j0.032 | 3120 | 460 | 487 |
| 500 | 558.80 | 53400 | 0.0722 | 0.10 | 0.0049 | 0.0984 | 0.385 + j0.297 | 0.030 + j0.030 | 3516 | 556 | 573 |
| 500 | 558.80 | 53400 | 0.0722 | 0.10 | 0.0049 | 0.0984 | 0.385 + j0.297 | 0.030 + j0.030 | 3516 | 556 | 573 |
| 750 | 652.78 | 80100 | 0.0459 | 0.08 | 0.0046 | 0.0951 | 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.

* Calculations are based on 5 mil 25 % over lapping copper tape shield / Conductor temperature of 90°C / Shield temperature of 45°C / Earth resistivity of 100 ohm-meter

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