



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

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

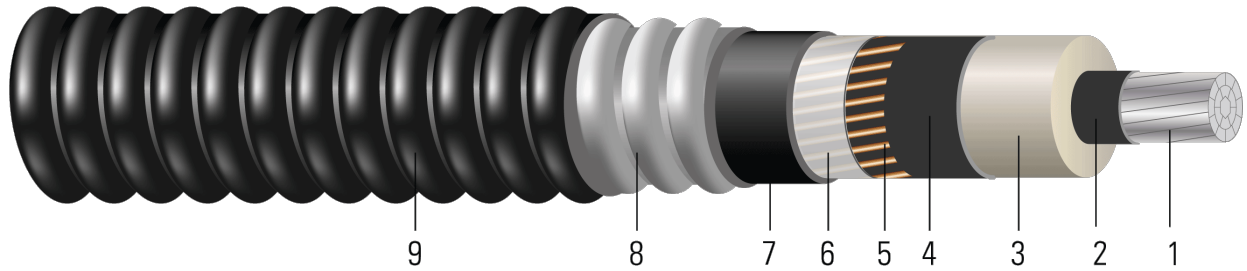


Image not to scale. See Table 1 for dimensions.

### 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. **Concentric Shield:** Concentrically applied copper bond / shield wires. Complies with greater than the minimum requirement as per Table 44, CSA Standard C68.10 and Table 16A, Canadian Electrical Code Part 1
6. **Neutral Separator:** Mylar tape
7. **Inner Jacket:** PVC inner jacket
8. **Armour:** Aluminum Interlocked Armour (AIA)
9. **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)
- 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 260 TRXLPE AIA 25kV 100% INS LEVEL CB [No. x SIZE] AWG 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 | Concentric Neutral | Inner Jacket Thickness | Dia. Over Armour | Overall Jacket Thickness | Approx. OD | Approx. Weight |
|------------|--------|-------------------------|--------------------------|------------------|---------------------------------|--------------------|------------------------|------------------|--------------------------|------------|----------------|
| AWG/ Kcmil | No.    | inch                    | inch                     | mil              | inch                            | No. x AWG          | mil                    | inch             | mil                      | inch       | lb/1000ft      |
| 1          | 19     | 0.298                   | 0.856                    | 260              | 0.916                           | 7x14               | 80                     | 1.536            | 60                       | 1.656      | 1044           |
| 1/0        | 19     | 0.336                   | 0.894                    | 260              | 0.954                           | 7x14               | 80                     | 1.574            | 60                       | 1.694      | 1102           |
| 2/0        | 19     | 0.376                   | 0.934                    | 260              | 0.994                           | 11x14              | 80                     | 1.614            | 60                       | 1.734      | 1220           |
| 3/0        | 19     | 0.422                   | 0.980                    | 260              | 1.040                           | 11x14              | 80                     | 1.684            | 60                       | 1.804      | 1329           |
| 4/0        | 19     | 0.474                   | 1.032                    | 260              | 1.092                           | 11x14              | 80                     | 1.736            | 60                       | 1.856      | 1420           |
| 250        | 37     | 0.520                   | 1.086                    | 260              | 1.146                           | 13x14              | 80                     | 1.790            | 60                       | 1.910      | 1540           |
| 350        | 37     | 0.615                   | 1.181                    | 260              | 1.241                           | 17x14              | 80                     | 1.919            | 60                       | 2.039      | 1889           |
| 500        | 37     | 0.735                   | 1.301                    | 260              | 1.361                           | 21x14              | 110                    | 2.099            | 60                       | 2.219      | 2329           |
| 750        | 61     | 0.908                   | 1.484                    | 260              | 1.544                           | 17x12              | 110                    | 2.282            | 75                       | 2.432      | 2913           |
| 1000       | 61     | 1.060                   | 1.636                    | 260              | 1.696                           | 17x12              | 110                    | 2.434            | 75                       | 2.584      | 3319           |

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          | 19.9               | 502              | 0.211                | 0.266                | 0.067                       | 0.061                      | 0.623 + j0.382          | 0.267 + j0.060              | 5458                                   | 193                            | 194                                     |
| 1/0        | 20.3               | 633              | 0.168                | 0.211                | 0.062                       | 0.059                      | 0.566 + j0.367          | 0.212 + j0.057              | 5458                                   | 221                            | 219                                     |
| 2/0        | 20.8               | 798              | 0.133                | 0.167                | 0.058                       | 0.057                      | 0.521 + j0.352          | 0.168 + j0.055              | 8577                                   | 253                            | 246                                     |
| 3/0        | 21.6               | 1006             | 0.105                | 0.133                | 0.054                       | 0.055                      | 0.484 + j0.336          | 0.134 + j0.054              | 8577                                   | 288                            | 275                                     |
| 4/0        | 22.3               | 1269             | 0.084                | 0.105                | 0.050                       | 0.053                      | 0.452 + j0.318          | 0.106 + j0.051              | 8577                                   | 327                            | 305                                     |
| 250        | 22.9               | 1500             | 0.071                | 0.090                | 0.047                       | 0.052                      | 0.433 + j0.302          | 0.091 + j0.050              | 10137                                  | 367                            | 343                                     |
| 350        | 24.5               | 2100             | 0.050                | 0.065                | 0.041                       | 0.049                      | 0.400 + j0.276          | 0.066 + j0.048              | 13256                                  | 443                            | 399                                     |
| 500        | 26.6               | 3000             | 0.035                | 0.046                | 0.036                       | 0.047                      | 0.371 + j0.247          | 0.047 + j0.046              | 16376                                  | 529                            | 451                                     |
| 750        | 29.2               | 4500             | 0.024                | 0.033                | 0.031                       | 0.044                      | 0.341 + j0.211          | 0.034 + j0.043              | 21062                                  | 633                            | 505                                     |
| 1000       | 31.0               | 6000             | 0.018                | 0.026                | 0.027                       | 0.042                      | 0.320 + j0.186          | 0.027 + j0.041              | 21062                                  | 711                            | 544                                     |

