

## In-Screed Water UFH vs Low-Profile Water UFH vs Dry/Routed Board Water UFH vs Electric Mat UFH vs Electric Loose Wire UFH

Underfloor heating sounds simple on the surface: warm floor, happy feet, fewer ugly radiators. In reality, there are several different system types, and the right one depends on whether the project is a new build or retrofit, how much floor build-up you can tolerate, what heat source you are using, how quickly you want the floor to respond, and how much you want to spend upfront versus over time. Energy Saving Trust notes that underfloor heating generally runs at lower flow temperatures than radiators, which is one reason it works well with heat pumps.

For most UK projects, the real choices tend to be these: **water UFH in screed**, **low-profile water UFH for retrofit**, **dry or routed board water UFH**, **electric mat systems**, and **electric loose wire systems**. Nu-Heat and Warmup both position their ranges around these broad categories, and that reflects how the market actually behaves.

### What the systems are generally used for?

**In-screed water UFH** is generally used in new builds, extensions and major refurbishments where the floor build-up is being formed from scratch. It is especially common on ground floors and other areas where pipes can be laid over insulation and then embedded within a screed layer. This is the classic “proper wet UFH” approach and is often the best fit where there is enough depth available.

**Low-profile water UFH** is generally used in retrofit work where the client wants a wet underfloor heating system but cannot afford a large increase in floor height. Nu-Heat’s low-profile systems are specifically marketed as retrofit solutions laid over existing floors, with LoPro®10 described as a slim overlay option and LoProMax noted as a 15 mm system.

**Dry or routed board water UFH** is commonly used in timber floors, upper floors, fast-track construction and projects where reducing wet trades is attractive. This type of system usually places the pipe into pre-routed insulation or structural boards, often with heat diffusion plates or formed channels, rather than burying everything in a full screed. It is popular where weight, drying time or floor build-up need tighter control.

**Electric mat UFH** is commonly used in bathrooms, en-suites, kitchens and smaller renovation projects where quick installation and minimal floor build-up matter more than whole-house wet heating integration. Warmup positions electric mat systems as a popular solution for renovations and for tiled areas where a straightforward layout is possible.

**Electric loose wire UFH** is generally used where the room shape is awkward or where the installer needs more freedom to work around fixtures, corners and unusual layouts. Warmup’s loose-wire documentation specifically presents it as a tiled-floor electric heating option and, by nature, it is more flexible in layout than a fixed mat.



## Why each one is used?

**In-screed water UFH** is used because it is efficient, proven and well suited to whole-house heating strategies. It works particularly well with modern low-temperature heat sources such as heat pumps. Energy Saving Trust notes that underfloor heating flow temperatures tend to be around **45°C**, which aligns well with efficient heat pump operation.

**Low-profile water UFH** is used because it gives renovators a way into wet UFH without digging out existing floors or losing large amounts of ceiling height. Nu-Heat explicitly markets these systems as ideal for fitting over existing floor decks in renovations where depth is limited. That makes them commercially useful in real homes, not just in perfect new-build drawings where everything behaves itself.

**Dry or routed board water UFH** is used because it can reduce weight, avoid screed drying delays and work well in timber floor constructions. It is often chosen where programme matters or where upstairs installations need something lighter and drier than a traditional screeded floor.

**Electric mat UFH** is used because it is quick, relatively simple to install and well suited to smaller areas. Warmup describes electric floor heating mats as quicker and simpler to install than many people expect, which is a big reason they remain popular in bathroom and single-room upgrades.

**Electric loose wire UFH** is used because it is more adaptable than a mat in awkward spaces. If the room is full of corners, sanitaryware, kitchen units or other interruptions, loose wire gives more layout freedom. In short, it is the system for when the room refuses to behave like a neat rectangle.

## Ease of use

**In-screed water UFH** is usually the least attractive option for quick retrofit work because it needs floor depth, insulation planning, pipe layout, manifolds and a screed stage. It is excellent when designed into the build early, but much less appealing when someone decides halfway through a renovation that they fancy warm toes with no disruption.

**Low-profile water UFH** is easier to justify in existing homes because it is specifically designed to lay over existing substrates. Nu-Heat's retrofit guidance states that overlay systems can be installed over existing concrete floors, existing sound tiled floors and structurally sound timber floors, subject to proper site assessment.

**Dry or routed board water UFH** is often easier to coordinate where wet trades are a problem or time is tight. It can also be a cleaner fit on suspended floors and upper storeys. That said, it still needs proper design, correct board selection, pipe spacing and good floor-finish coordination.

**Electric mat UFH** is one of the easiest systems to install in simple room shapes. Warmup's installation guidance and videos are built around that simplicity, especially for regular-shaped tiled



floors. Electrical final connections, however, still need the right qualified involvement, so it is not a total free-for-all with a Stanley knife and optimism.

**Electric loose wire UFH** takes a little more care to lay out than a mat because the installer is manually spacing the cable, but that same feature is what makes it more useful in awkward rooms. Warmup's loose-wire manual also notes that final electrical connections must comply with current BS 7671 wiring regulations and be completed by a Part P qualified electrician.

