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CPD Seminar Synopsis
Solutions to common problems in the installation and performance of underfloor heating systems

Warm water underfloor heating is becoming increasingly recognised as an energy efficient means of emitting heat generated by renewable and sustainable means such as solar thermal, ground and air source heat pumps.

Until recently it has been generally believed that the only underfloor heating system capable of operating at low temperatures involves covering pipework in screed to form an emitter with large thermal mass and low thermal resistance.

Dry installed systems often rely upon an insulating floor covering such as chipboard which, when covered by carpet and underlay or further timber requires water flow temperatures at the limit of the capabilities of all but conventional boilers.

There are, however, a number of load bearing surfaces available which have extremely low thermal resistance. When coupled with high performance underfloor heating panels these systems give a thermal resistance equivalent to or lower than screed based systems along with a reaction time similar to that experienced with wall hung radiators. Additionally the outputs can exceed those provided by screed based systems.

Such lightweight systems dramatically increase the number of areas available suitable for underfloor heating in both new-build and refurbishment. Low height and between joist solutions can be matched with a variety of load bearing surfaces allowing, for example, the laying of large format stone tiles with no requirement for expansion joints.

Recent tests have established that dry-installed systems can give savings in running costs of up to 15% when compared to screed based systems.

Dry-installed systems have been tested in-situ and demonstrate compliance with Part E of The Building Regulations on both timber suspended and solid floors in a build height of only 50mm, giving valuable savings in storey heights.

The use of dry-installed heating does not have to be limited to underneath the floors. Wall solutions are also available for areas where additional output may be required or within office partitions.

Finally, why stick to heating the building? If a reversible heat pump or similar technology is installed cooling solutions can be gained from the floor or ceiling.

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