\* 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

**Table 3 – Weights and Measurements (Metric)**

| Cond. Size | Strand | Diameter Over Conductor | Diameter Over Insulation | Insul. Thickness | Diameter Over Insulation Shield | Concentric Neutral | Inner Jacket Thickness | Dia. Over Armour | Overall Jacket Thickness | Approx. OD | Approx. Weight |
|------------|--------|-------------------------|--------------------------|------------------|---------------------------------|--------------------|------------------------|------------------|--------------------------|------------|----------------|
| AWG/Kcmil  | No.    | mm                      | mm                       | mm               | mm                              | No. x AWG          | mm                     | mm               | mm                       | mm         | kg/km          |
| 1          | 19     | 7.57                    | 21.74                    | 6.60             | 23.27                           | 7x14               | 2.03                   | 39.01            | 1.52                     | 42.06      | 1554           |
| 1/0        | 19     | 8.53                    | 22.71                    | 6.60             | 24.23                           | 7x14               | 2.03                   | 39.98            | 1.52                     | 43.03      | 1640           |
| 2/0        | 19     | 9.55                    | 23.72                    | 6.60             | 25.25                           | 11x14              | 2.03                   | 41.00            | 1.52                     | 44.04      | 1816           |
| 3/0        | 19     | 10.72                   | 24.89                    | 6.60             | 26.42                           | 11x14              | 2.03                   | 42.77            | 1.52                     | 45.82      | 1978           |
| 4/0        | 19     | 12.04                   | 26.21                    | 6.60             | 27.74                           | 11x14              | 2.03                   | 44.09            | 1.52                     | 47.14      | 2113           |
| 250        | 37     | 13.21                   | 27.58                    | 6.60             | 29.11                           | 13x14              | 2.03                   | 45.47            | 1.52                     | 48.51      | 2292           |
| 350        | 37     | 15.62                   | 30.00                    | 6.60             | 31.52                           | 17x14              | 2.03                   | 48.74            | 1.52                     | 51.79      | 2811           |
| 500        | 37     | 18.67                   | 33.05                    | 6.60             | 34.57                           | 21x14              | 2.79                   | 53.31            | 1.52                     | 56.36      | 3466           |
| 750        | 61     | 23.06                   | 37.69                    | 6.60             | 39.22                           | 17x12              | 2.79                   | 57.96            | 1.91                     | 61.77      | 4335           |
| 1000       | 61     | 26.92                   | 41.55                    | 6.60             | 43.08                           | 17x12              | 2.79                   | 61.82            | 1.91                     | 65.63      | 4939           |

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          | 505.46             | 2234             | 0.6923               | 0.87                 | 0.0204                      | 0.2001                     | 0.623 + j0.382          | 0.267 + j0.060              | 5458                                   | 193                            | 194                                     |
| 1/0        | 515.62             | 2817             | 0.5512               | 0.69                 | 0.0189                      | 0.1936                     | 0.566 + j0.367          | 0.212 + j0.057              | 5458                                   | 221                            | 219                                     |
| 2/0        | 528.32             | 3551             | 0.4364               | 0.55                 | 0.0177                      | 0.1870                     | 0.521 + j0.352          | 0.168 + j0.055              | 8577                                   | 253                            | 246                                     |
| 3/0        | 548.64             | 4477             | 0.3445               | 0.44                 | 0.0165                      | 0.1804                     | 0.484 + j0.336          | 0.134 + j0.054              | 8577                                   | 288                            | 275                                     |
| 4/0        | 566.42             | 5647             | 0.2756               | 0.34                 | 0.0152                      | 0.1739                     | 0.452 + j0.318          | 0.106 + j0.051              | 8577                                   | 327                            | 305                                     |
| 250        | 581.66             | 6675             | 0.2329               | 0.30                 | 0.0143                      | 0.1706                     | 0.433 + j0.302          | 0.091 + j0.050              | 10137                                  | 367                            | 343                                     |
| 350        | 622.30             | 9345             | 0.1640               | 0.21                 | 0.0125                      | 0.1608                     | 0.400 + j0.276          | 0.066 + j0.048              | 13256                                  | 443                            | 399                                     |
| 500        | 675.64             | 13350            | 0.1148               | 0.15                 | 0.0110                      | 0.1542                     | 0.371 + j0.247          | 0.047 + j0.046              | 16376                                  | 529                            | 451                                     |
| 750        | 741.68             | 20025            | 0.0787               | 0.11                 | 0.0094                      | 0.1444                     | 0.341 + j0.211          | 0.034 + j0.043              | 21062                                  | 633                            | 505                                     |
| 1000       | 787.40             | 26700            | 0.0591               | 0.09                 | 0.0082                      | 0.1378                     | 0.320 + j0.186          | 0.027 + j0.041              | 21062                                  | 711                            | 544                                     |

\* 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

