### HVTECK SPECIFICATIONS

**HVTECK AL 1/C 115EPR TS PVC AIA PVC 8KV 100% CSA**

**PRODUCT HIGHLIGHTS**
Southwire’s 8KV HVTECK is a CSA armoured cable for industrial and commercial medium voltage applications. Rated FT4, -40°C, Hazardous Locations (HL) and 105°C for use in harsh Canadian environments. For installation in cable trays, duct banks, direct burial, troughs, continuous rigid cable supports and concrete encasement.

**CONSTRUCTION**

- **Conductor**
  - Class B - compact stranded -8000 Series Aluminum -ACM
- **Options**
  - Class B compact stranded copper
  - Class B compressed stranded copper
  - Strand blocking technology
  - Tinning on copper conductors
- **Conductor Shield**
  - Extruded semi-conducting thermosetting polymeric layer
- **Insulation**
  - No-lead EPR (Ethylene Propylene Rubber)
  - Thickness: 0.115 inches (2.92mm) - nominal
  - Insulation level: 100% - grounded system
  - 105°C rated

**Insulation Shield**
- Extruded Semi-conducting thermosetting polymeric layer
- CSA 68.10 - Shield Removal/removal requirements are printed on the surface
- Meets requirement of ICEA but built to CSA standards

**Copper Tape Shield**
- Helically wrapped 5 mil copper tape with 25% overlap
- Not designed to carry ground fault current
- A separate bonding/grounding conductor may be required

**Inner Jacket**
- Black PVC
- Thickness:
  - No.2 AWG to No.1/0 AWG = 0.06 inches (1.52mm)
  - No.2/0 AWG to 750 kcmil = 0.08 inches (2.03mm)

**Armour**
- Aluminum Interlocked Armour (AIA)
- Optional Galvanized Steel Interlocked Armour (GSIA)

**Overall Jacket**
- Black PVC (optional colours available)
- Nominal Thickness:
  - No.2 AWG to 300 kcmil = 0.06 inches (1.27mm)
  - 500 kcmil to 750 kcmil = 0.06 inches (1.52mm)

**Typical Print Legend**
- (CSA) SOUTHwire [NESC] #4 #4 AWG or #4 kcmil
gPT AL 115 EPR AIA 8KV 100% INS LEVEL 25% TS SUN RES 105° FT4 HL (-40° C)
LTG RoHS YEAR [SEQUENTIAL METER MARKS]

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### TABLE 1 - WEIGHTS & MEASUREMENTS

