TED TODD

FINE WOOD FLOORS

# INSTALLATION GUIDE

*Plank*

*Narrow Plank*

*Wide Plank*

*Extra-Wide Plank*

*Super-Wide Plank*

*Herringbone*

*Chevron*

*Chantilly panel*

*Parquet de Versailles*

*Parquet de Chevney*

*Circular design panel*

*Parquet de Ardeche*

*8 tile parquet de versailles*

*Shrawley*

*Avery*

*Continuous Versailles*

*Wall Cladding*

# GUIDELINES FOR: **UNDERFLOOR HEATING (UFH)**

The following sections offer guidelines to help with Wood Floor installations with UFH:

- 13.1 General.
- 13.2 General additional guidelines for UFH with Wood Floor installations.
- 13.3 Notes about Wood Floor installation methods
- 13.4 Acclimatisation and UFH
- 13.5 Monitoring
- 13.6 Water-Fed UFH systems
- 13.7 Electric UFH systems
- 13.8 Part of a floor with UFH
- 13.9 Summary
- 13.10 FAQ's

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*Herringbone*

*Chevron*

*Circular design panel*

*Continuous patterns*

# GUIDELINES FOR: **UNDERFLOOR HEATING (UFH)**

## 13.1 General Guidelines

(i) All of the usual guidelines for the installation of wood flooring must be followed.

- See Chapter 1, sections A, B and C. Site conditions, Acclimatisation and Moisture barriers and testing.
- See Chapter 2, Sub Floors
- See Chapters 3,4,5,6,7,8,9,10,11 and 12 for guidelines on installation relevant to the flooring type.

(ii) Only engineered wood floors should be installed with UFH systems.

## 13.2 General additional Guidelines for UFH Wood Floor Installations

(i) UFH systems generally fall into one of 2 categories:

- Hot-water pipe systems
- Electric foil, mat or cable systems.

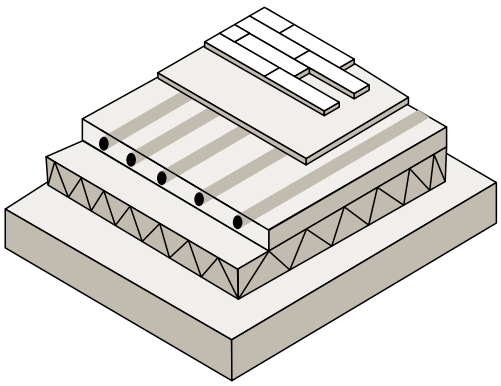

Fig 1: ***Hot-water pipe UFH systems***

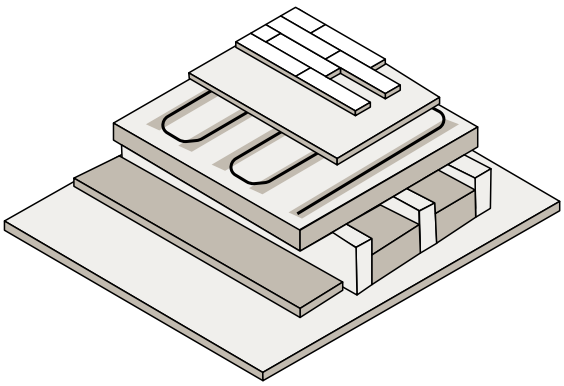

***Fig 2: Electric foil, mat or cable UFH systems***

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*Herringbone*

*Chevron*

*Circular design panel*

*Continuous patterns*

# GUIDELINES FOR: **UNDERFLOOR HEATING (UFH)**

(ii) All Ted Todd engineered floors are suitable for installations with UFH systems as long as the installation meets suitable criteria.

(iii) You must check with the manufacturer and installer of the UFH system to ensure that the design of the system, with regard to the layout of the heating pipes or elements and the associated control systems, can be properly controlled to ensure the maximum temperature of the timber floor (at any point) will not exceed 27°C.

Underfloor Heating should not be the main source of heating, it should be ambient only.

For water systems this is easily achieved by adjusting the flow-control valves regulator to a maximum water temperature that is commensurate with a floor temperature of 27°C. (Normally the maximum water flow temperature should not exceed 35°C to achieve this)

For electric systems you will also need to set up the system, so it is impossible for the floor temperature to exceed 27°C.

