



HVTECK CU 3/C 320TRXLPE TS PVC AIA PVC 25kV 133% CSA

3 Conductor, 320 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:** 320 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. **Grounding Conductor:** Class B compressed stranded bare copper ground per ASTM B3 and ASTM B8
7. **Filler:** Non-wicking, non-hygroscopic and flame retardant polypropylene filler
8. **Binder:** Polypropylene tape
9. **Inner Jacket:** PVC inner jacket
10. **Armour:** Aluminum Interlocked Armour (AIA)
11. **Overall Jacket:** Black Polyvinyl Chloride (PVC) Jacket

APPLICATIONS AND FEATURES:

Southwire's 25kV 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 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
- 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 320 TRXLPE AIA 25kV 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 | 1 | 19 | 0.322 | 1.000 | 320 | 1.060 | 6 | 110 | 2.909 | 75 | 3.059 | 927 | 4064 |
| TBA | 1/0 | 19 | 0.361 | 1.039 | 320 | 1.099 | 6 | 110 | 2.993 | 75 | 3.143 | 1133 | 4411 |
| 139407 | 2/0 | 19 | 0.405 | 1.083 | 320 | 1.143 | 6 | 125 | 3.134 | 85 | 3.304 | 1605 | 5034 |
| TBA | 3/0 | 19 | 0.456 | 1.134 | 320 | 1.194 | 4 | 125 | 3.228 | 85 | 3.398 | 1769 | 5559 |
| 678745 | 4/0 | 19 | 0.512 | 1.190 | 320 | 1.250 | 4 | 125 | 3.363 | 85 | 3.533 | 2411 | 6143 |
| TBA | 250 | 37 | 0.558 | 1.244 | 320 | 1.304 | 4 | 125 | 3.466 | 85 | 3.636 | 2543 | 6769 |
| 137995! | 350 | 37 | 0.661 | 1.327 | 320 | 1.387 | 3 | 125 | 3.659 | 85 | 3.829 | 3771 | 7906 |
| 138182 | 350 | 37 | 0.661 | 1.327 | 320 | 1.387 | 3 | 135 | 3.660 | 85 | 3.830 | 3771 | 7895 |
| 678737 | 500 | 37 | 0.789 | 1.475 | 320 | 1.535 | 3 | 125 | 3.979 | 85 | 4.149 | 5207 | 9763 |

All dimensions are nominal and subject to normal manufacturing tolerances

◊ Cable marked with this symbol is a standard stock item

! Gray Jacket Color





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 |
| 1 | 21.4 | 2008 | 0.128 | 0.162 | 0.073 | 0.050 | 0.523 + j0.335 | 0.162 + j0.05 | 3315 | 202 | 226 |
| 1/0 | 22.0 | 2534 | 0.102 | 0.128 | 0.068 | 0.048 | 0.485 + j0.322 | 0.128 + j0.048 | 3435 | 231 | 256 |
| 2/0 | 23.1 | 3194 | 0.081 | 0.102 | 0.063 | 0.046 | 0.455 + j0.307 | 0.102 + j0.046 | 3572 | 265 | 290 |
| 3/0 | 23.8 | 4027 | 0.064 | 0.081 | 0.059 | 0.044 | 0.430 + j0.292 | 0.081 + j0.044 | 3730 | 303 | 327 |
| 4/0 | 24.7 | 5078 | 0.051 | 0.065 | 0.054 | 0.043 | 0.408 + j0.276 | 0.065 + j0.043 | 3903 | 348 | 369 |
| 250 | 25.5 | 6000 | 0.043 | 0.056 | 0.051 | 0.042 | 0.394 + j0.263 | 0.056 + j0.042 | 4071 | 384 | 408 |
| 350 | 26.8 | 8400 | 0.031 | 0.041 | 0.045 | 0.039 | 0.368 + j0.239 | 0.042 + j0.039 | 4390 | 468 | 485 |
| 350 | 30.6 | 8400 | 0.030 | 0.041 | 0.046 | 0.039 | 0.368 + j0.239 | 0.042 + j0.039 | 4390 | 468 | 485 |
| 500 | 29.0 | 12000 | 0.022 | 0.030 | 0.040 | 0.037 | 0.345 + j0.213 | 0.031 + j0.037 | 4786 | 565 | 571 |

