

LOW PROFILE AND RESPONSIVE UNDERFLOOR HEATING

THE BEAMA GUIDE TO LOW HEIGHT,
QUICK RESPONSE SYSTEMS FOR
RENOVATION AND NEW BUILDINGS



Written by John Trenell

DISCLAIMER

Published in Great Britain in 2017 by BEAMA Underfloor Heating (the UK's underfloor heating trade association), Westminster Tower, 3 Albert Embankment, London, SE1 7SL

askforunderfloor.org.uk

www.beama.org.uk/underfloorheating.html

Copyright © BEAMA Ltd 2017

All rights reserved. You may copy, store, distribute, transmit, reproduce or otherwise make available this publication (or any part of it) in any form, or by any means (electronic, digital, optical, mechanical, photocopying, recording or otherwise), without the prior written permission of the publisher provided that at all times the publisher is credited on every page or excerpt or graphic or image and the publishers copyright is acknowledged. The information, pictures, drawings, tables and text herein are provided for guidance only and no responsibility is accepted for any errors or omissions however arising nor is any guarantee or warranty given by or to be assumed from the information contained in this publication. The information has been provided by members of the BEAMA Underfloor trade association and is considered best practice at the time of publication however laws and building practices change and you are advised to seek independent advice before relying upon the information contained herein. Pictures and case studies or referenced material used herein are the copyright of the company named in the case study or credited.

CONTENTS

FOREWORD	04
INTRODUCTION	05
THE BENEFITS OF GOING LOW	06
HOW TO PICK THE PERFECT SYSTEM	10
THE SYSTEMS – IN DETAIL	11
HEAT OUTPUTS	14
BUILDING REGULATIONS	15
LOW PROFILE UNDERFLOOR HEATING SYSTEMS IN ACTION	16
BEAMA UNDERFLOOR MEMBERS	22



FOREWORD

Welcome to the first in a series of guides BEAMA Underfloor members are producing to inform householders and professionals on various aspects of warm water underfloor heating.

BEAMA Underfloor members have been designing, manufacturing, and installing warm water underfloor heating for decades and while the principles of comfortable, invisible and efficient heat haven't changed there have been tremendous advances in the options available which has opened up the possibility to install UFH in almost any situation with minimum disruption.

However, knowledge and understanding of what modern systems can allow have not necessarily developed as rapidly. This guide looks at low profile and fast response systems and aims to fill some of those gaps. There are several different approaches but what all of the systems have in common is that they can be used

in situations where UFH may have previously been considered unsuitable, difficult or time consuming.

These systems lend themselves well to suspended floors and can be laid over existing floors so are great for renovation work. Members of BEAMA Underfloor support training and the dissemination of factual information to help ensure installations are fit for purpose and provide homeowners with the most appropriate solution for their circumstances. Look out for future publications on floor coverings, controls and heat sources, and check out our website for information for householders, designers and specifiers, and installers.

www.beama.org.uk/underfloorheating.html

BEAMA UNDERFLOOR MEMBERS HAVE BEEN DESIGNING, MANUFACTURING, AND INSTALLING WARM WATER UNDERFLOOR HEATING FOR DECADES

INTRODUCTION

Thanks to its many benefits, underfloor heating is rising in popularity with homeowners. As well as being energy efficient, it provides an even level of heat and saves valuable space around the home.

Traditionally, homeowners wanting to fit underfloor heating faced the challenge of installing a system that required a significant amount of work, time and mess to integrate the system into the existing build. Now, thanks to new materials, technology and greater knowledge, low profile systems have been developed which are simpler to install, don't take as much valuable space, but still provide excellent, efficient heating. Low profile systems can be fitted to timber joists or floating floors and are great for renovation projects, extensions or new builds.

This guide is designed to inform homeowners and installers of the different types of low profile systems available and key considerations for choosing the right one for your project, as well as case studies to show you examples of where low profile systems have been used effectively. The guide also provides more detail around installation, building regulations and heat outputs for those who require more in-depth information to help them pick and fit their system.



BENEFITS OF LOW PROFILE UNDERFLOOR HEATING

More 'traditional' underfloor heating systems require thick insulation, a large thermal mass and use a wet screed. All of these elements typically result in a more involved installation process, which is best suited for new build projects or involving significant excavation work.

In some situations, such as retrofit, upper floors or in rooms where raising the floor level could cause issues, the standard systems could be difficult to incorporate and homeowners may well find themselves put off by the size, cost and mess of the job.

But underfloor heating has many benefits – and it doesn't need to be an expensive or disruptive home improvement. Thanks to low profile systems, it can be a lot more affordable and easier to fit underfloor heating than you might think.

The benefits are simple:

- **Quick and mess-free installation:** Some systems can be fitted as quickly as in one day!
- **Minimal space lost:** Low profile systems tend to only be a few millimetres in thickness, meaning you won't lose valuable floor space or depth.
- **Complete solution or mix and match:** You can choose to have low profile systems in just one or two rooms – our research shows that bathrooms and kitchens are the most popular rooms to have underfloor heating – or used throughout an entire home, giving you the flexibility to choose a heating system to suit your needs.

