

Raising hot water standards

Mark Foster of HWA member Gledhill Building Products examines new standards concerning thermal stores that will come into force this year

Although widely used in Europe, thermal stores were originally developed for the UK market in the mid-1980s by British Gas.

However, as they were not covered by a British Standard, in 1999 the Waterheater Manufacturers Association (WMA) was authorised by British Gas to publish and be responsible for a Performance Specification for Thermal Stores.

which was published in 2006.

When WMA merged with MODUS to form the Hot Water Association (HWA), it was decided that the document should be reviewed.

As a result, it was decided that a complete rewrite was

necessary to comply with the many changes that had been supplies the heating system as well as the hot water. This is particularly useful in spring and autumn.

In fact, it has been calculated that this will save between 15 and 20% on the annual heating bill of a typical property, in addition

an open-vented system is required for it to operate safely.

Section 5.7 of the new specification explains how easy this is with an openvented integrated thermal

Existing legislation will

require a continual reduction in carbon emissions and, in the near future, technologies like solar will not be enough to meet the requirements on their own. The way more than one renewable system can be connected easily to an integrated thermal store, and how further systems can be added in the future, is also covered in this section.

A further advantage of thermal stores is a simplified approach to legionella protection. The recent HWA guidance on hot water safety states that one effective means of controlling legionella growth is by reducing the dwell time within a system and avoiding stagnation.

Thermal stores have a minimal amount of stored domestic hot water, which significantly reduces the risk as the domestic hot water that appears at the tap is heated instantaneously via a heat exchanger.

Thermal stores have a very important and growing role in the future of low carbon heating and hot water.

The updated HWA Performance Specification is the industry reference point, and is available to download free at www.hotwater.org.uk.

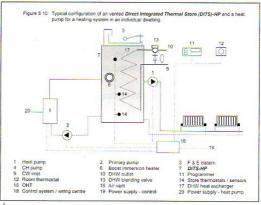
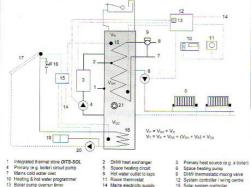


Figure 5.8 Typical example of an open vertied *Direct Integrated Thermal Store (DITS)-SOL* based heating system with solar heating controlled by a separate dedicated controller



This set out in some detail the hydraulic design and thermal performance requirements for the thermal store, and included the test procedures needed to prove compliance.

It mainly covered thermal stores in individual properties with a single heat source, such as electricity or a gas boiler, but some information was also provided for group heating schemes.

The specification was quoted as the accepted standard for these products in the Building Regulations second-tier Domestic Heating Compliance Guide to Approved Document L1,

made to
Building
Regulations
and
British/
European
standards.
It also

needed to cover all the new alternative and renewable technologies that were being introduced to meet these changes.

The 2010 HWA
Performance Specification
references all the current
regulations and standards,
and has been extended with
new sections covering heat
pumps, solar thermal and
wood burning systems.

Figure 5.8 from the new specification is typical of the many diagrams provided, and shows how to make best use of an integrated thermal store with a solar system.

The same primary water that is heated by solar energy

to the savings already being made for producing hot water. Any increased use of renewable energy also cuts down on the use of carbon fuels

Similarly, figure 5.10 from the new specification shows how a heat pump can replace a gas/oil boiler.

It is now accepted that the large volume of primary water and the stratification that occurs in a thermal store means it is ideally suited for use with heat pumps and avoids the costly addition of a separate buffer store.

To save even more energy, connections can be provided at different heights so that the correct temperature of water can be supplied directly to separate underfloor or low temperature heating circuits.

Because a wood burner is not fitted with a temperature control/overheat thermostat,