PRODUCT HIGHLIGHTS
Southwire’s 35KV 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 encasable.

CONSTRUCTION
Conductor
• Class B - compact stranded -800 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: 0.42 inches (10.67mm) - nominal
• Insulation level: 133%
• 105°C rated

Insulation Shield
• Extruded Semi-conducting thermosetting polymeric layer
• CSA 88.10 - Shield Removal/termination 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.1/0 AWG to 250 kcmil = 0.08 inches (2.03mm)
  - 350 kcmil to 1000 kcmil = 0.11 inches (2.79mm)

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

Overall Jacket
• Black PVC (optional colours available)
• Nominal Thickness:
  - No.1/0 AWG to 250 kcmil = 0.06 inches (1.52mm)
  - 500 kcmil to 1000 kcmil = 0.075 inches (1.91mm)

Typical Print Legend
• (CSA) SOUTHWIRE (NESC) #P# [#AWG or #kcmil] CPT AL 420 EPR
• No-lead EPR (Ethylene Propylene Rubber)
• 10932 mm

TABLE 1 - WEIGHTS & MEASUREMENTS

<table>
<thead>
<tr>
<th>HVTECK Product Code</th>
<th>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. Weight of Cable</th>
<th>Max. Real Weight (reel and cable) **</th>
<th>Max. Real Diameter / Width **</th>
<th>Max. Cable Length on Reel **</th>
</tr>
</thead>
<tbody>
<tr>
<td>AL42OU79-010</td>
<td>1/0(19)</td>
<td>0.338</td>
<td>8.5</td>
<td>1.206</td>
<td>30.6</td>
<td>1.286</td>
<td>32.7</td>
<td>1.466</td>
<td>37.2</td>
<td>1.786</td>
<td>45.4</td>
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<tr>
<td>AL42OU79-020</td>
<td>2/0(19)</td>
<td>0.376</td>
<td>9.6</td>
<td>1.246</td>
<td>31.8</td>
<td>1.326</td>
<td>33.7</td>
<td>1.506</td>
<td>38.3</td>
<td>1.836</td>
<td>46.6</td>
</tr>
<tr>
<td>AL42OU79-030</td>
<td>3/0(19)</td>
<td>0.423</td>
<td>10.7</td>
<td>1.293</td>
<td>32.8</td>
<td>1.373</td>
<td>34.9</td>
<td>1.553</td>
<td>39.4</td>
<td>1.883</td>
<td>47.8</td>
</tr>
<tr>
<td>AL42OU79-040</td>
<td>4/0(19)</td>
<td>0.475</td>
<td>12.1</td>
<td>1.345</td>
<td>34.2</td>
<td>1.425</td>
<td>36.2</td>
<td>1.605</td>
<td>40.6</td>
<td>1.935</td>
<td>49.1</td>
</tr>
<tr>
<td>AL42OU79-050</td>
<td>500(37)</td>
<td>0.520</td>
<td>13.2</td>
<td>1.400</td>
<td>35.6</td>
<td>1.480</td>
<td>37.6</td>
<td>1.660</td>
<td>42.2</td>
<td>1.990</td>
<td>50.5</td>
</tr>
<tr>
<td>AL42OU79-060</td>
<td>350(37)</td>
<td>0.616</td>
<td>15.6</td>
<td>1.496</td>
<td>38.0</td>
<td>1.576</td>
<td>40.0</td>
<td>1.816</td>
<td>46.1</td>
<td>2.146</td>
<td>54.5</td>
</tr>
<tr>
<td>AL42OU79-070</td>
<td>500(37)</td>
<td>0.736</td>
<td>18.7</td>
<td>1.616</td>
<td>41.0</td>
<td>1.696</td>
<td>43.1</td>
<td>1.936</td>
<td>49.2</td>
<td>2.266</td>
<td>57.6</td>
</tr>
<tr>
<td>AL42OU79-080</td>
<td>250(37)</td>
<td>0.908</td>
<td>23.1</td>
<td>1.798</td>
<td>45.7</td>
<td>1.878</td>
<td>47.7</td>
<td>2.118</td>
<td>53.8</td>
<td>2.448</td>
<td>62.2</td>
</tr>
<tr>
<td>AL42OU79-090</td>
<td>1000(61)</td>
<td>1.060</td>
<td>26.9</td>
<td>1.950</td>
<td>49.5</td>
<td>2.030</td>
<td>51.6</td>
<td>2.270</td>
<td>57.7</td>
<td>2.600</td>
<td>66.0</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 SPECIFICATIONS**

