Communities and Local Government

The Building Act 1984, The Building Regulations 2000

Proposals for amending Part G (Hygiene) of the Building Regulations and Approved Document G

Consultation

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Consultation

May 2008
Department for Communities and Local Government

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1. Introduction to the consultation

Purpose of consultation

1.1 This consultation paper seeks views on proposals by the Government to change the Requirements of Part G, Hygiene, of Schedule 1 of the Building Regulations, and the associated guidance in Approved Document G. The proposed new Approved Document G would be titled **'Sanitation, Hot Water Safety and Water Efficiency'** to reflect the revised scope of the Approved Document (AD).

1.2 Approved Document G was last updated in 1992 although a number of non-technical amendments were made in 2000. Since 1992, plumbing and building practice has moved on, standards and legislation have changed and technology has developed. Both industry and Communities and Local Government agree that the language and references need to be brought up to date and that a number of other changes are required to reflect current Government policy.

1.3 It is proposed that in future Part G the Approved Document will be made up of:

G1 Cold Water Services
G2 Water Efficiency
G3 Hot Water Services
G4 WCs and associated facilities
G5 Bathrooms
G6 Food Preparation Areas
G7 Sanitary Appliances

1.4 This consultation paper works through each of these sections and asks a number of questions about the options for change that the Government has considered. All proposals in this document have been reviewed with the Building Regulations Advisory Committee.

Summary of Consultation

1.5 In this document the Government is consulting on a range of options for change and asking a number of questions on each. The principle areas are:

- A full update in all parts to reflect current standards, legislation and practice;
- The inclusion of a new section on cold water services which would specify locations within the building where a "wholesome" supply of water is required, making it possible in turn to allow the use of "non-wholesome" water in other locations e.g. captured rainwater for toilet flushing.

- The inclusion of a new section on water efficiency in new dwellings to bring into effect the Government's policy on this, announced in July 2007;
- Possible measures to improve the safety of hot water systems and to limit the temperature of water delivered at water outlets to 48°C.

1.6 The need to update the AD to reflect current standards, legislation and practice is self-evident. The Part G Approved Document is the longest standing of all Approved Documents and is in need of updating to ensure that it is accurate, relevant and fulfils its purpose of aiding the construction industry and others in ensuring compliance with the regulations.

1.7 The proposals in relation to cold water services reflect current requirements in the Building Regulations and other legislation including section 25 of the Building Act, the Workplace (health, safety and welfare) Regulations and the Food Hygiene Regulations. In addition to providing clarity in the guidance, the proposed changes also enable us to use the building regulations to take forward provisions on water efficiency and on the supply of wholesome and non-wholesome water (see below).

1.8 The proposal to introduce water efficiency standards for new homes were consulted upon in 2006. A joint policy statement published by Communities and Local Government and Defra in July 2007 summarised the key findings of this consultation and the next steps. This is available on-line at: www.communities.gov.uk/documents/planningandbuilding/pdf/WaterEfficiencyNewBuildings. This statement outlined that the Government would introduce an amendment to Building Regulations to provide for a "whole building" performance standard for new homes, set at 125 litres/head/day. The final impact assessment for this proposed change will be published alongside the final impact assessments for the other elements of this consultation once the consultation period has closed and responses have been considered. The proposed requirement and associated guidance, including a calculation methodology for the whole building standard, are set out in this consultation document.

1.9 Consideration of hot water safety standards (both in relation to system safety and the delivery of hot water at water outlets) is a key priority for Communities and Local Government. In June 2007, following a number of fatalities resulting from scalding incidents, Ministers announced that the forthcoming review of Part G of the Building Regulations would consider the issue of hot water safety including the issue of the temperature of water delivered at water outlets.

1.10 Hot bath water is currently responsible for the highest number of fatal and severe scalding injuries in the home, but scalding can also occur when showering or by putting hands directly under running taps. The review of Part G has considered whether it might be appropriate to introduce a requirement for the installation of a thermostatic mixing valve (TMV) on baths and bidets in homes to limit the temperature of water to 48°C. In considering this we have looked closely at the costs and benefits of such an approach for baths, taps, showers and bidets in new homes and for replacement of sanitary appliances.

