

Technical Bulletin

Industry Information: NHBC policy for combination boilers

NHBC policy regarding the minimum simultaneous flow rates from combination boilers – Updated January 2017

Background

The National House Builders Council or NHBC, offer warranty and insurance protection for new homes. Their 'Buildmark' 10 year cover is reported to be in place for approximately 80% of new homes built in the UK. In order to be able to offer this type of cover for homebuyers, the NHBC provide technical requirements, performance standards and guidance for the design and construction of new homes – these are known as the NHBC Standards. The NHBC Standards cover all aspects of the dwelling construction and services within. The standards can be accessed by anyone for free via the NHBC website:

www.nhbc.co.uk/Builders/ProductsandServices/TechZone/nhbcstandards

Hot water service

In the NHBC Standards, 'Hot water service' is covered by paragraph 8.1.5. It details the design flow rates and required supply temperatures to different types of outlets in the home i.e. bath, shower, basin etc.

However, when determining the type of hot water supply system for the dwelling i.e. stored water or instantaneous, it is necessary to consider the simultaneous demand. In this instance, a set of minimum supply flow rates are detailed in the standards.

Supplementary clarification issued in January 2017

Based on on-going feedback, customer expectations and common practice, the NHBC have provided supplementary advice in order to clarify the standards further. The full document is attached.

What does it mean for specifying Worcester combination boilers in new houses?

In order to comply with the NHBC standards for simultaneous demand from a combination boiler for 1 Bath or 1 Bath & 1 En-Suite houses. A Greenstar 36 CDi Compact, 38 or 42CDi Classic would be required. All of these boilers have, or are in excess of, the required output to satisfy the stated 15 litres/minute flow rate with a 35°C temperature rise at the outlet.

Houses with a greater number of bathrooms or en-suites are likely to require a stored water solution.

In the future

The policy in this bulletin describes the current guidance from the NHBC Standards office. This is an on-going trial and may be subject to revision in the future. If any doubt exists or further clarification is required, we would advise contacting the NHBC Standards Technical Office directly.

Whilst it is always our intention to fully assist, it is essential to recognise that all information given by the company in response to an enquiry of any nature is provided in good faith and based upon the information provided with the enquiry. We recommend that advice should always be checked with your installer or contract partner. Consequently, the company cannot be held responsible for any liability relating to the use or repetition of such information or part thereof. In addition, whilst making every reasonable effort to monitor the performance and quality of our supply, installation and service network, we do not accept responsibility for the workmanship or operation of any third party company that the company may have promoted either in conversation, e-mail, or other communication. Similarly, the views and opinions expressed in communication with individuals within the company may not reflect that of the business as a whole.

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Hot water flow rates and simultaneous use.

Where a number of outlets are used simultaneously there is likely to be a reduction in the water flow rate at each outlet. The hot water '**design flow rate**', quoted in NHBC Standards clause 8.1.5, may not be available at each outlet when other outlets are in use at the same time.

NHBC has previously taken the view that it should be possible to use a bath, shower and kitchen sink at the same time and achieve at least the relevant '**minimum flow rate**', as quoted in NHBC Standards clause 8.1.5, at each outlet. Therefore, where a bath, shower and kitchen sink could potentially be used at the same time the minimum total hot water flow rate for such '**simultaneous use**' should be:

Bath (from combi)	0.15	(9)
Shower	0.10	(6)
Sink	0.10	(6)
Total	0.35 L/s	= (21) L/m

This '**simultaneous use**' flow rate could be used to help decide on what hot water supply system to use to meet this demand including whether a combi boiler is suitable.

Exceptions to this rule include:

- Where there is only a bath and kitchen sink then those two outlets are used to establish '**simultaneous use**'.
- Where there is only a shower and kitchen sink then those two outlets are used to establish '**simultaneous use**'.
- Where a shower and bath are in the same room it is assumed only one fitting will be used at a time. To establish the '**simultaneous use**' in such cases only the shower and kitchen sink need be considered as fluctuations in flow rates at a shower will be more noticeable to a homeowner (fluctuations in flow rate when filling a bath are considered unlikely to raise an issue).
- Where there are two separate bathrooms each with a bath and shower (including showers over a bath) or one room with a bath and shower and the other with just a bath, the '**simultaneous use**' can be calculated by taking the **minimum flow rates** for a bath in one room and a shower in the other. The aim is to avoid fluctuations when using a shower in one room and filling a bath in the other room or when using both showers in separate rooms. Slight fluctuations when filling two baths simultaneously are considered unlikely to raise an issue.
- Where the actual **minimum flow rate** of any outlet, such as a shower or bath, exceeds the **minimum flow rate** quoted in NHBC Standards then the actual **minimum flow rate** should be used in calculating the '**simultaneous use**'.
- The flow rate at an outlet should achieved the '**design flow rate**' for that outlet, as quoted in NHBC Standards, when only that outlet is in use.

It is recognised that some plumbing systems are designed to achieve water saving in accordance with the Code for Sustainable Homes. In such cases the homeowner should be notified if the '**design flow rates**', at individual outlets are less than those quoted in NHBC Standards or the '**simultaneous use**' flow rates are calculated using minimum flow rates other than those quoted in NHBC Standards clause 8.1.5.

In reviewing the issue of '**simultaneous use**', it has now been agreed that on a trial basis an alternative approach could be taken i.e. Where there are three or more separate kitchen sink/bath/shower outlets then the kitchen sink can be taken out of the calculation for '**simultaneous use**'. All other considerations, as described above, remain the same. This should enable the use of some higher rated combi boilers where currently they are unable to meet the calculated '**simultaneous use**' flow rate.

END.

N. Shapland January 2017