Please note that the 27°C is across the whole floor and it is common for poorly installed systems to have hot spots. The calibration of both water and electric systems needs to be measured against the hottest areas in the floor. The sub-floor construction must have a heat-distributing layer that gives an even temperature over the entire surface of the floor area, in order to prevent high temperatures in certain spots.

It is important that the manufacturer and installer of the UFH system understand the thickness of the Engineered flooring which is top of the installation, so the UFH and its control systems can be designed accordingly.

Due regard must be given to the substrate between the UFH and the subfloor to which the wood floor layer will be attached.

Due regard must be given to the thermostats controlling each room area.

Best results will only be achieved with well insulated rooms and building structures.

(iv) The installer of the system should also ensure that, in the operating instructions for the system, it is highlighted for the heating system to be warmed up gradually when approaching cooler periods, or after the UFH has been switched off for any time.

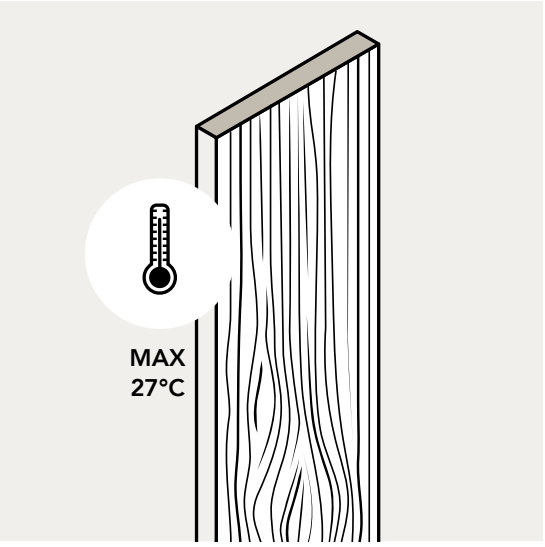


***Fig 3: maximum temperature of the timber floor (at any point) should not exceed 27°C.***

*Plank*

*Herringbone*

*Chevron*

*Circular design panel*

*Continuous patterns*

# GUIDELINES FOR: **UNDERFLOOR HEATING (UFH)**

## 13.3 Notes about Wood Floor installations methods:

The preferred and recommended method for installing all Ted Todd engineered floors (T&G floors, Parquet, Patterns and Panels) is to fully bond (glue down) to the screed layer above the UFH system with a single coat of Ted Todd Primerfast and Ted Todd MS Flex adhesive.

Planks with either T&G or a click joining system may also be or floated over a suitable underlay, such as Ted Todd Green or Ted Todd Yellow. (Parquet, Patterns and Panels must not be floated. They must be fully bonded).

## 13.4 Acclimatisation.

Please note that most Ted Todd engineered floors are supplied with a moisture content (MC) of between 8% - 10%. After a period of time under a UFH installation, the MC of the wood may drop to 6%-8% or lower. This could cause some shrinkage in the floorboards. Similarly, if the UFH system is switched off after installation (such as in the summer) the M/C of the floorboards may rise again causing some width expansion. For this reason, the MC of the wood floor must be carefully checked before installation and if necessary, extra acclimatisation should take place. Similarly, allowance should be considered for some expansion of the wood in case the heating system is switched off and the site's humidity rises again.

## 13.5 Monitoring.

Ted Todd recommend that all installations of Ted Todd wood floors over UFH systems be accompanied by the installation of the Ted Todd Fidbox monitoring system.

The Fidbox allows the performance of the UFH system to be recorded by monitoring and recording the temperature and humidity from within the wood floor and over the sub-floor.

This in turn allows the UFH system controls to be adjusted and optimised.

Additionally, extra monitoring may be made using hand-held infra-red temperature gauges and / or heat images using an infra-red camera.

The maximum surface temperature on the top of the wood floor should not exceed 27°C. at any point in the installation.

Check for hot spots as the calibration needs to be measured against the hottest areas.

