**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: 0.09 inches (2.29mm) - nominal
  - Insulation level: 100% - grounded system
  - 105°C rated

- **Insulation Shield**
  - Extruded Semi-conducting thermosetting polymeric layer
  - Meets requirement of ICEA but built to CSA standards

- **Copper Tape Shield**
  - Metallically 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.2 AWG to No.2/0 AWG = 0.06 inches (1.52mm)
    - No.3/0 AWG to 1000 kcmil = 0.08 inches (2.03mm)
  - Rated for installation in cable trays, duct banks, direct burial, troughs, continuous rigid cable supports and concrete encasement. For use in cable trays, exposed run and hazardous locations as per the limitations in the Canadian Electrical Code Part I, particularly Table 19.

**PRODUCT HIGHLIGHTS**

Southwire's 5KV Solonon® low smoke zero halogen jacketed cable is a CSA approved copper tape shielded cable for industrial and commercial medium voltage applications. FT4-ST1, -25°C, and 105°C rated for use in harsh Canadian environments. Rated for installation in cable trays, duct banks, direct burial, troughs, continuous rigid cable supports and concrete encasement. For use in cable trays, exposed run and hazardous locations as per the limitations in the Canadian Electrical Code Part I, particularly Table 19.

**TABLE 1 - WEIGHTS & MEASUREMENTS**

<table>
<thead>
<tr>
<th>Product Code</th>
<th>AWG or Kcmil</th>
<th>Diameter Over Insulation</th>
<th>Diameter Over Insulation Shield</th>
<th>Approx. Overall Diameter</th>
<th>Approx. Overall Shield Diameter</th>
<th>Approx. Overall Weight</th>
<th>Approx. Weight of Cable</th>
<th>Minimum Bend Radius</th>
<th>Approx. Weight of Cable on Reel</th>
<th>Max. Reel Weight</th>
<th>Max. Reel Diameter / Width</th>
<th>Max. Length of Cable on Reel</th>
</tr>
</thead>
<tbody>
<tr>
<td>AL90270-002</td>
<td>2</td>
<td>0.268</td>
<td>6.8</td>
<td>0.478</td>
<td>12.1</td>
<td>0.558</td>
<td>14.2</td>
<td>0.698</td>
<td>17.7</td>
<td>8.4</td>
<td>213</td>
<td>276</td>
</tr>
<tr>
<td>AL90270-001</td>
<td>1</td>
<td>0.299</td>
<td>7.6</td>
<td>0.509</td>
<td>12.9</td>
<td>0.589</td>
<td>15.0</td>
<td>0.729</td>
<td>18.5</td>
<td>8.7</td>
<td>222</td>
<td>305</td>
</tr>
<tr>
<td>AL90270-010</td>
<td>1/0 (19)</td>
<td>0.336</td>
<td>8.5</td>
<td>0.546</td>
<td>13.9</td>
<td>0.626</td>
<td>15.9</td>
<td>0.766</td>
<td>19.5</td>
<td>9.2</td>
<td>233</td>
<td>341</td>
</tr>
<tr>
<td>AL90270-020</td>
<td>2/0 (19)</td>
<td>0.376</td>
<td>9.6</td>
<td>0.586</td>
<td>14.9</td>
<td>0.666</td>
<td>16.9</td>
<td>0.806</td>
<td>20.5</td>
<td>9.7</td>
<td>246</td>
<td>384</td>
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<td>AL90270-030</td>
<td>3/0 (19)</td>
<td>0.423</td>
<td>10.7</td>
<td>0.633</td>
<td>16.1</td>
<td>0.713</td>
<td>18.1</td>
<td>0.853</td>
<td>22.7</td>
<td>10.7</td>
<td>272</td>
<td>472</td>
</tr>
<tr>
<td>AL90270-040</td>
<td>4/0 (19)</td>
<td>0.475</td>
<td>12.1</td>
<td>0.685</td>
<td>17.4</td>
<td>0.765</td>
<td>19.4</td>
<td>0.945</td>
<td>24.0</td>
<td>11.3</td>
<td>288</td>
<td>537</td>
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<td>AL90270-250</td>
<td>250(37)</td>
<td>0.520</td>
<td>13.2</td>
<td>0.740</td>
<td>18.8</td>
<td>0.820</td>
<td>20.8</td>
<td>1.000</td>
<td>25.4</td>
<td>12.0</td>
<td>305</td>
<td>602</td>
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<tr>
<td>AL90270-350</td>
<td>350(37)</td>
<td>0.616</td>
<td>15.6</td>
<td>0.826</td>
<td>21.2</td>
<td>0.916</td>
<td>23.3</td>
<td>1.086</td>
<td>27.8</td>
<td>13.2</td>
<td>334</td>
<td>741</td>
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<tr>
<td>AL90270-500</td>
<td>500(37)</td>
<td>0.736</td>
<td>18.7</td>
<td>0.956</td>
<td>24.3</td>
<td>1.036</td>
<td>26.3</td>
<td>1.216</td>
<td>30.9</td>
<td>14.6</td>
<td>371</td>
<td>938</td>
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<tr>
<td>AL90270-750</td>
<td>750(37)</td>
<td>0.908</td>
<td>23.1</td>
<td>1.138</td>
<td>28.9</td>
<td>1.218</td>
<td>30.9</td>
<td>1.398</td>
<td>35.5</td>
<td>16.8</td>
<td>426</td>
<td>1266</td>
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<tr>
<td>AL90270-1000</td>
<td>1000(61)</td>
<td>1.060</td>
<td>26.9</td>
<td>1.290</td>
<td>32.8</td>
<td>1.370</td>
<td>34.8</td>
<td>1.550</td>
<td>39.4</td>
<td>18.6</td>
<td>472</td>
<td>1572</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.
### HVTC AL 1/C 90EPR TS LSZH SOLONON® 5KV 100% CSA

