

Terrain Acoustic Floor Heating Systems

Underfloor heating systems are increasingly popular and are rapidly becoming the heat source of choice for commercial and residential developments. Underfloor heating combined with acoustic regulatory compliance however, has always been challenging. Polypipe Terrain's new approach to this with our Acoustic Floor Heating System offers consistent installation married to enhanced performance both thermally and acoustically.

This technical bulletin will introduce the new development from Polypipe Terrain, a support mechanism TFH.ACU.1, when used in conjunction with an acoustic floor system improving not only the acoustic performance but also the efficiency.

The bulletin will detail the system requirements, underfloor heating specification and the system benefits.

SYSTEM REQUIREMENTS

The Terrain acoustic floor heating system provides floor levelling capability incorporating an underfloor heating system.

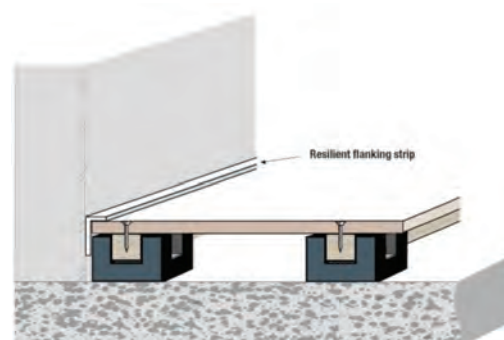
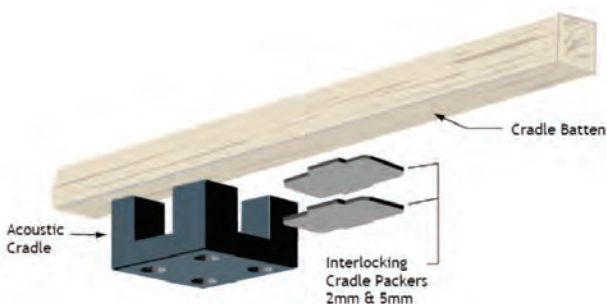
Standard build height including structural floor finish (18mm moisture resistant chipboard or Cement Fibre board) is 81mm, which can, if required be reduced to just 63mm

18mm thick FSC certified moisture resistant chipboard 2400 x 600 T&G 4 sides, bonded to 43mm high x 35mm wide x 1800mm long, FSC/PEFC certified softwood timber support bearers laid at a maximum of 400mm centres supported on 20mm base, 25mm leg recycled rubber acoustic cradles at 450mm centres.

Levelling components comprising of dedicated interlocking packers, 2mm and 5mm inserted into acoustic cradles as necessary to overcome minor slab level tolerances. 25mm leg cradles will accommodate up to 20mm of internal packing.

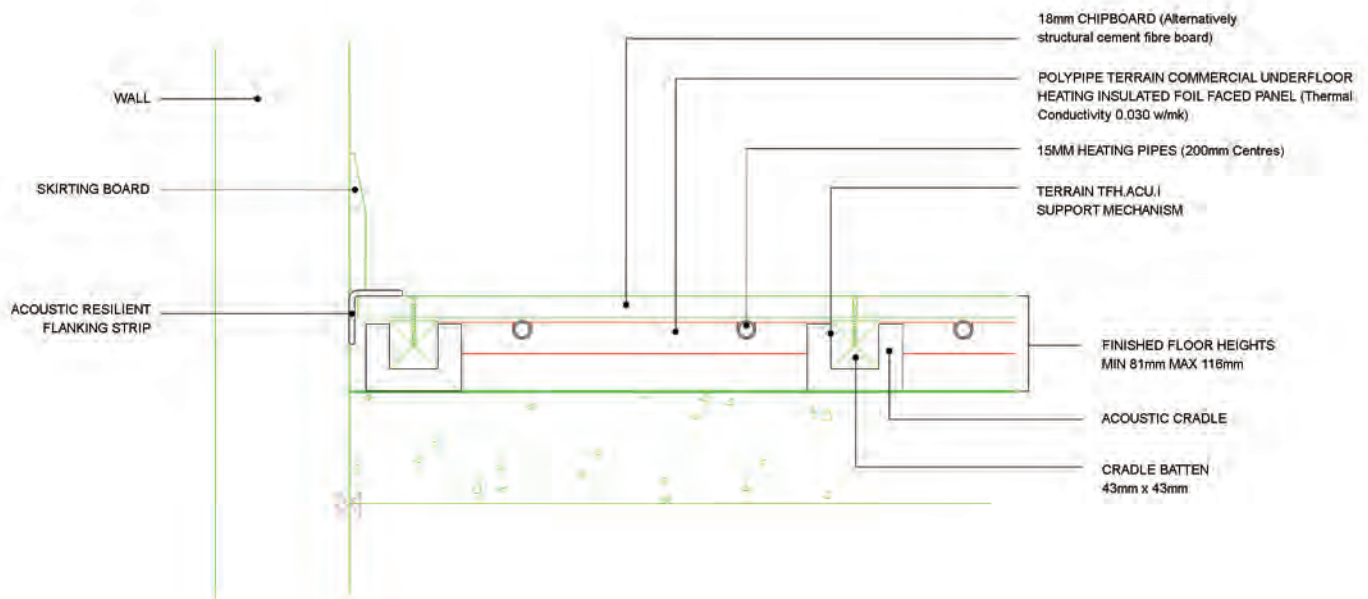
Acoustic interlocking cradle base packers, 10mm and 30mm thick, placed beneath the cradles where required to accommodate major deviations in the slab level.

