

# TECHNICAL DATA SHEET

## Section L – Downconductors

### LPI® High Voltage Shielded Cable



**Withstand Voltage of  $\geq 500kV$**

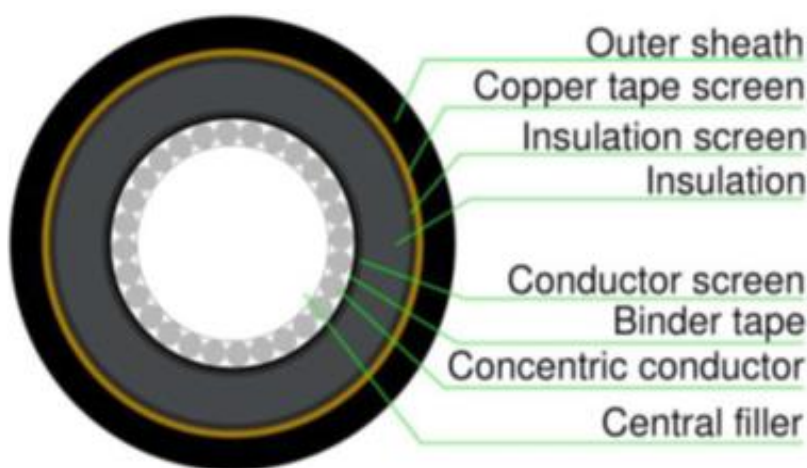
LPI’s “High Voltage Shielded Cable” (HVSC Plus) is a purpose-designed, high-integrity, low-impedance cable that is used to safely convey lightning currents to earth with minimal risk of side flashing or structure electrification. The design of the HVSC Plus incorporates carefully selected dielectric components to ensure optimum performance under the impulse or “transient” voltages and currents imposed by lightning discharges.

LPI’s new HVSC Plus provides improved features as a dedicated insulated lightning downconductor:

- Double the voltage withstand performance of past versions;
- 35% reduction in the mass per unit length of the cable;
- Improved manufacturing consistency via a continuous “triple extrusion” process;
- Reduced voltage stress via thin, semi-conductive screen layers; and
- Improved material parameters and performance.

The design of the cable is based on the optimisation of all of the key parameters associated with dealing with lightning discharges and the consequent voltage and current transients, including impedance, inductance, capacitance, insulation thickness (withstand voltage) and all of the relevant lightning statistics, plus practical aspects such as size, flexibility and mass.

**Figure 1:** Construction of the HVSC Plus lightning downconductor cable.



**HVSC Plus has been tested by a certified, independent high voltage laboratory located at Monash University, Australia.**

This Test Report is available on request to [info@lpi.com.au](mailto:info@lpi.com.au) or on our website [www.lpi.com.au](http://www.lpi.com.au)

**Product Ordering Code: HVSCPLUS-PM or HVSCPLUS-500**

## TECHNICAL DATA SHEET

## Physical Specifications of HVSC Plus:

<b>Mass per unit length</b>	1.34 kg/m
<b>Construction</b>	Triple extruded
<b>Concentric conductor material</b>	Aluminium
<b>Concentric conductor XSA</b>	≥ 50 mm <sup>2</sup>
<b>Insulation</b>	5 mm (nominal) of XLPE
<b>Metallic screen</b>	Copper tape
<b>Outer sheath</b>	3 mm (nominal) of PVC, UV Stabilised
<b>Cable diameter</b>	36 mm
<b>Min. bending radius <i>before</i> installation</b>	430 mm
<b>Min. bending radius <i>after</i> installation</b>	358 mm

## Electrical Specifications of HVSC Plus:

<b>Conductor DC resistance @ 20°C</b>	0.641 Ω/km
<b>Conductor DC resistance @ 90°C</b>	0.821 Ω/km
<b>Insulation resistance @ 20°C</b>	5000 MΩ
<b>Inductance</b>	93 nH/m
<b>Capacitance</b>	285 pF/m
<b>Impedance</b>	18 Ω
<b>Withstand voltage (1.2/50 μs impulse)</b>	≥ 500 kV