

Changes to Approved Document G

Introduction:

1. The document has been unaltered since 1992, although there have been a number of non-technical amendments in 2000.
2. The title 'Hygiene' will be replaced with 'Sanitation, Hot Water Safety and Water Efficiency'.
3. Minor sections of the document have gone unaltered, only references to standards have been updated to reflect the changes to the current British and European Standards.
4. Requirements extended from three to seven:
 - G1: Cold Water Services
 - G2: Water Efficiency
 - G3: Hot Water Services
 - G4: WC's and associated facilities
 - G5: Bathrooms
 - G6: Food Preparation Areas
 - G7: Sanitary Appliances
5. Water Efficiency is included to bring into effect the Governments policy announced in July 2007. Whole building performance standard for new homes, set at 125 litres/head/day. This is the minimum provision in the Code for Sustainable Homes
6. Possible measures to improve safety of hot water systems and limit temperature of water delivered from water outlets to 48°C via the introduction of a thermostatic mixing valve (TMV) on baths, bidets, taps and showers. Due to the identified costs currently outweighing the monetised benefits by about 3 to 1, provision for TMV has not been included, however, information and evidence on costs and benefits is being sought through this document.
7. Possibility of extending the provision of adequate bathing facilities to cover buildings containing rooms for residential purposes.
8. Suggestions have been made to remove the guidance on effective cleaning of WC's, urinals and wash basins or to extend it to cover baths, showers, bidets and sinks.
9. The consultation welcomes comments for the inclusion of guidance on slip resistance for shower trays and baths.

G1:

10. Specified locations within a building will require a "wholesome" supply of water. Only water complying with either; the Water Supply (Water Fittings) Regulations 1999 (SI 1999/1148 as

amended) or the Private Water Supplies Regulations 1991 (SI 1991/2790 as amended) will be classed as wholesome. The areas that should have wholesome water include;

- a. Any place where drinking water is drawn off
- b. Any sanitary appliance used for washing provided in accordance with G4 & G5
- c. Any sink provided in accordance with G6 and in a place kitchenware and utensils are washed

11. Other locations are allowed the use of “non-wholesome” water e.g. captured rainwater for toilet or urinal flushing and laundry use. Examples of non-wholesome water would be;
 - a. Captured rainwater
 - b. Reclaimed grey water
 - c. Water abstracted from wells, springs etc and
 - d. Reclaimed industrial process water e.g. air-conditioning condensate (Buildings other than Dwellings ONLY)

Non-wholesome water should be stored prior to the point of use either underground or above ground at a temperature not exceeding 25°C. This water may require treatment if it contains particulate contaminants. All no-wholesome water should be filtered prior to storage.

When stored above ground and the intended use is within the building, the system should minimise retention and allow stagnant water to be dumped and the release of water for maintenance.

It should be noted suitable arrangements for maintenance of these systems should be made available for buildings other than dwellings.

12. The requirements are in line with the current Guidance in G1 and G2 as it requires a supply of water. However, the new document specifies the need for a wholesome supply to certain locations for the protection of health. To encourage water efficiency it is proposed to allow the use of non-wholesome water in some applications. Hence, it becomes important to identify the areas where it is essential the water to be wholesome.

G2:

13. Applies only to dwellings
14. Water to be used efficiently with cold and hot water systems designed so that no more than 125 litres/head/day of wholesome water is used.
15. Efficiency of new dwelling is determined by adding together the maximum water usage of each sanitary appliance and relevant white goods and comparing the sum of these with the maximum regulatory standard of 125 litres/head/day. It should be noted this l/h/d is really

120 as a fixed factor of 5 l/h/d has to be included for outdoor use. When designing blocks of flats for example, each dwelling should be calculated individually.

Allowances are given for the use of non-wholesome water. However, when this is to be used in the dwelling the calculation method provided in Part G cannot be used and you must refer back to the Code for Sustainable Homes calculation.

The calculator is designed to give an indication of how water efficient the home may be and not the actual water used in the house by its occupants.

G3:

16. Areas that require heated wholesome water include;

- a. Any sanitary appliance used for washing provided in accordance with G4 & G5
- b. Any sink provided in accordance with G6

The regulation on the availability of wholesome hot water has been extended to cover food preparation areas and all personal washing facilities in all buildings without waste, misuse or undue consumption.

17. The installed hot water system, including cistern or other vessel that supplies water to or receives expansion water from a hot water system should resist the effects of temperature and pressure that may occur either in normal use or in the event of reasonable malfunction.

18. A hot water storage vessel should have at least two safety devices to prevent the temperature of water within the vessel exceeding 100°C in addition to any thermostat. The discharge to be visible at some point and should safely discharge any hot water from safety devices to an appropriate place open to the atmosphere that does not cause danger to persons in or about the building. This does not apply to a vessel with a capacity of 15l or less and a system providing space heating only and a system which heats or stores water for the purposes only of an industrial process.

19. G3 (3) is based on the existing requirement G3 but has been extended to cover both vented and unvented systems. It also applies to thermal storage vessels. In the instance of vented systems the regulation should apply to;

- a. New installations
- b. Replacement
- c. All other building work to the extent that it should continue to comply with any requirements where it did so before the work or where it did not it is no more unsatisfactory than before the work was carried out

20. The guidance describes the requirements for a vented system and states the vent pipe should be of adequate size not less than 19mm internal diameter, connecting the top of the vessel to a point open to the atmosphere above the cold water storage cistern.

