



Installation Guides, Data Sheets & Technical Index's

Underfloor Heating with Acoustic Constructions

TX 100

Detailed technical information on the use of underfloor heating & surface cooling within acoustic constructions in accordance with the Robust Standard Details.



TX



Acoustic Constructions

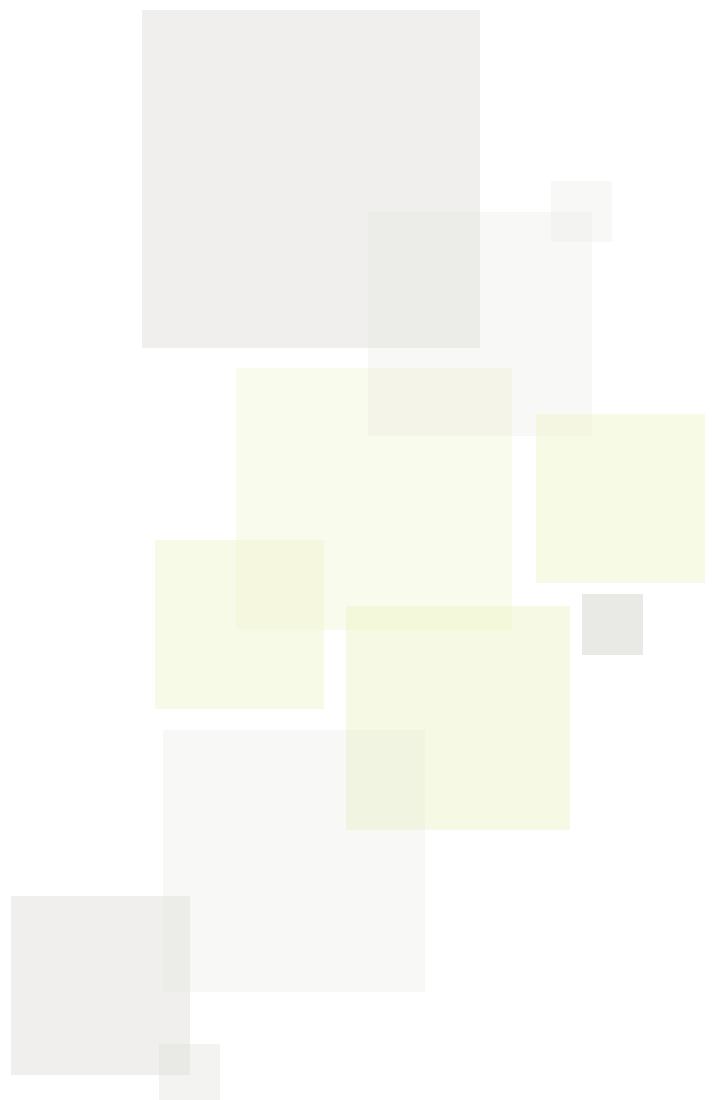
Acoustic constructions are commonly found in residential buildings with floors, walls and ceilings that separate living spaces. These constructions are required to provide resistance to the passage of sound and allowing occupants to enjoy quiet living conditions without being disturbed by those living in adjacent properties. Such buildings can benefit enormously from underfloor heating & surface cooling, not only to enhance the living environment but also to improve energy efficiency. Acoustic constructions are by no way limited to residential structures, buildings such as commercial offices will also require floors utilising sound resistant constructions.

Timóleon underfloor heating & surface cooling systems are ideally suited to being incorporated in acoustic constructions, both in residential and commercial environments. Part E of the Building Regulations shows how such constructions must provide resistance to the passage of sound. The performance standards for the constructions are set out in Part E with compliance being granted by passing a pre-completion test (PCT) for each individual construction. However PCT's can be avoided if a Robust Standard Detail (RSD) is adopted. Specific RSD's have been established for each construction and underfloor heating can be incorporated into an RSD construction provided:

That no fixings or staples penetrate or break the separating resilient layer used in a construction

In a floating floor treatment the underfloor heating does not connect the structural floor with any of the floating floor elements thereby bridging the resilient layer.

There are a variety of RSD constructions and it is important to understand how effective the underfloor heating system will be when used with these constructions. In this guide to underfloor heating and acoustic constructions we show how underfloor heating can be simply incorporated into RSD constructions.



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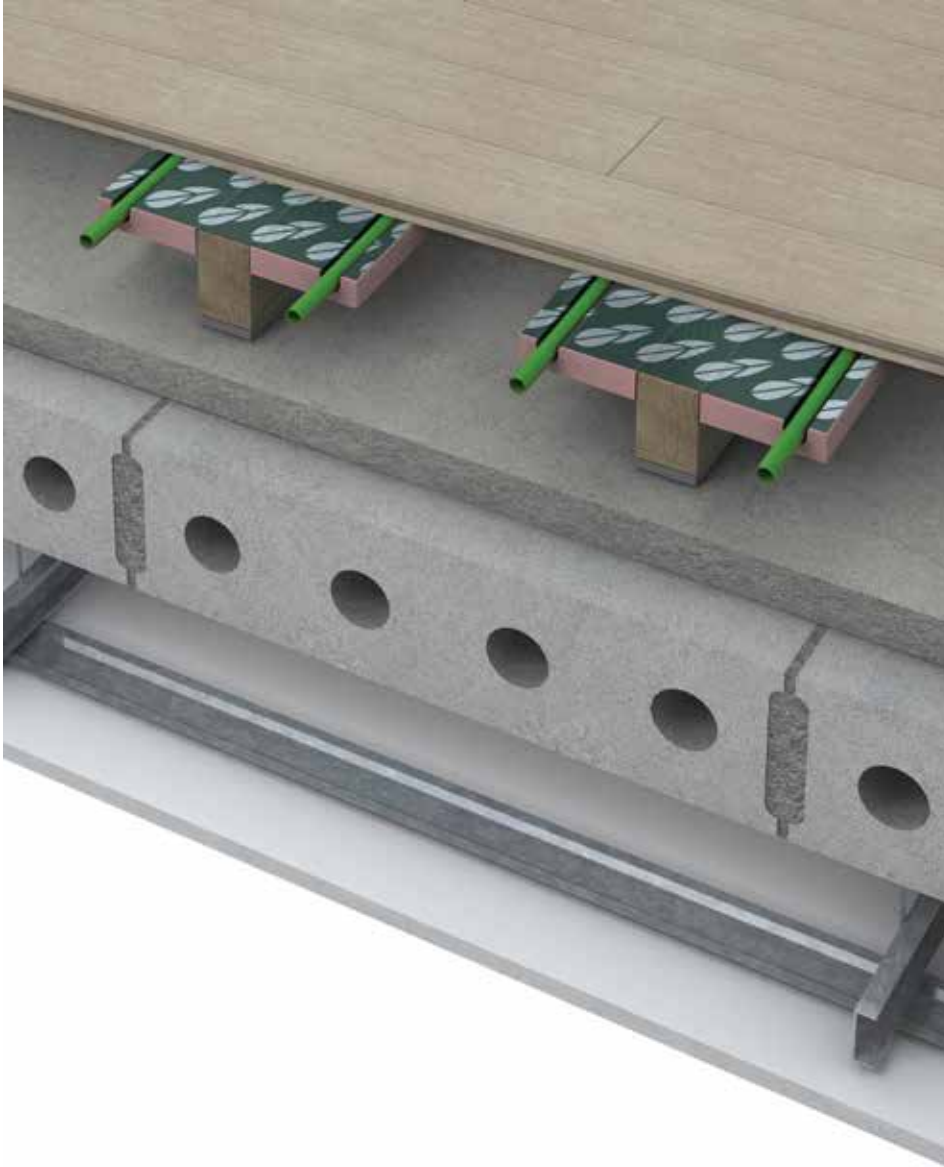
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 CASE STUDY

Please refer to “Robust Details Part E - Resistance to the passage of sound” for specifications and further information. Available from Robust Details Ltd, Davy Avenue, Knowlhill, Milton Keynes, MK5 8ND.

