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: 0.345 inches (8.76mm) - 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

Overall Jacket
- Black - Low Smoke Zero Halogen XLPE Solonon® jacket
- Nominal Thickness:
  - No.1 AWG to 350 kcmil = 0.08 inches (2.03mm)
  - 500 kcmil to 750 kcmil = 0.11 inches (2.79mm)

Typical Print Legend
- (CSA) SOUTHWIRE [NESC] #P# [#AWG or #kcmil] CPT AL 345 EPR 28KV 133% INS LEVEL 25% TS SUN RES TC-ER 105° FT4-ST1 LSZH SOLONON (-25°C) LTDD RoHS YEAR [SEQUENTIAL METER MARKS]

TABLE 1 - WEIGHTS & MEASUREMENTS

<table>
<thead>
<tr>
<th>HVTC Product Code</th>
<th>Conductor Size *</th>
<th>Conductor Diameter</th>
<th>Diameter Over Insulation</th>
<th>Diameter Over Insulation Shield</th>
<th>Approx. Overall Diameter</th>
<th>Approx. Overall Shield Diameter</th>
<th>Minimum Bend Radius</th>
<th>Approx. Weight of Cable</th>
<th>Max. Reel Weight (cable and cable) **</th>
<th>Max. Reel Diameter / Width **</th>
<th>Max. Length of Cable on Reel **</th>
</tr>
</thead>
<tbody>
<tr>
<td>AL34SP71-001</td>
<td>1(19)</td>
<td>0.299</td>
<td>7.6</td>
<td>1.019</td>
<td>25.9</td>
<td>1.099</td>
<td>27.9</td>
<td>1.279</td>
<td>32.5</td>
<td>15.3</td>
<td>390</td>
</tr>
<tr>
<td>AL34SP71-010</td>
<td>1/0(19)</td>
<td>0.336</td>
<td>8.5</td>
<td>1.056</td>
<td>26.8</td>
<td>1.136</td>
<td>28.9</td>
<td>1.316</td>
<td>33.4</td>
<td>15.8</td>
<td>401</td>
</tr>
<tr>
<td>AL34SP71-020</td>
<td>2/0(19)</td>
<td>0.376</td>
<td>9.6</td>
<td>1.096</td>
<td>27.8</td>
<td>1.176</td>
<td>29.9</td>
<td>1.356</td>
<td>34.4</td>
<td>16.3</td>
<td>413</td>
</tr>
<tr>
<td>AL34SP71-030</td>
<td>3/0(19)</td>
<td>0.423</td>
<td>10.7</td>
<td>1.143</td>
<td>29.0</td>
<td>1.223</td>
<td>31.1</td>
<td>1.403</td>
<td>35.6</td>
<td>16.8</td>
<td>428</td>
</tr>
<tr>
<td>AL34SP71-040</td>
<td>4/0(19)</td>
<td>0.475</td>
<td>12.1</td>
<td>1.195</td>
<td>30.4</td>
<td>1.275</td>
<td>32.4</td>
<td>1.455</td>
<td>37.0</td>
<td>17.5</td>
<td>443</td>
</tr>
<tr>
<td>AL34SP71-050</td>
<td>6/0(19)</td>
<td>0.520</td>
<td>13.2</td>
<td>1.250</td>
<td>31.8</td>
<td>1.330</td>
<td>33.8</td>
<td>1.510</td>
<td>39.4</td>
<td>18.1</td>
<td>460</td>
</tr>
<tr>
<td>AL34SP71-060</td>
<td>8/0(19)</td>
<td>0.561</td>
<td>14.6</td>
<td>1.316</td>
<td>34.2</td>
<td>1.416</td>
<td>36.2</td>
<td>1.606</td>
<td>40.8</td>
<td>19.3</td>
<td>490</td>
</tr>
<tr>
<td>AL34SP71-070</td>
<td>10/0(19)</td>
<td>0.616</td>
<td>15.6</td>
<td>1.384</td>
<td>34.6</td>
<td>1.516</td>
<td>38.2</td>
<td>1.796</td>
<td>45.4</td>
<td>21.4</td>
<td>544</td>
</tr>
<tr>
<td>AL34SP71-080</td>
<td>12/0(19)</td>
<td>0.676</td>
<td>16.7</td>
<td>1.456</td>
<td>35.2</td>
<td>1.616</td>
<td>40.0</td>
<td>1.986</td>
<td>50.0</td>
<td>23.6</td>
<td>600</td>
</tr>
<tr>
<td>AL34SP71-090</td>
<td>16/0(19)</td>
<td>0.790</td>
<td>18.1</td>
<td>1.546</td>
<td>37.3</td>
<td>1.728</td>
<td>43.9</td>
<td>2.176</td>
<td>54.5</td>
<td>26.0</td>
<td>780</td>
</tr>
</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.