1.11 The Government would very much like to support a provision that would help to reduce the risk of scalding incidents from sanitary appliances. However, our initial analysis suggests that the cost of requiring the installation of TMVs are considerably out of proportion to the benefits that would be realised, even if we were to only limit the provision to baths in new homes. Unfortunately, this means that it is not currently possible for us to include this provision as a definitive proposal in this document. However, through this consultation we are seeking more information and evidence from our stakeholders on the likely costs and benefits of installing protective measures such as TMVs. If this information and evidence changes the analysis of costs and benefits favourably we will reconsider the position in formulating our final policy.

1.12 Chapter 2 of this consultation document contains the draft proposed Approved Document G. This includes the proposed Requirements of a revised Part G, and guidance indicating how these might be satisfied. The chapter also includes explanations of the proposed changes and questions inviting responses and information from consultees. A full list of questions being asked is in the response form in Annex A.

Evidence gathered and Consultation Impact Assessment

1.13 The proposals contained in this document have been developed in consultation with industry through the Buildings Regulations Advisory Committee[1] (BRAC) and its Working Group for the Part G review of hot water safety and water efficiency. Membership of the Working Group included manufacturers, developers, architects and installers together with members of BRAC and representatives of Government including the Devolved Administrations and agencies.

1.14 Shaded text boxes have been included throughout the draft AD to highlight where we propose to make changes, to describe the changes proposed and to explain why we think the changes are needed. These shaded text boxes will not be present in the final Approved Document.

[1] A statutory set up to advise Ministers on Building Regulations.

1.15 Two Impact Assessments – one covering the issue of hot water safety (limiting temperature at water outlets) and one covering other elements of the proposed changes – have been prepared and are available at www.communities.gov.uk/planningandbuilding/publications/impact-assessments/

How to Respond

1.16 We are seeking responses to specific questions on the proposals for the revision of Approved Document G. Questions on which we are seeking input are raised throughout this document and repeated in Annex 1. Responses to this consultation must be received by **5 August 2008**. We are also seeking views on the Consultation Impact Assessments, and evidence to inform future decisions. Responses should be submitted on-line (www.buildingpartg.communities.gov.uk) or by downloading the form and emailing to partgconsultation@communities.gsi.gov.uk.

1.17 **It is very important that if you wish to give a view on a specific proposed change that you do so by responding to the relevant question and saying why you agree or disagree with the proposed change at that point.** If responses are not in the template format, we will only be able to include them under 'Any Other Comments'.

1.18 **This is an e-consultation and we encourage you to submit your comments online (via the website address above) or by email with the response form provided.** We will, however, accept responses submitted on paper using the template provided.

1.19 Responses on paper should be sent to:

Part G consultation,
Sustainable Buildings Division,
Zone 2/H6, Eland House,
Bressenden Place,
London, SW1E 5DU.

1.20 A summary of responses to this consultation will be published within three months of the close of the consultation at www.communities.gov.uk. Paper copies will be available on request.

Confidentiality and data protection

1.21 Information provided in response to this consultation, including personal information, may be published or disclosed in accordance with the access to information regimes (these are primarily the Freedom of Information Act 2000, the Data Protection Act 1998, and the Environmental Information Regulations 2000).

1.22 If you want the information that you provide to be treated as confidential, please be aware that, under the Freedom of Information Act, there is a statutory Code of Practice with which public authorities must comply and which deals, amongst other things, with obligations of confidence. In view of this it would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information, we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on the Department.

1.23 Communities and Local Government will process your personal data in accordance with the Data Protection Act and in the majority of circumstances this will mean that your personal data will not be disclosed to third parties.

1.24 Confidential responses will nevertheless be included in any statistical summary of number of comments and views expressed, although individuals will not be identified.

