**PRODUCT HIGHLIGHTS**
Southwire’s 15KV HVTC is a CSA approved copper tape shielded cable for Industrial and Commercial medium voltage applications. FT4, -40°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 encasable. For use in cable trays, exposed run and hazardous locations as per the limitations in the Canadian Electrical Code Part I, particularly Table 19.

**CONSTRUCTION**

**Conductor**
- Class B – compact stranded -8000 Series Aluminum -ACM
- 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**
- TR-XLPE - (Tree Retardent Cross Linked Polyethylene)
- Thickness: 0.22 inches (5.59mm) - 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**
- Red PVC (optional colours available)
- Nominal Thickness:
  - No.2 AWG to 750 kcmil = 0.08 inches (2.03mm)
  - 1000 kcmil = 0.11 inches (2.79mm)

**Typical Print Legend**
- (CSA) SOUTHWIRE [NESC] #P# [#AWG or #kcmil] CPT AL 220 TRXLPE 15KV 133% INS LEVEL 25% TS SUN RES TC-ER 105° FT4 (-40°C) LTGG RoHS YEAR [SEQUENTIAL METER MARKS]

### TABLE 1 - WEIGHTS & MEASUREMENTS

<table>
<thead>
<tr>
<th>HVTC Product Code</th>
<th>AWG or Kcmil</th>
<th>Conductor Diameter</th>
<th>Diameter Over Insulation</th>
<th>Diameter Over Insulation Shield</th>
<th>Approx. Overall Diameter</th>
<th>Approx. Weight of Cable</th>
<th>Max. Reel Weight (reel and cable)**</th>
<th>Max. Reel Diameter / Width **</th>
<th>Max. Length of Cable on Reel **</th>
</tr>
</thead>
<tbody>
<tr>
<td>AL220X3-002</td>
<td>2(7)</td>
<td>0.268 6.8</td>
<td>0.738 18.7</td>
<td>0.818 20.8</td>
<td>0.998 25.3</td>
<td>461 667</td>
<td>2968 3146</td>
<td>62/42</td>
<td>1346 72/42</td>
</tr>
<tr>
<td>AL220X3-001</td>
<td>1(19)</td>
<td>0.299 7.6</td>
<td>0.769 19.5</td>
<td>0.849 21.6</td>
<td>1.029 26.1</td>
<td>496 738</td>
<td>3175 1440</td>
<td>68/42</td>
<td>1829 72/42</td>
</tr>
<tr>
<td>AL220X3-010</td>
<td>1/0(19)</td>
<td>0.336 8.5</td>
<td>0.806 20.5</td>
<td>0.886 22.5</td>
<td>1.106 28.1</td>
<td>538 801</td>
<td>3979 1805</td>
<td>78/54</td>
<td>1829 72/42</td>
</tr>
<tr>
<td>AL220X3-020</td>
<td>2/0(19)</td>
<td>0.376 9.6</td>
<td>0.846 21.5</td>
<td>0.926 23.5</td>
<td>1.166 29.1</td>
<td>588 874</td>
<td>4276 1939</td>
<td>78/54</td>
<td>1829 72/42</td>
</tr>
<tr>
<td>AL220X3-030</td>
<td>3/0(19)</td>
<td>0.423 10.7</td>
<td>0.893 22.7</td>
<td>0.973 24.7</td>
<td>1.153 29.3</td>
<td>648 964</td>
<td>4636 2103</td>
<td>78/54</td>
<td>1829 72/42</td>
</tr>
<tr>
<td>AL220X3-040</td>
<td>4/0(19)</td>
<td>0.475 12.1</td>
<td>0.945 24.0</td>
<td>1.025 26.0</td>
<td>1.205 30.6</td>
<td>719 1071</td>
<td>5067 2298</td>
<td>78/54</td>
<td>1829 72/42</td>
</tr>
<tr>
<td>AL220X3-250</td>
<td>250(37)</td>
<td>0.520 13.2</td>
<td>1.000 25.4</td>
<td>1.080 27.4</td>
<td>1.360 32.0</td>
<td>792 1178</td>
<td>5501 2495</td>
<td>78/54</td>
<td>1829 72/42</td>
</tr>
<tr>
<td>AL220X3-350</td>
<td>350(37)</td>
<td>0.616 15.6</td>
<td>1.096 27.8</td>
<td>1.176 29.9</td>
<td>1.476 34.4</td>
<td>943 1403</td>
<td>6815 3091</td>
<td>96/54.5</td>
<td>1829 72/42</td>
</tr>
<tr>
<td>AL220X3-500</td>
<td>500(37)</td>
<td>0.736 18.7</td>
<td>1.216 30.9</td>
<td>1.296 32.9</td>
<td>1.77 37.5</td>
<td>1155 1718</td>
<td>9087 3698</td>
<td>96/54.5</td>
<td>1829 72/42</td>
</tr>
<tr>
<td>AL220X3-750</td>
<td>750(61)</td>
<td>0.908 23.1</td>
<td>1.396 35.5</td>
<td>1.478 37.5</td>
<td>1.99 42.1</td>
<td>1505 2240</td>
<td>10374 4706</td>
<td>104/56.5</td>
<td>1829 72/42</td>
</tr>
<tr>
<td>AL220X3-1000</td>
<td>1000(61)</td>
<td>1.060 26.9</td>
<td>1.550 39.4</td>
<td>1.630 41.4</td>
<td>2.16 47.5</td>
<td>1934 2878</td>
<td>13159 5968</td>
<td>108/70.5</td>
<td>1829 72/42</td>
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</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 Specifications

