Nu-Heat
Feel the difference

Information sheet

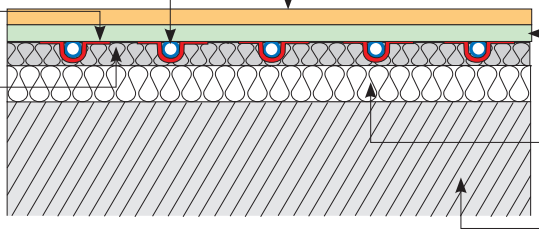
LoPro®Lite – 10mm Fastflo® in low-profile diffuser panels for floating floors

Supplied by Nu-Heat

Fastflo-10® tubing

Diffuser plate

Nu-Heat 15mm moulded LoPro®Lite EPS panel



Supplied by others

Floor covering

18 or 22mm chipboard deck, 12mm Nu-Heat Coverboard* or Engineered wood**

Floor insulation to current Building Regulations

Floor structure (concrete or timber deck)

* Can be supplied by Nu-heat as an optional extra

** See note below about fitting Engineered wood and laminates on top of LoProLite

TECHNICAL INFORMATION

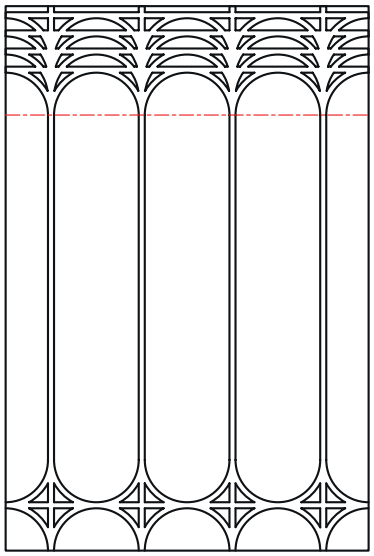
Substrate and Insulation

If the floor is to be tiled, it is important that the underlying substrate is flat and level to at least SR2 standard (5mm deviation over 3 metres) so that deflection is minimised. In all cases, any insulation installed below the panel must have a compressive strength higher than 140kPa.

XPS (extruded polystyrene) boards including Polyfoam, Styrofoam and Yelofoam are suitable. Expanded polystyrene is not suitable. The thickness of the insulation is dependent on Part L of building regulations, which can vary.

LoProLite® panel types

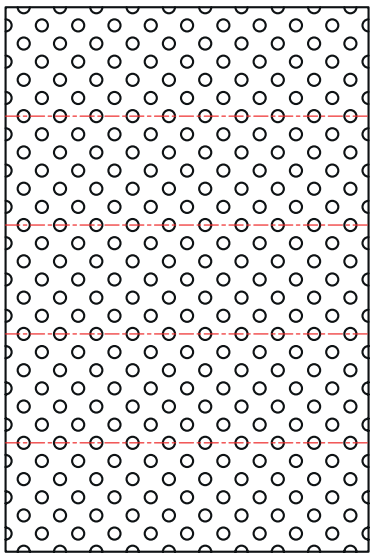
Nu-Heat supplies two types of LoPro®Lite panel designs:



Up to 4 pipes closely spaced at edge of room.

Cut line

Single pipe turn

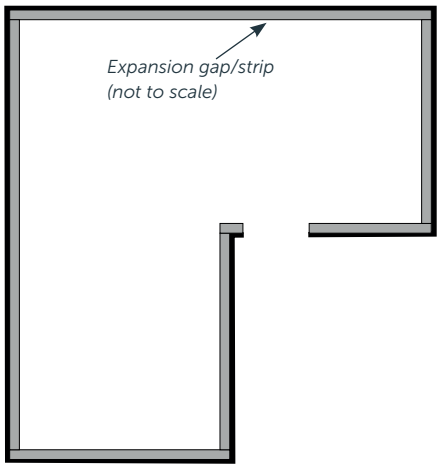


Cut lines

A A combined straights and turns panel for the majority of the floor. The panel can be used for straight runs or orientated to make use of the multi-turns end where multiple pipes need to run along the edge of a room at close spacing. Panel can be cut with a stanley knife, using a straight edge as a guide.

B A versatile, very high density EPS castellated panel that is used on run-back to the manifold, to change pipe direction and where pipes are closely spaced through doors, corridors, etc. Panel can be cut to suit requirements, or snapped carefully over a hard edge at the cut line.