Underfloor heating for Robust Standard Detail E-FC-1



FLOOR COVERING

Shown T&G Wooden Floor Finish
18mm thick

AB PLATES

FFT1 - Minimum 70mm batten system
with pre-bonded resilient layer

SCREED

40mm Sand & Cement

STRUCTURAL FLOOR

150mm Precast Concrete
Floor Plank

CEILING

AB SYSTEM

E-FC-1 Uses our AB Plate System

Plates are easily installed over the batten
Integrated insulation to minimise down loss
Designed to maximise contact with the floor deck, giving improved performance

TI 1012 AB PLATE DATASHEET

TI 4101 E-FC-1 DATASHEET

Underfloor heating for Robust Standard Detail E-FC-2



FLOOR COVERING

Shown T&G Wooden Floor Finish
18mm thick

AB PLATES

FFT1 - Minimum 70mm batten system
with pre-bonded resilient layer

STRUCTURAL FLOOR

Structural Floor - 250mm in-situ
Concrete floor slab or 200mm in-situ
Concrete floor slab with 40mm (min)
Screed directly applied to the slab

CEILING

AB SYSTEM

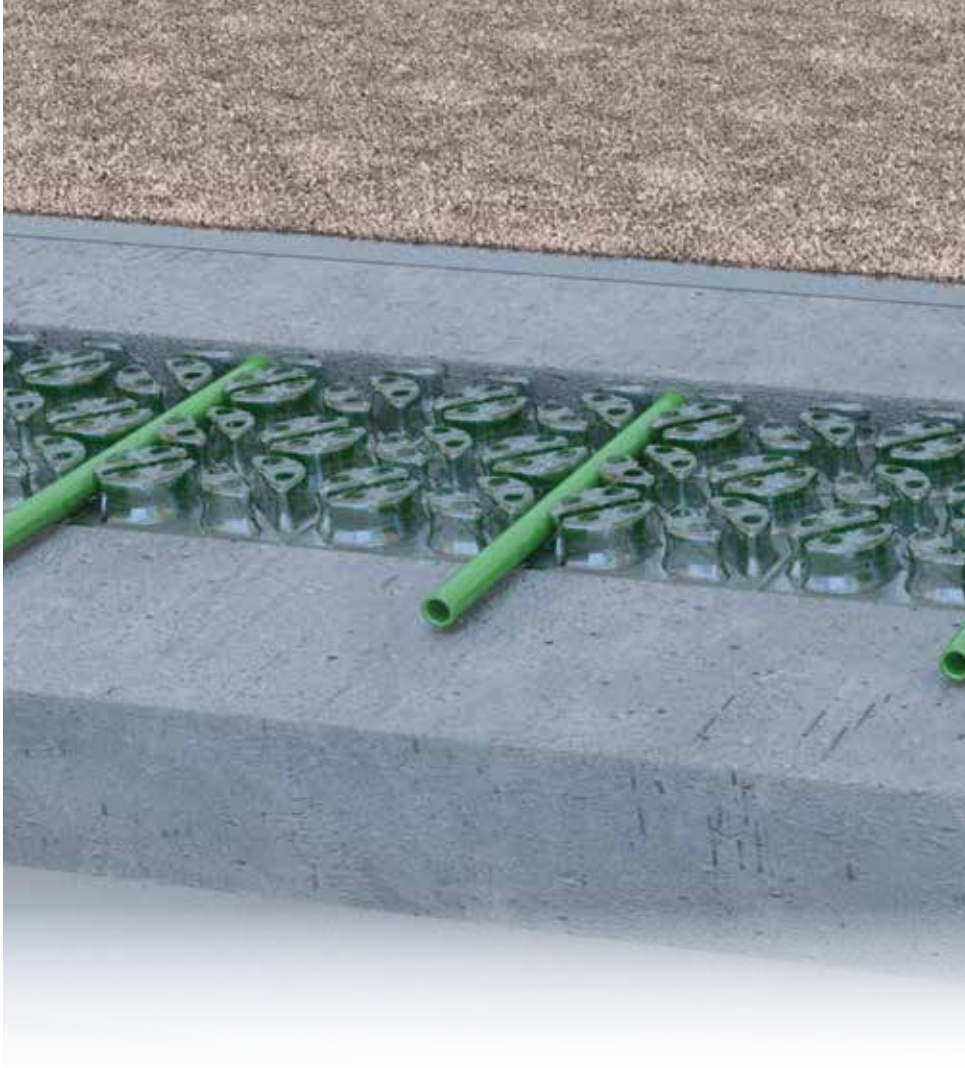
E-FC-2 Uses our AB Plate System

Plates are easily installed over the batten
Integrated insulation to minimise down loss
Designed to maximise contact with the floor deck, giving improved performance

TI 1012 AB PLATE DATASHEET

TI 4102 E-FC-2 DATASHEET

Underfloor heating for Robust Standard Detail E-FC-3



FLOOR COVERING

Shown with Tile Finish

SCREED

65mm Sand & Cement

CLIPPLATE

STRUCTURAL FLOOR

150mm Precast Concrete
Floor Plank

CEILING

CLIPPLATE COMPACT SYSTEM

E-FC-3 Uses our ClipPlate System

No fixings or staples to dislodge as the screed is being laid
The pipe is protected from site traffic during and after installation
Flexible, multi-directional panel with integrated insulation

E-FC-4

Underfloor heating for Robust Standard Detail E-FC-4



FLOOR COVERING

Shown with Tile Finish

SCREED

65mm Sand & Cement

CLIPPLATE

RESILIENT LAYER

6mm IsoRubber

STRUCTURAL FLOOR

150mm Precast Concrete
Floor Plank

CEILING

CLIPPLATE SYSTEM

E-FC-4 Uses our ClipPlate System

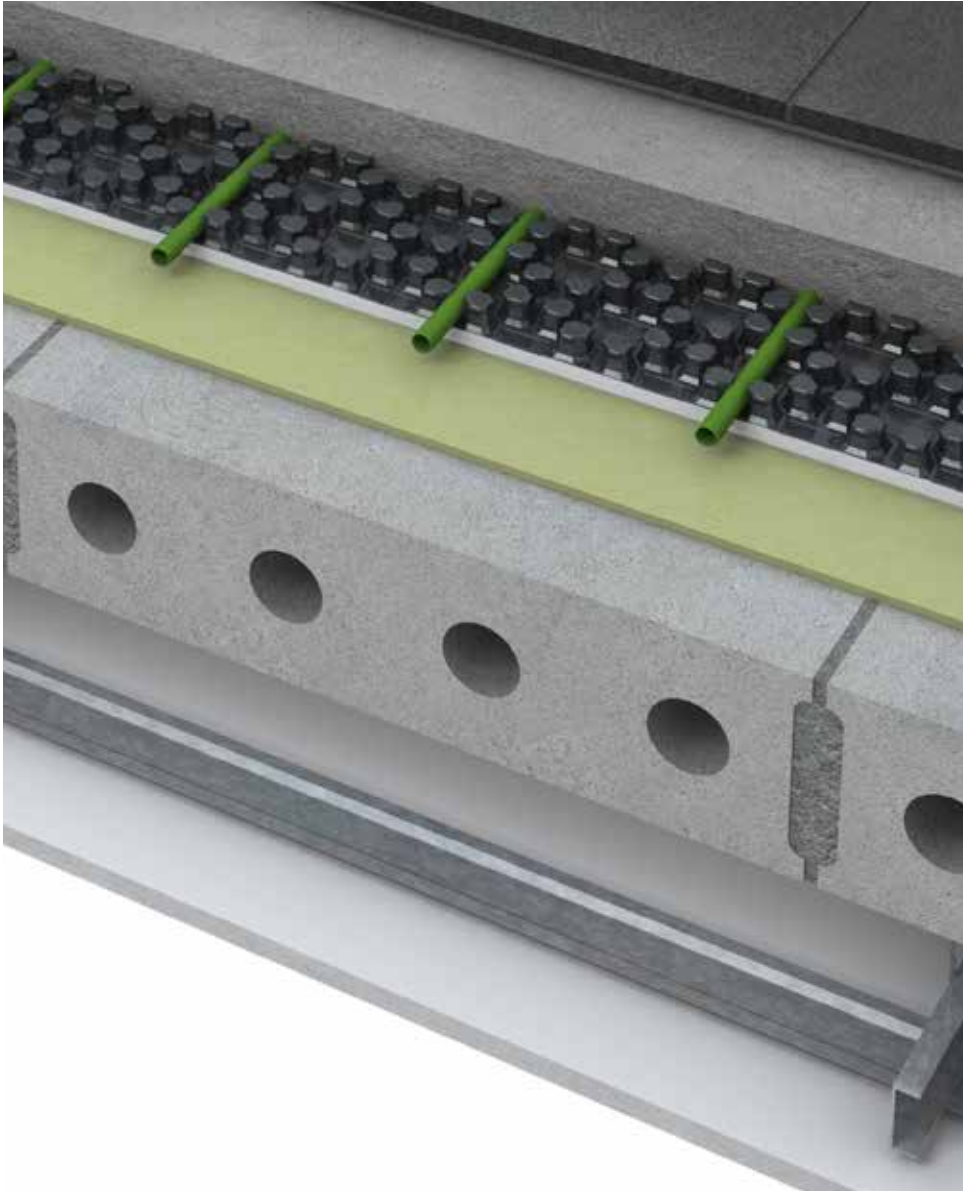
No fixings or staples to dislodge as the screed is being laid
The pipe is protected from site traffic during and after installation
Flexible, multi-directional panel with integrated insulation

