

Changes clarify safety requirements

Changes to Building Regulations Part G will have implications for hot water storage systems, according to Martyn Griffiths of HWA member Waterheating UK

In October this year, the new revisions to Building Regulation Part G covering sanitation, hot water safety and water efficiency will come into force.

Section G3 of the regulation covers hot water safety and, in particular, hot water storage systems.

The new regulations make significant changes, including the introduction of new requirements to improve water efficiency, and to control the temperature of hot water supplied to baths to a maximum of 48°C by means of a thermostatic mixer valve or other suitable device.

Over the past 20 years, the hot water storage market has been transformed. Vented copper systems used to be the norm, but now mains-pressure systems have a 50% overall market share, and totally dominate the newbuild and major refurbishment markets.

Since the introduction of unvented systems in the mid-1980s, their safety has always been the subject of legislation via Section G3 of the Building Regulations. Now, for the first time, vented cylinders and thermal stores are also to be included.

VENTED CYLINDERS

On an unvented system, the cylinder is supplied from the factory complete with all relevant control and safety devices to prevent temperatures reaching 100°C. The traditional vented system, however, has always relied more heavily on correct installation to ensure its safety.

Recent tragic deaths as a result of faulty installation have quite rightly prompted a rethink, and the important factors required to ensure safety are now covered by legislation.

Regulations state that the base of the cold-feed cistern must be



Unvented systems have always been the subject of safety legislation

supported adequately over its full area. The Approved Document recommends that the support platform extends 150mm in all directions beyond the dimensions of the cistern.

This is so that, in the unlikely event that all the hot water temperature safety devices fail and the cistern overheats to softening point, it will not collapse.

In addition, the previous code of practice requirement of having a minimum vent pipe internal diameter of 19mm has been specified formally in the G3 Approved Document.

The provision of the vent pipe, and the support of the cold-feed cistern, are a last resort in the event of failure of the other comfort and safety controls.

If we consider direct-vented

cylinders with an electric immersion heater, then, in addition to the control thermostat, there must be a non-self-resetting energy cut out.

These have been normal practice in immersion heaters for the past few years.

For indirectly-heated vented cylinders, the first line of defence is the control thermostat. There must be an additional overheat cut out to ensure that the stored water does not exceed 100°C. This device will usually be the thermostat on the heating boiler, on the basis that if the primary water is unable to exceed 100°C, then neither is the cylinder.

It should be noted that there is no requirement for this particular device to be non-self-resetting, so there should be no problems with compliance on the vast majority of replacement systems. On both direct and indirect cylinders, an alternative to the energy cut out would be a temperature-relief valve.

UNVENTED CYLINDERS

The guidance for unvented cylinders with a capacity over 15 litres is essentially unchanged, requiring a control thermostat, non-self-resetting energy cut out and a temperature-relief valve.

Small unvented storage vessels with a capacity of less than 15 litres are now included in G3, but are treated differently in that they do not need notification under Part G, and a temperature-relief valve is not a specific requirement.

From our experience, the part of G3 that has traditionally raised the most questions is that of discharge pipework. The

Approved Document gives some useful clarification in this area, with specific material specification requirements if plastic pipes are used. Plastic soil-pipe systems are not generally available in these materials currently.

THERMAL STORES

The revised Part G clarifies the requirements of thermal (primary) storage vessels.

These can be vented or, if part of a sealed system, are treated as unvented systems. There is, however, an important technical difference in the Approved Document guidance for unvented thermal stores, in that an additional independent energy cut out should be used instead of a temperature-relief valve.

NOTIFICATION

The main change in terms of notification is that all hot water storage systems, including vented cylinders and thermal stores, are now included under the G3 Regulations.

Notification to Building Control is always required unless the capacity is 15 litres or less. There are two routes for notification. The first of these is by direct notification on an individual basis to the local Building Control body.

This notification should be in advance of work starting, so that the Building Control body has the opportunity for a site inspection.

The preferred route is for the installer to belong to an approved Competent Person Scheme, when the work can be notified retrospectively to Building Control by the scheme operator. 