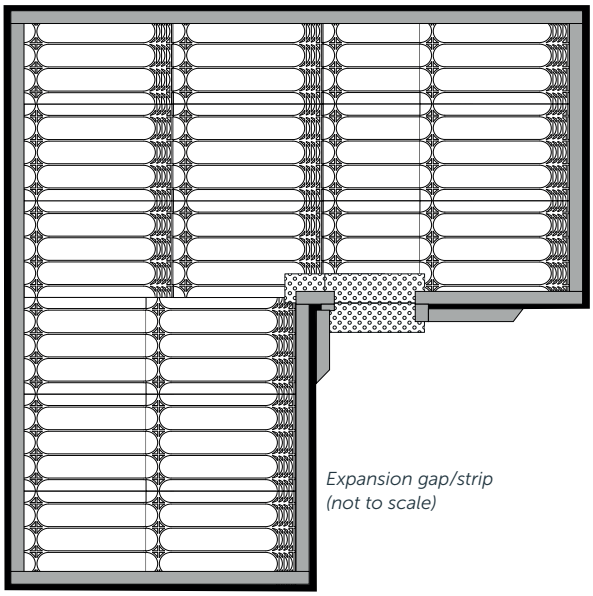
INSTALLING EXPANSION STRIP / LEAVING EXPANSION GAP

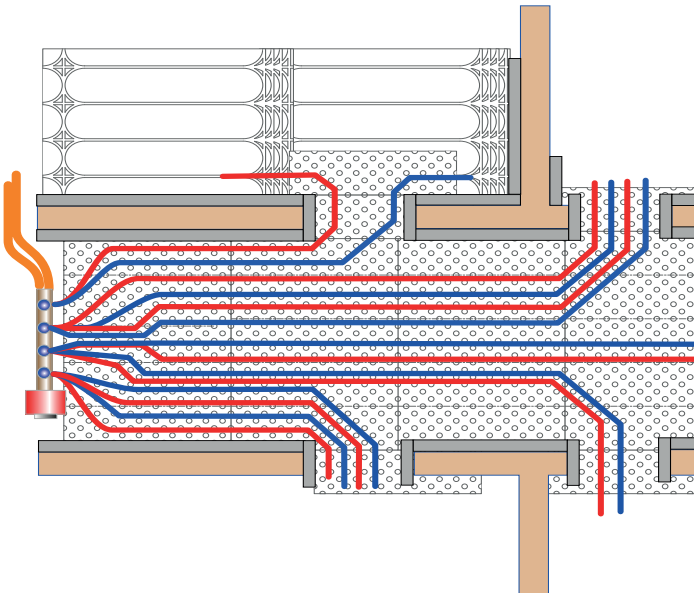


1 Lay a base layer of insulation if required (not supplied).

2 An expansion strip can also be fitted if applicable (not supplied). Install the expansion strip around all sides of the room. If an expansion strip is not fitted, leave a 10mm expansion gap around the perimeter.

INSTALLING THE COMBINED STRAIGHT/TURNS PANEL AND CASTELLATED PANEL





3 Starting along one wall, lay the LoPro®Lite combined straights/turns panel to fit against the expansion strip, if fitted, or allow a 10mm expansion gap. Follow the layout on the CAD drawings provided.

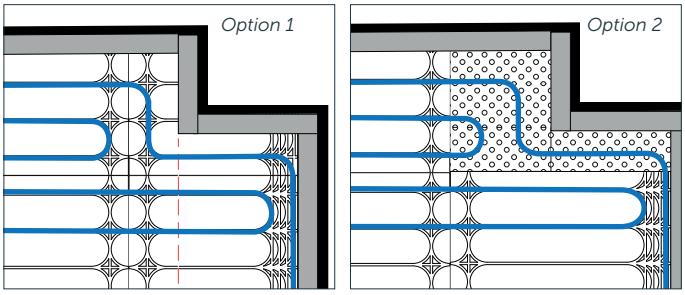
Double-sided tape is provided for areas where the panel may lift; this could be at turns, where small off-cuts are used or at the edge of the room.

Continue across the floor until the space is filled. The panel can be easily cut with a Stanley knife or small hand saw.

