

HVTECK AL 1/C 140TRXLPE TS PVC AIA PVC 8kV 133% CSA

Single Conductor, 140 Mils Tree Retardant Cross Linked Polyethylene, 133% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

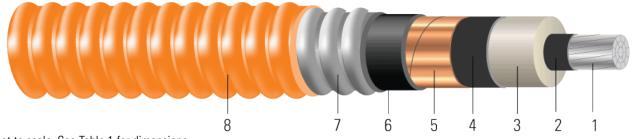


Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

- 1. Conductor: Class B compact stranded 8000 Series aluminum per ASTM B800 and ASTM B836
- 2. **Conductor Shield:** Semi-conducting cross-linked copolymer; A conductor separator is used for cable size larger than or equal to 500 Kcmil
- 3. **Insulation:** 140 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: 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 B801 Concentric-Lay-Stranded Conductors of 8000 Series Aluminum Alloy
- ASTM B836 Compact Rounded Stranded Aluminum 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] CPT AL 140 TRXLPE AIA 8kV 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. Size | Strand | Diameter Over Conductor | Diameter Over Insulation | Insul. Thickness | Diameter Over Insulation Shield | Inner Jacket Thickness | Dia. Over Armour | Overall Jacket Thickness | Approx. OD | Approx. Weight |
|---------------|--------|----------------------------|-----------------------------|---------------------|------------------------------------|---------------------------|---------------------|-----------------------------|---------------|-------------------|
| AWG/ Kcmil | No. | inch | inch | mil | inch | mil | inch | mil | inch | lb/1000ft |
| 1000 | 61 | 1.060 | 1.396 | 140 | 1.456 | 80 | 1.992 | 60 | 2.112 | 2271 |

All dimensions are nominal and subject to normal manufacturing tolerances

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 |
| 1000 | 25.3 | 6000 | 0.018 | 0.026 | 0.016 | 0.038 | 0.344 + j0.219 | 0.027 + j0.036 | 4542 | 707 | 539 |

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

Table 3 – Weights and Measurements (Metric)

| Cond. Size | Strand | Diameter Over Conductor | Diameter Over Insulation | Insul. Thickness | Diameter Over Insulation Shield | Inner Jacket Thickness | Dia. Over Armour | Overall Jacket Thickness | Approx. OD | Approx. Weight |
|---------------|--------|----------------------------|-----------------------------|---------------------|------------------------------------|---------------------------|---------------------|-----------------------------|---------------|-------------------|
| AWG/ Kcmil | No. | mm | mm | mm | mm | mm | mm | mm | mm | kg/km |
| 1000 | 61 | 26.92 | 35.46 | 3.56 | 36.98 | 2.03 | 50.60 | 1.52 | 53.64 | 3380 |

All dimensions are nominal and subject to normal manufacturing tolerances



[♦] Cable marked with this symbol is a standard stock item

^{*} Strand count meets minimum number per ASTM

^{*} CEC ampacities are based on:

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

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

[♦] Cable marked with this symbol is a standard stock item

^{*} Strand count meets minimum number per ASTM



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 |
| 1000 | 642.62 | 26700 | 0.0591 | 0.09 | 0.0049 | 0.1247 | 0.344 + j0.219 | 0.027 + j0.036 | 4542 | 707 | 539 |

^{*} 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