HVTECK SPECIFICATIONS
HVTECK AL 3/C 140EPR TS PVC AIA PVC 8KV 133% 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 encaseable.

CONSTRUCTION
Conductor
- Class B - compact stranded -8000 Series Aluminum -ACM

Options
- Class B compact stranded copper
- Class B compressed stranded copper
- Strand blocking technology
- Timing on copper conductors

Conductor Shield
- Extruded semi-conducting thermosetting polymeric layer

Insulation
- No-lead EPR (Ethylene Propylene Rubber)
- Thickness: 0.14 inches (3.56mm) - nominal
- Insulation level: 133%
- 105°C rated

Insulation Shield
- Extruded semi-conducting thermosetting polymeric layer
- CSA 68.10 - Shield Removal/termination requirements are printed on the surface
- Phase identification as per ICEA Method 3, using printed circuit numbers
- Meets requirement of ICEA but built to CSA standards

Copper Tape Shield
- Helically wrapped 5 mil copper tape with 25% overlap

Bonding Conductor
- Class B compressed stranded bare copper
- - in accordance with ASTM B3 and B8

Fillers
- Non-wicking, non-hygroscopic

Inner Jacket
- Black PVC
- Thickness: No.2 AWG = 0.08 inches (2.03mm)
- No.1 AWG to 500 kcmil = 0.11 inches (2.79mm)
- 750 kcmil = 0.14 inches (3.56mm)

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

Overall Jacket
- Black PVC (optional colours available)
- Nominal Thickness: No.2 AWG to No.2/0 AWG = 0.06 inches (1.52mm)
- No.3/0 AWG to 350 kcmil = 0.075 inches (1.91mm)
- 500 kcmil to 750 kcmil = 0.085 inches (2.165mm)

Typical Print Legend
- [CSA] SOUTHWIRE (NESC) #P# 3/C [%AWG or #kcmil] CPT AL 140 EPR AIA 8KV 133% INS LEVEL 25% TS SUN RES 105° FT4 HL (-40°C) LTGG RoHS YEAR [SEQUENTIAL METER MARKS]

TABLE 1 - WEIGHTS & MEASUREMENTS

<table>
<thead>
<tr>
<th>HVTECK Product Code</th>
<th>Conductor Size</th>
<th>Conductor Diameter</th>
<th>Insulation Diameter</th>
<th>Conductor Diameter Over Insulation Shield</th>
<th>Bonding Cond. Size</th>
<th>Diameter Over Inner Jacket</th>
<th>Diameter Over Armour</th>
<th>Approx. Overall Diameter</th>
<th>Minimum Bend Radius</th>
<th>Approx. Weight of Cable</th>
<th>Max. Real Weight (conductor)</th>
<th>Max. Real Diameter / Width</th>
<th>Max. Real Length of Cable on Reel</th>
</tr>
</thead>
<tbody>
<tr>
<td>AL140X63-002</td>
<td>2/1</td>
<td>0.268</td>
<td>0.578</td>
<td>14.7</td>
<td>0.658</td>
<td>16.7</td>
<td>1.624</td>
<td>41.3</td>
<td>1.964</td>
<td>49.6</td>
<td>2.074</td>
<td>52.7</td>
<td>14.5</td>
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<tr>
<td>AL140X63-001</td>
<td>1/1(9)</td>
<td>0.299</td>
<td>0.609</td>
<td>15.5</td>
<td>0.688</td>
<td>17.5</td>
<td>1.751</td>
<td>44.5</td>
<td>2.081</td>
<td>52.9</td>
<td>2.201</td>
<td>55.9</td>
<td>15.4</td>
</tr>
<tr>
<td>AL140X63-010</td>
<td>1/0(19)</td>
<td>0.336</td>
<td>0.646</td>
<td>16.4</td>
<td>0.726</td>
<td>18.4</td>
<td>1.831</td>
<td>46.5</td>
<td>2.161</td>
<td>54.9</td>
<td>2.281</td>
<td>57.9</td>
<td>16.0</td>
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<tr>
<td>AL140X63-020</td>
<td>2/0(19)</td>
<td>0.376</td>
<td>0.666</td>
<td>17.4</td>
<td>0.766</td>
<td>19.5</td>
<td>1.918</td>
<td>48.7</td>
<td>2.248</td>
<td>57.1</td>
<td>2.388</td>
<td>60.1</td>
<td>16.6</td>
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<tr>
<td>AL140X63-030</td>
<td>3/0(19)</td>
<td>0.423</td>
<td>0.733</td>
<td>18.6</td>
<td>0.813</td>
<td>20.7</td>
<td>2.019</td>
<td>51.3</td>
<td>2.349</td>
<td>59.7</td>
<td>2.499</td>
<td>63.5</td>
<td>17.5</td>
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<tr>
<td>AL140X63-040</td>
<td>4/0(19)</td>
<td>0.475</td>
<td>0.785</td>
<td>19.9</td>
<td>0.865</td>
<td>22.0</td>
<td>2.132</td>
<td>54.1</td>
<td>2.462</td>
<td>62.5</td>
<td>2.612</td>
<td>66.3</td>
<td>18.3</td>
</tr>
<tr>
<td>AL140X63-250</td>
<td>250/371</td>
<td>0.520</td>
<td>1.232</td>
<td>21.3</td>
<td>0.920</td>
<td>23.4</td>
<td>4.225</td>
<td>97.2</td>
<td>2.589</td>
<td>65.5</td>
<td>2.730</td>
<td>69.4</td>
<td>19.1</td>
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<tr>
<td>AL140X63-350</td>
<td>350/371</td>
<td>0.616</td>
<td>1.560</td>
<td>23.8</td>
<td>1.016</td>
<td>25.8</td>
<td>4.258</td>
<td>92.4</td>
<td>2.789</td>
<td>70.8</td>
<td>2.938</td>
<td>74.6</td>
<td>20.6</td>
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<tr>
<td>AL140X63-500</td>
<td>500/371</td>
<td>0.736</td>
<td>1.056</td>
<td>26.8</td>
<td>1.138</td>
<td>28.9</td>
<td>3.217</td>
<td>79.4</td>
<td>3.217</td>
<td>81.7</td>
<td>22.5</td>
<td>572</td>
<td>4622</td>
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<td>AL140X63-750</td>
<td>750/611</td>
<td>0.908</td>
<td>1.238</td>
<td>31.4</td>
<td>1.318</td>
<td>33.5</td>
<td>3.170</td>
<td>90.5</td>
<td>3.500</td>
<td>88.9</td>
<td>3.670</td>
<td>93.2</td>
<td>25.7</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.
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DESIGN

