

# **HVTECK CU 1/C 220TRXLPE TS PVC AIA PVC 15kV 133% CSA**

Single 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

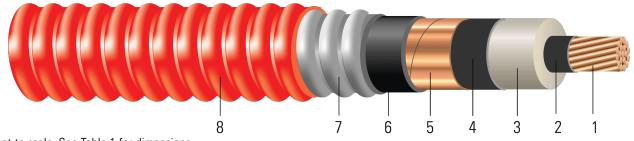


Image not to scale. See Table 1 for dimensions.

#### **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. Inner Jacket: PVC inner jacket
- 7. **Armour:** Aluminum Interlocked Armour (AIA)
- 8. 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 (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 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**

| Cond.<br>Size | Strand | Diameter Over<br>Conductor | Diameter Over<br>Insulation | Insul.<br>Thickness | Diameter Over<br>Insulation Shield |     | Dia. Over<br>Armour | Overall Jacket<br>Thickness | Approx.<br>OD | Copper<br>Weight | Approx.<br>Weight |
|---------------|--------|----------------------------|-----------------------------|---------------------|------------------------------------|-----|---------------------|-----------------------------|---------------|------------------|-------------------|
| AWG/<br>Kcmil | No.    | inch                       | inch                        | mil                 | inch                               | mil | inch                | mil                         | inch          | lb/1000ft        | lb/1000ft         |
| 1             | 19     | 0.322                      | 0.800                       | 220                 | 0.860                              | 80  | 1.372               | 50                          | 1.472         | 275              | 999               |

All dimensions are nominal and subject to normal manufacturing tolerances

## Table 2 – Electrical and Engineering Data

| Cond.<br>Size | Min<br>Bending<br>Radius | Max Pull<br>Tension | DC<br>Resistance<br>@ 25°C | AC<br>Resistance<br>@ 90°C | Capacitive<br>Reactance @<br>60Hz | Inductive<br>Reactance<br>@ 60Hz | Zero<br>Sequence<br>Impedance | Positive<br>Sequence<br>Impedance | Phase<br>Short<br>Circuit<br>Current @<br>6 Cycles | Allowable<br>Ampacity In<br>Air 90°C | Allowable<br>Ampacity<br>Directly<br>Buried 90°C |
|---------------|--------------------------|---------------------|----------------------------|----------------------------|-----------------------------------|----------------------------------|-------------------------------|-----------------------------------|--|--------------------------------------|--|
| AWG/<br>Kcmil | inch                     | lb                  | Ω/1000ft                   | Ω/1000ft                   | MΩ*1000ft                         | Ω/1000ft                         | Ω/1000ft                      | Ω/1000ft                          | Amp  | Amp                                  | Amp  |
| 1             | 17.7                     | 669                 | 0.128                      | 0.162                      | 0.058                             | 0.057                            | 0.524 +<br>j0.400             | 0.163 +<br>j0.057                 | 2695   | 245                                  | 247  |

<sup>\*</sup> Inductive impedance is based on non-ferrous conduit with one diameter spacing center-to-center.

# Table 3 – Weights and Measurements (Metric)

| Cond.<br>Size | Strand | Diameter Over<br>Conductor | Diameter Over<br>Insulation | Insul.<br>Thickness | Diameter Over<br>Insulation Shield |      | Dia. Over<br>Armour | Overall Jacket<br>Thickness | Approx.<br>OD | Copper<br>Weight | Approx.<br>Weight |
|---------------|--------|----------------------------|-----------------------------|---------------------|------------------------------------|------|---------------------|-----------------------------|---------------|------------------|-------------------|
| AWG/<br>Kcmil | No.    | mm                         | mm                          | mm                  | mm                                 | mm   | mm                  | mm                          | mm            | kg/km            | kg/km             |
| 1             | 19     | 8.18                       | 20.32                       | 5.59                | 21.84                              | 2.03 | 34.85               | 1.27                        | 37.39         | 409              | 1487              |

All dimensions are nominal and subject to normal manufacturing tolerances



<sup>♦</sup> Cable marked with this symbol is a standard stock item

<sup>1</sup> Comply with ICEA S-93-639 Appendix C for jacket thickness determination

TBA stock codes are estimations only and actual product may vary. Please wait until a stock code is assigned to purchase connectors and/or fittings.

<sup>\*</sup> CEC ampacities are based on:

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

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

<sup>♦</sup> Cable marked with this symbol is a standard stock item

<sup>1</sup> Comply with ICEA S-93-639 Appendix C for jacket thickness determination

TBA stock codes are estimations only and actual product may vary. Please wait until a stock code is assigned to purchase connectors and/or fittings.



# **Table 4 – Electrical and Engineering Data (Metric)**

| Cond.<br>Size | Min<br>Bending<br>Radius | Max Pull<br>Tension | DC<br>Resistance<br>@ 25°C | AC<br>Resistance<br>@ 90°C | Capacitive<br>Reactance<br>@ 60Hz | Inductive<br>Reactance<br>@ 60Hz | Zero<br>Sequence<br>Impedance | Positive<br>Sequence<br>Impedance | Phase<br>Short<br>Circuit<br>Current @<br>6 Cycles | Allowable<br>Ampacity In<br>Air 90°C | Allowable<br>Ampacity<br>Directly<br>Buried 90°C |
|---------------|--------------------------|---------------------|----------------------------|----------------------------|-----------------------------------|----------------------------------|-------------------------------|-----------------------------------|--|--------------------------------------|--|
| AWG/<br>Kcmil | mm                       | newton              | Ω/km                       | Ω/km                       | MΩ*km                             | Ω/km                             | Ω/1000ft                      | Ω/1000ft                          | Amp  | Amp                                  | Amp  |
| 1             | 449.58                   | 2977                | 0.4199                     | 0.53                       | 0.0177                            | 0.1870                           | 0.524 +<br>j0.400             | 0.163 +<br>j0.057                 | 2695   | 245                                  | 247  |

<sup>\*</sup> Inductive impedance is based on non-ferrous conduit with one diameter spacing center-to-center.



<sup>\*</sup> CEC ampacities are based on:

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

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