

Unvented cylinders are on the rise

The recent trend for unvented mains pressure hot water systems is likely to continue, according to Gareth Ash of HWA member Ariston

The unvented hot water cylinder was invented by British civil engineer Thomas Hawksley in 1861. It was adopted throughout the world, with the exception of the UK.

After changes to UK Building Regulations in 1985, and to Water Byelaws in 1986, unvented hot water storage systems were allowed in the UK.

Restrictions were imposed, however, which required a different technical set up from the standard European system, with special safety devices and the strict registration of installers.

Since then, some of the same safety aspects have been adopted for open-vented systems. One such change is the requirement for an energy cut-out on immersion heaters in open-vented cylinders, which are already present on an unvented cylinder.

At first, mains-pressure unvented systems became the product of choice for developers in newbuild homes and larger properties, while combination boilers were popular for retrofit installation in existing private homes where appropriate.

Unvented systems also found favour with local authorities and housing associations when upgrading and refurbishing properties. This is possibly

because they still offer the benefit of stored water and an immersion heater back up.

More recently, there has been



High-performance showering is causing an increase in the amount of hot water used

a change in the balance of demand for heating and hot water. Less energy is required for heating, as a result of improved insulation reducing the heat loss from homes.

The use of hot water is also increasing, as a result of lifestyle changes such as high-performance showering and multi-bathroom homes.

ADD MULTIPLE OUTLETS

The current turmoil in the UK property market is causing homeowners to stay put and extend their properties rather than moving house, which often means there are more hot water outlets being installed.

The most common demand is

now for hot water systems with a greater capacity for simultaneous draw off.

While the hot water flow rate of combi boilers has increased over time, few are able to produce over 20 litres/min.

However, with a sufficient incoming mains flow rate, a system boiler – combined with an unvented cylinder – can deliver hot water at a rate of 50 litres/min.

In properties that are being extended, where a combi boiler is installed, this functionality is retained for a few taps and for the main hot water system. An unvented cylinder is then installed for the extension.

Where electric heating is installed, for instance in apartment blocks, this can be left in place and direct electrically-heated unvented cylinders used.

A SHIFT IN THE MARKET

The Hot Water Association figures for 2008 showed the extent of the shift in favour of unvented systems, when mains-pressure hot water reached almost half the total hot water storage market for the first time.

This means that, today, mains-pressure unvented systems are no longer the traditional preserve of housebuilders. Installers are recognising that a combi system is not always the right choice. As a result, the replacement market is seeing an unprecedented increase in the one-off installation of unvented cylinders.

Unvented systems have the potential to meet the increasing demand in all sizes of home. They are capable of delivering more volume hot water at high-flow rates to multiple outlets

simultaneously, with no loss of performance.

Even in the smallest home, at certain times of day it may be necessary to draw off hot water from more than one outlet at a time.

There is also the added benefit that potable water is available at all outlets.

Unvented cylinders can be either heated directly by electricity, or heated indirectly from an auxiliary boiler. These are gas or oil fired typically, and can be linked to a solar thermal hot water or heat pump installation.

When installed with a new generation condensing boiler – as required under current Building Regulations – and connected to a renewable energy source, CO₂ emissions and energy consumption are reduced.

Both solar thermal and heat pump systems need a hot water storage unit such as an unvented cylinder, which again moves away from instantaneous hot water production.

A suitable partner for these renewable technologies is a stainless steel unvented cylinder, with specifically developed solar or heat pump coils. The industry is already recording a rise in sales of these units.

This compatibility with energy-efficient technologies makes unvented cylinders future proof, as a suitable unvented cylinder installation would not need to be upgraded if solar panels were added to the system at a later date.

The trend towards unvented cylinders as the hot water system of choice is, therefore, likely to grow stronger.

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