



HVTECK AL 1/C 280NLEPR CB PVC AIA PVC 28kV 100% CSA

Single Conductor, 280 Mils No Lead Ethylene Propylene Rubber (NL-EPR), 100% Insulation Level, Concentric Bond, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

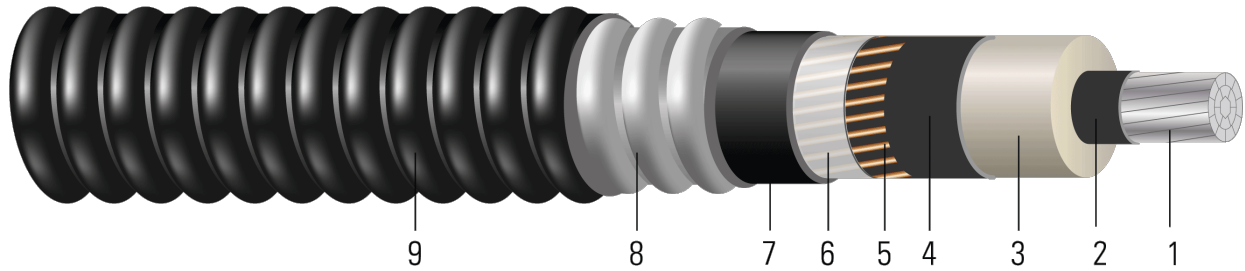


Image not to scale. See Table 1 for dimensions.

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:** 280 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 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 28kV 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 280 NLEPR AIA 28kV 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 | 0.896 | 280 | 0.956 | 7x14 | 80 | 1.576 | 60 | 1.696 | 1092 |
| 1/0 | 19 | 0.336 | 0.934 | 280 | 0.994 | 7x14 | 80 | 1.614 | 60 | 1.734 | 1152 |
| 2/0 | 19 | 0.376 | 0.974 | 280 | 1.034 | 11x14 | 80 | 1.678 | 60 | 1.798 | 1302 |
| 3/0 | 19 | 0.422 | 1.020 | 280 | 1.080 | 11x14 | 80 | 1.724 | 60 | 1.844 | 1382 |
| 4/0 | 19 | 0.474 | 1.072 | 280 | 1.132 | 11x14 | 80 | 1.776 | 60 | 1.896 | 1475 |
| 250 | 37 | 0.520 | 1.126 | 280 | 1.186 | 13x14 | 80 | 1.830 | 60 | 1.950 | 1596 |
| 350 | 37 | 0.615 | 1.221 | 280 | 1.281 | 17x14 | 80 | 1.959 | 60 | 2.079 | 1951 |
| 500 | 37 | 0.735 | 1.341 | 280 | 1.401 | 21x14 | 110 | 2.139 | 60 | 2.259 | 2397 |
| 750 | 61 | 0.908 | 1.524 | 280 | 1.584 | 17x12 | 110 | 2.322 | 75 | 2.472 | 2989 |

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

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 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 | 20.4 | 502 | 0.211 | 0.266 | 0.054 | 0.062 | 0.621 + j0.369 | 0.267 + j0.060 | 5458 | 193 | 194 |
| 1/0 | 20.8 | 633 | 0.168 | 0.211 | 0.050 | 0.059 | 0.565 + j0.355 | 0.212 + j0.058 | 5458 | 221 | 219 |
| 2/0 | 21.6 | 798 | 0.133 | 0.167 | 0.047 | 0.058 | 0.518 + j0.340 | 0.168 + j0.056 | 8577 | 253 | 246 |
| 3/0 | 22.1 | 1006 | 0.105 | 0.133 | 0.043 | 0.056 | 0.481 + j0.324 | 0.134 + j0.054 | 8577 | 288 | 275 |
| 4/0 | 22.8 | 1269 | 0.084 | 0.105 | 0.040 | 0.054 | 0.450 + j0.308 | 0.106 + j0.052 | 8577 | 327 | 305 |
| 250 | 23.4 | 1500 | 0.071 | 0.090 | 0.038 | 0.052 | 0.430 + j0.292 | 0.091 + j0.051 | 10137 | 367 | 343 |
| 350 | 24.9 | 2100 | 0.050 | 0.065 | 0.033 | 0.050 | 0.397 + j0.267 | 0.066 + j0.048 | 13256 | 443 | 399 |
| 500 | 27.1 | 3000 | 0.035 | 0.046 | 0.029 | 0.047 | 0.367 + j0.240 | 0.047 + j0.046 | 16376 | 529 | 451 |
| 750 | 29.7 | 4500 | 0.024 | 0.033 | 0.025 | 0.045 | 0.337 + j0.205 | 0.034 + j0.043 | 21062 | 633 | 505 |

