

# HVTECK AL 1/C 260TRXLPE TS PVC AIA PVC 25kV 100% CSA

Single Conductor, 260 Mils Tree Retardant Cross Linked Polyethylene, 100% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

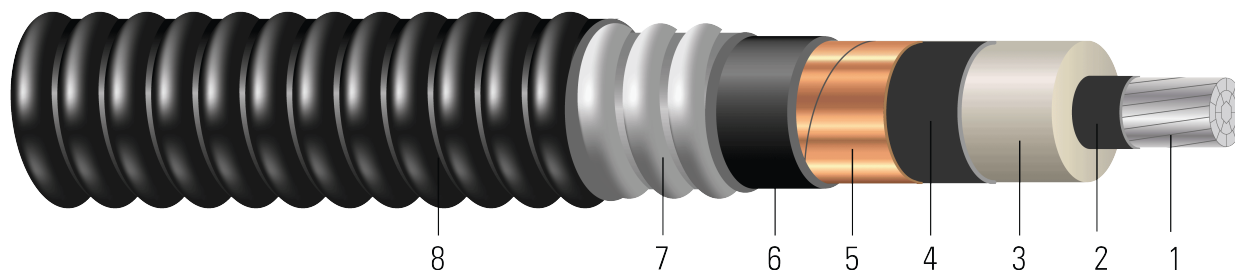


Image not to scale. See Table 1 for dimensions.

## 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:** 260 Mils Tree Retardant Cross Linked Polyethylene 100% insulation level
4. **Insulation Shield:** Strippable semi-conducting cross-linked copolymer
5. **Copper Tape Shield:** Helicallly wrapped 5 mil copper tape with 25% overlap
6. **Inner Jacket:** PVC inner jacket
7. **Armour:** Aluminum Interlocked Armour (AIA)
8. **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 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)



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- FT1 Flame Test (1,706 BTU/Hr nominal - Vertical Wire Flame Test)
- AIEC 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 260 TRXLPE AIA 25kV 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 | 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      |
| 1          | 19     | 0.298                   | 0.856                    | 260              | 0.916                           | 80                     | 1.428            | 50                       | 1.528      | 890            |
| 1/0        | 19     | 0.336                   | 0.894                    | 260              | 0.954                           | 80                     | 1.466            | 50                       | 1.566      | 948            |
| 2/0        | 19     | 0.376                   | 0.934                    | 260              | 0.994                           | 80                     | 1.506            | 60                       | 1.626      | 1043           |
| 3/0        | 19     | 0.422                   | 0.980                    | 260              | 1.040                           | 80                     | 1.552            | 60                       | 1.672      | 1119           |
| 4/0        | 19     | 0.474                   | 1.032                    | 260              | 1.092                           | 80                     | 1.604            | 60                       | 1.724      | 1210           |
| 250        | 37     | 0.520                   | 1.086                    | 260              | 1.146                           | 80                     | 1.682            | 60                       | 1.802      | 1337           |
| 350        | 37     | 0.615                   | 1.181                    | 260              | 1.241                           | 80                     | 1.777            | 60                       | 1.897      | 1523           |
| 500        | 37     | 0.735                   | 1.301                    | 260              | 1.361                           | 80                     | 1.897            | 60                       | 2.017      | 1878           |
| 750        | 61     | 0.908                   | 1.484                    | 260              | 1.544                           | 110                    | 2.140            | 60                       | 2.260      | 2436           |
| 1000       | 61     | 1.060                   | 1.636                    | 260              | 1.696                           | 110                    | 2.292            | 75                       | 2.442      | 2913           |

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 @ 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          | 18.3               | 502              | 0.211                | 0.266                | 0.067                       | 0.059                      | 0.626 + j0.380          | 0.267 + j0.058              | 2869                                   | 193                            | 194                                     |
| 1/0        | 18.8               | 633              | 0.168                | 0.211                | 0.062                       | 0.057                      | 0.569 + j0.365          | 0.212 + j0.056              | 2986                                   | 221                            | 219                                     |
| 2/0        | 19.5               | 798              | 0.133                | 0.167                | 0.058                       | 0.055                      | 0.523 + j0.350          | 0.168 + j0.054              | 3110                                   | 253                            | 246                                     |
| 3/0        | 20.1               | 1006             | 0.105                | 0.133                | 0.054                       | 0.053                      | 0.486 + j0.333          | 0.134 + j0.052              | 3253                                   | 288                            | 275                                     |
| 4/0        | 20.7               | 1269             | 0.084                | 0.105                | 0.050                       | 0.051                      | 0.455 + j0.316          | 0.106 + j0.050              | 3414                                   | 327                            | 305                                     |
| 250        | 21.6               | 1500             | 0.071                | 0.090                | 0.047                       | 0.050                      | 0.435 + j0.300          | 0.091 + j0.049              | 3581                                   | 367                            | 343                                     |
| 350        | 22.8               | 2100             | 0.050                | 0.065                | 0.041                       | 0.048                      | 0.402 + j0.273          | 0.066 + j0.046              | 3875                                   | 443                            | 399                                     |
| 500        | 24.2               | 3000             | 0.035                | 0.046                | 0.036                       | 0.045                      | 0.373 + j0.244          | 0.047 + j0.043              | 4247                                   | 529                            | 451                                     |
| 750        | 27.1               | 4500             | 0.024                | 0.033                | 0.031                       | 0.043                      | 0.342 + j0.208          | 0.034 + j0.041              | 4814                                   | 633                            | 505                                     |
| 1000       | 29.3               | 6000             | 0.018                | 0.026                | 0.027                       | 0.041                      | 0.321 + j0.184          | 0.027 + j0.040              | 5285                                   | 711                            | 544                                     |