- **Superior quality and energy efficient:** As underfloor heating operates at a lower, overall temperature, producing 'radiant' heat, rather than 'convected' heat, rooms are consistently warm and comfortable, with an even heat distribution throughout. Because of this, opting for water-based underfloor heating will help reduce energy bills in the long-run.
- **Compatible and ready to go:** Because underfloor heating systems are compatible with everything from standard central heating boilers to more modern, renewable source heat such as ground heat source pumps, you won't need an entirely new central heating system to get started.
- **Add value:** Our research shows that underfloor heating is the number one aspirational feature house hunters would look for in their next home, with one in ten house hunters saying they would pay at least £5,000 more for a new home with such a feature.

So if you've made the decision to go for a low profile underfloor system, the next step is to choose a suitable solution for your home.



MAKING LIFE EASY
REHAU underfloor heating solutions



REHAU offer a number of underfloor heating floor systems, **REHAU EASY PANEL**, **RAUFIX** and **TACKER**, ideal for residential and commercial installations. These systems are complimented with the new **REHAU NEA** and **NEA SMART/R** heating controls and our PE-Xa pipes use our renowned **REHAU EVERLOC™** jointing system.
To find out more visit rehau.co.uk/easyheat or email: enquiries@rehau.com

Warmup Total-16 Low Profile Hydronic System

Ideal for new-build and refurbishment projects
where finished floor height is critical.



0345 345 2288
uk@warmup.com
www.warmup.co.uk

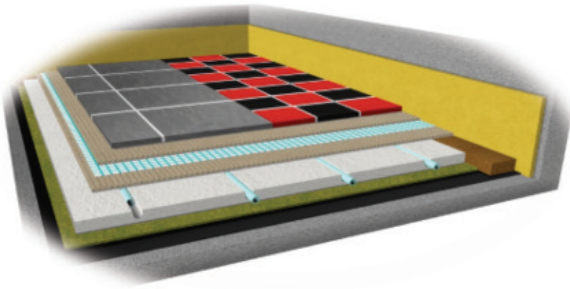


Warmup
The world's best-selling floor heating brand

SIX OPTIONS

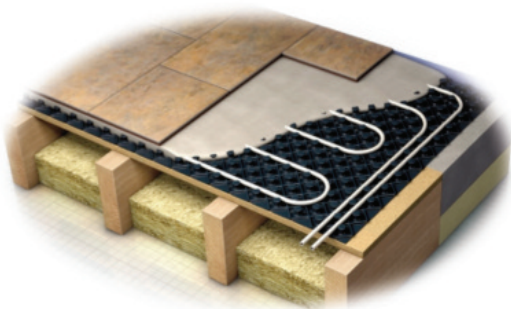
Underfloor heating manufacturers and suppliers will have their own selection of low profile systems, but typically they can be split into six types:

1. Low Section Gypsum Fibreboard Panel Systems (Finished Depth 15-29mm)



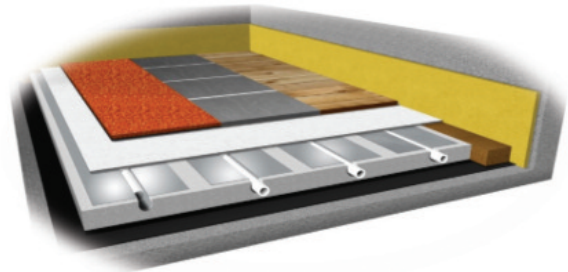
Low section panel systems: A gypsum fibreboard that has pre-routed grooves into which the underfloor pipework is fitted. The finished depth tends to be between 15 and 29mm.

2. Low Section Grid/Leveling Compound Systems (Finished Depth 15-22mm)



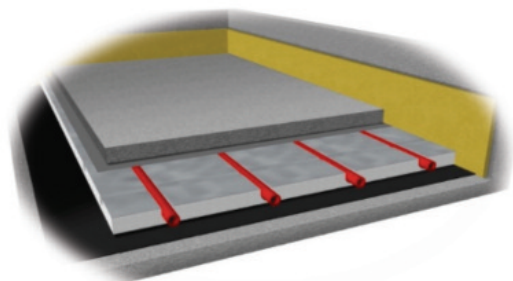
Low section grid/levelling compound systems: A profiled plastic panel designed to house the underfloor heating pipework and levelling. Some boards are available with an adhesive backing to help installation. The finished depth tends to be between 15 and 22mm.

3. Lightweight Aluminium Plate Systems (Finished Depth 43-68mm)



Lightweight aluminium plate systems: A profiled polystyrene insulation panel designed to fit the underfloor heating pipework and aluminium plates with an intermediate layer of plywood, chipboard or gypsum fibreboard laid over before the floor covering is placed. The finished depth tends to be between 43 and 68mm.

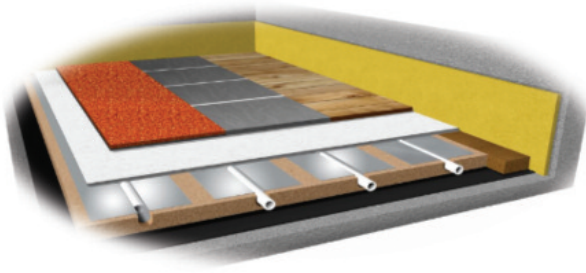
4. Lightweight Foil Faced Insulation systems (Finished Depth 25-68mm)



Lightweight foil faced insulation systems: A profiled polystyrene insulation panel, this time with a bonded aluminium layer added. The underfloor heating pipework fits into the panels with an intermediate layer of plywood, chipboard or gypsum fibreboard laid over to accommodate the floor covering. The finished depth tends to be between 25 and 68mm.