TI 1003 CLIPPLATE DATASHEET

TI 4104 E-FC-4 DATASHEET

E-FC-5

Underfloor heating for Robust Standard Detail E-FC-5



FLOOR COVERING

Shown with Tile Finish

SCREED

65mm Sand & Cement

CLIPPLATE

RESILIENT LAYER

YELOfon HD10+

STRUCTURAL FLOOR

150mm Precast Concrete
Floor Plank

CEILING

CLIPPLATE SYSTEM

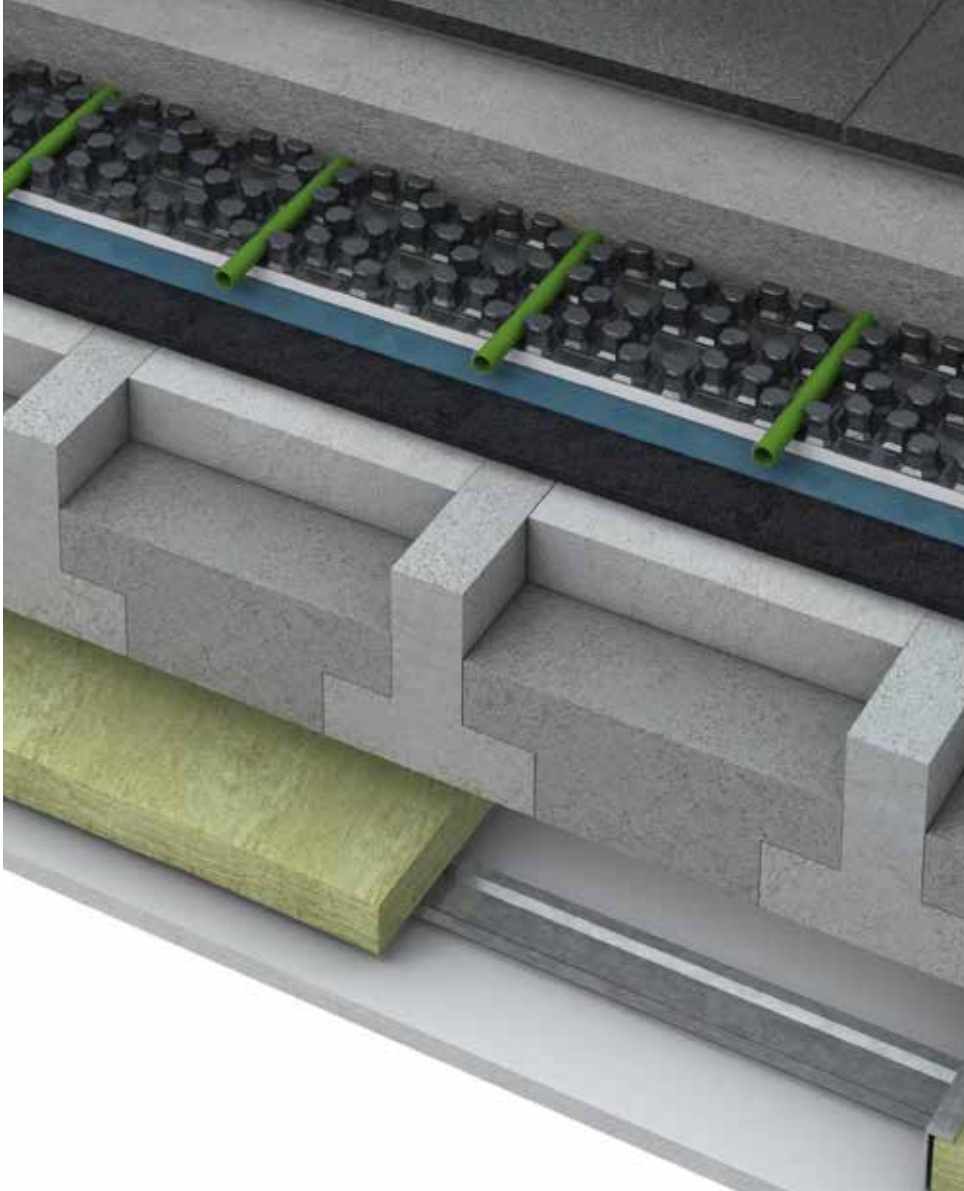
E-FC-5 Uses our ClipPlate System

No fixings or staples to dislodge as the screed is being laid
The pipe is protected from site traffic during and after installation
Flexible, multi-directional panel with integrated insulation