## Technical characteristics that matter

One of the biggest technical advantages of **water UFH systems** is that they work at lower flow temperatures than traditional radiator systems. Energy Saving Trust states that underfloor heating tends to run at around **45°C**, and that this suits heat pumps well because the larger heated floor area allows the system to deliver comfort at lower temperatures.

For **low-profile water systems**, the key technical feature is reduced build-up. Nu-Heat states that its LoPro<sup>®</sup>10 system is designed for retrofit and that LoProMax is **15 mm** thick, which is important where floor-to-ceiling height, thresholds and door clearances are tight. These systems solve a practical site problem first and a heating problem second.

For **electric systems**, floor finish compatibility and sensor control matter. Warmup's installation manuals emphasise correct sensor positioning, while Nu-Heat's flooring guidance notes that sensitive finishes can be protected using floor sensors and that carpet plus underlay should usually stay below a combined **2.5 tog** for UFH compatibility.

For **all UFH systems**, the floor finish makes a real difference. Nu-Heat's flooring guidance confirms that tiles, stone, wood, vinyl and carpet can all potentially work with UFH, but the covering affects heat transfer and performance. In plain terms, the system can be brilliant, but if the floor finish fights it, the results will be underwhelming.

## Approximate costs of the product / system

At a broad planning level, **in-screed water UFH** usually carries the highest upfront installation commitment in simple product terms because it involves the full wet system package: insulation planning, pipe, manifold, controls and screed coordination. That said, it is often the most commercially sensible whole-house option in a new build because it integrates properly from day one and works efficiently with low-temperature heat sources.

**Low-profile water UFH** is usually more expensive per square metre than a straightforward in-screed new-build installation because the products are doing more in less depth and are aimed at retrofit convenience. The value case is usually not "cheapest heating system"; it is "wet UFH without ripping the house apart".

**Dry or routed board water UFH** tends to sit somewhere in the middle depending on the board type and floor construction. It can save time and wet-trade delay, which may make the overall job stack up well even if the board system itself looks pricier than bare pipe in screed. Programme has a value, even if it does not always get invited into the first pricing meeting.



**Electric mat and loose wire systems** generally have lower upfront supply-and-fit barriers for small areas because they are simpler to install and avoid manifolds, pumps and plumbing integration. The catch is that electric resistance heating is usually more exposed to electricity running costs than water systems served by efficient wet heating sources, particularly over larger areas. Energy Saving Trust's wider heating guidance notes that low-carbon wet systems such as heat pumps are more efficient than electric resistance heaters.

### How they tend to be sold and availability

**Water UFH systems** are usually sold as a designed package rather than as isolated bits. Suppliers such as Nu-Heat position them as complete systems covering design, pipe layout, floor build-up guidance, controls and compatibility with the wider heating setup. That matters because UFH works best when it is treated as a system, not as a pile of components that met each other five minutes before installation.

**Low-profile and dry board water systems** are also usually sold as application-specific packages for retrofit, suspended floors or low-build scenarios. The sales proposition is generally tied to the problem they solve: limited floor depth, limited disruption or faster installation.

**Electric UFH systems** are widely available through specialist suppliers, tile retailers, electrical distributors and online merchants. Warmup's range, guides and manuals reflect how mainstream electric UFH has become for bathrooms, kitchens and smaller renovation zones

### Other points a customer should know before choosing

If the project is a **whole-house new build** or a major extension, **water UFH** usually deserves first look, especially if the heating source is a heat pump. The lower flow temperature and larger emitter area make that pairing particularly strong.

If the project is a **retrofit with limited floor height, low-profile wet UFH** becomes much more attractive because it offers the benefits of a water system without the same disruption as a full dig-out and screed rebuild.

If the project is a **single bathroom, en-suite or awkward-shaped room, electric systems** often win on practicality because they are quick to fit and easy to target to one area. That does not make them the best answer for every house. It just means they are often the least painful answer for small spaces.

If the floor finish is **thick carpet or another high-resistance covering**, UFH performance can suffer. The heating system and the finish need to be chosen together, not in separate silos by people who never speak to each other.

### Conclusion

If you want the blunt version: **in-screed water UFH** is usually the best all-rounder for new builds and major works; **low-profile water UFH** is the retrofit-friendly wet option where floor height is tight; **dry or routed board water UFH** is the lighter, faster-fit option for timber floors and dry construction;



**electric mat UFH** is the quick, simple choice for regular-shaped small rooms; and **electric loose wire UFH** is the flexible option for awkward layouts.

There is no universal winner. For a new build with a heat pump, wet UFH usually makes the strongest technical and commercial case. For a renovation where you cannot raise the floor too much, low-profile systems come into their own. For upstairs timber floors or fast-track dry construction, routed-board systems can be a very smart fit. And for smaller rooms where speed and simplicity matter more than whole-house efficiency, electric UFH still earns its place.

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