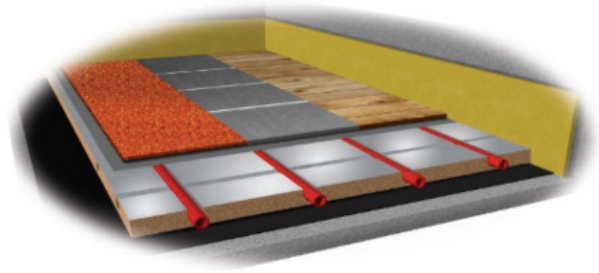
All diagrams reproduced with the kind permission of TIA

5. Lightweight Aluminium Plate Wood Panel Systems (Finished Depth 15-36mm)



Lightweight aluminium plate wood panel systems: A wood panel designed to take the underfloor heating pipework and aluminium plates with an intermediate layer of plywood, chipboard or gypsum fibreboard laid over it before the floor covering is placed. The finished depth tends to be between 15 and 36mm.

6. Lightweight Aluminium Foil Faced Wood Panel Systems (Finished Depth 15-36mm)



Lightweight aluminium foil wood panel systems: A wooden panel with a bonded aluminium layer designed to take the underfloor heating pipework with an intermediate layer of plywood, chipboard or gypsum fibreboard laid over to accept the floor covering. The finished depth tends to be between 15 and 36mm.



Ronafix Pre-packed Underfloor Heating Screed

Thin section polymer screed - application from 40mm
Fast drying allows earlier commissioning
Enhanced thermal conductivity - heats the room quicker

RonaScreed Flowable Underfloor Heating Screed

Thin section flowable self smoothing screed - application from 40mm
Fast drying allows earlier commissioning
Enhanced thermal conductivity - heats the room quicker

RonaScreed Fast Drying Underfloor Heating Screed

Fast drying allows earlier commissioning
Can be opened to traffic next day
Available pre-packed or as an additive for site batching



The Professional's Choice

01279 638 700
tech@ronacrete.co.uk
www.ronacrete.co.uk

HOW TO PICK THE PERFECT SYSTEM

Manufacturers and suppliers will be able to advise on which system is best for your particular project. They will base their advice on a number of factors including the following:

The space:

- How much floor space are you planning on covering?
- Are you installing the system in one room or multiple rooms?
- How much glazing is there in each room?
- What existing insulation is there?
- How strong and stable do you need the system and flooring to be?

The inputs and outputs:

- What is the heat source (eg a boiler or heat pump)?
- What will the water temperature be?
- What water pressure are you able to have?
- What level of heat output do you require?

The installation:

- How quickly do you need to complete the installation?
- How many manifolds will your system require?
- Can you add insulation and if so, what type will you be adding?

It's also worth remembering the following key points when choosing and installing a low profile underfloor heating system:

- You need to consider the system height, floor strength, floor finish and heating performance when choosing the right system for your project
- Pipes with smaller diameters typically result in shorter pipe length and reduced pipe spacing
- When using a system with shorter pipe lengths, you may need to increase the number of underfloor heating pipework circuits. Different system providers offer a range of solutions when considering the impact of this
- Because low profile systems limit the space for pipework to run from the manifold to each room, the central location of each manifold needs to be carefully considered to ensure all the area and rooms are served
- All adhesives and priming compounds with levelling materials need to be checked carefully to ensure they are compatible with the system you're using
- Insulation should always be added if it can be accommodated in the system
- If insulation is used, it should be of sufficient compressive strength to support the floor coverings and

minimise movement where necessary

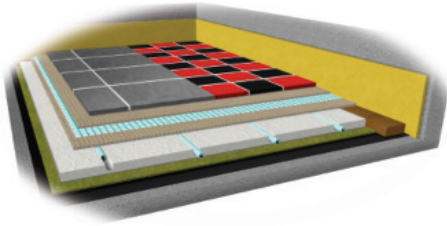
- For systems containing aluminium, the thicker the material the better the heat output
- If using grooved panels, you might require an intermediate layer such as plywood, chipboard or gypsum fibreboard before placing the floor covering. The thicker the intermediate layer, the more resistance there will be to the heat output
- Although they have good load-bearing capabilities, the system boards should not be considered as structural floorboards and should be supported by a structural floor underneath

Once you've considered the above factors and have a detailed brief it should make the process of choosing the best low profile system easier.

THE SYSTEMS – IN DETAIL

Following on from the above snapshot of the six system types, here is a more in-depth look at each one, covering details about the dimensions, pipework, and considerations for installation.

Low section panel systems



Typical dimensions:

- Length: 1200mm
- Width: 600mm
- Depth: 15-23mm
- Panel density: 1200-1500kg/m³
- Overall finished depth: 15-29mm

Pipework:

- The underfloor heating pipework used is typically 10-12mm in diameter

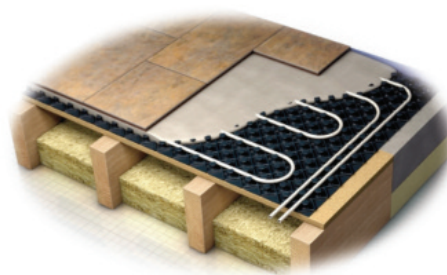
Installation:

The boards are laid directly onto the existing or new structural floor, which should be cleaned and, if required, primed to accept the boards. Profiled plastic panels are generally used to accept the pipework returns down each side of a room.