Qualitative observations should also be made of the condition of the wood floor in the early weeks after installation. This can include:

- Floor feels very warm or hot underfoot
- Cold areas and hot spots underfoot
- Boards losing colour if they dry out excessively
- Surface checks and splits appearing on some boards.

# GUIDELINES FOR: **UNDERFLOOR HEATING (UFH)**

The above may be symptomatic of the master-regulator being set too high, in which case it should be reduced. The humidity of the air in the room should be checked and if too low, re-humidify. (Target = 45% to 65% Rh). In some cases additional heat sources may be needed in some room areas.

Do not lay thick rugs, mats or large items that will trap the heat over floors with under floor heating systems as this can cause excessive drying of the timber.

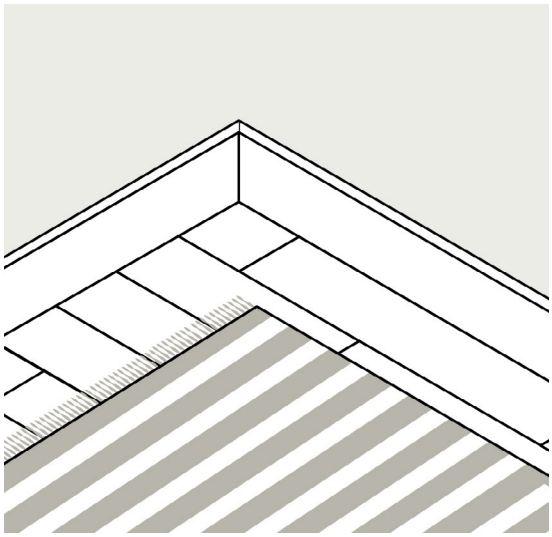

***Fig 4: Laying thick rugs, mats or large items can lead to excessive drying of the timber.***

**13.5.1 Basic Guide to the Ted Todd Fidbox monitoring System**

**What is a Fidbox?**

A Fidbox is a battery powered temperature and humidity measuring device that fits, rebated within the underside of a wooden floor. It logs the temperature and humidity measurements above and below the sensors over a six-year period. The readings can be taken wirelessly.

**Why use a Fidbox?**

Almost all problems with wooden floors come from temperature or humidity changes. The Fidbox shows a record of what has happened to a floor such as rising damp, too hot underfloor heating, washed floors, bad environmental conditions after fitting. The Fidbox records all these factors and allows you to understand what has happened and avoid future problems.

**How do you read the data?**

The data can be read using either a free iPhone or Android app.

**How many Fidboxes are needed?**

You need approximately 1 Fidbox per 50sqm. If you have large open areas this quantity can be reduced. Ask advice if you want to reduce the number used. A Fidbox should be installed over each underfloor heating circuit.

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*Herringbone*

*Chevron*

*Circular design panel*

*Continuous patterns*

# GUIDELINES FOR: **UNDERFLOOR HEATING (UFH)**

**Where do you install?**

Install throughout the project in the larger rooms. Install in areas that will not be covered by rugs or fitted furniture. A good place is 1.2m from a doorway.

**How do you install?**

The Fidbox comes ready to install. Simply make a small pocket routed out of the back of the floorboard 95mm x 55mm x 8mm leaving at least 3mm of timber remaining, and stick the Fidbox into the back of the board with the sticky pad provided. Avoid putting flooring adhesive directly below the Fidbox sensor.

**What do you do after install?**

Place the serial number sticker that came in the packaging on a site plan sketch or drawing and record the fidbox location. Good records of the serial number and its location aid future reading of the Fidbox.

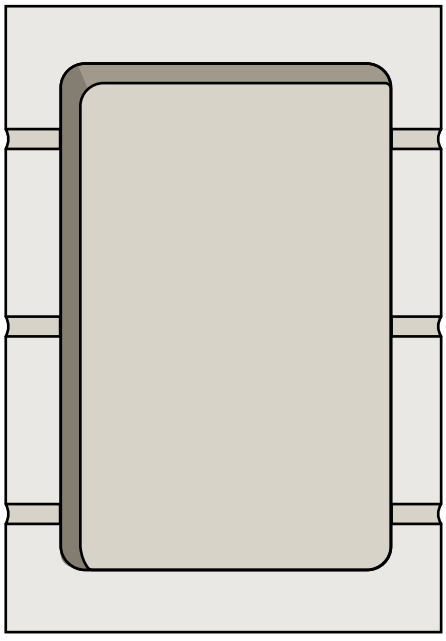

*Fig 5: make a small pocket routed out of the back of the floorboard 95mm x 55mm x 8mm.*

