

## HVTECK AL 3/C 320NLEPR TS PVC AIA PVC 25kV 133% CSA

3 Conductor, 320 Mils No Lead Ethylene Propylene Rubber (NL-EPR), 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:** 320 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 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. **Filler:** Interstices filled with non-hydroscoping/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 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
- 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# 3/C [#AWG or #kcmil] CPT AL 320 NLEPR AIA 25kV 133% INS LEVEL 25% TS SUN RES 105°C FT4 HL (-40°C) LTGG RoHS YEAR [SEQUENTIAL METER MARKS]

**Table 1 – Weights and Measurements**

| Stock Number | 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 | Copper Weight | Approx. Weight |
|--------------|------------|--------|-------------------------|--------------------------|------------------|---------------------------------|-------------|------------------------|------------------|--------------------------|------------|---------------|----------------|
|              | AWG/Kcmil  | No.    | inch                    | inch                     | mil              | inch                            | AWG         | mil                    | inch             | mil                      | inch       | lb/1000ft     | lb/1000ft      |
| 580658^      | 1/0        | 10     | 0.336                   | 1.014                    | 320              | 1.074                           | 6           | 110                    | 2.933            | 75                       | 3.083      | 344           | 3750           |

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                                     |
| 1/0        | 21.6               | 1900             | 0.168                | 0.211                | 0.054                       | 0.049                      | 0.570 + j0.329          | 0.211 + j0.047              | 3358                                   | 181                            | 200                                     |

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

\* CEC ampacities are based on:

3/C in air copper and aluminum: D17N

3/C direct buried copper and aluminum: D17E

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

| Stock Number | 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 | Copper Weight | Approx. Weight |
|--------------|------------|--------|-------------------------|--------------------------|------------------|---------------------------------|-------------|------------------------|------------------|--------------------------|------------|---------------|----------------|
|              | AWG/Kcmil  | No.    | mm                      | mm                       | mm               | mm                              | AWG         | mm                     | mm               | mm                       | mm         | kg/km         | kg/km          |
| 580658^      | 1/0        | 10     | 8.53                    | 25.76                    | 8.13             | 27.28                           | 6           | 2.79                   | 74.50            | 1.91                     | 78.31      | 512           | 5581           |

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 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                                     |
| 1/0        | 548.64             | 8455             | 0.5512               | 0.69                 | 0.0165                      | 0.1608                     | 0.570 + j0.329          | 0.211 + j0.047              | 3358                                   | 181                            | 200                                     |

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

\* CEC ampacities are based on:

3/C in air copper and aluminum: D17N

3/C direct buried copper and aluminum: D17E

