



PART L COMPLIANCE STATEMENT

PerformPipe® Pre-Insulated Heat Pump Pipework (DN25 & DN32, 13 mm Aerogel Insulation)

1. Regulatory Context

Approved Document L of the Building Regulations sets energy-efficiency performance requirements for dwellings. Compliance is demonstrated through calculated energy performance—including target primary energy rate, target CO₂ emission rate, and target fabric energy efficiency rate—using the Government's Standard Assessment Procedure (SAP), rather than by prescribing specific insulation thicknesses.

2. Relationship to BS 5422

BS 5422 provides heat-loss calculation methods and reference insulation thicknesses based on typical insulation thermal conductivity (**~0.025 W/m·K**). Alternative insulation thicknesses are acceptable where heat-loss calculations demonstrate equivalent or improved performance.

3. PerformPipe® Thermal Performance

PerformPipe® utilises advanced aerogel insulation with thermal conductivity $\lambda = 0.0175 \text{ W/m·K}$ (EN 12667), 13 mm insulation thickness for DN25 and DN32 pipe sizes, fire classification A2-s1,d0, and maximum operating temperature up to 675 °C. These properties provide substantially lower heat transfer than conventional pipe insulation materials.

4. Independent Performance Validation

Dynamic whole-building simulation by the Energy Systems Research Unit, University of Strathclyde, demonstrated that aerogel-insulated PerformPipe® produced the lowest heat pump operating time and electricity consumption, reducing heat loss and avoiding 14–31% increases in electricity use seen with higher-conductivity insulation materials.

5. Part L Compliance Position

Because Part L compliance is performance-based rather than thickness-based, **BS 5422** permits reduced insulation thickness where heat-loss calculations show **equal or better performance**. PerformPipe®'s ultra-low thermal conductivity enables 13 mm insulation to achieve heat-loss performance equivalent to or better than thicker conventional insulation. When incorporated within SAP energy calculations for a dwelling, PerformPipe® pipework can satisfy Part L energy-efficiency requirements.

6. Formal Statement

When assessed in accordance with BS 5422 heat-loss methodology and incorporated within SAP-based Part L dwelling energy calculations, PerformPipe® DN25 and DN32 pre-insulated pipework with 13 mm aerogel insulation achieves heat-loss performance equivalent to or better than that required to support compliance with the energy-efficiency requirements of Approved Document L.