HVTECK AL 1/C 420EPR TS LSZH AIA LSZH SOLONON® 35KV 133% CSA

PRODUCT HIGHLIGHTS
Southwire’s 35KV HVTECK Solonon® low smoke zero halogen jacketed cable is a CSA armoured cable for industrial and commercial medium voltage applications. Rated FT4-ST1, -25°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: 0.42 inches (10.67mm) - 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
• 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)

Typical Print Legend
• (CSA) SOUTHWIRE [NESC] #P# [#AWG or #kcmil] CPT AL 420 EPR AIA 35KV 133% INS LEVEL 25% TS SUN RES 105° FT4-ST1 LSZH SOLONON HL (-25°C) LTTD RoHS YEAR [SEQUENTIAL METER MARKS]

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. Overall Weight of Cable**</th>
<th>Approx. Overall Weight of Cable (reel and cable)**</th>
<th>Min. Bend Radius</th>
<th>Maximum Reel Weight</th>
<th>Max. Reel Diameter / Width **</th>
<th>Maximum Cable Length on Reel **</th>
</tr>
</thead>
<tbody>
<tr>
<td>AL420G74-010</td>
<td>1/0(19)</td>
<td>0.336</td>
<td>8.5</td>
<td>1.206</td>
<td>30.6</td>
<td>1.286</td>
<td>32.7</td>
<td>1.436</td>
<td>37.2</td>
<td>1.786</td>
<td>45.4</td>
<td>22.9</td>
<td>561</td>
</tr>
<tr>
<td>AL420G74-020</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>
<td>23.5</td>
<td>596</td>
</tr>
<tr>
<td>AL420G74-030</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>
<td>24.0</td>
<td>611</td>
</tr>
<tr>
<td>AL420G74-040</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>40.8</td>
<td>1.935</td>
<td>49.1</td>
<td>24.7</td>
<td>626</td>
</tr>
<tr>
<td>AL420G74-250</td>
<td>250(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>
<td>25.3</td>
<td>643</td>
</tr>
<tr>
<td>AL420G74-350</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>1.716</td>
<td>43.1</td>
<td>1.936</td>
<td>49.2</td>
<td>27.2</td>
<td>691</td>
</tr>
<tr>
<td>AL420G74-500</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>
<td>29.0</td>
<td>736</td>
</tr>
<tr>
<td>AL420G74-750</td>
<td>750(31)</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>53.9</td>
<td>2.448</td>
<td>62.2</td>
<td>31.2</td>
<td>792</td>
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<tr>
<td>AL420G74-1000</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>2.700</td>
<td>66.0</td>
<td>33.0</td>
<td>838</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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**HVTECK SPECIFICATIONS**

**HVTECK AL 1/C 420EPR TS LSZH AIA LSZH SOLONON® 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 & Concentric Neutral Power Cable - 5 to 46 kV
- CSA C22.2 No. 174 - Cables in Hazardous Locations
- IEEE 1202 - Flame Test - (70,000 BTU/Hr. - Vertical Tray Test)
- 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 383 - Flame Test - (70,000 BTU/Hr.)
- ICEA T-29-520 - Vertical Cable Tray Flame Test - (210,000 BTU/Hr)
- CSA ST1 Smoke Test - marked FT4-ST1
- CSA SUN RES - for Sunlight Resistant rating
- CSA HL - for Hazardous Locations rating
- CSA FT4 - for Flame Retardancy rating
- CSA C22.2 No. 174 & No. 0.3 - Wire and Cable Test Methods
- CSA C22.2 No. 2556 & No. 0.3. - Wire and Cable Test Methods
- AEIC CS-8 - Qualification Testing Requirements

**Operating Temperatures**
- -25°C - CSA Cold Bend and Impact Temperature
- 0°C - Min. Installation Temperature
- 10°C - Max. Continuous Operating Temperature
- 105°C - Emergency Overload Temperature
- 250°C for Short Circuit Temperature