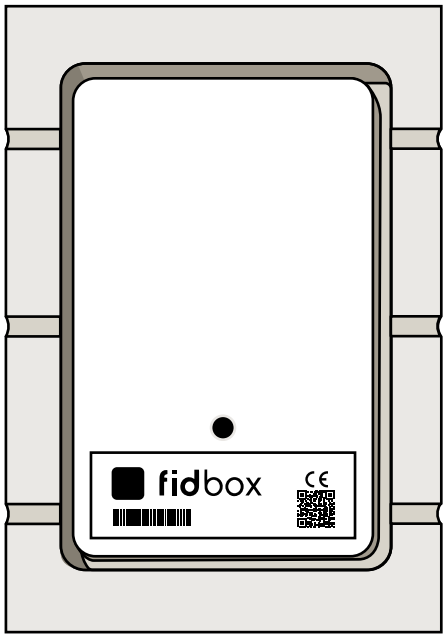


*Fig 6: Affix the Fidbox into the back of the board with the sticky pad provided.*

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*Continuous patterns*

# GUIDELINES FOR: **UNDERFLOOR HEATING (UFH)**

## 13.6 Guidelines specifically for Water-Fed Systems

The UFH installer must ensure that all services running beneath the floor have been fully tested and commissioned before laying starts.

(i) A typical set up for a water-fed UFH system is for a 150mm screed to be used and with the slow, radiant heating system being supplied by close-centred water pipes with a typical spacing of 150mm apart.

- The use of in-floor probes to control the maximum temperature is necessary.
- The water temperature must be regulated to a maximum of 35°C.

**13.6.1 Testing the system prior to installing the wood floor:**

Once the screed is dry as specified in Chapter 1C - Moisture Testing, and prior to installation follow the heat-up procedure as below.

Please note that this is to check that the system is working properly and to dry out the installation screed.

Under no circumstances should the system be run at these high temperatures once the wood flooring is installed.

- Day 1 - 20°C
- Day 2 - 30°C
- Day 3 - 40°C
- Day 4 - 50°C or the maximum planned operating temperature and maintained constantly for 7 days
- Day 12 - 40°C
- Day 13 - 30°C
- Day 14 - 30°C
- Day 15 – Switch off heating system.

Allow 4 days before a final moisture reading is taken.

If more than 7 days elapse between the last cooling down day and the start of laying the flooring, the UFH system should be run at minimum operating temperature for 2 days. The system should then be switched off for at least 4 days before a further moisture check is carried out prior to laying.

Once this has been completed and moisture checks agree with recommendations and your sub floor is suitable for glue down installation follow guidelines in Chapter 3 Fully Bonded (glue down) Installation. If your sub floor is not suitable for glue down installation, follow guidelines in Chapter 4, Floating Installation.

Do then follow the Monitoring guidelines as per section 13.5 above.

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*Herringbone*

*Chevron*

*Circular design panel*

*Continuous patterns*

# GUIDELINES FOR: **UNDERFLOOR HEATING (UFH)**

## 13.7 Guidelines specifically for Electric Systems

Some electric UFH systems are not suitable for installations with timber flooring, check with the manufacturer that the system will adhere to the general guidelines and is suitable for the type of wood floor being installed.

Issues are likely to occur with the wood floor installation if excessive temperatures are generated by electric UFH systems with too high output rating.

Always ensure that the electric UFH system has a cut-off to prevent the surface temperature of the wood flooring exceeding 27°C.

Do always follow the Monitoring guidelines as per section 13.5 above

## 13.8 Underfloor heating in just part of a continual floor area.

If the UFH is to be installed in just part of a continuous floor area, (e.g. in an open lounge-diner area with UFH just in the lounge area) it is important that the floor area is separated.

There needs to be a break between the heated area and the non-heated area. The use of a Ted Todd "T" section is ideal for this purpose.