<table>
<thead>
<tr>
<th>HVTECK Product Code</th>
<th>Conductor AWG or Kcmil</th>
<th>Conductor Diameter</th>
<th>Diameter Over Insulation</th>
<th>Diameter Over Insulation Shield</th>
<th>Diameter Over Inner Jacket</th>
<th>Diameter Over Armour</th>
<th>Approx. Overall Diameter</th>
<th>Approx. Overall Diameter of Cable</th>
<th>Minimum Bend Radius</th>
<th>Approx. Weight of Cable</th>
<th>Max. Real Weight (cable and armour) **</th>
<th>Max. Real Diameter / Width **</th>
<th>Max. Real Diameter on Reel **</th>
</tr>
</thead>
<tbody>
<tr>
<td>AL115V98-002</td>
<td>2(7)</td>
<td>0.288</td>
<td>6.8</td>
<td>0.528</td>
<td>13.4</td>
<td>0.608</td>
<td>15.4</td>
<td>0.074</td>
<td>19.0</td>
<td>1.068</td>
<td>27.1</td>
<td>1.168</td>
<td>29.7</td>
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<td>AL115V98-001</td>
<td>1(9)</td>
<td>0.299</td>
<td>7.6</td>
<td>0.559</td>
<td>14.2</td>
<td>0.639</td>
<td>16.2</td>
<td>0.079</td>
<td>19.6</td>
<td>1.099</td>
<td>27.9</td>
<td>1.199</td>
<td>30.5</td>
</tr>
<tr>
<td>AL115V98-010</td>
<td>1/0(13)</td>
<td>0.338</td>
<td>8.5</td>
<td>0.598</td>
<td>15.1</td>
<td>0.676</td>
<td>17.2</td>
<td>0.081</td>
<td>20.7</td>
<td>1.136</td>
<td>31.4</td>
<td>1.236</td>
<td>34.1</td>
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<tr>
<td>AL115V98-020</td>
<td>2/0(13)</td>
<td>0.376</td>
<td>9.6</td>
<td>0.636</td>
<td>16.2</td>
<td>0.716</td>
<td>18.2</td>
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<td>22.8</td>
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<td>1.316</td>
<td>35.8</td>
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<td>AL115V98-030</td>
<td>3/0(13)</td>
<td>0.423</td>
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<td>0.683</td>
<td>17.3</td>
<td>0.763</td>
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<td>1.263</td>
<td>33.4</td>
<td>1.363</td>
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<td>AL115V98-040</td>
<td>4/0(13)</td>
<td>0.475</td>
<td>12.1</td>
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<td>18.7</td>
<td>0.815</td>
<td>20.7</td>
<td>0.099</td>
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<td>AL115V98-050</td>
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<td>0.520</td>
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<td>AL115V98-060</td>
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<td>1.466</td>
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<td>0.968</td>
<td>22.5</td>
<td>1.060</td>
<td>24.5</td>
<td>1.146</td>
<td>29.1</td>
<td>1.466</td>
<td>37.2</td>
<td>1.566</td>
<td>39.8</td>
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<tr>
<td>AL115V98-080</td>
<td>8/0(13)</td>
<td>0.676</td>
<td>16.7</td>
<td>1.066</td>
<td>25.6</td>
<td>1.086</td>
<td>27.6</td>
<td>1.266</td>
<td>32.2</td>
<td>1.586</td>
<td>40.3</td>
<td>1.706</td>
<td>43.3</td>
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<tr>
<td>AL115V98-090</td>
<td>9/0(13)</td>
<td>0.736</td>
<td>17.6</td>
<td>1.106</td>
<td>26.6</td>
<td>1.106</td>
<td>27.6</td>
<td>1.302</td>
<td>35.8</td>
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<td>1.888</td>
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<tr>
<td>AL115V98-100</td>
<td>10/0(13)</td>
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<td>32.2</td>
<td>1.448</td>
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<td>1.788</td>
<td>44.9</td>
<td>1.888</td>
<td>51.1</td>
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</tbody>
</table>

**Note:** These are minimum average dimensions as per CSA Standards.

* Other conductor sizes and outer jacket colours are available upon request. (#s in brackets represent # of strands / conductor)

** ** Longer maximum lengths may be possible. Standard sizes and lengths may be supplied. Reel sizes are not guaranteed. The factory reserves the right to make changes as necessary to optimize manufacturing requirements.
**HVTECK AL 1/C 115EPR TS PVC AIA PVC 8KV 100% CSA**

**DESIGN**

**Qualification Standards**
- 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 C22.2 No. 174 - Cables in Hazardous Locations
- ICEA S-93-639 (NEMA WC 74) 5 to 46 kV - Shielded Power Cable
- AEIC CS-8 - Qualification Testing Requirements

**Flame Test Ratings**
- FT1 - Flame Test - (1,706 BTU/Hr. nominal - Vertical Wire Flame Test)
- FT4, Flame Test - (70,000 BTU/Hr. - Vertical Tray Flame Test)
- IEEE 1202 - Flame Test - (70,000 BTU/Hr. - Vertical Tray Test)
- IEEE 383 - Flame Test - (70,000 BTU/Hr.)
- ICEA T-29-520 - Vertical Cable Tray Flame Test - (210,000 BTU/Hr.)

**Operating Temperatures**
- -40°C - CSA Cold Bend and Impact Temperature
- -25°C - Min. Installation Temperature
- 105°C - Max. Continuous Operating Temperature
- 140°C for Emergency Overload Temperature
- 250°C for Short Circuit Temperature

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**TABLE 2 - ENGINEERING SPECIFICATIONS**

