



HVTECK CU 3/C 220TRXLPE TS PVC AIA PVC 15kV 133% CSA

3 Conductor, 220 Mils Tree Retardant Cross Linked Polyethylene, 133% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

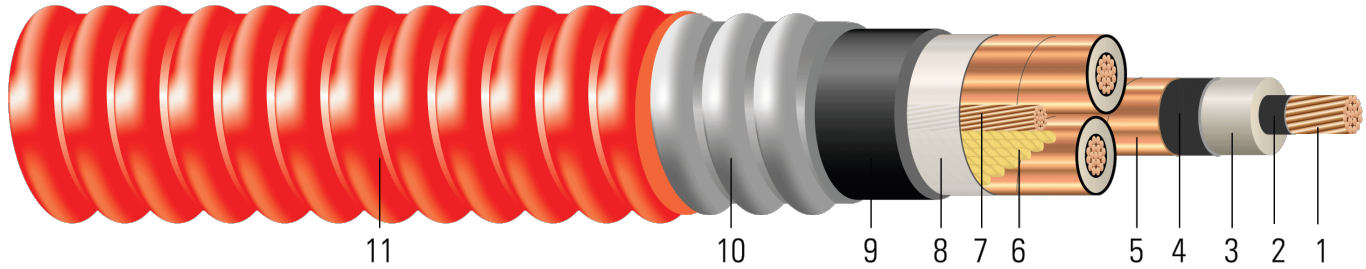


Image not to scale. See Table 1 for dimensions.

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:** 220 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:** Red Polyvinyl Chloride (PVC) Jacket

APPLICATIONS AND FEATURES:

Southwire's 15kV 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
- 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 220 TRXLPE AIA 15kV 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 |
| 652980 | 2 | 7 | 0.282 | 0.755 | 220 | 0.815 | 6 | 110 | 2.387 | 75 | 2.537 | 906 | 2947 |
| 596312 [^] | 2 | 7 | 0.282 | 0.755 | 220 | 0.815 | 6 | 110 | 2.387 | 75 | 2.537 | 906 | 2936 |
| 138160 | 1 | 19 | 0.322 | 0.800 | 220 | 0.860 | 6 | 110 | 2.471 | 75 | 2.621 | 1076 | 3207 |
| 596307 [^] | 1 | 19 | 0.322 | 0.800 | 220 | 0.860 | 6 | 110 | 2.471 | 75 | 2.621 | 1076 | 3197 |
| 138978 | 1/0 | 19 | 0.361 | 0.840 | 220 | 0.900 | 6 | 110 | 2.557 | 75 | 2.707 | 1290 | 3547 |
| 596302 [^] | 1/0 | 19 | 0.361 | 0.840 | 220 | 0.900 | 6 | 110 | 2.557 | 75 | 2.707 | 1290 | 3547 |
| 599521 | 2/0 | 19 | 0.405 | 0.884 | 220 | 0.944 | 6 | 110 | 2.652 | 75 | 2.802 | 1557 | 3949 |
| 596297 [^] | 2/0 | 19 | 0.405 | 0.884 | 220 | 0.944 | 6 | 110 | 2.652 | 75 | 2.802 | 1557 | 3938 |
| TBA | 3/0 | 19 | 0.456 | 0.934 | 220 | 0.994 | 4 | 110 | 2.766 | 75 | 2.916 | 1757 | 4476 |
| 599134 | 4/0 | 19 | 0.512 | 0.990 | 220 | 1.050 | 4 | 110 | 2.881 | 75 | 3.031 | 2401 | 5085 |
| 592993 [^] | 4/0 | 19 | 0.512 | 0.990 | 220 | 1.050 | 4 | 110 | 2.881 | 75 | 3.031 | 2401 | 5072 |
| 669259 | 250 | 37 | 0.558 | 1.044 | 220 | 1.104 | 4 | 110 | 2.998 | 75 | 3.148 | 2738 | 5613 |
| 599133 | 350 | 37 | 0.661 | 1.147 | 220 | 1.207 | 3 | 125 | 3.270 | 85 | 3.440 | 3773 | 7156 |
| 596108 [^] | 350 | 37 | 0.661 | 1.147 | 220 | 1.207 | 3 | 125 | 3.270 | 85 | 3.440 | 3773 | 7140 |
| 592992 [^] | 500 | 37 | 0.789 | 1.275 | 220 | 1.335 | 3 | 125 | 3.547 | 85 | 3.717 | 5259 | 9009 |
| 599107 | 500 | 37 | 0.789 | 1.275 | 220 | 1.335 | 3 | 125 | 3.547 | 85 | 3.717 | 5259 | 9032 |
| 599523 | 750 | 61 | 0.968 | 1.464 | 220 | 1.524 | 2 | 125 | 3.955 | 85 | 4.125 | 7586 | 11996 |
| 596289 [^] | 750 | 61 | 0.968 | 1.464 | 220 | 1.524 | 2 | 125 | 3.955 | 85 | 4.125 | 7586 | 11977 |