**TABLE 2 - ENGINEERING SPECIFICATIONS**

<table>
<thead>
<tr>
<th>HVTECK Product Code</th>
<th>Maximum Pulling Tension</th>
<th>DC Resistance @ 25°C $R_D$</th>
<th>AC Resistance @ 60°C (triplex formation) $R_{AC}$</th>
<th>Inductance $L$</th>
<th>Capacitance $C$</th>
<th>Inductive Reactance @ 60Hz (triplexed) $X_L$</th>
<th>Capacitive Reactance @ 60Hz (triplexed) $X_C$</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 Cable Tray</th>
<th>Allowable Ampacities Directly Buried in Earth†</th>
</tr>
</thead>
<tbody>
<tr>
<td>AL42G74-010</td>
<td>634</td>
<td>0.168</td>
<td>0.551</td>
<td>0.211</td>
<td>0.693</td>
<td>0.1355</td>
<td>0.4445</td>
<td>0.0385</td>
<td>0.1262</td>
<td>0.0511</td>
<td>0.1676</td>
<td>0.0690</td>
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<tr>
<td>AL42G74-020</td>
<td>799</td>
<td>0.133</td>
<td>0.436</td>
<td>0.167</td>
<td>0.549</td>
<td>0.1306</td>
<td>0.4286</td>
<td>0.0410</td>
<td>0.1346</td>
<td>0.0492</td>
<td>0.1616</td>
<td>0.0647</td>
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<tr>
<td>AL42G74-030</td>
<td>1007</td>
<td>0.105</td>
<td>0.345</td>
<td>0.132</td>
<td>0.433</td>
<td>0.1257</td>
<td>0.4124</td>
<td>0.0440</td>
<td>0.1443</td>
<td>0.0474</td>
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<td>0.0803</td>
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<tr>
<td>AL42G74-040</td>
<td>1270</td>
<td>0.084</td>
<td>0.274</td>
<td>0.105</td>
<td>0.345</td>
<td>0.1210</td>
<td>0.3971</td>
<td>0.0472</td>
<td>0.1549</td>
<td>0.0462</td>
<td>0.1497</td>
<td>0.0562</td>
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<tr>
<td>AL42G74-050</td>
<td>1500</td>
<td>0.071</td>
<td>0.232</td>
<td>0.089</td>
<td>0.292</td>
<td>0.1180</td>
<td>0.3670</td>
<td>0.0486</td>
<td>0.1629</td>
<td>0.0445</td>
<td>0.1459</td>
<td>0.0535</td>
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<tr>
<td>AL42G74-350</td>
<td>2100</td>
<td>0.051</td>
<td>0.166</td>
<td>0.084</td>
<td>0.209</td>
<td>0.1117</td>
<td>0.3664</td>
<td>0.0554</td>
<td>0.1817</td>
<td>0.0421</td>
<td>0.1381</td>
<td>0.0479</td>
</tr>
<tr>
<td>AL42G74-500</td>
<td>3000</td>
<td>0.035</td>
<td>0.116</td>
<td>0.045</td>
<td>0.147</td>
<td>0.1055</td>
<td>0.3462</td>
<td>0.0462</td>
<td>0.2050</td>
<td>0.0398</td>
<td>0.1305</td>
<td>0.0424</td>
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<tr>
<td>AL42G74-750</td>
<td>4520</td>
<td>0.024</td>
<td>0.077</td>
<td>0.030</td>
<td>0.089</td>
<td>0.0962</td>
<td>0.3255</td>
<td>0.0719</td>
<td>0.2360</td>
<td>0.0374</td>
<td>0.1227</td>
<td>0.0369</td>
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<tr>
<td>AL42G74-1000</td>
<td>6000</td>
<td>0.018</td>
<td>0.058</td>
<td>0.023</td>
<td>0.075</td>
<td>0.0847</td>
<td>0.3108</td>
<td>0.0803</td>
<td>0.2645</td>
<td>0.0357</td>
<td>0.1172</td>
<td>0.0329</td>
</tr>
</tbody>
</table>

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

† Ampacities are based on Table D17M of the 2015 Canadian Electrical Code Part I

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

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