Qualification Standards
- CSA C68.10 - Shielded Power Cables for Commercial and Industrial Applications - 5 to 46 kV
- CSA C68.3 - Shielded & Consecutive 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

Product Ratings
- CSA C22.2 No. 2568 & No. 0.3 - Wire and Cable Test Methods
- CSA LTGS (40°C) - as per C68.10 - for Cold Bend and Impact rating
- CSA HL - for Hazardous Locations rating
- CSA FT4 - for Flame Retardancy rating
- CSA SUN RES - for Sunlight Resistant rating

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

Flame Test Ratings
- FT1 - Flame Test - (1,706 BTU/Hr./30 min. - 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.)

TABLE 2 - ENGINEERING SPECIFICATIONS

<table>
<thead>
<tr>
<th>HVTECK Product Code</th>
<th>Maximum Pulling Tension</th>
<th>DC Resistance @ 25°C</th>
<th>AC Resistance @ 90°C-60 Hz</th>
<th>Inductance</th>
<th>Capacitance</th>
<th>Inductive Reactance @ 60Hz (triplexed)</th>
<th>Capacitive Reactance @ 60Hz (triplexed)</th>
<th>Zero - Sequence Impedance</th>
<th>Short Circuit Current (each phase conductor)</th>
<th>Allowable Ampacities in Ventilated Cable Tray †</th>
<th>Allowable Ampacities Directly Buried in Earth ‡</th>
</tr>
</thead>
<tbody>
<tr>
<td>AL140X63-002</td>
<td>1194 lb (5313 kg)</td>
<td>0.265 Ω/km</td>
<td>0.333 Ω/km</td>
<td>0.1044 Ω/km</td>
<td>0.0639 Ω/km</td>
<td>0.2098 Ω/km</td>
<td>0.0394 Ω/km</td>
<td>0.0205 Ω/km</td>
<td>2.9 kAmp</td>
<td>135 Amps</td>
<td>157 Amps</td>
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<tr>
<td>AL140X63-001</td>
<td>1506 lb (6701 kg)</td>
<td>0.211 Ω/km</td>
<td>0.295 Ω/km</td>
<td>0.0982 Ω/km</td>
<td>0.0581 Ω/km</td>
<td>0.1965 Ω/km</td>
<td>0.0331 Ω/km</td>
<td>0.0233 Ω/km</td>
<td>3.7 kAmp</td>
<td>154 Amps</td>
<td>178 Amps</td>
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<tr>
<td>AL140X63-010</td>
<td>1901 lb (8455 kg)</td>
<td>0.168 Ω/km</td>
<td>0.231 Ω/km</td>
<td>0.0974 Ω/km</td>
<td>0.0596 Ω/km</td>
<td>0.1801 Ω/km</td>
<td>0.0327 Ω/km</td>
<td>0.0230 Ω/km</td>
<td>4.7 kAmp</td>
<td>176 Amps</td>
<td>202 Amps</td>
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<tr>
<td>AL140X63-020</td>
<td>2396 lb (10657 kg)</td>
<td>0.133 Ω/km</td>
<td>0.201 Ω/km</td>
<td>0.0942 Ω/km</td>
<td>0.0554 Ω/km</td>
<td>0.1632 Ω/km</td>