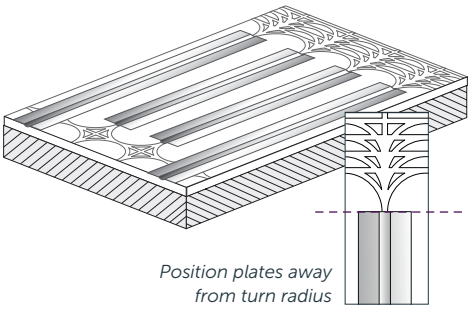
The high-density EPS castellated panel can be used in areas where multiple pipes need to be closely spaced or pipes need to change direction, e.g. through doorways or in a hall leading to the manifold position. Follow the layout on the CAD drawings provided. **If the castellated panel is likely to be exposed to more than very light foot traffic, a protective cover board should be used until the top deck is installed.**

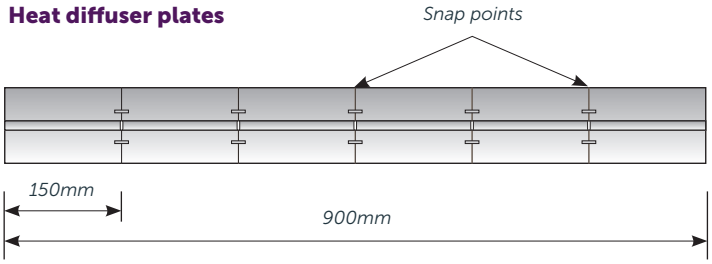
In awkward corners, cut panel down and re-orientate it so that turns can be lined up with adjacent panels.

Alternatively, the multi-directional castellated panel can be used – be sure to align channels on both types of panel.



INSTALLING THE METAL HEAT DIFFUSER PLATES



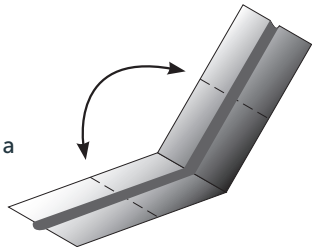


4 Install the heat transfer plates firmly into the LoPro®Lite straights panel leaving a small gap between plates and stopping the plates just short of where the UFH pipe will turn where necessary.

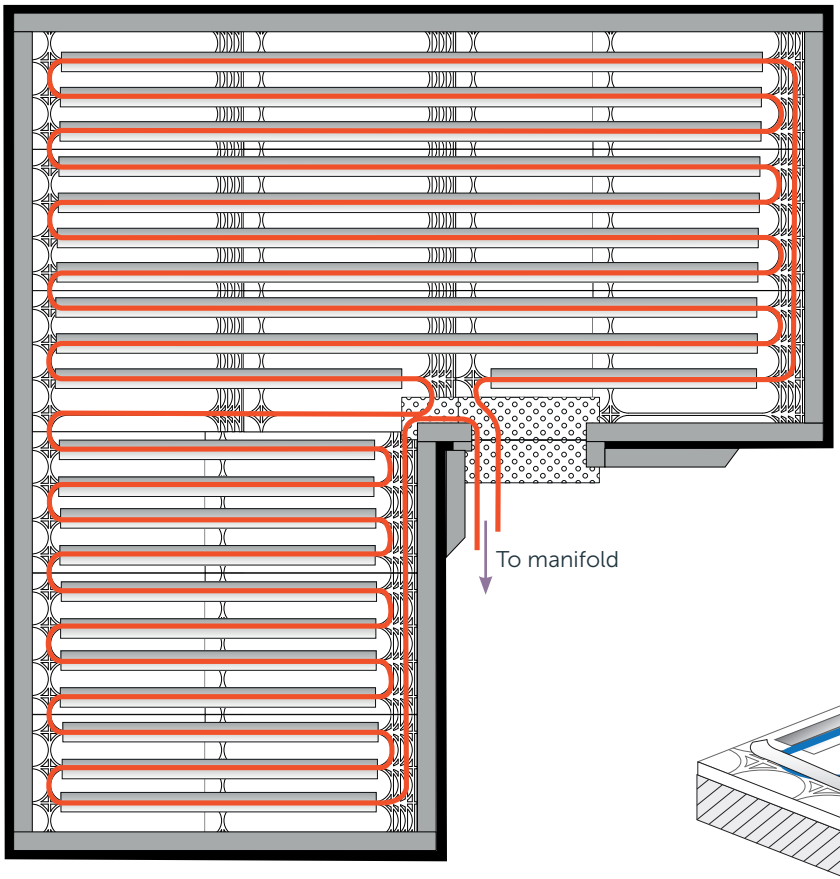
The plates have snap points that allow them to be trimmed to length.