\* 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 | 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          |
| 1          | 19     | 7.57                    | 21.74                    | 6.60             | 23.27                           | 2.03                   | 36.27            | 1.27                     | 38.81      | 1324           |
| 1/0        | 19     | 8.53                    | 22.71                    | 6.60             | 24.23                           | 2.03                   | 37.24            | 1.27                     | 39.78      | 1411           |
| 2/0        | 19     | 9.55                    | 23.72                    | 6.60             | 25.25                           | 2.03                   | 38.25            | 1.52                     | 41.30      | 1552           |
| 3/0        | 19     | 10.72                   | 24.89                    | 6.60             | 26.42                           | 2.03                   | 39.42            | 1.52                     | 42.47      | 1665           |
| 4/0        | 19     | 12.04                   | 26.21                    | 6.60             | 27.74                           | 2.03                   | 40.74            | 1.52                     | 43.79      | 1801           |
| 250        | 37     | 13.21                   | 27.58                    | 6.60             | 29.11                           | 2.03                   | 42.72            | 1.52                     | 45.77      | 1990           |
| 350        | 37     | 15.62                   | 30.00                    | 6.60             | 31.52                           | 2.03                   | 45.14            | 1.52                     | 48.18      | 2266           |
| 500        | 37     | 18.67                   | 33.05                    | 6.60             | 34.57                           | 2.03                   | 48.18            | 1.52                     | 51.23      | 2795           |
| 750        | 61     | 23.06                   | 37.69                    | 6.60             | 39.22                           | 2.79                   | 54.36            | 1.52                     | 57.40      | 3625           |
| 1000       | 61     | 26.92                   | 41.55                    | 6.60             | 43.08                           | 2.79                   | 58.22            | 1.91                     | 62.03      | 4335           |

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 @ 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          | 464.82             | 2234             | 0.6923               | 0.87                 | 0.0204                      | 0.1936                     | 0.626 + j0.380          | 0.267 + j0.058              | 2869                                   | 193                            | 194                                     |
| 1/0        | 477.52             | 2817             | 0.5512               | 0.69                 | 0.0189                      | 0.1870                     | 0.569 + j0.365          | 0.212 + j0.056              | 2986                                   | 221                            | 219                                     |
| 2/0        | 495.30             | 3551             | 0.4364               | 0.55                 | 0.0177                      | 0.1804                     | 0.523 + j0.350          | 0.168 + j0.054              | 3110                                   | 253                            | 246                                     |
| 3/0        | 510.54             | 4477             | 0.3445               | 0.44                 | 0.0165                      | 0.1739                     | 0.486 + j0.333          | 0.134 + j0.052              | 3253                                   | 288                            | 275                                     |
| 4/0        | 525.78             | 5647             | 0.2756               | 0.34                 | 0.0152                      | 0.1673                     | 0.455 + j0.316          | 0.106 + j0.050              | 3414                                   | 327                            | 305                                     |
| 250        | 548.64             | 6675             | 0.2329               | 0.30                 | 0.0143                      | 0.1640                     | 0.435 + j0.300          | 0.091 + j0.049              | 3581                                   | 367                            | 343                                     |
| 350        | 579.12             | 9345             | 0.1640               | 0.21                 | 0.0125                      | 0.1575                     | 0.402 + j0.273          | 0.066 + j0.046              | 3875                                   | 443                            | 399                                     |
| 500        | 614.68             | 13350            | 0.1148               | 0.15                 | 0.0110                      | 0.1476                     | 0.373 + j0.244          | 0.047 + j0.043              | 4247                                   | 529                            | 451                                     |
| 750        | 688.34             | 20025            | 0.0787               | 0.11                 | 0.0094                      | 0.1411                     | 0.342 + j0.208          | 0.034 + j0.041              | 4814                                   | 633                            | 505                                     |
| 1000       | 744.22             | 26700            | 0.0591               | 0.09                 | 0.0082                      | 0.1345                     | 0.321 + j0.184          | 0.027 + j0.040              | 5285                                   | 711                            | 544                                     |

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