<td>0.0313 Ω/km</td>
<td>0.0223 Ω/km</td>
<td>5.9 kAmp</td>
<td>204 Amps</td>
<td>229 Amps</td>
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<tr>
<td>AL140X63-030</td>
<td>3020 lb (13435 kg)</td>
<td>0.105 Ω/km</td>
<td>0.234 Ω/km</td>
<td>0.0911 Ω/km</td>
<td>0.0569 Ω/km</td>
<td>0.1570 Ω/km</td>
<td>0.0310 Ω/km</td>
<td>0.0216 Ω/km</td>
<td>7.4 kAmp</td>
<td>234 Amps</td>
<td>260 Amps</td>
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<tr>
<td>AL140X63-040</td>
<td>3809 lb (16942 kg)</td>
<td>0.084 Ω/km</td>
<td>0.225 Ω/km</td>
<td>0.0938 Ω/km</td>
<td>0.0551 Ω/km</td>
<td>0.1570 Ω/km</td>
<td>0.0300 Ω/km</td>
<td>0.0214 Ω/km</td>
<td>9.4 kAmp</td>
<td>268 Amps</td>
<td>304 Amps</td>
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<tr>
<td>AL140X63-050</td>
<td>4500 lb (20017 kg)</td>
<td>0.071 Ω/km</td>
<td>0.222 Ω/km</td>
<td>0.0898 Ω/km</td>
<td>0.0534 Ω/km</td>
<td>0.1557 Ω/km</td>
<td>0.0297 Ω/km</td>
<td>0.0212 Ω/km</td>
<td>11.1 kAmp</td>
<td>296 Amps</td>
<td>333 Amps</td>
</tr>
<tr>
<td>AL140X63-060</td>
<td>5383 lb (24077 kg)</td>
<td>0.051 Ω/km</td>
<td>0.212 Ω/km</td>
<td>0.0874 Ω/km</td>
<td>0.0532 Ω/km</td>
<td>0.1557 Ω/km</td>
<td>0.0294 Ω/km</td>
<td>0.0211 Ω/km</td>
<td>15.5 kAmp</td>
<td>363 Amps</td>
<td>386 Amps</td>
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<tr>
<td>AL140X63-070</td>
<td>6400 lb (29024 kg)</td>
<td>0.035 Ω/km</td>
<td>0.204 Ω/km</td>
<td>0.0856 Ω/km</td>
<td>0.0530 Ω/km</td>
<td>0.1557 Ω/km</td>
<td>0.0291 Ω/km</td>
<td>0.0210 Ω/km</td>
<td>22.2 kAmp</td>
<td>447 Amps</td>
<td>465 Amps</td>
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<tr>
<td>AL140X63-080</td>
<td>7500 lb (33855 kg)</td>
<td>0.024 Ω/km</td>
<td>0.198 Ω/km</td>
<td>0.0840 Ω/km</td>
<td>0.0529 Ω/km</td>
<td>0.1557 Ω/km</td>
<td>0.0288 Ω/km</td>
<td>0.0208 Ω/km</td>
<td>33.2 kAmp</td>
<td>566 Amps</td>
<td>563 Amps</td>
</tr>
</tbody>
</table>

* Calculations are based on 5 mil 25 % overlap copper tape shield / Conductor temperature of 79°C / Shield temperature of 45°C / Earth resistivity of 100 ohms-meter
† Ampacities are based on Table D17N of the 2015 Canadian Electrical Code Part I  (40°C Ambient Air Temperature, indoor installation)
‡ Ampacities are based on Table D17E of the 2015 Canadian Electrical Code Part I