* 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 | 22.76 | 7.11 | 24.28 | 7x14 | 2.03 | 40.03 | 1.52 | 43.08 | 1625 |
| 1/0 | 19 | 8.53 | 23.72 | 7.11 | 25.25 | 7x14 | 2.03 | 41.00 | 1.52 | 44.04 | 1714 |
| 2/0 | 19 | 9.55 | 24.74 | 7.11 | 26.26 | 11x14 | 2.03 | 42.62 | 1.52 | 45.67 | 1938 |
| 3/0 | 19 | 10.72 | 25.91 | 7.11 | 27.43 | 11x14 | 2.03 | 43.79 | 1.52 | 46.84 | 2057 |
| 4/0 | 19 | 12.04 | 27.23 | 7.11 | 28.75 | 11x14 | 2.03 | 45.11 | 1.52 | 48.16 | 2195 |
| 250 | 37 | 13.21 | 28.60 | 7.11 | 30.12 | 13x14 | 2.03 | 46.48 | 1.52 | 49.53 | 2375 |
| 350 | 37 | 15.62 | 31.01 | 7.11 | 32.54 | 17x14 | 2.03 | 49.76 | 1.52 | 52.81 | 2903 |
| 500 | 37 | 18.67 | 34.06 | 7.11 | 35.59 | 21x14 | 2.79 | 54.33 | 1.52 | 57.38 | 3567 |
| 750 | 61 | 23.06 | 38.71 | 7.11 | 40.23 | 17x12 | 2.79 | 58.98 | 1.91 | 62.79 | 4448 |

All dimensions are nominal and subject to normal manufacturing tolerances

◊ Cable marked with this symbol is a standard stock item

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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 | 518.16 | 2234 | 0.6923 | 0.87 | 0.0165 | 0.2034 | 0.621 + j0.369 | 0.267 + j0.060 | 5458 | 193 | 194 |
| 1/0 | 528.32 | 2817 | 0.5512 | 0.69 | 0.0152 | 0.1936 | 0.565 + j0.355 | 0.212 + j0.058 | 5458 | 221 | 219 |
| 2/0 | 548.64 | 3551 | 0.4364 | 0.55 | 0.0143 | 0.1903 | 0.518 + j0.340 | 0.168 + j0.056 | 8577 | 253 | 246 |
| 3/0 | 561.34 | 4477 | 0.3445 | 0.44 | 0.0131 | 0.1837 | 0.481 + j0.324 | 0.134 + j0.054 | 8577 | 288 | 275 |
| 4/0 | 579.12 | 5647 | 0.2756 | 0.34 | 0.0122 | 0.1772 | 0.450 + j0.308 | 0.106 + j0.052 | 8577 | 327 | 305 |
| 250 | 594.36 | 6675 | 0.2329 | 0.30 | 0.0116 | 0.1706 | 0.430 + j0.292 | 0.091 + j0.051 | 10137 | 367 | 343 |
| 350 | 632.46 | 9345 | 0.1640 | 0.21 | 0.0101 | 0.1640 | 0.397 + j0.267 | 0.066 + j0.048 | 13256 | 443 | 399 |
| 500 | 688.34 | 13350 | 0.1148 | 0.15 | 0.0088 | 0.1542 | 0.367 + j0.240 | 0.047 + j0.046 | 16376 | 529 | 451 |
| 750 | 754.38 | 20025 | 0.0787 | 0.11 | 0.0076 | 0.1476 | 0.337 + j0.205 | 0.034 + j0.043 | 21062 | 633 | 505 |

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

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