TI 1003 CLIPPLATE DATASHEET

TI 4105 E-FC-5 DATASHEET

Underfloor heating for Robust Standard Detail E-FC-6



FLOOR COVERING

Shown with Tile Finish

SCREED

65mm Sand & Cement

CLIPPLATE

DPM

0.2mm waterproof membrane

RESILIENT LAYER

YELOfon HD10+

STRUCTURAL FLOOR

150mm Precast Concrete
Floor Plank

CEILING

CLIPPLATE SYSTEM

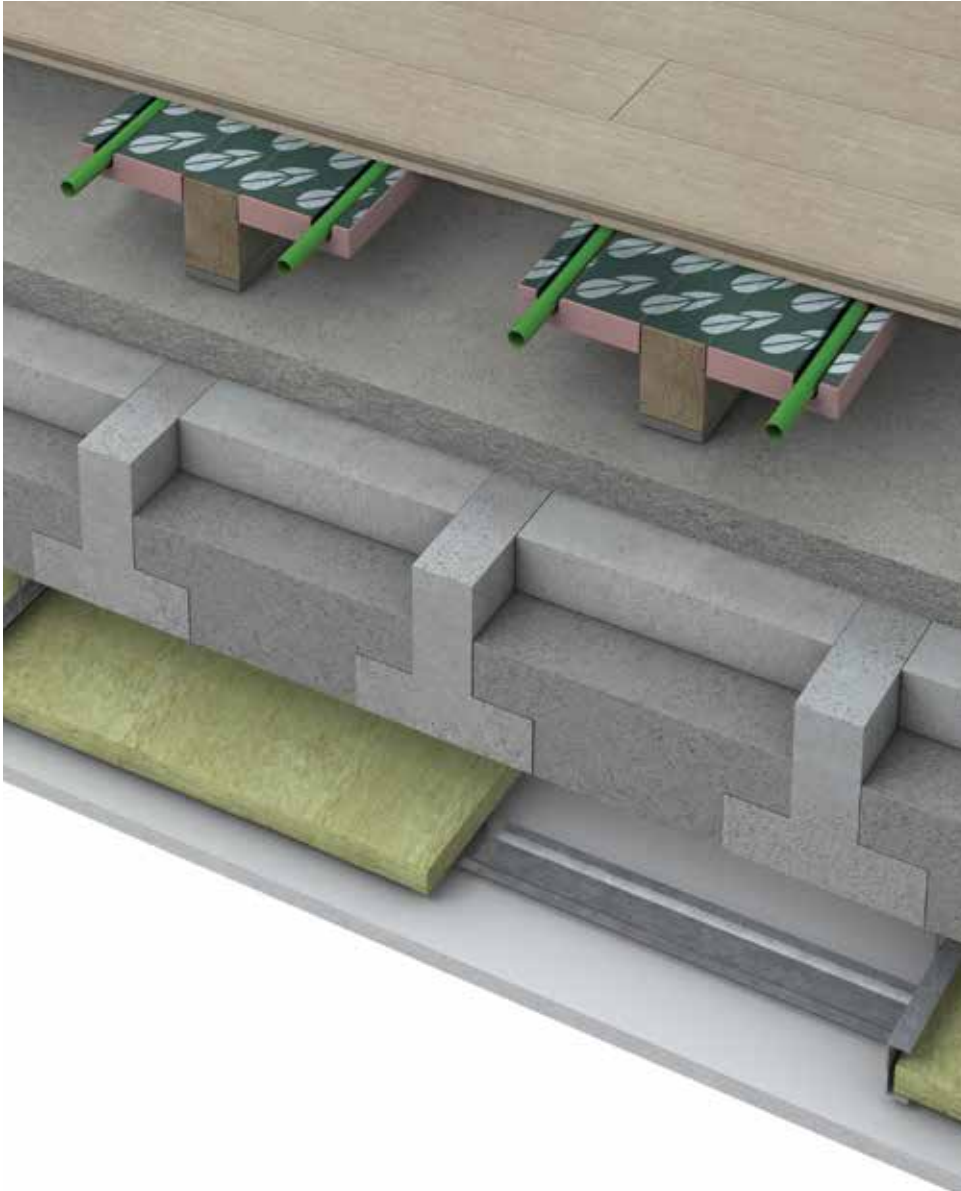
E-FC-6 Uses our ClipPlate System

No fixings or staples to dislodge as the screed is being laid
The pipe is protected from site traffic during and after installation
Flexible, multi-directional panel with integrated insulation

TI 1003 CLIPPLATE DATASHEET

TI 4106 E-FC-6 DATASHEET

Underfloor heating for Robust Standard Detail E-FC-7



FLOOR COVERING

Shown T&G Wooden Floor Finish
18mm thick

AB PLATE

Battened System with
Acoustic Pads

SCREED

20mm levelling

STRUCTURAL FLOOR

Beam & block, 100mm infill blocks,
50mm concrete topping

CEILING

AB SYSTEM

E-FC-7 Uses our AB Plate System

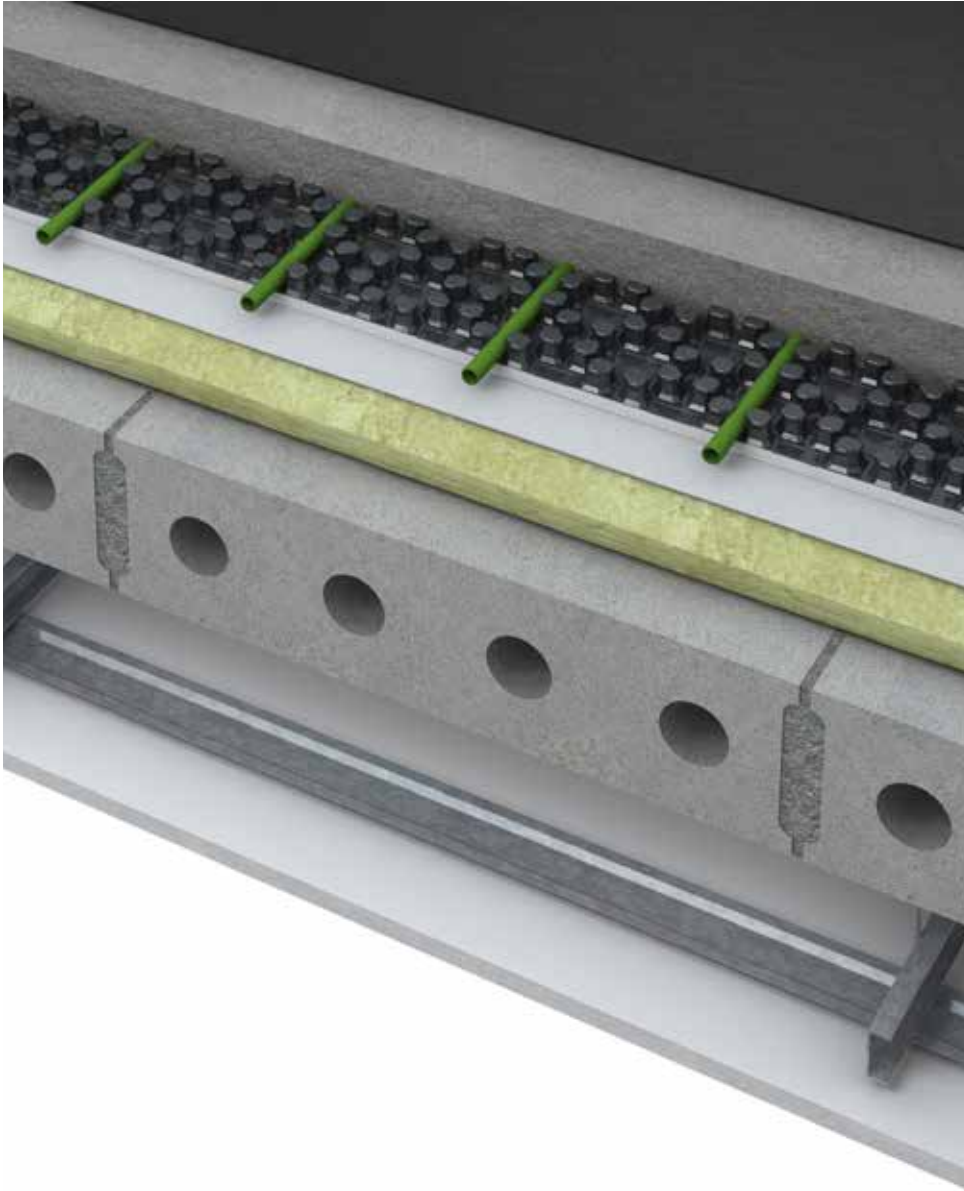
Plates are easily installed over the batten
Integrated insulation to minimise down loss
Designed to maximise contact with the floor deck, giving improved performance

TI 1012 FOILBOARD DATASHEET

TI 4107 E-FC-7 DATASHEET

E-FC-8

Underfloor heating for Robust Standard Detail E-FC-8



FLOOR COVERING

Shown with Tile Finish

SCREED

65mm Sand & Cement

CLIPPLATE

ISOLATING LAYER

5mm Foamed Polyethylene

25mm mineral wool batt

STRUCTURAL FLOOR

150mm Precast Concrete
Floor Plank

CEILING

CLIPPLATE SYSTEM

E-FC-8 Uses our ClipPlate System

No fixings or staples to dislodge as the screed is being laid
The pipe is protected from site traffic during and after installation
Flexible, multi-directional panel with integrated insulation

TI 1003 CLIPPLATE DATASHEET

TI 4108 E-FC-8 DATASHEET

Underfloor heating for Robust Standard Detail E-FC-9



FLOOR COVERING

3mm Thermal Economics
IsoRubber Top

SCREED

65mm Sand & Cement

CLIPPLATE

STRUCTURAL FLOOR

150mm Precast Concrete
Floor Plank

CEILING

CLIPPLATE SYSTEM

E-FC-9 Uses our ClipPlate System

No fixings or staples to dislodge as the screed is being laid
The pipe is protected from site traffic during and after installation
Flexible, multi-directional panel with integrated insulation

TI 1003 CLIPPLATE DATASHEET

TI 4109 E-FC-9 DATASHEET

E-FC-10

Underfloor heating for Robust Standard Detail E-FC-10



FLOOR COVERING

3mm IsoRubber Top
bonded to slab

SCREED

65mm Sand & Cement

CLIPPLATE

STRUCTURAL FLOOR

175mm in-situ concrete floor slab

CEILING

CLIPPLATE SYSTEM

E-FC-10 Uses our ClipPlate System

No fixings or staples to dislodge as the screed is being laid
The pipe is protected from site traffic during and after installation
Flexible, multi-directional panel with integrated insulation