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

[^] Black outer 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 | 17.8 | 1592 | 0.162 | 0.204 | 0.062 | 0.047 | 0.579 + j0.421 | 0.204 + j0.048 | 2571 | 172 | 201 |
| 2 | 17.8 | 1592 | 0.162 | 0.204 | 0.062 | 0.047 | 0.579 + j0.421 | 0.204 + j0.048 | 2571 | 172 | 201 |
| 1 | 18.3 | 2008 | 0.128 | 0.162 | 0.058 | 0.045 | 0.535 + j0.402 | 0.162 + j0.045 | 2695 | 197 | 228 |
| 1 | 18.3 | 2008 | 0.128 | 0.162 | 0.058 | 0.045 | 0.535 + j0.402 | 0.162 + j0.045 | 2695 | 197 | 228 |
| 1/0 | 18.9 | 2534 | 0.102 | 0.128 | 0.053 | 0.043 | 0.500 + j0.385 | 0.128 + j0.043 | 2816 | 225 | 257 |
| 1/0 | 18.9 | 2534 | 0.102 | 0.128 | 0.053 | 0.043 | 0.500 + j0.385 | 0.128 + j0.043 | 2816 | 225 | 257 |
| 2/0 | 19.6 | 3194 | 0.081 | 0.102 | 0.050 | 0.042 | 0.471 + j0.367 | 0.102 + j0.042 | 2952 | 260 | 292 |
| 2/0 | 19.6 | 3194 | 0.081 | 0.102 | 0.050 | 0.042 | 0.471 + j0.367 | 0.102 + j0.042 | 2952 | 260 | 292 |
| 3/0 | 20.4 | 4027 | 0.064 | 0.081 | 0.046 | 0.040 | 0.447 + j0.347 | 0.081 + j0.040 | 3110 | 297 | 330 |
| 4/0 | 21.2 | 5078 | 0.051 | 0.065 | 0.042 | 0.039 | 0.426 + j0.328 | 0.065 + j0.039 | 3284 | 342 | 372 |
| 4/0 | 21.2 | 5078 | 0.051 | 0.065 | 0.042 | 0.039 | 0.426 + j0.328 | 0.065 + j0.039 | 3284 | 342 | 372 |
| 250 | 22.0 | 6000 | 0.043 | 0.056 | 0.039 | 0.038 | 0.413 + j0.310 | 0.056 + j0.038 | 3451 | 376 | 410 |
| 350 | 24.1 | 8400 | 0.031 | 0.041 | 0.035 | 0.036 | 0.388 + j0.280 | 0.041 + j0.036 | 3770 | 460 | 487 |
| 350 | 24.1 | 8400 | 0.031 | 0.041 | 0.035 | 0.036 | 0.388 + j0.280 | 0.041 + j0.036 | 3770 | 460 | 487 |
| 500 | 26.0 | 12000 | 0.022 | 0.030 | 0.030 | 0.034 | 0.365 + j0.248 | 0.030 + j0.034 | 4167 | 556 | 573 |
| 500 | 26.0 | 12000 | 0.022 | 0.030 | 0.030 | 0.034 | 0.365 + j0.248 | 0.030 + j0.034 | 4167 | 556 | 573 |
| 750 | 28.9 | 18000 | 0.014 | 0.023 | 0.026 | 0.032 | 0.339 + j0.210 | 0.024 + j0.032 | 4752 | 678 | 668 |
| 750 | 28.9 | 18000 | 0.014 | 0.023 | 0.026 | 0.032 | 0.339 + j0.210 | 0.024 + j0.032 | 4752 | 678 | 668 |