The boards are available with different edge details to aid in the strength of the joint.

Depending on the type of panel and floor covering being used, you will have to prepare the floor to suit. For example, if you want carpet, the floor should be primed and a smoothing/levelling compound, thin wood or specialist heat transfer panel should be used. Whereas for wood floor coverings you can usually lay directly on the primed surface.

Low section grid/levelling compound systems



Typical dimensions:

- Length: 600mm
- Width: 600mm
- Depth: 15mm
- Levelling compound weight: 22-30 kg/m²
- Levelling compound density: Approx. 1.5 kg/mm/m²
- Overall finished depth: 18-22mm

Pipework:

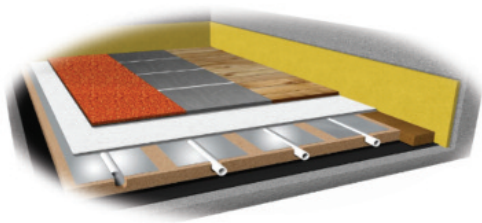
- The underfloor heating pipework used is typically 10-12mm

Installation:

The plastic boards are laid directly onto the existing or new structural floor. Before laying the panels, the floor should be cleaned and, if required, primed. The pipes are then placed into the grooves and a levelling compound is spread over the whole floor to provide the finish, before the floor covering is laid on top.

The sub-floor needs to be cleaned and primed to accept the panels before they are placed and the area will need to be prepped before the floor covering is fitted. Typically for tiles, the floor will need to be primed and the tiles will be placed directly onto the board. For wood and carpet, the floor needs to be primed for protection only.

Lightweight aluminium plate insulation systems



Typical dimensions:

- Length: 1200mm
- Width: 1200-600mm
- Depth: 25-50mm
- Intermediate panel weight: Insulation 10-34kg/m²
- Overall finished depth: 25-68mm

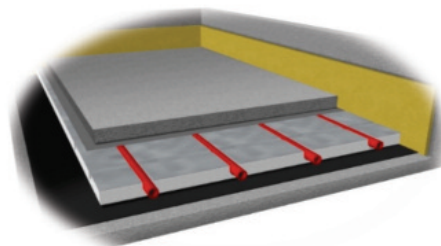
Pipework:

- The underfloor heating pipework used is typically 16mm in diameter

Installation:

The insulation boards are placed directly onto the existing or new structural floor, with the aluminium plates placed into the grooves of the board. The pipework is pressed into place, before an intermediate layer is laid on top to accept the floor covering.

Lightweight aluminium foil faced insulation systems



Typical dimensions:

- Length: 1200mm
- Width: 1200-600mm
- Depth: 25-50mm
- Intermediate panel weight: Insulation 10-34kg/m²
- Overall finished depth: 25-68mm

Pipework:

- The underfloor heating pipework used is typically 16mm in diameter

Installation:

The boards are laid directly onto the existing or new structural floor, with the pipework pressed into place. If required, an intermediate layer should be laid on top to accept the floor coverings.



Tailored Heat Supplies Ltd

Press Fit

Heat Pumps

Underfloor Heating

talk to **Tailored Heat** about your project

quality systems | indemnified design | expert support

01228 564 564



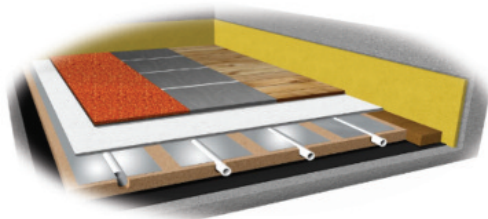


Ask for Underfloor.

f | tailoredheat.co.uk | info@tailoredheat.co.uk | 



Lightweight aluminium plate wood panel systems



Typical dimensions:

- Length: 1200mm
- Width: 1200-600mm
- Depth: 15-36mm
- Intermediate panel weight: Chipboard: 12-16 kg/m²
Gypsum Fibreboard: 22-28 kg/m²
- Overall finished depth: 15-42mm

Pipework:

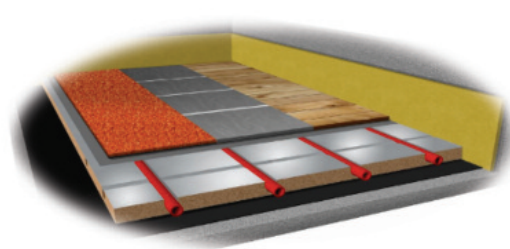
- The underfloor heating pipework used is typically 12-16mm in diameter

Installation:

The wood panels are laid over the existing floor or over new joists with thicker panels. The aluminium plates are then placed in the grooves of the boards with the pipework pressed into place. An intermediate layer is laid over to accept the floor covering.

You can use profiled wood panels instead of chipboard floorboards, but careful consideration should be given to the strength and structure the material used.