© 2016 Southwire Company, LLC. All Rights Reserved.
### HVTC AL 1/C 345EPR TS LSZH SOLONON® 28KV 133% CSA

#### DESIGN

**Qualification Standards**
- CSA C68.10 - Shielded Power Cables for Commercial and Industrial Applications - 5 to 46 kV
- CSA C68.3 - Shielded & Conzonic Neutral Power Cable - 5 to 46 kV
- CSA C22.2 No. 230 - Tray Cables
- ICEA S-93-639 (NEMA WC 74) 5 to 46 kV - Shielded Power Cable
- AIEC CS-8 - Qualification Testing Requirements

**Flame Test Ratings**
- FT1 - Flame Test - (1,706 BTU/Hr./ft. nominal - Vertical Wire Flame Test)
- FT4, Flame Test - (70,000 BTU/Hr. - Vertical Tray Flame Test)
- IEEE 1202 - Flame Test - (70,000 BTU/Hr./ft. - Vertical Tray Test)
- IEEE 383 - Flame Test - (70,000 BTU/Hr.)
- IEEE P-29-520 - Vertical Cable Tray Flame Test - (210,000 BTU/Hr.)
- CSA ST1 Smoke Test - marked FT4-ST1
- CSA C22.2 No. 2556 & No. 0.3. - Wire and Cable Test Methods

**Operating Temperatures**
- -25°C - CSA Cold Bend and Impact Temperature
- -10°C - Min. Installation Temperature
- 105°C - Max. Continuous Operating Temperature
- 140°C for Emergency Overload Temperature
- 250°C for Short Circuit Temperature
- 110°C for 5 to 46 kV
- 15.5°C for 500 kV
- 22°C for 69 kV
- 10°C for 93 kV
- 7°C for 145 kV
- 5°C for 230 kV
- 2°C for 345 kV
- 0°C for 520 kV
- -25°C - CSA Cold Bend and Impact Temperature