Perimeter isolation comprising of a pre-formed L shaped flanking strip 2000mm x 25mm x 50mm x 6mm thick laid continuously to all floor perimeter junctions.



UNDERFLOOR HEATING SPECIFICATION

Prior to 18mm Chipboard deck (alternatively structural cement fibre board) being installed. Terrain TFH.ACU.1 support mechanism to be installed onto battens spanning between acoustic cradles. Pre-routed Terrain Heat Diffusion panel TFH.HDP.30.1200.300 to be installed between cradles onto the support mechanism. Polypipe Terrain 15mm polybutylene barrier pipe laid into pre routed panel at 200mm pipe centres.



POLYPIPE TERRAIN COMMERCIAL UNDERFLOOR HEATING INSULATED PANEL FITTED WITH ACOUSTIC CRADLE AND BATTEN

Design to be in accordance with BS EN 1264 Pt. 1-3 and covered by Polypipe Terrain professional indemnity insurance.

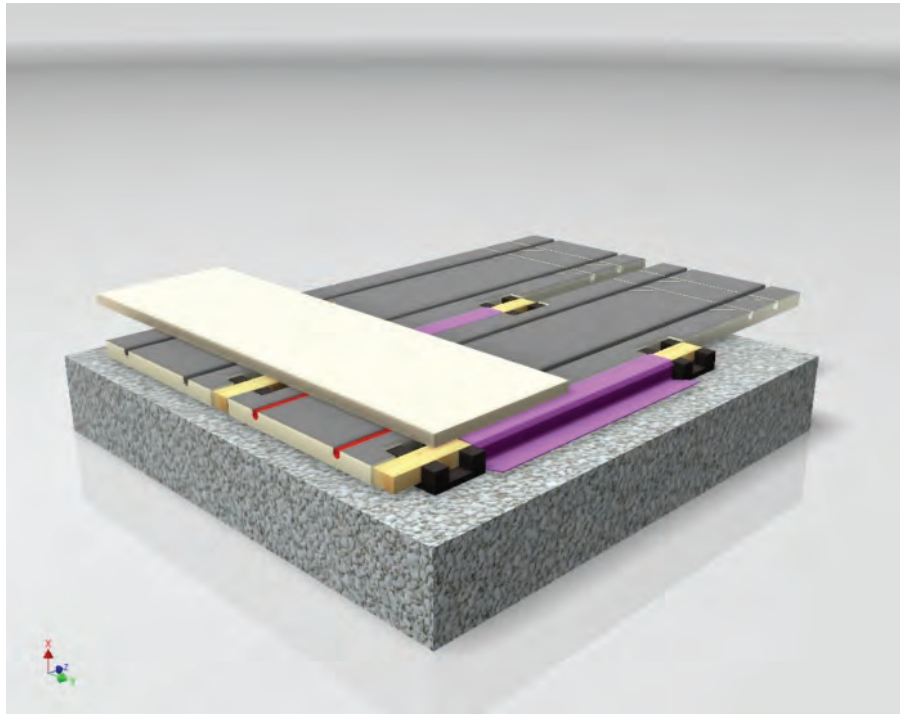
Terrain approved installer to carry out works and in accordance with BS EN1264: Pt. 4 where appropriate.

