

## **Additional guidance for control of underfloor heating systems on how to comply with 2013 Building Regulations Part L**

*(Version 1.0 - Issued 1st April 2014)*

This document is intended to offer specific guidance when installing heating controls for warm water underfloor heating systems. It is intended to support section 7, 'Underfloor Heating' in the 2013 edition of the Domestic Building Services Compliance Guide issued by the Department for Communities and Local Government which came into effect from 6 April 2013.

The recommended system diagrams and additional notes based on the Guide will help to ensure that the essential requirements of the Building Regulations for this type of underfloor heating will be met.

Additional guidance is offered for warm water underfloor heating used in commercial applications in line with the Non- Domestic Building Services Compliance Guide, although no specific underfloor heating section is included in the Guide.

### **Additional Notes**

1. An underfloor heating system should be provided with a means of operating at a water temperature suitable for its application.

*See: Domestic Building Services Compliance Guide 2013 Edition, Table 31, item 1.0*

*- For systems with a high temperature heat source, such as a boiler, then a mixing valve should be fitted to ensure that the temperature of the water to the floor is reduced to the correct temperature for the type of floor and for the designed comfort conditions. The mixing valve may be of a two, three or four port type and will usually give thermostatic control i.e. provide a fixed water temperature set by the installer to suit the system. Alternative types which provide a water temperature which will vary according to the outside temperature may also be used but are not mandatory.*

*- For systems with a low temperature heat source, such as a heat pump, it may not be necessary to use a mixing valve but this should be verified as individual types of heat pump can vary.*

*- A 'high-limit' thermostat shown as 'HL' in the following diagrams should be installed as an additional safeguard. The thermostat should be positioned to sense the flow temperature produced by the mixing valve and be set to limit the flow temperature to prevent damage to the floor and discomfort to the user.*

2. Each room should be provided with its own sensor, thermostat or programmable thermostat. Where two adjacent rooms have a similar function, e.g. kitchen and utility rooms, it may be possible to use one temperature control for both rooms.

*See: Domestic Building Services Compliance Guide 2013 Edition, Table 31, item 2.0*

3. In a single storey, open plan dwelling where the living area is greater than 70% of the total area, separate temperature controls are not required.

*See: Domestic Building Services Compliance Guide 2013 Edition, Table 31, item 3.0c*

4. Automatic reduction of room temperature when a room is unoccupied, for example at night, is recommended where an underfloor heating system uses a floor with a thick screed (greater than 65mm thickness.)

*See: Domestic Building Services Compliance Guide 2013 Edition, Table 31, item 3.0d*

5. The heating system controls should be connected so that when there is no demand for heat, the heat source and pump are switched off.

*See: Domestic Building Services Compliance Guide 2013 Edition, Table 31, item 4.0*

*- The 'wiring interlock centre' shown as 'WIC' in the following system diagrams should incorporate connections for the boiler and the underfloor heating pump which are de-energised when there is no demand for heat from the underfloor heating controls*

6. An automatic by-pass is shown which may be necessary where a boiler manufacturer's instructions require a by-pass to be fitted

*See: Domestic Building Services Compliance Guide 2013 Edition, Table 2, item 2.0*

7. Guidance for stored hot water controls should be taken from the BEAMA Heating Controls document 'Guidance on how to comply with the 2013 Building Regulations Part L.'

8. For additional information about Heat Pumps, see Section 9 of the Domestic Building Services Compliance Guide 2013 Edition.

### **Additional requirements for installations**

1. On completion of the installation all equipment should be commissioned in accordance with the manufacturers' instructions. The operation of all controls should be tested and the distribution system should be fully balanced to ensure correct operation of the underfloor heating system

2. The installer is required to also give a full explanation of the system and its operation to the user. This will include a description of how to use all of the controls and the relevant user Instructions must be left with the building owner. For new systems the Part L approved document states that a way of complying is to "provide a suitable set of operating and maintenance instructions aimed at assisting the occupiers of the dwelling achieve the expected level of energy efficiency. The documentation should be specific to the dwelling, and be in a durable format that can be kept and referred to over the service life of the various systems and components. The documentation should include relevant information in an easily understood format."