This is to avoid any potential problems with differential expansion or shrinkage between the two areas.

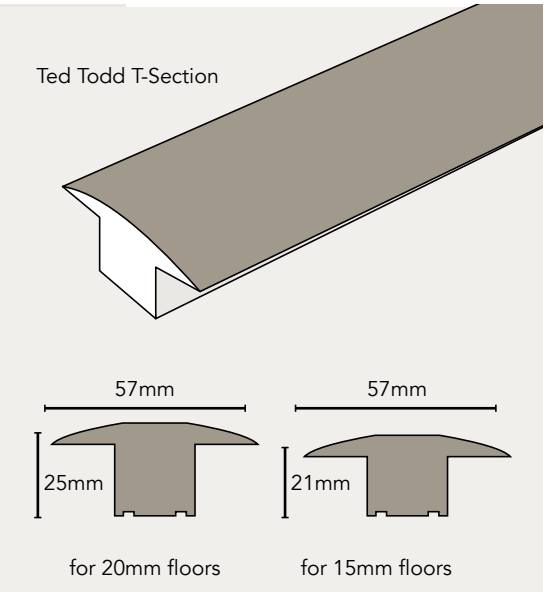


***Fig 7: Use a Ted Todd T-section to break up heated and none-heated areas***

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*Circular design panel*

*Continuous patterns*

# GUIDELINES FOR: **UNDERFLOOR HEATING (UFH)**

## 13.9 Summary.

(i) All of the usual guidelines for the installation of wood flooring must be followed.

(ii) Do follow the guidelines for Monitoring and the use of the Ted Todd Fidbox (Section 10.5)

(iii) Fully Bonded (Glue Down) installation method is always necessary with Parquet, Patterns and Panels, and is strongly recommended too with T&G Plank format wood flooring. Planks with T&G or Click format jointing may be considered for a floating installation.

(iv) Allow for a slow warm-up of the UFH system and the surface temperature of the wood should not exceed 27°C in any area.

(v) Ensure that all normal air temperature and humidity limits within the rooms are observed. (16 to 24°C and 45% to 65% Rh)

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*Circular design panel*

*Continuous patterns*

# GUIDELINES FOR: **UNDERFLOOR HEATING (UFH)**

## 13.10 FAQ's

**Is all of the above really necessary?**

The success of a good wood floor installation depends upon many factors. In instances where things go wrong the problems will almost certainly be traceable back to failure to correctly follow some of the guidelines listed above. Even in apparently simple installation projects all of the above points must be checked to ensure compliance.

**Why is 27°C important for the wood floor?**

Experience has shown that above this temperature, especially if heated up quickly, the wood floor can be damaged as it can dry out too much or too quickly. Drying out too quickly or too much can cause distortion, splits and cracks in the wood floor.

**Isn't wood a reasonably good insulator for heat? If so, how will it conduct the UFH heat into the room?**

Any UFH system needs to be designed specifically to accommodate wood flooring. UFH is designed to provide a "slow" background heat only. It will take time to warm up and start to radiate heat from the UFH system.

**Can I use a rug over my wood floor with UFH?**

This is generally not recommended as it may cause a build up of heat in the wood under the rug. If necessary use a thin rug, it is important to monitor the temperature of the wood below the rug to ensure that it doesn't exceed 27°C.

**Why is it preferred to Fully Bond a T&G plank floor. Can it be floated?**

Wood floors move naturally with changes in temperature and especially with changes in moisture. Over a UFH system, the wood floor may be exposed to more changes in temperature and humidity and therefore more movement through drying out. In a Fully Bonded (glued down) floor, each plank is glued down individually and so is free to move individually. Any slight shrinkage due to the change of moisture can result in small gaps between each of the planks. These gaps should be barely noticeable.

In a floating installation of planks, where the T&G are glued together, any expansion and shrinkage of individual planks will have an effect on the whole glued-together floor and the floor will tend to move as a whole. This can put extra pressure on individual T&G joints which, in the unlikely event of the T&G joint not being fully glued, could result large gapping. This rarely a problem in smaller rooms.

*Plank*

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*Circular design panel*

*Continuous patterns*