Lightweight aluminium foil faced wood panel systems



Typical dimensions:

- Length: 1200mm
- Width: 1200-600mm
- Depth: 15-36mm
- Intermediate panel weight: Chipboard: 12-16 kg/m²
Gypsum Fibreboard: 22-28 kg/m²
- Overall finished depth: 15-42mm

Pipework:

- The underfloor heating pipework used is typically 16mm in diameter

Installation:

As with the lightweight aluminium plate wood panel systems, the wood panels are placed over the existing floor or new joists with the pipework pressed into place. If required, an intermediate layer can be laid on top before the floor covering is fitted.

You can use profiled wood panels instead of chipboard floorboards, but careful consideration should be given to the strength and structure the material used.

HEAT OUTPUTS

Below is a summary of heat outputs for each type of system with different average water temperatures. The actual heat outputs for each project will depend on a number of factors such as system type, pipe size, pipe spacing, effective heat output area and floor insulation and therefore this should only be used as a guide.

For the purpose of comparison, all information is shown with a pipe spacing of 150mm and a typical room temperature of 20°C.

SYSTEM	Mean Water Temp	Indicative Heat Output expressed as Watts per m ² (heated area) for differing TOG Rating of Floor Topping/Covering		
		DegC	0.0	1.0
STANDARD UFH CONSTRUCTION Floating Screed Floor Laid over BS1264 Compliant Insulation (86-115mm GF, 61-90mm FF)	35	81	50	42
	45	100	83	70
	55	100	100	98
Low Section - Gypsum Fibreboard (≥15mm)	35	55	38	33
	45	91	63	54
	55	100	88	76
Low Section - Grid and Leveling Compound (≥18-22mm)	35	73	53	48
	45	100	89	80
	55	100	100	100
Lightweight Aluminium Plate Insulation System Pre-Grooved Insulation, 0.5mm Aluminium Plate and 18mm Chipboard (50-68mm GF, 25-43mm FF)	35	45	32	28
	45	76	53	46
	55	100	74	65
Lightweight Aluminium Plate Insulation System Pre-Grooved Insulation, 0.5mm Aluminium Plate System and 18mm Gypsum Fibreboard (50-68mm GF, 25-43mm FF)	35	70	43	36
	45	100	71	59
	55	100	99	83
Lightweight Aluminium Plate Wood Panel System Pre-Grooved Wood Panel, 0.5mm Aluminium Plate (15-42mm)	35	55	40	35
	45	92	66	58
	55	100	93	81
Lightweight Foil Faced Insulation System Pre-Grooved Insulation with 0.1mm Aluminium Foil and 18mm Chipboard (50-68mm GF, 25-43mm FF)	35	38	27	24
	45	64	45	39
	55	90	63	55
Lightweight Foil Faced Insulation System Pre-Grooved Insulation with 0.1mm Aluminium Foil and 18mm Gypsum Fibreboard ((50-68mm GF, 25-43mm FF)	35	60	36	30
	45	99	60	50
	55	100	84	70
Lightweight Foil Faced Wood Panel System Pre-Grooved Wood Panel with 0.1mm Aluminium Foil (15-42mm)	35	39	28	25
	45	65	47	41
	55	92	66	58
Lightweight Foil Faced Insulation System Pre-Grooved Insulation with 0.05mm Aluminium Foil and 18mm Chipboard (50-68mm GF, 25-43mm FF)	35	30	21	19
	45	50	35	31
	55	71	50	43
Lightweight Foil Faced Insulation System Pre-Grooved Insulation with 0.05mm Aluminium Foil and 18mm Gypsum Fibreboard (50-68mm GF, 25-43mm FF)	35	47	28	24
	45	78	47	40
	55	100	66	55

ADDITIONAL NOTES:

1. Data is sourced from BS EN 1264 Calculations (as shown in the BRE Low Temperature Guide); Nu Heat; Polypipe; Uponor; BEAMA Underfloor Aluminium Working Group.
2. It should be noted that information provided within this guide would always be superseded by specific guidance relative to each system provider.
3. Data sourced from manufacturers for non BS EN 1264 constructions has been averaged.
4. Outputs shown with insulated floors assume insulation to BS EN 1264.
5. All pipe spacing is at 150mm c-c.
6. Assumed Room temperature is 20°C.
7. Aluminium Heat Plate outputs have been adjusted assuming 84% coverage of the plate relevant to the heated floor area.
8. Aluminium Foil outputs have been adjusted assuming 95% coverage of the foil relevant to the heated floor area.

BUILDING REGULATIONS

Where possible, building regulations and standards should be adhered to when installing underfloor heating systems. However, it's noted that often the main reason for using low profile systems is to minimise floor depth and so this may therefore limit the use of floor insulation.

