# HV XLPE Cable Data Sheet

**Description:** COPPER, XLPE, W/B, CSA, LLDPE, HIGH STRESS

**Voltage & Specification:** 76/132kV, SANS 60840/ NRS 077

**Water blocking:** Core is standard, conductor on request

## PHYSICAL DIMENSIONS:

<table>
<thead>
<tr>
<th>Description</th>
<th>300</th>
<th>400</th>
<th>500</th>
<th>630</th>
<th>800</th>
<th>1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conductor size mm²</td>
<td>300</td>
<td>400</td>
<td>500</td>
<td>630</td>
<td>800</td>
<td>1000</td>
</tr>
<tr>
<td>Conductor diameter mm</td>
<td>20.7</td>
<td>24.0</td>
<td>27.2</td>
<td>30.4</td>
<td>34.2</td>
<td>38.7</td>
</tr>
<tr>
<td>Diameter over s/c conductor screen mm</td>
<td>25.5</td>
<td>28.6</td>
<td>31.8</td>
<td>35.0</td>
<td>38.8</td>
<td>43.4</td>
</tr>
<tr>
<td>Diameter over XLPE insulation mm</td>
<td>58.6</td>
<td>60.0</td>
<td>63.4</td>
<td>67.2</td>
<td>71.4</td>
<td>76.5</td>
</tr>
<tr>
<td>Diameter over s/c core screen mm</td>
<td>61.3</td>
<td>62.7</td>
<td>66.1</td>
<td>70.1</td>
<td>74.3</td>
<td>79.4</td>
</tr>
<tr>
<td>Diameter over CSA sheath mm</td>
<td>80.9</td>
<td>82.3</td>
<td>85.8</td>
<td>89.9</td>
<td>94.3</td>
<td>99.7</td>
</tr>
<tr>
<td>Final diameter of cable (D) mm</td>
<td>94.1</td>
<td>95.5</td>
<td>99.0</td>
<td>103.1</td>
<td>107.5</td>
<td>112.9</td>
</tr>
<tr>
<td>Cable mass (approximate) kg/m</td>
<td>9.5</td>
<td>10.4</td>
<td>11.8</td>
<td>13.6</td>
<td>15.7</td>
<td>18.2</td>
</tr>
<tr>
<td>Gross mass (500 m) (approximate) kg</td>
<td>6000</td>
<td>6700</td>
<td>7100</td>
<td>8000</td>
<td>9050</td>
<td>10350</td>
</tr>
<tr>
<td>Minimum installation bending radius m</td>
<td>1.9</td>
<td>1.9</td>
<td>2.0</td>
<td>2.1</td>
<td>2.2</td>
<td>2.3</td>
</tr>
</tbody>
</table>

## RATINGS:

<table>
<thead>
<tr>
<th>Description</th>
<th>Trefoil</th>
<th>Flat (2D)</th>
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<th>Flat (2D)</th>
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<th>Flat (2D)</th>
<th>Trefoil</th>
<th>Flat (2D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current rating in ground Amps</td>
<td>535</td>
<td>572</td>
<td>605</td>
<td>652</td>
<td>678</td>
<td>738</td>
<td>756</td>
<td>833</td>
<td>831</td>
<td>930</td>
</tr>
<tr>
<td>Current rating in air Amps</td>
<td>741</td>
<td>839</td>
<td>855</td>
<td>979</td>
<td>977</td>
<td>1131</td>
<td>1109</td>
<td>1297</td>
<td>1245</td>
<td>1477</td>
</tr>
<tr>
<td>AC Resistance @ 90°C Ω/km</td>
<td>0.0779</td>
<td>0.0777</td>
<td>0.0616</td>
<td>0.0614</td>
<td>0.0489</td>
<td>0.0485</td>
<td>0.0389</td>
<td>0.0384</td>
<td>0.0318</td>
<td>0.0268</td>
</tr>
<tr>
<td>Reactance Ω/km</td>
<td>0.0120</td>
<td>0.1466</td>
<td>0.2047</td>
<td>0.1498</td>
<td>0.1989</td>
<td>0.1363</td>
<td>0.1944</td>
<td>0.1896</td>
<td>0.1267</td>
<td>0.1848</td>
</tr>
<tr>
<td>Impedance Ω/km</td>
<td>0.1734</td>
<td>0.2268</td>
<td>0.1590</td>
<td>0.2137</td>
<td>0.1491</td>
<td>0.2048</td>
<td>0.1418</td>
<td>0.1981</td>
<td>0.1353</td>
<td>0.1921</td>
</tr>
<tr>
<td>Sheath standing voltage (flat - centre phase) V/km</td>
<td>31.55</td>
<td>56.85</td>
<td>35.48</td>
<td>66.60</td>
<td>39.44</td>
<td>75.07</td>
<td>43.49</td>
<td>84.19</td>
<td>47.34</td>
<td>93.41</td>
</tr>
</tbody>
</table>

## ELECTRICAL PARAMETERS:

<table>
<thead>
<tr>
<th>Description</th>
<th>Ω/km</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC Resistance @ 20°C</td>
<td>0.0601</td>
</tr>
<tr>
<td>Max Electric stress at conductor screen kV/mm</td>
<td>7.2</td>
</tr>
<tr>
<td>Min Electric stress at insulation screen kV/mm</td>
<td>3.1</td>
</tr>
<tr>
<td>Capacitance µF/km</td>
<td>0.1671</td>
</tr>
<tr>
<td>Zero Sequence Resistance Ω/km</td>
<td>0.1279</td>
</tr>
<tr>
<td>Zero Sequence Reactance Ω/km</td>
<td>0.0960</td>
</tr>
<tr>
<td>Symmetrical fault rating (250°C) kA (1s)</td>
<td>43.1</td>
</tr>
<tr>
<td>Earth fault rating (150°C ) kA (1s)</td>
<td>48.0</td>
</tr>
</tbody>
</table>

Ratings above are based on standard laying conditions for a single circuit in isolation as follows:

- Soil thermal resistance = 1.2Km/W
- Soil temperature = 25°C
- Depth of burial = 1.2m
- Air temperature = 30°C
- Earthing = Cross bonded or single point bonded
- Tolerance on dimensions = ±5%