

HVTECK AL 3/C 345TRXLPE TS PVC AIA PVC 35kV 100% CSA

3 Conductor, 345 Mils Tree Retardant Cross Linked Polyethylene, 100% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

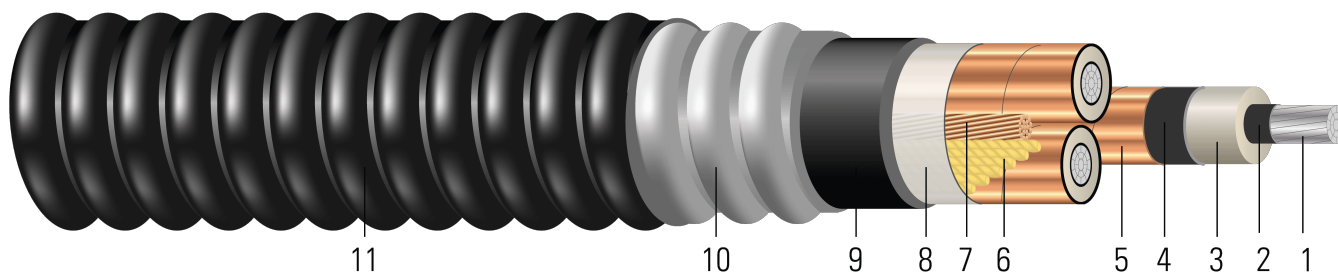


Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

1. **Conductor:** Class B 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:** 345 Mils Tree Retardant Cross Linked Polyethylene 100% 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-hydrating/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:** Black Polyvinyl Chloride (PVC) Jacket

APPLICATIONS AND FEATURES:

Southwire's 35kV 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
- 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

SAMPLE PRINT LEGEND:

(CSA) SOUTHWIRE (NESC) #P# 3/C [#AWG or #kcmil] CPT AL 345 TRXLPE AIA 35kV 100% 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 | Ground Size | Inner Jacket Thickness | Dia. Over Armour | Overall Jacket Thickness | Approx. OD | Approx. Weight |
|------------|--------|-------------------------|--------------------------|------------------|---------------------------------|-------------|------------------------|------------------|--------------------------|------------|----------------|
| AWG/ Kcmil | No. | inch | inch | mil | inch | AWG | mil | inch | mil | inch | lb/1000ft |
| 1/0 | 19 | 0.336 | 1.064 | 345 | 1.124 | 6 | 110 | 3.047 | 85 | 3.217 | 4056 |
| 2/0 | 19 | 0.376 | 1.104 | 345 | 1.164 | 6 | 125 | 3.163 | 85 | 3.333 | 4389 |
| 3/0 | 19 | 0.422 | 1.150 | 345 | 1.210 | 6 | 125 | 3.262 | 85 | 3.432 | 4679 |
| 4/0 | 19 | 0.474 | 1.202 | 345 | 1.262 | 6 | 125 | 3.375 | 85 | 3.545 | 5024 |
| 250 | 37 | 0.520 | 1.256 | 345 | 1.316 | 4 | 125 | 3.491 | 85 | 3.661 | 5372 |
| 350 | 37 | 0.615 | 1.351 | 345 | 1.411 | 4 | 125 | 3.696 | 85 | 3.866 | 6061 |

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

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 @ 60Hz | 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 |
| 1/0 | 22.5 | 1900 | 0.168 | 0.211 | 0.078 | 0.050 | 0.567 + j0.318 | 0.211 + j0.048 | 3482 | 181 | 200 |
| 2/0 | 23.3 | 2395 | 0.133 | 0.167 | 0.073 | 0.048 | 0.519 + j0.305 | 0.167 + j0.047 | 3606 | 208 | 228 |
| 3/0 | 24 | 3020 | 0.105 | 0.133 | 0.068 | 0.046 | 0.481 + j0.291 | 0.133 + j0.045 | 3749 | 239 | 258 |
| 4/0 | 24.8 | 3808 | 0.084 | 0.105 | 0.063 | 0.045 | 0.448 + j0.276 | 0.105 + j0.043 | 3910 | 273 | 292 |
| 250 | 25.6 | 4500 | 0.071 | 0.090 | 0.060 | 0.043 | 0.427 + j0.262 | 0.09 + j0.042 | 4077 | 302 | 321 |
| 350 | 27 | 6300 | 0.050 | 0.065 | 0.053 | 0.041 | 0.393 + j0.24 | 0.066 + j0.04 | 4371 | 368 | 385 |

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



Table 3 – Weights and Measurements (Metric)

| 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 | Approx. Weight |
|------------|--------|-------------------------|--------------------------|------------------|---------------------------------|-------------|------------------------|------------------|--------------------------|------------|----------------|
| AWG/Kcmil | No. | mm | mm | mm | mm | AWG | mm | mm | mm | mm | kg/km |
| 1/0 | 19 | 8.53 | 27.03 | 8.76 | 28.55 | 6 | 2.79 | 77.39 | 2.16 | 81.71 | 6036 |
| 2/0 | 19 | 9.55 | 28.04 | 8.76 | 29.57 | 6 | 3.18 | 80.34 | 2.16 | 84.66 | 6532 |
| 3/0 | 19 | 10.72 | 29.21 | 8.76 | 30.73 | 6 | 3.18 | 82.85 | 2.16 | 87.17 | 6963 |
| 4/0 | 19 | 12.04 | 30.53 | 8.76 | 32.05 | 6 | 3.18 | 85.73 | 2.16 | 90.04 | 7477 |
| 250 | 37 | 13.21 | 31.90 | 8.76 | 33.43 | 4 | 3.18 | 88.67 | 2.16 | 92.99 | 7994 |
| 350 | 37 | 15.62 | 34.32 | 8.76 | 35.84 | 4 | 3.18 | 93.88 | 2.16 | 98.20 | 9020 |

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

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 @ 60Hz | 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 |
| 1/0 | 571.50 | 8455 | 0.5512 | 0.69 | 0.0238 | 0.1640 | 0.567 + j0.318 | 0.211 + j0.048 | 3482 | 181 | 200 |
| 2/0 | 591.82 | 10658 | 0.4364 | 0.55 | 0.0223 | 0.1575 | 0.519 + j0.305 | 0.167 + j0.047 | 3606 | 208 | 228 |
| 3/0 | 609.60 | 13439 | 0.3445 | 0.44 | 0.0207 | 0.1509 | 0.481 + j0.291 | 0.133 + j0.045 | 3749 | 239 | 258 |
| 4/0 | 629.92 | 16946 | 0.2756 | 0.34 | 0.0192 | 0.1476 | 0.448 + j0.276 | 0.105 + j0.043 | 3910 | 273 | 292 |
| 250 | 650.24 | 20025 | 0.2329 | 0.30 | 0.0183 | 0.1411 | 0.427 + j0.262 | 0.09 + j0.042 | 4077 | 302 | 321 |
| 350 | 685.80 | 28035 | 0.1640 | 0.21 | 0.0162 | 0.1345 | 0.393 + j0.24 | 0.066 + j0.04 | 4371 | 368 | 385 |

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