Note: To avoid injury always wear gloves when handling heat diffuser plates.

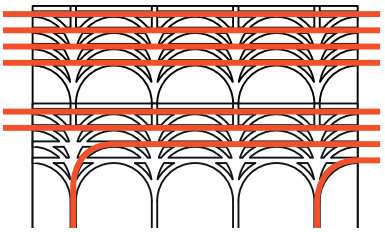
Take care when snapping the plates not to leave a burr as this could cause damage to the heating tube when installed.



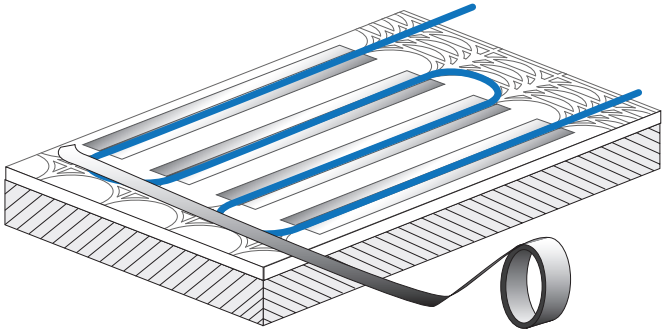
INSTALLING THE FASTFLO® UFH PIPE



5 Install the Fastflo® UFH pipe following the layout on the CAD drawings and the instructions on the following page.

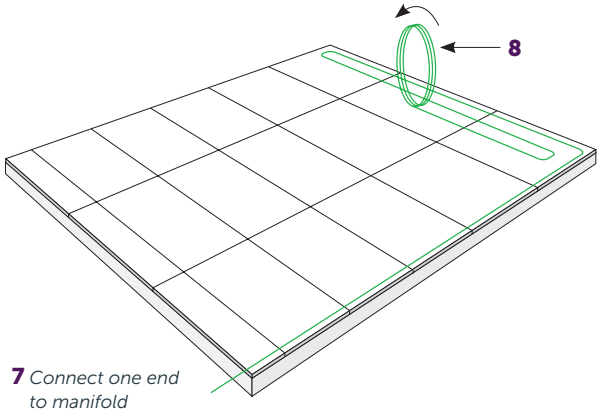


Note: The turns end of the panel can be cut off for use in areas that need extra channels to run back towards the door/ manifold.



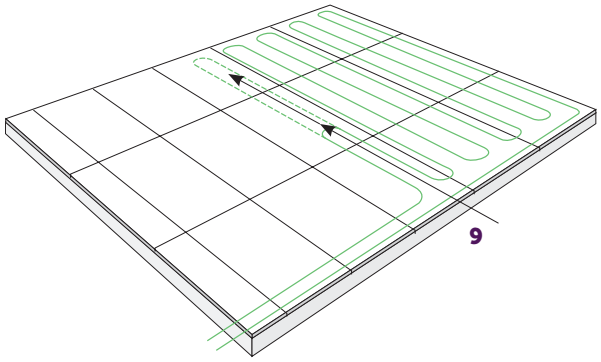
Metallic tape is supplied to secure pipe into the LoPro®Lite panel if it lifts on turns.

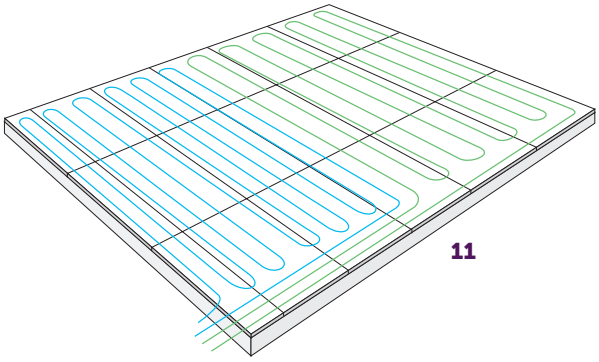
SEQUENCE OF LAYING THE HEATING TUBE IN THE FLOOR



7 *Connect one end to manifold*

Label zones





6 Firstly install the furthest room from the manifold. Ensure that the correct coil is selected for the room to be installed. The coil is marked every metre with its overall length and remaining coil length. The coil lengths for each room will be shown on the system drawings.