**HVTECK AL 1/C 420EPR TS PVC AIA PVC 35KV 133% CSA**

### DESIGN

**Qualification Standards**
- CSA C68.10 - Shielded Power Cables for Commercial and Industrial Applications - 5 to 46 kV
- CSA C68.3 - Shielded & Conduit 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 - (1,708 BTU/Hr./ft.)
- FT4 - Flame Test - (70,000 BTU/Hr./ft.)
- ICEA T-29-520 - Vertical Cable Tray Flame Test - (210,000 BTU/Hr.)
- CSA HL - for Hazardous Locations rating
- CSA SUN RES - for Sunlight Resistant rating
- CSA LTGG [-40°C] - as per C68.10 - for Cold Bend and Impact rating
- CSA C22.2 No. 2556 & No. 0.3 - Wire and Cable Test Methods

### Product Ratings

- CSA C22.2 No. 2556 & 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
- 221°C - Short Circuit Temperature

### Applications

- 5 to 46 KV

### 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, 60Hz (triplex formation)</th>
<th>Inductance L</th>
<th>Capacitance C</th>
<th>Inductive Reactance @ 60Hz (triplexed)</th>
<th>Capacitive Reactance @ 60Hz</th>
<th>Zero - Sequence Impedance</th>
<th>Short Circuit Current (each phase conductor) @ 60Hz</th>
<th>Allowable Ampacities in Ventilated Cable Tray</th>
<th>Allowable Ampacities Directly Buried in Earth</th>
</tr>
</thead>
<tbody>
<tr>
<td>AL420U79-010</td>
<td>634 lb</td>
<td>0.168</td>
<td>0.162</td>
<td>0.1355</td>
<td>0.0385</td>
<td>0.0362</td>
<td>0.176</td>
<td>0.0660</td>
<td>0.210</td>
<td>0.545 + j0.278</td>
<td>132 + 219 + 219</td>
</tr>
<tr>
<td>AL420U79-020</td>
<td>799 lb</td>
<td>0.133</td>
<td>0.151</td>
<td>0.1006</td>
<td>0.0410</td>
<td>0.0542</td>
<td>0.166</td>
<td>0.0575</td>
<td>0.247</td>
<td>0.47 + j0.276</td>
<td>235 + 246 + 246</td>
</tr>
<tr>
<td>AL420U79-030</td>
<td>1007 lb</td>
<td>0.105</td>
<td>0.132</td>
<td>0.1257</td>
<td>0.0440</td>
<td>0.0474</td>
<td>0.1555</td>
<td>0.0803</td>
<td>0.251</td>
<td>0.458 + j0.255</td>
<td>288 + 275 + 275</td>
</tr>
<tr>
<td>AL420U79-040</td>
<td>1270 lb</td>
<td>0.084</td>
<td>0.105</td>
<td>0.1210</td>
<td>0.0472</td>
<td>0.0566</td>
<td>0.1447</td>
<td>0.0962</td>
<td>0.252</td>
<td>0.416 + j0.243</td>
<td>327 + 305 + 305</td>
</tr>
<tr>
<td>AL420U79-050</td>
<td>1500 lb</td>
<td>0.071</td>
<td>0.106</td>
<td>0.1180</td>
<td>0.0524</td>
<td>0.0645</td>
<td>0.1458</td>
<td>0.1055</td>
<td>0.264</td>
<td>0.404 + j0.232</td>
<td>367 + 343 + 343</td>
</tr>
<tr>
<td>AL420U79-060</td>
<td>1712 lb</td>
<td>0.059</td>
<td>0.101</td>
<td>0.1177</td>
<td>0.0565</td>
<td>0.0725</td>
<td>0.1397</td>
<td>0.1198</td>
<td>0.254</td>
<td>0.370 + j0.213</td>
<td>443 + 399 + 399</td>
</tr>
<tr>
<td>AL420U79-070</td>
<td>1920 lb</td>
<td>0.047</td>
<td>0.099</td>
<td>0.1055</td>
<td>0.0655</td>
<td>0.0826</td>
<td>0.1345</td>
<td>0.1306</td>
<td>0.246</td>
<td>0.309 + j0.193</td>
<td>529 + 451 + 451</td>
</tr>
<tr>
<td>AL420U79-080</td>
<td>2024 lb</td>
<td>0.042</td>
<td>0.097</td>
<td>0.0992</td>
<td>0.0719</td>
<td>0.0974</td>
<td>0.1227</td>
<td>0.1302</td>
<td>0.234</td>
<td>0.289 + j0.150</td>
<td>633 + 505 + 505</td>
</tr>
<tr>
<td>AL420U79-090</td>
<td>2100 lb</td>
<td>0.038</td>
<td>0.094</td>
<td>0.0925</td>
<td>0.0836</td>
<td>0.1057</td>
<td>0.1172</td>
<td>0.1320</td>
<td>0.219</td>
<td>0.264 + j0.143</td>
<td>711 + 544 + 544</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 ohm-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 D17 of the 2015 Canadian Electrical Code Part I