Typically the regulations and standards that should be considered are:

Building Regulations for the retrofit/renovation market:

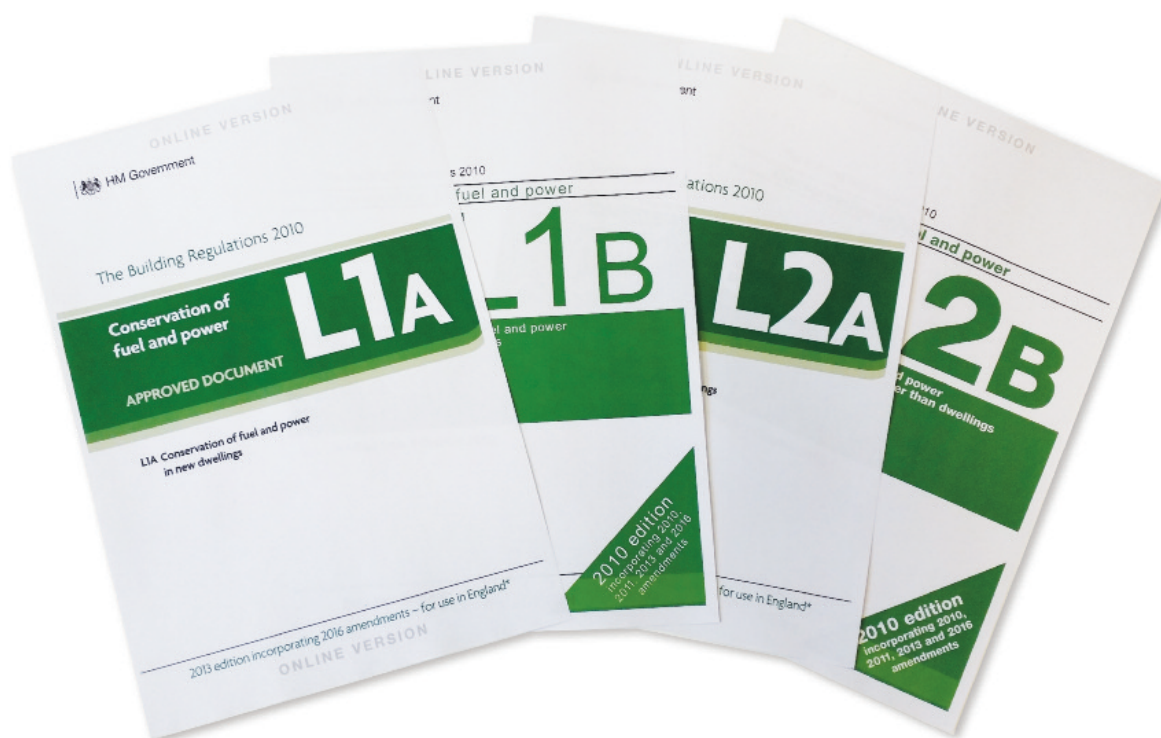
After consultation between BEAMA and Building Control, it was agreed that underfloor heating using panel-based, low profile systems does not require the provision of floor insulation to meet building regulations where it is not practical to do so.

Building Regulations (Part L1a 2013) position for new builds:

Require provision of insulation in the ground floor to meet minimum U value requirements of $0.25 \text{ W(m}^2\text{k)}$.

BS EN 1264-4:

Requires minimum insulation layers under the pipework to the ground and upper floors.



LOW PROFILE UNDERFLOOR HEATING SYSTEMS IN ACTION

For homeowners still weighing up their options when it comes to underfloor heating, hearing about some successful projects could help to inspire and inform their decisions.

Project 1: An extended three-bedroom semi-detached

Mandy Stamp wanted to enhance the downstairs living space in her three-bedroom semi-detached with a kitchen/diner extension, measuring 30 square meters. The brief was to install an energy-efficient heating solution which would create a warm and inviting environment without compromising the interior design space.

With the new extension connecting directly to the living room, the underfloor heating solution had to create an even join between the rooms and durability was also a key consideration due to the high level of traffic passing through the area each day.

The homeowner met with JG Speedfit, which specified the use of its Overfit system, which uses lightweight insulated panel technology and offers high compressive strength. Although the panels had high compressive strength already, battens were placed between the boards to create an even more robust platform.



Before laying the Layflat Pipe, the manifold was fitted centrally to the system to reduce the flow and return distance. Using the pre-grooved channels, the 15mm pipe was inserted at 150mm centres to create a highly responsive system. A heavy tongue and grooved backer board was then laid and glued along the joints for extra security, providing a heavy duty surface suitable for the tiling with good heat transferring properties. By concealing the underfloor heating pipe circuits under the tiles, the homeowner was given complete design freedom to place units and furniture anywhere in the extension.

Project 2: A renovated spacious bungalow

As part of an extensive renovation project, a homeowner chose to fit a Myson FLOORTEC system using Myson MICROBOARD in his bungalow. After removing the top layer of concrete on the floors to remove the old heating system, the owner decided to retrofit the underfloor heating system to maximise the internal space and achieve the open plan interior he wanted.

Myson MICROBOARD is a low profile system for hydronic underfloor heating that can be retrofitted over an existing floor or as part of a new build system. At just 18mm thick, the system can be installed without significantly altering the floor height and without the need for expensive excavation work. It is available in two panel types, straight and end turn panels.

Stuart Chater, the property owner, said: "The system was extremely straightforward to install and provided an excellent level of comfort. We have just added an extension to the property and will install underfloor heating using Myson MICROBOARD in this space too."



www.myson.co.uk



SMARTER SOLUTIONS FROM MYSON FLOORTEC

MICROBOARD

The flexible underfloor heating system ideal for renovations and new build projects.

- Retrofit low-profile heating system
- Only 18mm in depth, allowing it to be easily installed into older and existing properties
- Integrates with the existing heating system

MYSON also offer a full range of fixing systems for all floor types, so we guarantee we have the solution you need.