#### HVTC AL 1/C 220TRXLPE TS PVC 15KV 133% CSA

**Design**

- 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. 230 - Tray Cables
- 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 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/Hr)

**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

**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 FT4 - for Flame Retardancy rating
- CSA SUN RES - for Sunlight Resistant rating
- CSA TC-ER (marked TC for No. 1/0 AWG and larger)***

**Table 2 - Engineering Specifications**

<table>
<thead>
<tr>
<th>HVTC Product Code</th>
<th>Maximum Pulling Tension</th>
<th>DC Resistance @ 25°C (Ω/1000 ft)</th>
<th>AC Resistance @ 90°C 60Hz (triplex formation) (Ω/km)</th>
<th>Inductance (L)</th>
<th>Capacitance (C)</th>
<th>Inductive Reactance @ 60Hz (triplexed) (X)</th>
<th>Capacitive Reactance @ 60Hz (triplexed) (X)</th>
<th>Positive - Sequence Impedance (Ω)</th>
<th>Zero - Sequence Impedance (Ω)</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>AL220X3-002</td>
<td>398</td>
<td>0.265</td>
<td>0.333</td>
<td>1.093</td>
<td>0.3915</td>
<td>0.0385</td>
<td>0.1263</td>
<td>0.0450</td>
<td>0.1476</td>
<td>0.0689</td>
<td>0.0210</td>
<td>0.334 + j0.052</td>
</tr>
<tr>
<td>AL220X3-001</td>
<td>502</td>
<td>0.211</td>
<td>0.265</td>
<td>0.679</td>
<td>0.1112</td>
<td>0.0413</td>
<td>0.1354</td>
<td>0.0434</td>
<td>0.1424</td>
<td>0.0643</td>
<td>0.0196</td>
<td>0.212 + j0.048</td>
</tr>
<tr>
<td>AL220X3-010</td>
<td>634</td>
<td>0.168</td>
<td>0.211</td>
<td>0.694</td>
<td>0.1109</td>
<td>0.0418</td>
<td>0.1372</td>
<td>0.0595</td>
<td>0.1324</td>
<td>0.0659</td>
<td>0.0196</td>
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<tr>
<td>AL220X3-020</td>
<td>799</td>
<td>0.133</td>
<td>0.167</td>
<td>0.549</td>
<td>0.1070</td>
<td>0.0418</td>
<td>0.1372</td>
<td>0.0595</td>
<td>0.1324</td>
<td>0.0659</td>
<td>0.0196</td>
<td>0.212 + j0.048</td>
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<td>AL220X3-030</td>
<td>1007</td>
<td>0.105</td>
<td>0.132</td>
<td>0.433</td>
<td>0.1031</td>
<td>0.0384</td>
<td>0.1276</td>
<td>0.0509</td>
<td>0.1346</td>
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<td>0.168 + j0.046</td>
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<tr>
<td>AL220X3-040</td>
<td>1270</td>
<td>0.084</td>
<td>0.274</td>
<td>0.345</td>
<td>0.0995</td>
<td>0.0365</td>
<td>0.1231</td>
<td>0.0468</td>
<td>0.1346</td>
<td>0.0659</td>
<td>0.0193</td>
<td>0.168 + j0.046</td>
</tr>
<tr>
<td>AL220X3-050</td>
<td>1500</td>
<td>0.071</td>
<td>0.232</td>
<td>0.292</td>
<td>0.0874</td>
<td>0.0389</td>
<td>0.1205</td>
<td>0.0446</td>
<td>0.1326</td>
<td>0.0646</td>
<td>0.0193</td>
<td>0.168 + j0.046</td>
</tr>
<tr>
<td>AL220X3-060</td>
<td>1800</td>
<td>0.057</td>
<td>0.168</td>
<td>0.209</td>
<td>0.0821</td>
<td>0.0301</td>
<td>0.1147</td>
<td>0.0392</td>
<td>0.1019</td>
<td>0.0646</td>
<td>0.0193</td>
<td>0.168 + j0.046</td>
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<tr>
<td>AL220X3-070</td>
<td>2100</td>
<td>0.051</td>
<td>0.116</td>
<td>0.147</td>
<td>0.0882</td>
<td>0.0271</td>
<td>0.0960</td>
<td>0.0332</td>
<td>0.0918</td>
<td>0.0646</td>
<td>0.0193</td>
<td>0.168 + j0.046</td>
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<tr>
<td>AL220X3-080</td>
<td>26689</td>
<td>0.018</td>
<td>0.077</td>
<td>0.030</td>
<td>0.0839</td>
<td>0.0275</td>
<td>0.0903</td>
<td>0.0316</td>
<td>0.1038</td>
<td>0.0646</td>
<td>0.0193</td>
<td>0.168 + j0.046</td>
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<tr>
<td>AL220X3-1000</td>
<td>6000</td>
<td>0.058</td>
<td>0.023</td>
<td>0.076</td>
<td>0.0807</td>
<td>0.0269</td>
<td>0.1026</td>
<td>0.0304</td>
<td>0.0999</td>
<td>0.0259</td>
<td>0.0079</td>
<td>0.024 + j0.035</td>
</tr>
</tbody>
</table>

* Calculations are based on three cables triplexed / 5 mil 25% over laying 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.