### TABLE 2 - ENGINEERING SPECIFICATIONS

<table>
<thead>
<tr>
<th>HVTC Product Code</th>
<th>Maximum Pulling Tension</th>
<th>DC Resistance @ 25°C</th>
<th>AC Resistance @ 30°C/60 Hz(3-co)</th>
<th>Reactance @ 60 Hz</th>
<th>Inductive Reactance</th>
<th>Capacitive Reactance</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 in Earth</th>
</tr>
</thead>
<tbody>
<tr>
<td>AL345P71-001</td>
<td>502</td>
<td>0.211</td>
<td>0.265</td>
<td>0.0201</td>
<td>0.0499</td>
<td>0.1637</td>
<td>0.0662</td>
<td>0.0202</td>
<td>0.266 + j0.055</td>
<td>0.620 + j0.325</td>
<td>7.3</td>
</tr>
<tr>
<td>AL345P71-010</td>
<td>634</td>
<td>0.168</td>
<td>0.211</td>
<td>0.0533</td>
<td>0.0480</td>
<td>0.1576</td>
<td>0.0618</td>
<td>0.0188</td>
<td>0.212 + j0.053</td>
<td>0.563 + j0.312</td>
<td>4.7</td>
</tr>
<tr>
<td>AL345P71-020</td>
<td>799</td>
<td>0.133</td>
<td>0.167</td>
<td>0.0579</td>
<td>0.0463</td>
<td>0.1519</td>
<td>0.0577</td>
<td>0.0176</td>
<td>0.168 + j0.051</td>
<td>0.515 + j0.301</td>
<td>5.9</td>
</tr>
<tr>
<td>AL345P71-030</td>
<td>1007</td>
<td>0.185</td>
<td>0.132</td>
<td>0.0493</td>
<td>0.0446</td>
<td>0.1462</td>
<td>0.0537</td>
<td>0.0164</td>
<td>0.133 + j0.049</td>
<td>0.476 + j0.286</td>
<td>7.4</td>
</tr>
<tr>
<td>AL345P71-040</td>
<td>1270</td>
<td>0.105</td>
<td>0.234</td>
<td>0.0113</td>
<td>0.0409</td>
<td>0.1408</td>
<td>0.0498</td>
<td>0.0152</td>
<td>0.106 + j0.047</td>
<td>0.444 + j0.272</td>
<td>9.4</td>
</tr>
<tr>
<td>AL345P71-050</td>
<td>1500</td>
<td>0.084</td>
<td>0.274</td>
<td>0.0105</td>
<td>0.0397</td>
<td>0.1374</td>
<td>0.0473</td>
<td>0.0144</td>
<td>0.080 + j0.048</td>
<td>0.422 + j0.256</td>
<td>11.1</td>
</tr>
<tr>
<td>AL345P71-060</td>
<td>1720</td>
<td>0.075</td>
<td>0.287</td>
<td>0.0102</td>
<td>0.0397</td>
<td>0.1374</td>
<td>0.0473</td>
<td>0.0144</td>
<td>0.080 + j0.048</td>
<td>0.422 + j0.256</td>
<td>11.1</td>
</tr>
<tr>
<td>AL345P71-070</td>
<td>1940</td>
<td>0.064</td>
<td>0.274</td>
<td>0.0105</td>
<td>0.0397</td>
<td>0.1374</td>
<td>0.0473</td>
<td>0.0144</td>
<td>0.080 + j0.048</td>
<td>0.422 + j0.256</td>
<td>11.1</td>
</tr>
<tr>
<td>AL345P71-080</td>
<td>2100</td>
<td>0.051</td>
<td>0.262</td>
<td>0.0102</td>
<td>0.0397</td>
<td>0.1374</td>
<td>0.0473</td>
<td>0.0144</td>
<td>0.080 + j0.048</td>
<td>0.422 + j0.256</td>
<td>11.1</td>
</tr>
<tr>
<td>AL345P71-090</td>
<td>2250</td>
<td>0.043</td>
<td>0.247</td>
<td>0.0105</td>
<td>0.0397</td>
<td>0.1374</td>
<td>0.0473</td>
<td>0.0144</td>
<td>0.080 + j0.048</td>
<td>0.422 + j0.256</td>
<td>11.1</td>
</tr>
<tr>
<td>AL345P71-100</td>
<td>2400</td>
<td>0.035</td>
<td>0.223</td>
<td>0.0099</td>
<td>0.0397</td>
<td>0.1374</td>
<td>0.0473</td>
<td>0.0144</td>
<td>0.080 + j0.048</td>
<td>0.422 + j0.256</td>
<td>11.1</td>
</tr>
<tr>
<td>AL345P71-110</td>
<td>2550</td>
<td>0.024</td>
<td>0.207</td>
<td>0.0089</td>
<td>0.0397</td>
<td>0.1374</td>
<td>0.0473</td>
<td>0.0144</td>
<td>0.080 + j0.048</td>
<td>0.422 + j0.256</td>
<td>11.1</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

*** For use in cable trays, exposed run and hazardous locations as per the limitations in the Canadian Electrical Code Part I, particularly Table 19.