7 Connect one end of the coil into the correct port of the manifold as described in the *Installation Manual*. **The tube should be clearly labelled with the room name.**

8 Lay the tube from the manifold to the zone following the CAD plan provided.

Note: **Do not kink the tube.**

9 Continue installing the tube until there is just enough tube remaining to return to the manifold **plus any difference in supplied length and cut-length** as stated on the system drawings. The metre markings on the coil can be used to help judge the amount of pipe remaining.

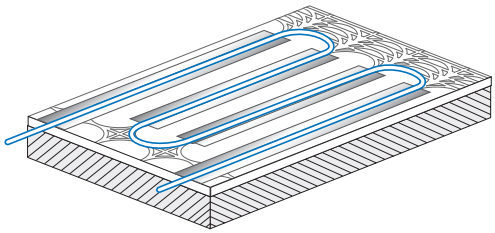
Note: **All tube coils within a single zone must be no more than 10% different in length.**

10 Once back at the manifold do not cut the tube to length or connect it to the manifold unless the zone has only one coil. Label the return pipe to ensure the pipes do not get crossed when connected at a later stage.

11 All remaining coils for the zone can now be installed in exactly the same way until the room is fully covered with tube.

CONNECTING THE PIPE AND PRESSURE TESTING

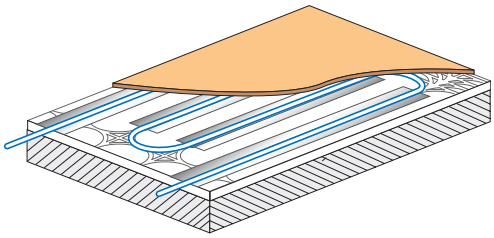
12 When the correct number and lengths of tube are laid in the floor, trim excess coil length and connect to the manifold as described in the *Installation Manual*. All ports on the manifold should now be connected.



Note: Always mark the flow and return pipes with their correct zone names. Do not get pipes crossed.

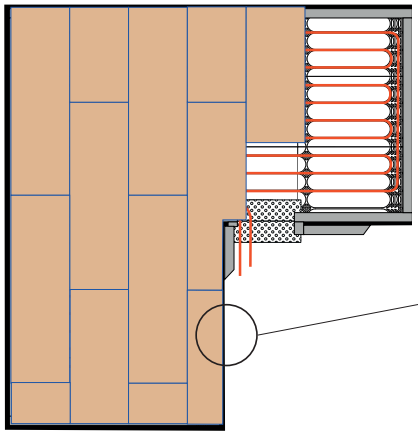
13 The manifold must now be filled and pressure tested as described in the *Installation Manual*.

INSTALLING A CHIPBOARD OR CEMENT BOARD DECK

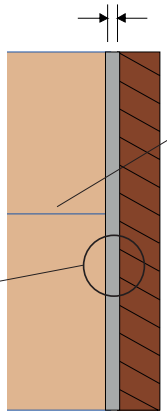


14 The deck (18 or 22mm chipboard or 12mm cement board) should be installed with the joints staggered and glued. Leave a 10mm expansion gap between the deck and the wall.

Stagger deck panels



Leave a 10mm expansion gap between the deck and wall



Chipboard: *glue joints as advised by the manufacturer.*

Cement board (supplied by Nu-Heat): *run a 6mm bead of the adhesive supplied along the half-lap joint on the long edge, and a 6mm bead along the short edge to form a butt joint.*

FLOOR SENSOR POSITIONING

Some suppliers recommend a maximum floor surface temperature for heat-sensitive floor coverings such as engineered timber and vinyl. Nu-Heat can supply a room thermostat that helps to control floor temperature via a sensor installed in the floor.

Positioning

When choosing floor coverings always follow the manufacturer's instructions and check that it is suitable for use with underfloor heating.

The thermostat's remote sensor helps to top-limit the floor temperature. The remote sensor is fitted with 3m of 2-core low voltage flex, extendable up to 20m.

To enable increased comfort levels in bathrooms, wetrooms and en-suites the floor must be allowed to reach higher than usual temperatures. For safety reasons thermostats for bathrooms, shower rooms and en-suites are always supplied with a remote AIR sensor.

Setup

Please check with the manufacturer of the floor covering for the temperature limit required and follow the instructions in the Nu-Heat A3 electrical sheet, *Setting up the Control System* on how to change the floor limit temperature.