* 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 |
| 652980 | 2 | 7 | 7.16 | 19.18 | 5.59 | 20.70 | 6 | 2.79 | 60.63 | 1.91 | 64.44 | 1348 | 4386 |
| 596312 [^] | 2 | 7 | 7.16 | 19.18 | 5.59 | 20.70 | 6 | 2.79 | 60.63 | 1.91 | 64.44 | 1348 | 4369 |
| 138160 | 1 | 19 | 8.18 | 20.32 | 5.59 | 21.84 | 6 | 2.79 | 62.76 | 1.91 | 66.57 | 1601 | 4773 |
| 596307 [^] | 1 | 19 | 8.18 | 20.32 | 5.59 | 21.84 | 6 | 2.79 | 62.76 | 1.91 | 66.57 | 1601 | 4758 |
| 138978 | 1/0 | 19 | 9.17 | 21.34 | 5.59 | 22.86 | 6 | 2.79 | 64.95 | 1.91 | 68.76 | 1920 | 5279 |
| 596302 [^] | 1/0 | 19 | 9.17 | 21.34 | 5.59 | 22.86 | 6 | 2.79 | 64.95 | 1.91 | 68.76 | 1920 | 5279 |
| 599521 | 2/0 | 19 | 10.29 | 22.45 | 5.59 | 23.98 | 6 | 2.79 | 67.36 | 1.91 | 71.17 | 2317 | 5877 |
| 596297 [^] | 2/0 | 19 | 10.29 | 22.45 | 5.59 | 23.98 | 6 | 2.79 | 67.36 | 1.91 | 71.17 | 2317 | 5860 |
| TBA | 3/0 | 19 | 11.58 | 23.72 | 5.59 | 25.25 | 4 | 2.79 | 70.26 | 1.91 | 74.07 | 2615 | 6661 |
| 599134 | 4/0 | 19 | 13.00 | 25.15 | 5.59 | 26.67 | 4 | 2.79 | 73.18 | 1.91 | 76.99 | 3573 | 7567 |
| 592993 [^] | 4/0 | 19 | 13.00 | 25.15 | 5.59 | 26.67 | 4 | 2.79 | 73.18 | 1.91 | 76.99 | 3573 | 7548 |
| 669259 | 250 | 37 | 14.17 | 26.52 | 5.59 | 28.04 | 4 | 2.79 | 76.15 | 1.91 | 79.96 | 4075 | 8353 |
| 599133 | 350 | 37 | 16.79 | 29.13 | 5.59 | 30.66 | 3 | 3.18 | 83.06 | 2.16 | 87.38 | 5615 | 10649 |
| 596108 [^] | 350 | 37 | 16.79 | 29.13 | 5.59 | 30.66 | 3 | 3.18 | 83.06 | 2.16 | 87.38 | 5615 | 10625 |
| 592992 [^] | 500 | 37 | 20.04 | 32.39 | 5.59 | 33.91 | 3 | 3.18 | 90.09 | 2.16 | 94.41 | 7826 | 13407 |
| 599107 | 500 | 37 | 20.04 | 32.39 | 5.59 | 33.91 | 3 | 3.18 | 90.09 | 2.16 | 94.41 | 7826 | 13441 |
| 599523 | 750 | 61 | 24.59 | 37.19 | 5.59 | 38.71 | 2 | 3.18 | 100.46 | 2.16 | 104.77 | 11289 | 17852 |
| 596289 [^] | 750 | 61 | 24.59 | 37.19 | 5.59 | 38.71 | 2 | 3.18 | 100.46 | 2.16 | 104.77 | 11289 | 17824 |

