

[Title] Retrofitting Underfloor Heating

[Introduction] As the popularity for underfloor heating (UFH) has grown, there has been an increasing demand in the market to provide solutions for existing buildings as well as new build properties.

[Text] More and more property owners are seeing the major benefits of UFH over conventional heating systems and are looking for ways in which they can incorporate UFH into an existing floor build-up. This desire has fuelled the development of a wide range of 'retrofit' UFH systems. Ambiente has kept at the forefront of this revolution with a range of low profile systems and Alan Phillips now outlines the main points for the installer to be aware of when they come to fit this type of system.

Floor Height Often the main factor in situations where UFH is being added as a retrofit solution is the floor build-up height. If a building was not designed with UFH in mind, the floor height will not have allowed for any further increase, so this calls for a system with as low a build-up as possible, while maintaining sufficient output to meet the room heat loss.

System Types Within the Ambiente range (and common in the industry) there are three main types of retrofit UFH systems:

- Pre-grooved and foiled polystyrene panels – this is a high-density EPS polystyrene product, grooved for pipework with radius returns to form a serial pipework pattern within the panels. The foil face allows for maximum heat output and optimum spread of heat in the area.
- Pre-grooved screedboard – another option is a grooved screedboard product, which has the added advantage of having a very low thermal resistance, allowing for quick warm-up times and exceptional heat output. This system in effect offers the properties of a screed within a low profile system. Another major plus-point of this system type is that it can be tiled onto directly, making it an ideal solution for wet areas.
- Pre-grooved chipboard – this system is unique in that it can also form the structural subfloor layer. Panels of pre-grooved chipboard are laid across joists, to provide a means of securing the pipework within a structural panel. Boards have radius returns to form a serial pipework layout and they can also be grooved on-site using a router, should further or specific grooves be needed.

All of the Ambiente low profile systems utilise a 12mm PE-RT UFH pipe – this size of pipe is the perfect combination of minimal height and sufficient output. It is also typical for the pipe spacings to be closer than normal to allow for maximum output from a smaller pipe width – all of the Ambiente low profile systems come with 150mm pipe spacings as standard. In our opinion, the pre-grooved polystyrene system takes some beating – it is the most cost effective of the three options, easy to work with, light to carry and readily available. It also acts as a further insulation layer within the floor build-up, helping to boost output and reduce downward losses.

Planning It is often said that 'a job half planned is a job well done' – this has never been truer when considering retrofit UFH systems. The main reason for this is that mostly the pipework runs will be within pre-grooved channels which are the means of securing the pipe – this is quite different from a screeded system for a new-build property where the pipe layout is flexible. The panels will need to be laid out in an efficient and intelligent manner, making sure that the pipework runs will access all areas and be able to return to the manifold to complete the loop. Pipework can also be channelled through walls to avoid an excessively 'busy' transit pipework area around the manifold and in some instances pipework can even run underneath the floor surface and re-enter the room at the relevant point, via an access hole.

Costs There is some unnecessary negative press when considering the cost of retrofit UFH solutions. It is true that a typical retrofit UFH system costs more than a new-build screeded UFH system, but what must be considered is that there is no actual screeding process involved in retrofit situations, which cuts out

considerable cost and hassle. Installers nationwide have found that the Ambiente low profile systems are a cost effective solution to offer to property owners.

Floor finishes Ambiente relies on recommendations of relevant manufacturers with regard to floor finishes on top of UFH systems. In nearly every instance, you would lay a chipboard or plyboard on top of a polystyrene type system, to give a solid base on which to lay the subfloor. An exception to this may be with a solid engineered wooden floor, which has a solid structural integrity, allowing it to be laid directly on top of a polystyrene type UFH system. With screedboard and chipboard type systems there is more chance of being able to lay the final floor finish directly on top of the UFH system, minimising further costs and further floor build-up.

Plated systems Plated systems consist of aluminium spreader plates which span a joist void and act as a means of securing UFH pipe work. These systems can be utilised in retrofit scenarios in two ways: firstly, if the floorboards are removed, spreader plates can be fixed onto the top of the joists and pipework fixed in place from above. Alternatively, for systems being fitted into upper floors in a property, a different type of spreader plate can be fixed from below, with the pipework being clipped in to the edge of the plate. The benefit of plated systems is that there is no overall build-up in the floor height as the plates are installed directly on top of the joists and are only 0.5mm thick. The main downside is that in most instances it does require the floorboards to be removed, which is often impractical and also joists may need to be notched for the pipework channels.

At Ambiente we are convinced that the options for retrofit UFH systems available to the installer will increase and improve in coming months and we are proud to be an innovative and proactive industry member, offering a range of systems as well as expert advice and installer support. Join us today – become an accredited Ambiente installer and enjoy all the benefits!

[CV info if required] Alan Phillips is the marketing manager for Ambiente Systems UK, one of the most respected suppliers of UFH systems in the UK. He joined them in 2011 and has since helped Ambiente to achieve double digit growth each year for the past three years.