For more information on any of our products call **0845 402 3434**, visit www.myson.co.uk or e-mail underfloor@myson.co.uk



Part of Rettig ICC Europe's leading manufacturer of heat emitters.



COMPLETE HEATING SOLUTIONS

Project 3: An extended two bed bungalow

When Paul and Gill Regan bought a dated two bedroom bungalow in Plymstock, Devon, they planned an extensive renovation. As well as adding much needed space, a key part of the project included upgrading the heating system to warm water underfloor heating.

The couple had previously enjoyed underfloor heating in their last few homes and they wanted the freedom to place fixtures and fittings without any restricted wall and floor space. They opted for a low profile retrofit solution from Nu-Heat, LoPro™Max, which is just 22mm in height.

Designed for a simple and quick installation, the LoPro™Max system uses robust castellated panels that are laid over the existing floor to hold the tube in place. The wet system benefits from a specialist self-levelling compound, LoPro™QuickSet, which provides a heat output of around 50 per cent higher than a typical retrofit solution. This makes it perfect for older properties with lower levels of insulation or rooms with large amounts of glazing and also means floor coverings can be laid as soon as the floor is dry without the need for any additional levelling.



The underfloor heating system took just two days to install; on the first day the tube was installed throughout the property and the system was pressure tested, and on the second day the specialist self-levelling compound was poured.

Paul said: "We were adding an extension, so the system had to easily go over two different floor structures, from floorboards to new concrete. We also wanted as little height build-up as possible, a rapid heat-up time and good control – and this system offers all of those things.

"The installation was very quick, just two days in total. The compound was down in a couple of hours and the fact that the floor was dry and we could walk on it after eight hours was brilliant."

**WITH LoPro™ ...
UNDERFLOOR HEATING
FOR RENOVATIONS
YOU WON'T HAVE TO DIG UP YOUR FLOOR!**

There's no need for extensive building works with Nu-Heat's award-winning LoPro™ range of underfloor heating systems. Simply laid directly on top of your existing floor, with an incredibly small height build-up and heating up as quickly as radiators, you can enjoy the luxury of underfloor heating whatever your project.

Call us to find out how LoPro™ can work for your project
01404 540650 or visit www.nu-heat.co.uk/lopro

Nu-Heat
UNDERFLOOR & RENEWABLES

Project 4: A revamped windmill

Situated in Doncaster, the windmill was converted into a home in 1970 but recent renovations have benefited from Polypipe's Overlay™ system, an ideal solution for retrospective installations and renovations as it can be laid on top of existing floors.

At only 18mm deep, Polypipe's Overlay™ system allowed the homeowners complete design freedom when placing the furniture within their home. With the room being completely round, it was impossible to locate radiators to fit the curve of the wall. Underfloor heating resolved this issue completely, with no large wall mounted equipment required.

As the windmill's layout is one long upright tunnel, it was of paramount importance that the heating was effective as well as designed to make best use of the space. With traditional radiators, the heat rises only along the wall, leaving the middle of the room cold.



Project 5: New office underfloor fit-out

During the course of renovating its offices, Stewarts Plumbing & Heating Ltd was keen to install a heating system which was environmentally friendly and would provide a consistent, ambient temperature in every room.

Already well experienced in specifying and installing underfloor heating projects for its customers, the company – based on the outskirts of Birmingham – selected Polypipe's Overlay™ system for its team HQ.

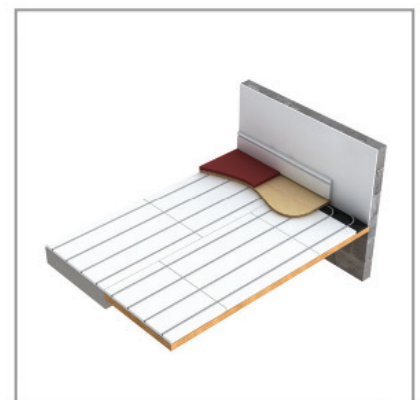
The perfect solution for retrospective installations and renovations, the system is installed over existing floor and – at only 18mm in depth – prevents the need for expensive excavation or floor heightening.

The system works by circulating warm water through a network of pipes to provide a consistent temperature in each of the rooms it is fitted. The water is heated to a lower temperature than traditional boiler-fed central heating systems, which

reduces running costs as well as providing many environmental benefits.

The installation was both cost-effective, and easy to undertake as it eliminated the need to consider the pre-existing radiators.

Completing the project in December 2015, the install offered Stewarts Plumbing & Heating Ltd the perfect opportunity to put its professional partnership with Polypipe to best use, resulting in a comfortable environment for the company's team.