INSTALLATION / SYSTEM

Acoustic cradle & batten floor system

Terrain Acoustic Floor Heating mechanism installed between cradles

Installation to be completed by an approved Terrain Under floor heating installer



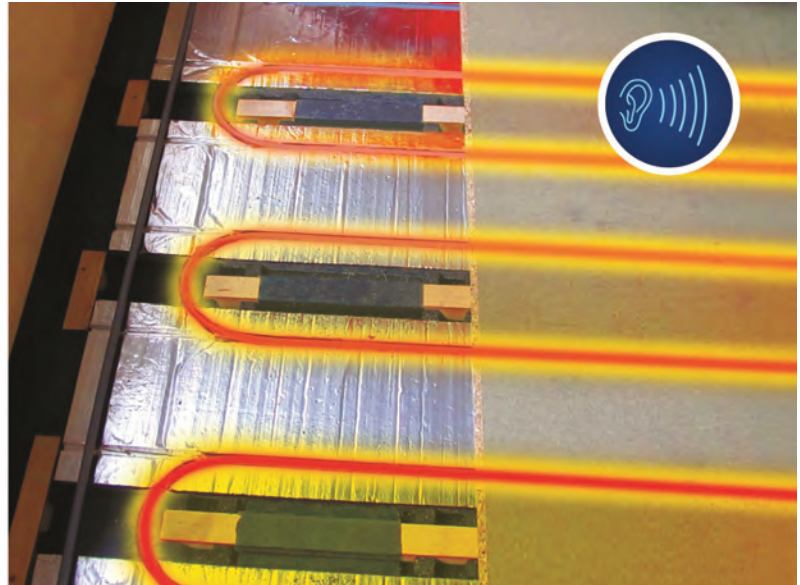
PIPEWORK

- a. Pipe work 15mm Terrain Polybutylene with integral oxygen barrier, 5 layer extrusion
- b. BBA and WRAS approved pipe work covered by 50 year guarantee
- c. Each pipe work circuit shall be laid in a continuous pipe length, no joints permitted
- d. Each circuit(s) shall be sized and outputs reflect the heat loss of each heated zone
- e. Dedicated circuit(s) for each heated zone
- f. Under floor heating pipe work within the floor of each zone shall typically be spaced at 200mm centres
- g. Both flow and return for each circuit shall terminate at the manifold locations
- h. Pipe turning from the floor and rising to the manifold shall have a bend former fitted to avoid pipe over bending and maintaining correct radius
- i. Heating pipe work not installed into a panel must be covered by our supplied conduit to limit heat transfer
- j. Any transit pipe work not in panel must have insulation placed beneath

SYSTEM PERFORMANCE

To ensure the highest performance of the system significant in house testing and analysis has been undertaken throughout the design process using the latest 3D modeling software. Additional production trials and physical testing was undertaken not only in house but by the industry research body BISRIA. For enhanced thermal performance we recommend the use of a structural fibre board in lieu of chip board.

For further performance details please contact the Polypipe Terrain Commercial Floor Heating team on 01622 795200.



SYSTEM BENEFITS

Wet underfloor heating systems offer a number of benefits in terms of heating and economic efficiency compared to traditional wall radiators, hence the increase in popularity of such systems. In addition to the benefits of a “traditional” underfloor heating system the Terrain support mechanism, TFH.ACU.1, will also provide the following benefits:

- Efficient performance at reduced flow temperatures
- Route to acoustic compliance built into systems
- Speed of installation
- Reduced Structural loadings within buildings
- Reduced floor zone depth
- Sustainability
- Surpasses Part E requirements
- Assists with the thermal comfort of building – Low Mass/response
- A dry alternative to screed systems
- Improve construction programme
- Remove installation & integration issues – single works package
- Guaranteed acoustic properties
- Provide a responsive underfloor heating system
- Longevity of acoustic performance and thermal output
- Assist with regulatory compliance and credits