TI 1003 CLIPPLATE DATASHEET

TI 4110 E-FC-10 DATASHEET

E-FC-11

Underfloor heating for Robust Standard Detail E-FC-11



FLOOR COVERING

SCREED

65mm Sand & Cement

CLIPPLATE

STRUCTURAL FLOOR

150mm Precast Concrete
Floor Plank

CEILING

CLIPPLATE SYSTEM

E-FC-11 Uses our ClipPlate System

No fixings or staples to dislodge as the screed is being laid
The pipe is protected from site traffic during and after installation
Flexible, multi-directional panel with integrated insulation

TI 1003 CLIPPLATE DATASHEET

TI 4111 E-FC-11 DATASHEET

E-FC-12

Underfloor heating for Robust Standard Detail E-FC-12



FLOOR COVERING

SCREED

65mm Sand & Cement

CLIPPLATE

RESILIENT LAYER

3mm IsoRubber Base HP3 layer
with IsoEdge flanking strip

STRUCTURAL FLOOR

200mm Precast Concrete
Floor Plank

CEILING

CLIPPLATE SYSTEM

E-FC-12 Uses our ClipPlate System

No fixings or staples to dislodge as the screed is being laid
The pipe is protected from site traffic during and after installation
Flexible, multi-directional panel with integrated insulation

TI 1003 CLIPPLATE DATASHEET

TI 4112 E-FC-12 DATASHEET

E-FC-13

Underfloor heating for Robust Standard Detail E-FC-13



FLOOR COVERING

SCREED

65mm Sand & Cement

CLIPPLATE

RESILIENT LAYER

InstaLay 65 Layer with
InstaLay 65 edge strip

STRUCTURAL FLOOR

150mm Precast Concrete
Floor Plank

CEILING

CLIPPLATE SYSTEM

E-FC-13 Uses our ClipPlate System

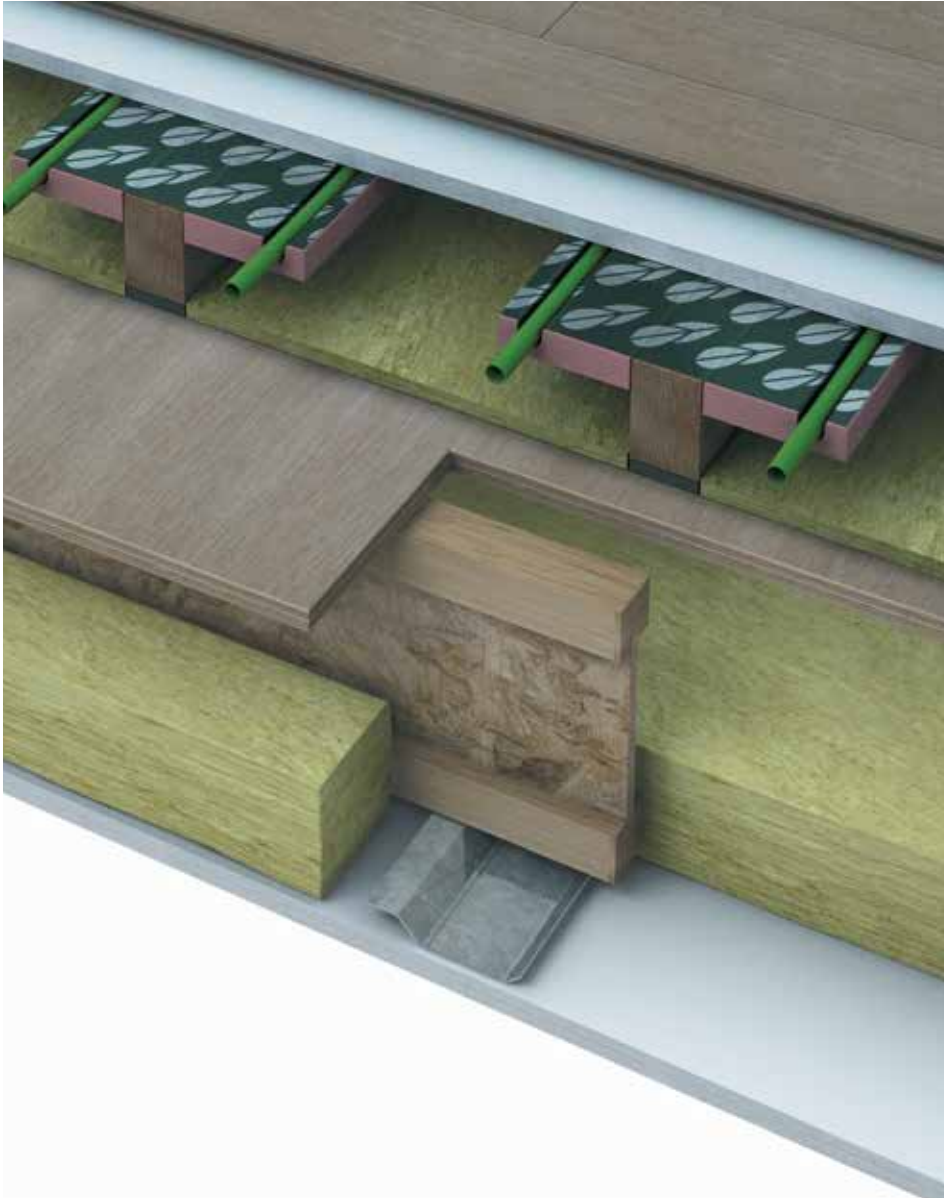
No fixings or staples to dislodge as the screed is being laid
The pipe is protected from site traffic during and after installation
Flexible, multi-directional panel with integrated insulation

TI 1003 CLIPPLATE DATASHEET

TI 4113 E-FC-13 DATASHEET

E-FT-1

Underfloor heating for Robust Standard Detail E-FT-1



FLOOR COVERING

Shown T&G Floor Finish
- 18mm thick

GYPSUM BASED BOARD

Weight 13.5 kg/m³

AB PLATE

FFT1 Minimum 70mm batten system
with pre-bonded resilient layer
Minimum 13mm mineral wool quilt
33-36 kg/m³

FLOOR DECK

15mm thick wood based board

INSULATION

100mm mineral wool quilt

CEILING

AB SYSTEM

E-FT-1 Uses our AB Plate System

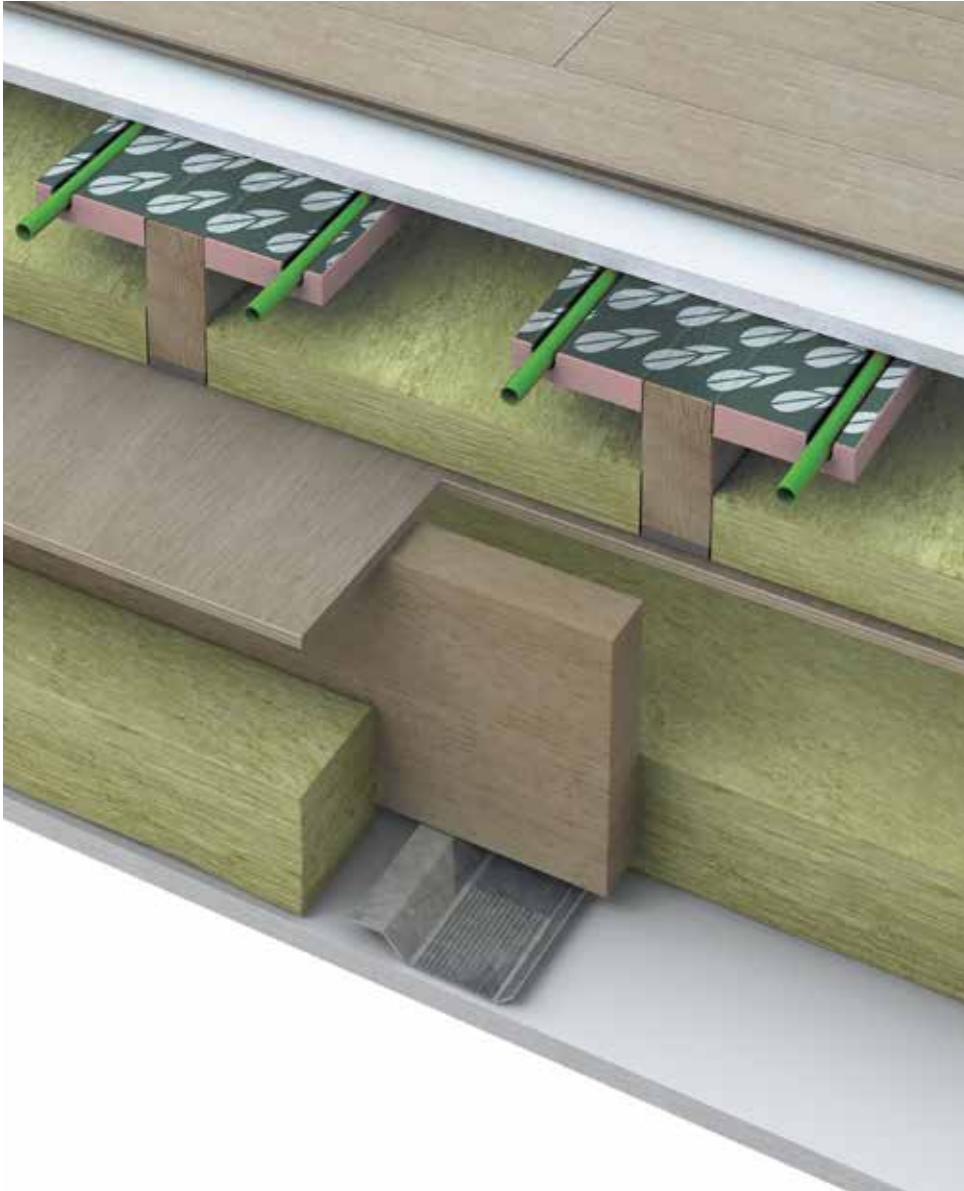
Plates are easily installed over the batten
Integrated insulation to minimise down loss
Designed to maximise contact with the floor deck, giving improved performance