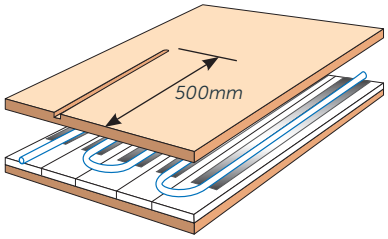
Installation

The sensor should be installed in the chipboard deck immediately below the floor covering. Form a recess in the deck midway between heating tubes before laying the final floor covering. The tip of the sensor should be at least 500mm from the wall. Secure the cable in place with adhesive or tape.

For engineered timber with no deck, form the recess on the underside of the plank.

Thermostat & floor temperature sensor

Rout channel for sensor 8mm deep, using an 8mm diameter bit parallel to the heating tube midway between plates.



Rout the sensor into the chipboard deck below final floor covering.

CERAMIC OR STONE FLOOR FINISHES

The underfloor heating system should be turned off while tiling and remain off until adhesives and grouts have fully cured (see manufacturer's recommendations).

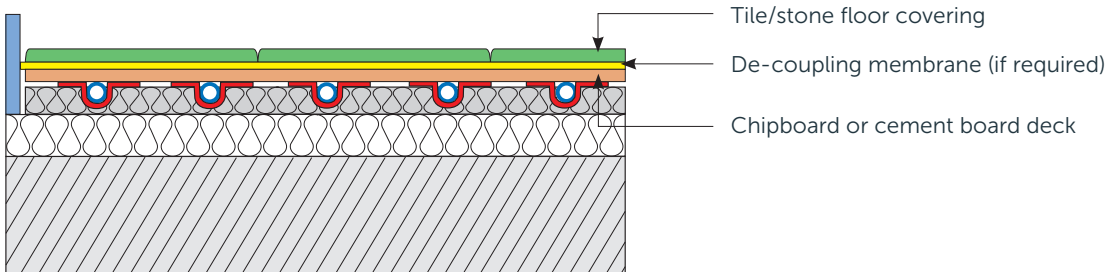
When installing large format tiles, the tile association recommends using a category C2 FTE S1 or S2 adhesive and a suitable de-coupling membrane.

If using soft or vulnerable natural stone products (e.g. travertine, marble, etc.) always follow any specific supplier recommendations.

Adhesives

To install the decoupling membrane and tiles a flexible tiling adhesive suitable for underfloor heating should be used. The Tile Association recommends using a category C2 adhesive.

Installation over a deck – recommended for all floor finishes



1. Fit the chipboard or cement board deck over the LoPro®Lite panels as described on the previous page.
2. Fit a de-coupling membrane if recommended by the tile supplier (available from Nu-Heat).
3. Lay the tiles using flexible adhesive and flexible grout.
4. Allow the adhesive and grout to dry fully before using the underfloor heating.

INSTALLING AN ENGINEERED TIMBER FLOOR FINISH

- The recommended thickness of engineered hardwood is 14–18mm; maximum of 22mm.
- Always use a good quality engineered board and check with the manufacturer that it is suitable for use with UFH.
- The timber flooring should have been kiln dried to have a moisture content of 6–9% and should not be stored in damp conditions prior to fitting.
- Allow the timber to acclimatise before fitting in accordance with supplier advice.
- Engineered timber flooring can be glued and butt-jointed and then free-floated on top of the chipboard deck to allow for expansion and contraction.
- Where engineered timber is to be fitted directly on top of the LoPro®Lite panel, a 2mm foam underlay is recommended.

  If underlay is used between a chipboard deck and engineered timber 2mm is the maximum thickness.
- Flooring manufacturers often recommend a floor temperature sensor for sensitive coverings such as engineered timber – these can be supplied by Nu-Heat. Sensors should be fitted in a channel routed in the underside of the plank midway between metal plates.
- Always leave an expansion gap around the edge of the room; typically 10mm. This will allow the floor to expand and contract with atmospheric changes.
- Where possible, fit planks at right angles to the underlying UFH pipe.
- T&G joints must be glued using adhesive recommended by the supplier.

Engineered timber floors can be free-floated over LoPro®Lite panels (as shown above) or fitted on top of an intermediate deck.

Always follow the flooring supplier's installation instructions.

OTHER FLOOR FINISHES

Always install the following floor finishes on an 18mm/22mm chipboard or 12mm Coverboard deck and follow the supplier's installation instructions

- Parquet timber
- Mosaic tiles
- Ceramic tiles / natural stone
- Travertine / reconstituted stone
- Bamboo / coir
- Carpet & underlay (max. 2.5 tog combined)
- Vinyl
- Linoleum, Amtico, Karndean, etc.
- Rubber