#### Design

**Qualification Standards**
- CSA C68.10 - Shielded Power Cables for Commercial and Industrial Applications - 5 to 46 kV
- CSA C68.3 - Shielded & Conctronic Neutral Power Cable - 5 to 46 kV
- CSA C22.2 No. 230 - Tray Cables
- IEEE 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.)
- CSA ST1 Smoke Test - marked FT-ST1

**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

### Table 2 - Engineering Specifications

<table>
<thead>
<tr>
<th>HVTC Product Code</th>
<th>Maximum Pulling Tension (lb Newtons)</th>
<th>DC Resistance @ 20°C (Ω/km)</th>
<th>AC Resistance @ 90°C 60 Hz (triplex formation) (Ω/km)</th>
<th>Inductance (L) (mH/1000 ft.)</th>
<th>Capacitance (C) (Ω/km)</th>
<th>Inductive Reactance @ 60Hz (triplexed) (R) (Ω/km)</th>
<th>Capacitive Reactance @ 60Hz (triplxed) (X) (Ω/km)</th>
<th>Positive - Sequence Impedance*</th>
<th>Zero - Sequence Impedance*</th>
<th>Short Circuit Current (each phase conductor) @ 60Hz (kAmps)</th>
<th>Allowable Ampacities in Ventilated Cable Tray 1</th>
<th>Allowable Ampacities Directly Buried in Earth 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>AL90270-002</td>
<td>398</td>
<td>0.269</td>
<td>0.869</td>
<td>0.333</td>
<td>1.093</td>
<td>0.0926</td>
<td>0.0346</td>
<td>0.0849</td>
<td>0.278</td>
<td>0.0350</td>
<td>0.0114</td>
<td>0.0052</td>
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<tr>
<td>AL90270-001</td>
<td>502</td>
<td>0.211</td>
<td>0.692</td>
<td>0.265</td>
<td>0.870</td>
<td>0.0900</td>
<td>0.2953</td>
<td>0.0924</td>
<td>0.3031</td>
<td>0.0339</td>
<td>0.1113</td>
<td>0.0287</td>
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<tr>
<td>AL90270-010</td>
<td>634</td>
<td>0.168</td>
<td>0.551</td>
<td>0.211</td>
<td>0.693</td>
<td>0.0872</td>
<td>0.2860</td>
<td>0.1012</td>
<td>0.3231</td>
<td>0.0329</td>
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<td>0.0282</td>
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<td>AL90270-020</td>
<td>799</td>
<td>0.133</td>
<td>0.436</td>
<td>0.167</td>
<td>0.549</td>
<td>0.0846</td>
<td>0.2776</td>
<td>0.1108</td>
<td>0.3634</td>
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<td>AL90270-030</td>
<td>1007</td>
<td>0.105</td>
<td>0.345</td>
<td>0.132</td>
<td>0.433</td>
<td>0.0821</td>
<td>0.2695</td>
<td>0.1219</td>
<td>0.4000</td>
<td>0.0310</td>
<td>0.1016</td>
<td>0.0218</td>
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<td>AL90270-040</td>
<td>1270</td>
<td>0.084</td>
<td>0.274</td>
<td>0.105</td>
<td>0.345</td>
<td>0.0799</td>
<td>0.2621</td>
<td>0.1342</td>
<td>0.4044</td>
<td>0.0301</td>
<td>0.0988</td>
<td>0.0198</td>
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<tr>
<td>AL90270-050</td>
<td>1500</td>
<td>0.071</td>
<td>0.232</td>
<td>0.089</td>
<td>0.292</td>
<td>0.0791</td>
<td>0.2585</td>
<td>0.1393</td>
<td>0.4570</td>
<td>0.0298</td>
<td>0.0978</td>
<td>0.0190</td>
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<tr>
<td>AL90270-060</td>
<td>2100</td>
<td>0.051</td>
<td>0.168</td>
<td>0.084</td>
<td>0.209</td>
<td>0.0762</td>
<td>0.2500</td>
<td>0.1669</td>
<td>0.5280</td>
<td>0.0297</td>
<td>0.0942</td>
<td>0.0165</td>
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<tr>
<td>AL90270-070</td>
<td>3000</td>
<td>0.035</td>
<td>0.116</td>
<td>0.045</td>
<td>0.142</td>
<td>0.0743</td>
<td>0.2412</td>
<td>0.1879</td>
<td>0.6166</td>
<td>0.0277</td>
<td>0.0909</td>
<td>0.0141</td>
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<tr>
<td>AL90270-080</td>
<td>4520</td>
<td>0.024</td>
<td>0.077</td>
<td>0.030</td>
<td>0.100</td>
<td>0.0713</td>
<td>0.2340</td>
<td>0.2177</td>
<td>0.7142</td>
<td>0.0269</td>
<td>0.0882</td>
<td>0.0122</td>
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<td>AL90270-090</td>
<td>6000</td>
<td>0.018</td>
<td>0.058</td>
<td>0.023</td>
<td>0.077</td>
<td>0.0685</td>
<td>0.2282</td>
<td>0.2503</td>
<td>0.8211</td>
<td>0.0262</td>
<td>0.0860</td>
<td>0.0106</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

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

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