TI 1012 AB PLATE DATASHEET

TI 4001 E-FT-1 DATASHEET

E-FT-2

Underfloor heating for Robust Standard Detail E-FT-2



FLOOR COVERING

Shown T&G Floor Finish
- 18mm thick

GYPSUM BASED BOARD

Weight 13.5 kg/m³

AB PLATE

FFT1 120mm batten system with
pre-bonded resilient layer
Minimum 60mm mineral wool quilt
10-36 kg/m³

FLOOR DECK

11mm thick wood based board

INSULATION

100mm mineral wool quilt

CEILING

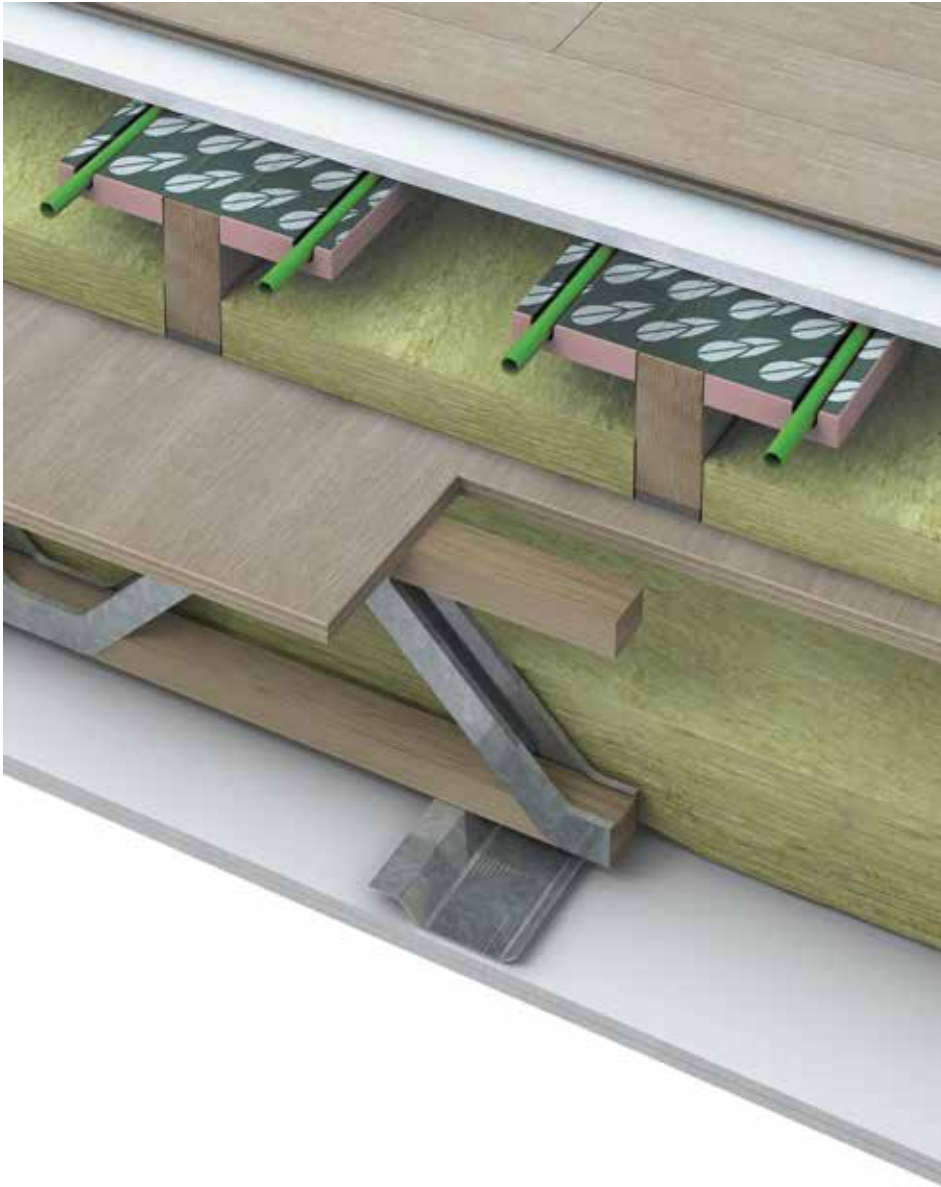
AB SYSTEM

E-FT-2 Uses our AB Plate System
Plates are easily installed over the batten
Integrated insulation to minimise down loss
Designed to maximise contact with the floor deck, giving improved performance

TI 1012 AB PLATE DATASHEET

TI 4002 E-FT-2 DATASHEET

Underfloor heating for Robust Standard Detail E-FT-3



FLOOR COVERING

Shown T&G Floor Finish
- 18mm thick

GYPSUM BASED BOARD

Weight 13.5 kg/m³

AB PLATE

FFT1 Minimum 70mm batten system
with pre-bonded resilient layer
Minimum 60mm mineral wool quilt
33-36 kg/m³