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

[^] Black outer 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 | 452.12 | 7084 | 0.5315 | 0.67 | 0.0189 | 0.1542 | 0.579 + j0.421 | 0.204 + j0.048 | 2571 | 172 | 201 |
| 2 | 452.12 | 7084 | 0.5315 | 0.67 | 0.0189 | 0.1542 | 0.579 + j0.421 | 0.204 + j0.048 | 2571 | 172 | 201 |
| 1 | 464.82 | 8936 | 0.4199 | 0.53 | 0.0177 | 0.1476 | 0.535 + j0.402 | 0.162 + j0.045 | 2695 | 197 | 228 |
| 1 | 464.82 | 8936 | 0.4199 | 0.53 | 0.0177 | 0.1476 | 0.535 + j0.402 | 0.162 + j0.045 | 2695 | 197 | 228 |
| 1/0 | 480.06 | 11276 | 0.3346 | 0.42 | 0.0162 | 0.1411 | 0.500 + j0.385 | 0.128 + j0.043 | 2816 | 225 | 257 |
| 1/0 | 480.06 | 11276 | 0.3346 | 0.42 | 0.0162 | 0.1411 | 0.500 + j0.385 | 0.128 + j0.043 | 2816 | 225 | 257 |
| 2/0 | 497.84 | 14213 | 0.2657 | 0.33 | 0.0152 | 0.1378 | 0.471 + j0.367 | 0.102 + j0.042 | 2952 | 260 | 292 |
| 2/0 | 497.84 | 14213 | 0.2657 | 0.33 | 0.0152 | 0.1378 | 0.471 + j0.367 | 0.102 + j0.042 | 2952 | 260 | 292 |
| 3/0 | 518.16 | 17920 | 0.2100 | 0.27 | 0.0140 | 0.1312 | 0.447 + j0.347 | 0.081 + j0.040 | 3110 | 297 | 330 |
| 4/0 | 538.48 | 22597 | 0.1673 | 0.21 | 0.0128 | 0.1280 | 0.426 + j0.328 | 0.065 + j0.039 | 3284 | 342 | 372 |
| 4/0 | 538.48 | 22597 | 0.1673 | 0.21 | 0.0128 | 0.1280 | 0.426 + j0.328 | 0.065 + j0.039 | 3284 | 342 | 372 |
| 250 | 558.80 | 26700 | 0.1411 | 0.18 | 0.0119 | 0.1247 | 0.413 + j0.310 | 0.056 + j0.038 | 3451 | 376 | 410 |
| 350 | 612.14 | 37380 | 0.1017 | 0.13 | 0.0107 | 0.1181 | 0.388 + j0.280 | 0.041 + j0.036 | 3770 | 460 | 487 |
| 350 | 612.14 | 37380 | 0.1017 | 0.13 | 0.0107 | 0.1181 | 0.388 + j0.280 | 0.041 + j0.036 | 3770 | 460 | 487 |
| 500 | 660.40 | 53400 | 0.0722 | 0.10 | 0.0091 | 0.1115 | 0.365 + j0.248 | 0.030 + j0.034 | 4167 | 556 | 573 |
| 500 | 660.40 | 53400 | 0.0722 | 0.10 | 0.0091 | 0.1115 | 0.365 + j0.248 | 0.030 + j0.034 | 4167 | 556 | 573 |
| 750 | 734.06 | 80100 | 0.0459 | 0.08 | 0.0079 | 0.1050 | 0.339 + j0.210 | 0.024 + j0.032 | 4752 | 678 | 668 |
| 750 | 734.06 | 80100 | 0.0459 | 0.08 | 0.0079 | 0.1050 | 0.339 + j0.210 | 0.024 + j0.032 | 4752 | 678 | 668 |

* 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