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

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 | 1 | 19 | 8.18 | 25.40 | 8.13 | 26.92 | 6 | 2.79 | 73.89 | 1.91 | 77.70 | 1380 | 6048 |
| TBA | 1/0 | 19 | 9.17 | 26.39 | 8.13 | 27.91 | 6 | 2.79 | 76.02 | 1.91 | 79.83 | 1686 | 6564 |
| 139407 | 2/0 | 19 | 10.29 | 27.51 | 8.13 | 29.03 | 6 | 3.18 | 79.60 | 2.16 | 83.92 | 2389 | 7491 |
| TBA | 3/0 | 19 | 11.58 | 28.80 | 8.13 | 30.33 | 4 | 3.18 | 81.99 | 2.16 | 86.31 | 2633 | 8273 |
| 678745 | 4/0 | 19 | 13.00 | 30.23 | 8.13 | 31.75 | 4 | 3.18 | 85.42 | 2.16 | 89.74 | 3588 | 9142 |
| TBA | 250 | 37 | 14.17 | 31.60 | 8.13 | 33.12 | 4 | 3.18 | 88.04 | 2.16 | 92.35 | 3784 | 10073 |
| 137995! | 350 | 37 | 16.79 | 33.71 | 8.13 | 35.23 | 3 | 3.18 | 92.94 | 2.16 | 97.26 | 5612 | 11765 |
| 138182 | 350 | 37 | 16.79 | 33.71 | 8.13 | 35.23 | 3 | 3.43 | 92.96 | 2.16 | 97.28 | 5612 | 11749 |
| 678737 | 500 | 37 | 20.04 | 37.47 | 8.13 | 38.99 | 3 | 3.18 | 101.07 | 2.16 | 105.38 | 7749 | 14529 |

All dimensions are nominal and subject to normal manufacturing tolerances

◇ Cable marked with this symbol is a standard stock item

! Gray Jacket Color





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 |
| 1 | 543.56 | 8936 | 0.4199 | 0.53 | 0.0223 | 0.1640 | 0.523 + j0.335 | 0.162 + j0.05 | 3315 | 202 | 226 |
| 1/0 | 558.80 | 11276 | 0.3346 | 0.42 | 0.0207 | 0.1575 | 0.485 + j0.322 | 0.128 + j0.048 | 3435 | 231 | 256 |
| 2/0 | 586.74 | 14213 | 0.2657 | 0.33 | 0.0192 | 0.1509 | 0.455 + j0.307 | 0.102 + j0.046 | 3572 | 265 | 290 |
| 3/0 | 604.52 | 17920 | 0.2100 | 0.27 | 0.0180 | 0.1444 | 0.430 + j0.292 | 0.081 + j0.044 | 3730 | 303 | 327 |
| 4/0 | 627.38 | 22597 | 0.1673 | 0.21 | 0.0165 | 0.1411 | 0.408 + j0.276 | 0.065 + j0.043 | 3903 | 348 | 369 |
| 250 | 647.70 | 26700 | 0.1411 | 0.18 | 0.0155 | 0.1378 | 0.394 + j0.263 | 0.056 + j0.042 | 4071 | 384 | 408 |
| 350 | 680.72 | 37380 | 0.1017 | 0.13 | 0.0137 | 0.1280 | 0.368 + j0.239 | 0.042 + j0.039 | 4390 | 468 | 485 |
| 350 | 777.24 | 37380 | 0.0984 | 0.13 | 0.0140 | 0.1280 | 0.368 + j0.239 | 0.042 + j0.039 | 4390 | 468 | 485 |
| 500 | 736.60 | 53400 | 0.0722 | 0.10 | 0.0122 | 0.1214 | 0.345 + j0.213 | 0.031 + j0.037 | 4786 | 565 | 571 |

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