As well as the thermostat, they should also have either;

- a. A non self-resetting energy cut-out for all direct heat sources and indirect heat sources should incorporate an overheat cut-out.
- b. A temperature relief valve or combined temperature and pressure relief valve to safely discharge the water

It should be noted that the cistern be supported over its whole area on a flat, level, rigid platform that extends a minimum 150mm in all directions beyond its age and which is capable of taking the cisterns weight when full. If replaced or enlarged the base should still meet the before mentioned criteria.

21. Any hot water storage system which applies to paragraphs 15 and 16 and does not incorporate a vent pipe to the atmosphere must be installed by a competent person. This is no different to the existing G3 requirement and some stakeholders have voiced for its removal. So may not be in the final document.
22. Additional guidance has been included on marking of unvented hot water storage units. This ensures that appropriate maintenance can be carried out when required.
23. Paragraph 3.11 in the current document “inspection of installations” has been removed as it was felt that it contributed to a misconception that notification is not required by installers not part of a competent persons scheme.
24. Additional information on other guidance, legislation and Building Regulations which apply to hot water services has been included to increase awareness of their existence. E.g. BS7671:2008.
25. The guidance on systems over 500 litres or 45kW has been amended to allow systems over 45kW but with a capacity of 500mm or less to be certified in the same way as a system up to 500 litres capacity and 45kW power input.
26. There are new sections on the following;
 - a. Safety devices - self-resetting energy cut-outs and pressure and temperature relief valves
 - b. Electric heating and
 - c. Solar water heating

These standards have been included to improve awareness of risks and to establish a minimum acceptable performance for solar hot water systems as they are becoming more common.

27. In respect of the discharge pipe arrangement. The distance from the tundish to the safety device has been amended to 600mm of pipe run, rather than a horizontal distance of 500mm.

28. The tundish should incorporate a suitable air gap and the discharge should be visible at this point. Discharge no longer requires being visible at the outlet. Where the discharge at the tundish may not be apparent i.e. where persons have impaired vision, consideration should be given to the installation of a suitable safety device e.g. electronically operated.
29. The discharge pipe from the tundish now has a specified fall of at least 1 in 200.
30. Additional guidance is provided to show how the discharge pipe can be connected to a soil stack. Key points are;
 - a. No other connections allowed to the discharge pipe. With the exception of a condensate pipe
 - b. Discharge pipe to be marked as reference that no future connections allowed
 - c. Waterless trap is necessary
 - d. Soil stack to be made of temperature resistant material
29. Due to a condensate pipe being allowed to connect to the discharge pipe, non-metallic discharge pipes are now allowed because of the need to resist corrosion, as long as they are capable of withstanding the appropriate temperatures.
30. The limit of six systems connecting into a single common discharge pipe has been removed.
31. New guidance provided on preventing excessive temperatures. A limitation of water temperatures delivered from the water storage vessel to the distribution pipework is required in certain instances to ensure hot water does not exceed 60°C.
32. As G3 now includes more than just unvented hot water storage systems. New guidance on workmanship has been included quoting BS 8000 Part 15.
33. Fixed building services installed in new and existing dwellings, when possible to be commissioned in accordance with the Domestic Heating Compliance Guide.
34. Fixed building services installed in new and existing buildings other than dwellings, when possible, to be commissioned in accordance with CIBSE Code M.
35. Regulation 20C(2) of the Building Regulations and Regulation 12C(2) of the Building (Approved Inspectors etc) Regulations require a notice to be given that commissioning has been carried out. Until the commissioning notice has been received the Building Control Body will not provide a final/completion certificate.

G4 :

36. This has taken over from the existing G1 (1) and (2). Terminology has been updated within the document to WC's, urinals and hand washing facilities, and the term 'where kitchenware

and utensils are washed'. G4 (4) is a new requirement stating that walls and floors shall be designed and constructed to allow effective cleaning in any room containing a WC, urinals or hand washing facilities. This new requirement only covers buildings other than dwellings.

37. A new general section is included to make reference to specific issues in other relevant legislation for the provision of WC and urinal facilities, including;
- a. Approved Document F – Ventilation
 - b. Workplace (Health, Safety and Welfare) Regulations 1992
 - c. Approved Document M – Access to and use of buildings
 - d. Approved Document P – Electrical Safety
38. If hot and cold water is provided on a sanitary appliance the hot tap should be on the left.
39. To help clarify the “scale of provision and layout in dwellings”, diagrams have been provided.
40. For buildings other than dwellings reference has now been made to BS 6465 part 2 to help aid developers in the design stage.
41. A new chapter on chemical and composting toilets has been provided to help establish a minimum acceptable performance.

G5:

42. Again, a new general section is included to make reference to specific issues in other relevant legislation for the provision of bathrooms, including;
- e. Approved Document F – Ventilation
 - f. Workplace (Health, Safety and Welfare) Regulations 1992
 - g. Approved Document P – Electrical Safety
43. If hot and cold water is provided on sanitary appliance the hot tap should be on the left.
44. Wording has been amended to clarify the need of a washbasin in the primary bathroom. However, not every bathroom in a dwelling requires a washbasin e.g. a room containing only a shower.

G6:

45. This new requirement introduces the need of a sink where food is prepared or a place where kitchenware and utensils are hand washed.

G7:

46. Sanitary appliances should be positioned to allow for effective cleaning and have profile designed for easy cleaning.
47. Discharge to drains from WC's has been amended to be less prescriptive allowing connection to an adequate system of drainage.
48. The use of mechanical seals has been included to urinals, thus being less restrictive.
49. Wording has been amended to include discharge from sinks.