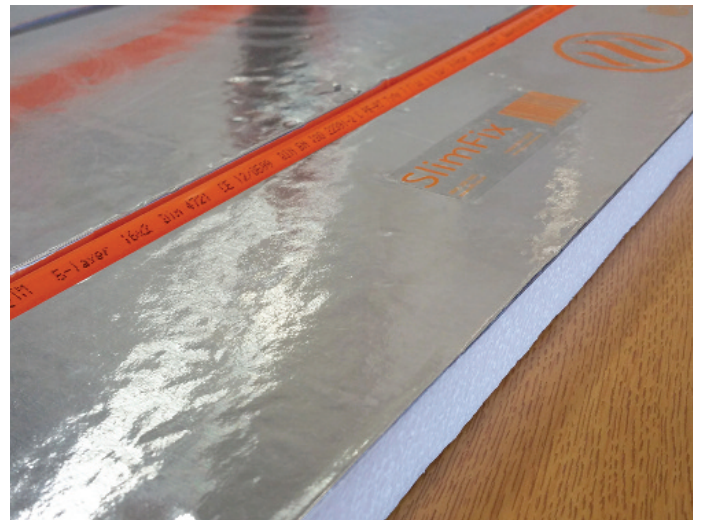
Project 6: 20 luxury, high-spec apartments

There's an increasing trend to develop urban industrial buildings into flats. The apartments in this luxury London development needed to be finished to a high standard, with a heating system that is low profile, efficient and compliant with robust details.

The plumber working on the project contacted Continental Underfloor and was specified a single panel system, SlimFix. As the plumber had to complete the installation of the heating system in all 20 flats within five days, time for this project was particularly tight. However, Continental was able to provide a same-day quote and the design within 24 hours, with the first instalment dispatched via next day delivery.

Thanks to choosing the right low profile system, a bespoke design and prompt delivery, the project was able to run smoothly and 20 high-spec apartments were fitted with underfloor heating systems that perfectly met the brief.

The plumber said: *"Each individual flat has a bespoke design; this enabled smooth and efficient installation on site. All goods arrived when required and receiving the delivery floor by floor removed the aggravation of having to store materials on site as space was very limited."*



The last word on thin systems...

SlimFix™
by
Continental UNDERFLOOR

0333 800 1750 www.ufh.co.uk

Project 7: A house refurbishment project in York

For this retrofit underfloor heating project at a residential property near York, the Maincor Overboard system was used due to its suitability with retrofit projects. The system is quick and easy to install, offering an energy efficient solution and a comfortable internal environment for the occupiers.



To fit the system, the underfloor heating pipes (12mm Multi-Layer Composite Pipe) are laid within the 18mm thick pre-routed Overboard panels, offering a low profile solution which lends itself to situations where minimal floor height adjustments are desired. This makes the Overboard system suitable for virtually any property desiring underfloor heating with its indoor comfort benefits, lower heating bills and reduced CO₂ emissions.

The Overboard panels were laid directly onto an existing wooden floor. The MLCP pipe was then laid and the boards were screwed down. In this particular situation, a kitchen island was planned, so chip board was laid in this area as heating pipes were not required under this unit.

The Overboard system has been designed with ease of installation and planning in mind, for example the boards don't need to be laid in brick pattern and the end returns are exactly half the size of the main panels, meaning less cutting is required.

Due to the formation of the end returns there are countless options on pipe placement reducing the need for routing on site saving time, hassle, wastage, dust and breakages. The panels are also square edge, reducing cutting requirements and removing the need to worry about lapped edges during the layout stage. Most importantly, the Overboard panels also have three fixing points on each channel which makes it far quicker to install the pipes – they stay firmly in place which saves time on site.

Working with the customer to support this project, Maincor provided on-site support to assist the installer including underfloor heating layout drawings to help position the Overboard panels. Maincor also offer a long-term insurance backed warranty for extra peace of mind.

The installer, Matthew Cox, said: "We've managed to save a day's labour as it was so quick to lay and if we'd used a traditional screed, we'd be waiting for the screed to go off. On every part of the floor, pipework is no more than 150mm apart so there will be an even heat across the floor. In fact I'm that impressed with it, I'm going to put it into my own conservatory! Previously we've used screed systems but I'll be using Maincor in the future".



OVERBOARD™

Introducing Overboard™ from Maincor:

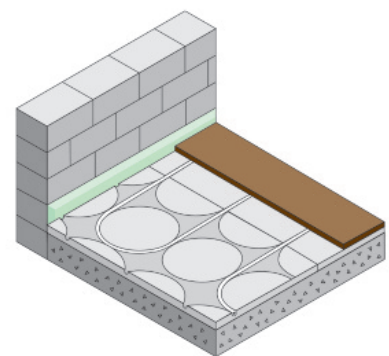
Designed for retrofit underfloor heating installation into virtually any property.

Perfect for complete property renovations and projects such as extensions or kitchen refurbishments:

- Overboard panels are **only 18mm thick** - low profile underfloor heating system
- **Minimal disruption** when installing into existing buildings
- Overboard panels **cover the entire floor surface** providing high heat output
- Panels have special **fixing points** to locate the pipes for **ease of installation**
- Clever system design offers increased layout options, less cutting and reduced wastage
 - saving time and money on site

Call us on 01455 555930 or visit www.maincor.co.uk for more information

OVERBOARD™
OVER ANY FLOOR



MAINCOR

*See website for applications

BEAMA UNDERFLOOR MEMBERS



ENGINEERING
TOMORROW



BEAMA UNDERFLOOR MEMBERS



MORE INFORMATION

For more information about BEAMA, the Ask for Underfloor campaign and underfloor heating, please visit www.askforunderfloor.co.uk.



Westminster Tower
3 Albert Embankment
London SE1 7SL

www.beama.org.uk