<table>
<thead>
<tr>
<th>HVTECK Product Code</th>
<th>Maximum Pulling Tension</th>
<th>DC Resistance @ 25°C R&lt;sub&gt;D&lt;/sub&gt;</th>
<th>AC Resistance @ 30°C-60 Hz (Triplex) R&lt;sub&gt;AC&lt;/sub&gt;</th>
<th>Inductance L</th>
<th>Capacitance C</th>
<th>Inductive Reactance @ 60Hz (Triplex) X&lt;sub&gt;L&lt;/sub&gt;</th>
<th>Capacitive Reactance @ 60Hz (Triplex) X&lt;sub&gt;C&lt;/sub&gt;</th>
<th>Positive - Sequence Impedance</th>
<th>Zero - Sequence Impedance</th>
<th>Short Circuit Current (Each Phase Conductor) @ 60Hz</th>
<th>Allowable Ampacities in Ventilated Tray</th>
<th>Allowable Ampacities Directly Buried in Earth</th>
</tr>
</thead>
<tbody>
<tr>
<td>AL11SV98-002</td>
<td>398</td>
<td>0.265</td>
<td>0.869</td>
<td>0.333</td>
<td>1.083</td>
<td>0.0989</td>
<td>0.3245</td>
<td>0.0725</td>
<td>0.2378</td>
<td>0.0373</td>
<td>0.1223</td>
<td>0.0366</td>
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<tr>
<td>AL11SV98-001</td>
<td>502</td>
<td>0.211</td>
<td>0.692</td>
<td>0.265</td>
<td>0.870</td>
<td>0.0957</td>
<td>0.3140</td>
<td>0.0785</td>
<td>0.2577</td>
<td>0.0361</td>
<td>0.1184</td>
<td>0.0338</td>
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<tr>
<td>AL11SV98-010</td>
<td>634</td>
<td>0.168</td>
<td>0.551</td>
<td>0.211</td>
<td>0.693</td>
<td>0.0925</td>
<td>0.3035</td>
<td>0.0858</td>
<td>0.2813</td>
<td>0.0349</td>
<td>0.1144</td>
<td>0.0309</td>
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<tr>
<td>AL11SV98-020</td>
<td>799</td>
<td>0.133</td>
<td>0.436</td>
<td>0.167</td>
<td>0.549</td>
<td>0.0896</td>
<td>0.2940</td>
<td>0.0935</td>
<td>0.3088</td>
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<td>0.1106</td>
<td>0.0284</td>
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<td>AL11SV98-030</td>
<td>1007</td>
<td>0.105</td>
<td>0.345</td>
<td>0.132</td>
<td>0.433</td>
<td>0.0886</td>
<td>0.2847</td>
<td>0.1026</td>
<td>0.3366</td>
<td>0.0327</td>
<td>0.1073</td>
<td>0.0259</td>
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<tr>
<td>AL11SV98-040</td>
<td>1270</td>
<td>0.084</td>
<td>0.274</td>
<td>0.105</td>
<td>0.346</td>
<td>0.0842</td>
<td>0.2762</td>
<td>0.1126</td>
<td>0.3894</td>
<td>0.0317</td>
<td>0.1041</td>
<td>0.0236</td>
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<tr>
<td>AL11SV98-250</td>
<td>1500</td>
<td>0.071</td>
<td>0.232</td>
<td>0.089</td>
<td>0.292</td>
<td>0.0831</td>
<td>0.2725</td>
<td>0.1175</td>
<td>0.3961</td>
<td>0.0313</td>
<td>0.1027</td>
<td>0.0226</td>
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<tr>
<td>AL11SV98-350</td>
<td>2100</td>
<td>0.051</td>
<td>0.166</td>
<td>0.084</td>
<td>0.209</td>
<td>0.0797</td>
<td>0.2616</td>
<td>0.1352</td>
<td>0.4436</td>
<td>0.0301</td>
<td>0.0986</td>
<td>0.0196</td>
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<tr>
<td>AL11SV98-500</td>
<td>3000</td>
<td>0.035</td>
<td>0.116</td>
<td>0.045</td>
<td>0.147</td>
<td>0.0766</td>
<td>0.2514</td>
<td>0.1573</td>
<td>0.5160</td>
<td>0.0289</td>
<td>0.0948</td>
<td>0.0169</td>
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<tr>
<td>AL11SV98-750</td>
<td>4500</td>
<td>0.024</td>
<td>0.077</td>
<td>0.030</td>
<td>0.099</td>
<td>0.0740</td>
<td>0.2426</td>
<td>0.1828</td>
<td>0.5999</td>
<td>0.0279</td>
<td>0.0915</td>
<td>0.0145</td>
</tr>
</tbody>
</table>

* Calculations are based on three cables triplexed / 5 mil 25% over lapping copper tape shield / Conductor temperature of 90°C / Shield temperature of 45°C / Earth resistivity of 100 ohms-meter

1 Ampacities are based on Table D17M of the 2015 Canadian Electrical Code Part I (40°C Ambient Air Temperature, indoor installation)

2 Ampacities are based on Table D17A of the 2015 Canadian Electrical Code Part I

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