

Underfloor Heating Components

There are 4 main components that make up an underfloor heating system: a Pump, a manifold, a control pack (controller and room thermostats) and the underfloor pipework.

Pump

Whether you are having a stand alone system or are incorporating it into an existing radiator central heating system you will need to have a pump in order to circulate water around the underfloor heating pipework. It also controls the water temperature entering the system to ensure that your floor does not get too hot!

Manifold

The manifold splits the main feed from the pump into individual circuits for each room (there may be multiple circuits in large rooms) and recombines it on its return. The manifold also allows for the installation of actuators to enable the individual operation of circuits. for example the actuator operates to stop hot water flowing through a circuit when a room reaches its preset temperature. Manifolds are available in a number of different sizes to meet individual requirements.

Control Pack

The control pack has a master unit providing all wiring connections and a 7 day programmable room thermostat. This allows you to set occupied and unoccupied temperature settings which can be different on each day of the week. There are 9 pre-set options or users can create their own custom programs. Room thermostats provide individual temperature settings in each room allowing the master unit to control the room temperature.

Pipework

The pipe that runs under the floor is 15mm flexible barrier pipe (except for the overlay system that uses 12mm) and the type of installation is dependent upon the floor type. The types of systems are Solid Floor, Suspended Floor, Floating Floor and Overlay - see System Design for more details.

Connection to Heating Systems

Underfloor heating systems can be connected either directly or indirectly to the heat source.

Direct Connection

When connecting the underfloor heating directly to the main heating pipework it is important to ensure that the boiler is compatible with secondary pumps i.e. the underfloor heating pump.

Indirect Connection

The use of a thermal store gives a couple of advantages. Firstly it ensures that the demands of the under floor heating do not directly affect the efficiency of the boiler. This is because the boiler will heat up the large store of water to a predetermined high temperature (higher than is required for underfloor heating) in a more efficient manner than continually stopping and starting (often referred to as cycling and is inefficient) to provide small amounts of hot water. The underfloor heating then uses the stored heat as needed. Secondly the use of a thermal store allows heat input from other sources such as Solar therefore making most use of renewable sources.

Source: Skyflair