FLOOR DECK

11mm thick wood based board

INSULATION

100mm mineral wool quilt

CEILING

AB SYSTEM

E-FT-3 Uses our AB Plate System

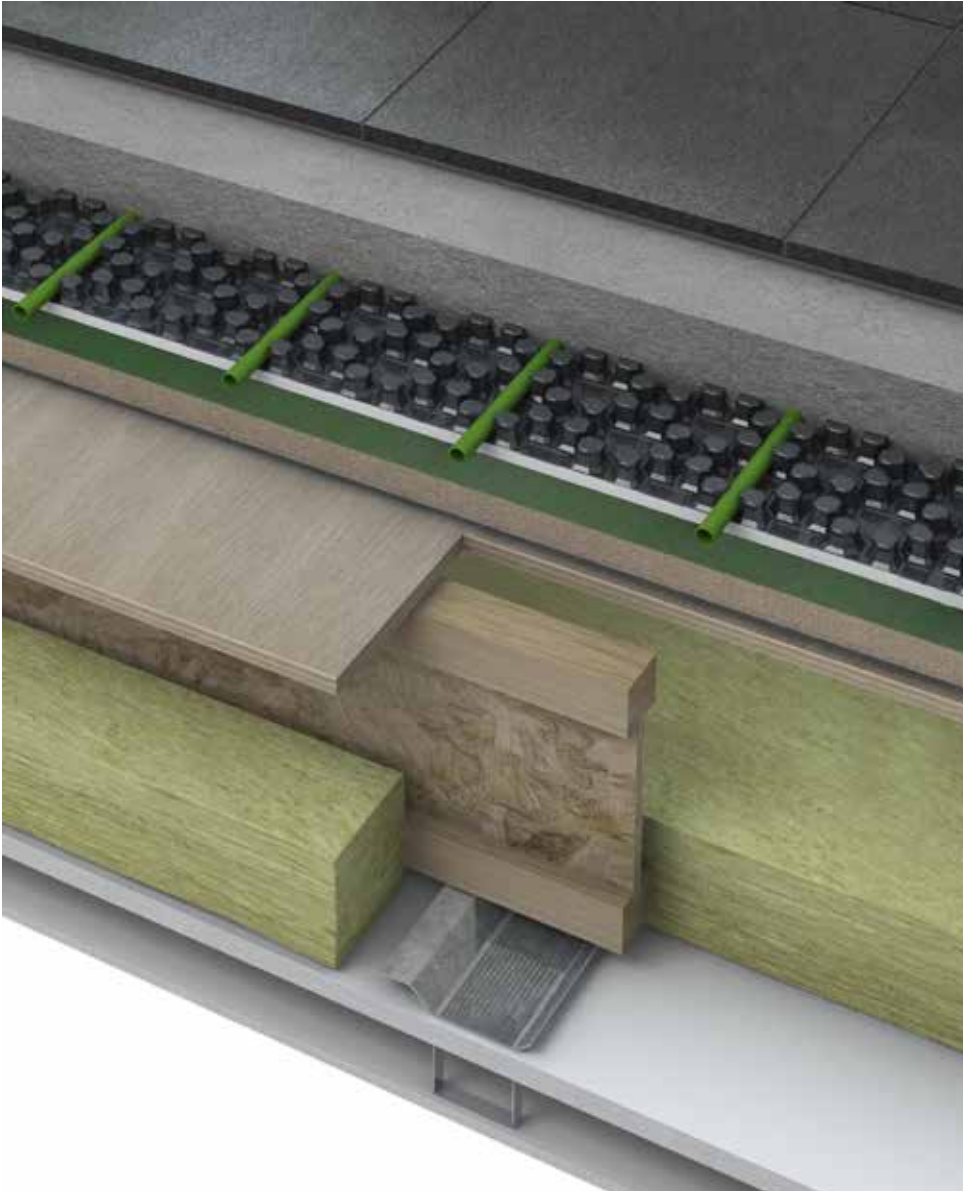
Plates are easily installed over the batten
Integrated insulation to minimise down loss
Designed to maximise contact with the floor deck, giving improved performance

TI 1012 AB PLATE DATASHEET

TI 4003 E-FT-3 DATASHEET

E-FT-4

Underfloor heating for Robust Standard Detail E-FT-4



SCREED

40mm Gyvlon SoundBar

CLIPPLATE

SOUNDBAR BOARD

500mm gauge polythene
on 34mm SoundBar board

INSULATION

100mm mineral wool quilt

CEILING

CLIPPLATE SYSTEM

E-FT-4 Uses our ClipPlate System

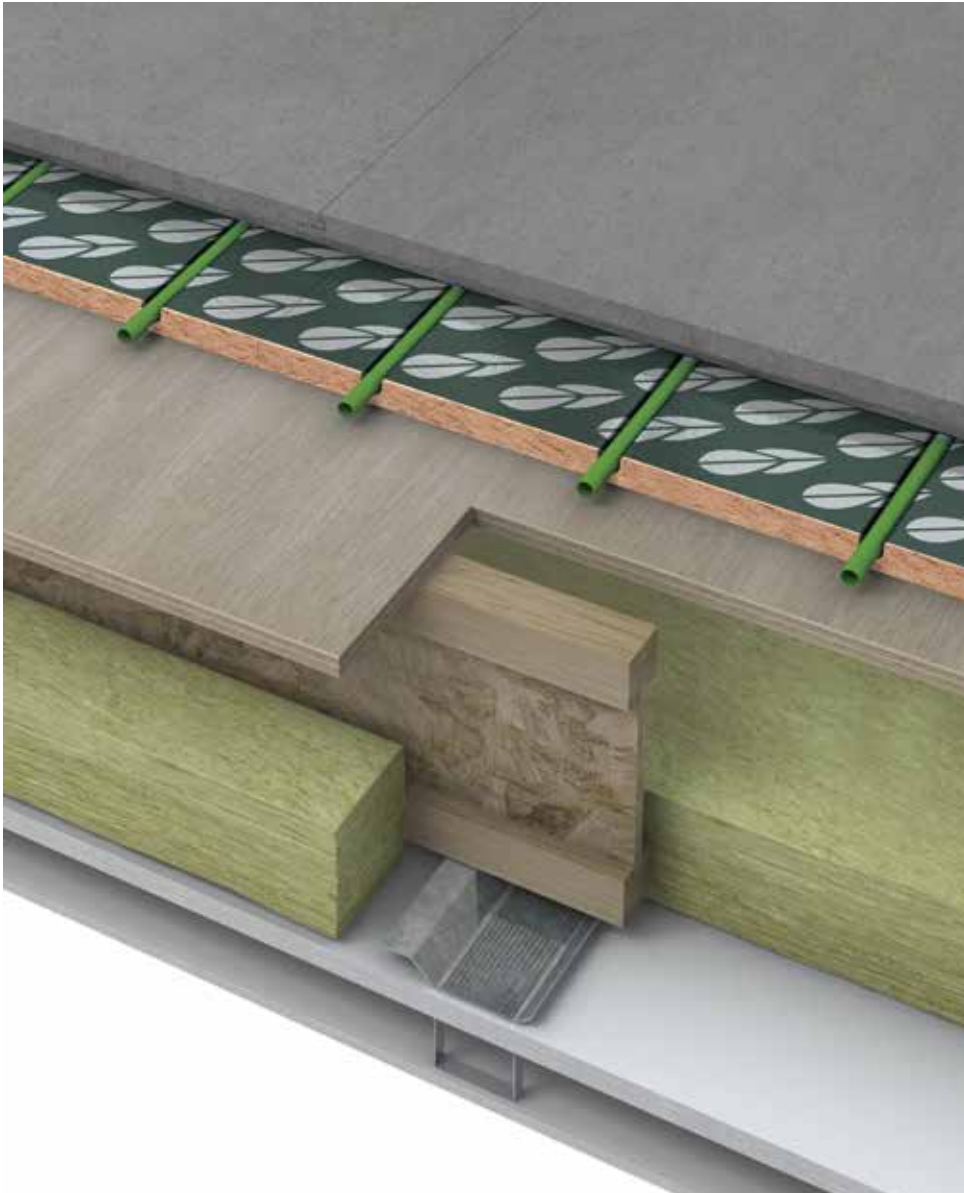
No fixings or staples to dislodge as the screed is being laid
The pipe is protected from site traffic during and after installation
Flexible, multi-directional panel with integrated insulation

TI 1003 CLIPPLATE DATASHEET

TI 4004 E-FT-4 DATASHEET

E-FT-5

Underfloor heating for Robust Standard Detail E-FT-5



SCREEDBOARD

Collecta ScreedBoard 28

FOILBOARD

Floating Floor System

FLOOR DECK

18mm thick base board

INSULATION

100mm mineral wool batt

CEILING

FOILBOARD FLOATING

E-FT-5 Uses our FoilBoard System

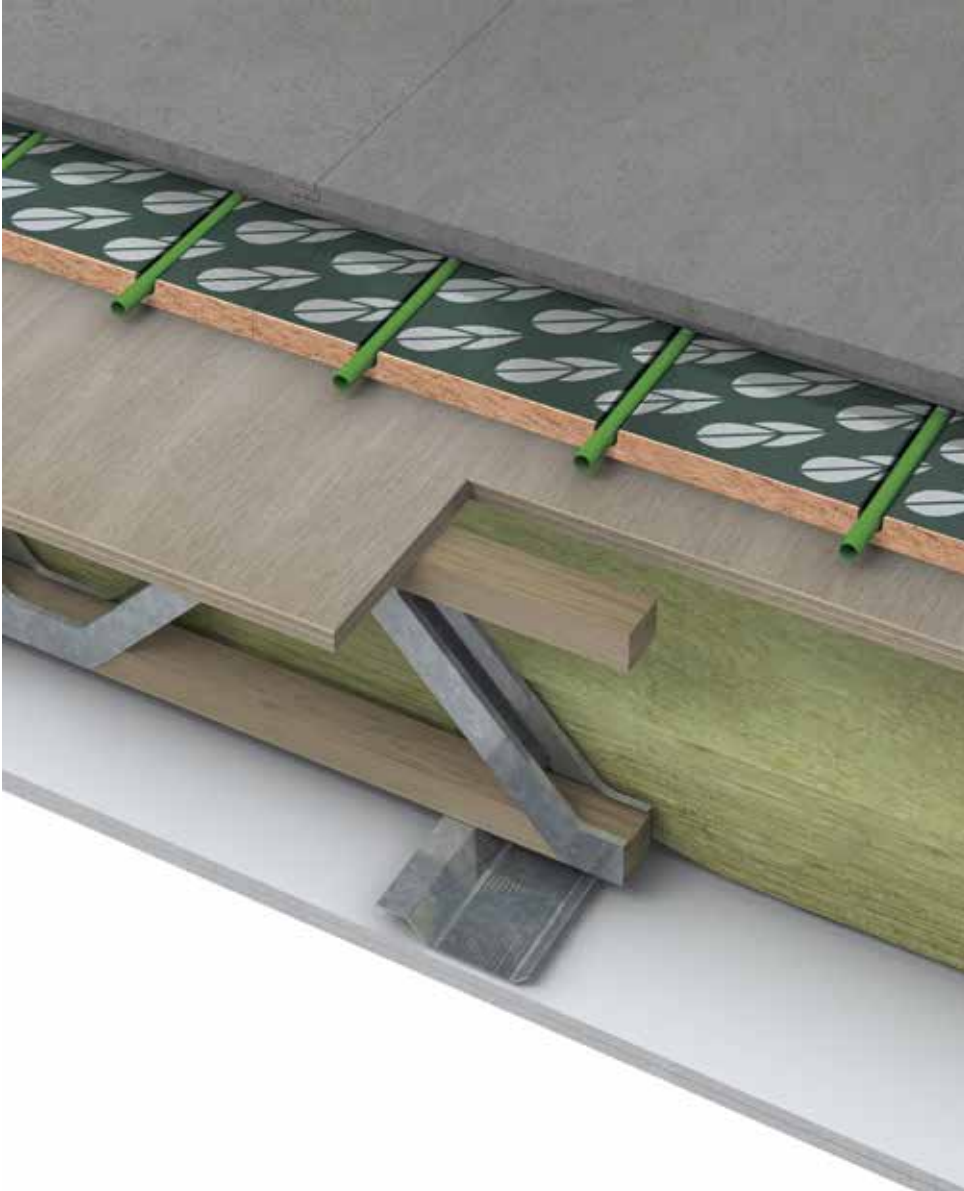
Integrated insulation – no parts to assemble
Panels can be easily trimmed and adjusted on site
Simple, quick installation

TI 1005 FOILBOARD DATASHEET

TI 4005 E-FT-5 DATASHEET

E-FT-6

Underfloor heating for Robust Standard Detail E-FT-6



SCREEDBOARD

Collecta ScreedBoard 28

FOILBOARD

Floating Floor System

FLOOR DECK

18mm thick base board

INSULATION

100mm mineral wool batt

CEILING

FOILBOARD FLOATING

E-FT-6 Uses our FoilBoard System

Integrated insulation – no parts to assemble
Panels can be easily trimmed and adjusted on site
Simple, quick installation

TI 1005 FOILBOARD DATASHEET

TI 4006 E-FT-6 DATASHEET

Timóleon Product Range

Clipplate System

The ClipPlate system has been purposely designed to avoid using fixings and staples in the floor and to speed up the installation of underfloor heating systems

ClipPlate is a series of interlocking sheets with an integrated 10mm expanded polystyrene insulation layer. The castellations in the panel provide grip for the pipe, whilst also providing protection from site traffic and the screed being laid.

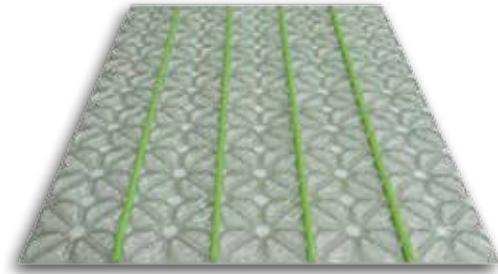
ClipPlate can be installed over any subfloor. Where floor build-up is limited the integrated 10mm EPS provides some resistance when the product is laid over an un-insulated floor. The panel is designed to allow pipes to be installed at spacings as close as 50mm and at 45° & 90° bends, providing additional flexibility.



Clipplate Compact System

The ClipPlate Compact panel is designed for refurbishment applications. The panel is 14mm thick and uses 12mm pipe making it a much thinner panel. The panel comes with holes within it to allow the screed to flow within the panel. The plate has an adhesive layer on the underside that ensures the plate stays in place when the screed is being poured.

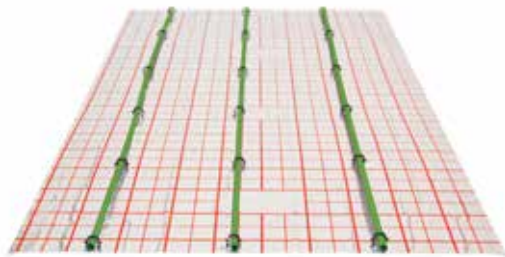
The design enables very thin screeds to be poured over the plate to give the lowest possible screed build up with an underfloor heating system – just 17mm.



Staple System

The staple system provides a quick, flexible and simple method of installing underfloor heating into a screeded floor.

The pipe is easily fixed to the insulation using staples. The barbs on each staple fix into the insulation and hold the pipe in place. The Timóleon Gridded insulation has a laminated foil surface that provides an even stronger fix than plain insulation alone. The foil also provides a convenient grid guide that can easily help with the layout of the piping system. To speed up the process further we also supply a Pipe Stapler with our staple system, making installation even easier and faster.

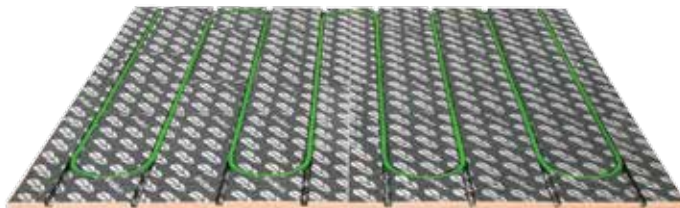


Foilboard System

Our FoilBoard Floating system is laid over a solid floor. The panels provide the support for the fully floating floor deck that is laid over. Each panel is manufactured from extra high density insulation which has a high compressive strength, suitable for floating floor applications.

The heat diffusers are pre-bonded and made from soft temper aluminium. As no thick rigid plates are used the panels are easily trimmed on site.

Once the insulation is laid a tongue and groove floor deck is laid over. The product is available in standard thicknesses from 25mm to 75mm, however other thicknesses are available to suit your project as required.



Toron Flooring System

Our Toron Flooring system consists of flooring grade panels routed with channels to accept 10mm pipe. The design of the panel makes it suitable as a structural floor deck.

The panels have the pipe as close to the floor finish as possible. This maximises the heat output of the panels whilst minimising the temperature of the water being used.

The panels are laid on the battens according to the design. The pipe is installed into the grooves with the ends of the circuit dropping into the batten space to be connected to a common flow and return. A 6mm ply covering layer is installed for all finishes except wood, which can be fixed directly to the flooring panels.



Axios Manifold

The Timóleon Axios manifold is pre-assembled, ready for installation and provides all the functionality stipulated by British Standards (BS1264-4) for an underfloor heating manifold. The manifold benefits from features such as an automatic air vent and water mixing valve so that once commissioned the system will run with very little maintenance for years to come.

Each Axios manifold is supplied with an energy efficient "A" rated circulator and is also available with an automatic bypass and additional manifold ports for the connection of towel radiators.



Questions?
Call the project team.
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