Help with queries

1.25 If you have any queries or problems with submitting an online response or would like a hard copy of this consultation document, please contact:

Mary Onyejiaku
Sustainable Buildings Division
Communities and Local Government
Zone 2/J6 Eland House
Bressenden Place
London SW1E 5DU
or by e-mail to partgconsultation@communities.gsi.gov.uk

1.26 Questions about the policy issues raised in the document can be addressed to:

Mike Johnson
Sustainable Buildings Division
Communities and Local Government
Zone 2/J6 Eland House
Bressenden Place
London SW1E 5DU
or by e-mail to partgconsultation@communities.gsi.gov.uk

1.27 If you have comments or complaints about the way this consultation has been conducted, these should be sent to:

Albert Joyce,
Consultation Co-ordinator
Communities and Local Government,
Zone 6/H10, Eland House,
Bressenden Place, London, SW1E 5DU
or by e-mail to: consultationcoordinator@communities.gsi.gov.uk

1.28 A copy of the consultation criteria from the Code of Practice on Consultation is in Annex B.

2. The proposed amendments to Part G and the proposed new guidance in Approved Document G: Sanitation, hot water safety and water efficiency

Contents (of the Approved Document)

USE OF GUIDANCE

The Approved Documents

This document is one of a series that has been approved and issued by the Secretary of State for the purpose of providing practical guidance with respect to the requirements of Schedule 1 and Regulation 7 of the Building Regulations 2000 (SI 2000/2531) for England and Wales.

SI 2000/2531 has been amended by the following regulations:

The Energy Performance of Buildings (Certificates and Inspections) (England and Wales) (Amendment) Regulations 2008 (SI 2008/647)

The Building (Amendment) Regulations 2008 (SI 2008/671)

The Building and Approved Inspectors (Amendment) Regulations 2007 (SI 2007/3384)

The Energy Performance of Buildings (Certificates and Inspections) (England and Wales) Regulations 2007 (SI 2007/991)

The Building and Approved Inspectors (Amendment) (No.2) Regulations 2006 (SI 2006/3318)

The Building and Approved Inspectors (Amendment) Regulations 2006 (SI 2006/652)

The Building (Amendment) (No.3) Regulations 2004 (SI 2004/3210)

The Building (Amendment) (No.2) Regulations 2004 (SI 2004/1808) **(Now entirely revoked)**

The Building (Amendment) Regulations 2004 (SI 2004/1465)

The Building (Amendment) Regulations 2003 (SI 2003/2692)

The Building (Amendment) (No.2) Regulations 2002 (SI 2002/2871)

The Building (Amendment) Regulations 2002 (SI 2002/440)

The Building (Amendment) Regulations 2001 (SI 2001/3335)

At the back of this document is a list of all the documents that have been approved and issued by the Secretary of State for this purpose.

This document is structured in 8 sections. With the exception of Section 0: General Guidance, each section corresponds to the relevant Requirement(s) of Schedule 1 and includes guidance on what, in ordinary circumstances, would be accepted as reasonable provision to comply with those Requirements.

The Approved Documents are intended to provide guidance for some of the more common building situations. However, there may well be alternative ways of achieving compliance with the Requirements.

Thus there is no obligation to adopt any particular solution contained in an Approved Document if you prefer to meet the relevant Requirement in some other way.

Supplementary Guidance

The Department of Communities and Local Government occasionally issues additional material to aid interpretation of the guidance in Approved Documents. This material may be conveyed in official letters to Chief Executives of local authorities and Approved Inspectors and/or posted on the websites accessed through: www.communities.gov.uk/planningandbuilding/buildingregulations/.

Where you can get further help

If you do not understand the technical guidance or other information set out in this Approved Document and the additional detailed technical references that it directs you to, there are a number of routes through which you can seek further assistance:

- Communities and Local Government website: www.communities.gov.uk
- The Planning Portal website: www.planningportal.gov.uk
- If you are the person undertaking the building work you can seek assistance either from your local authority building control service or from your approved inspector (depending on which building control service you are using, or intend to use, to certify compliance of your work with the requirements of the Building Regulations).
- Businesses registered with a competent persons self-certification scheme may be able to get technical advice from their scheme operator.
- If your query is of a highly technical nature you may wish to seek the advice of a specialist, or industry technical body, in the area of concern.

(DRAFT) GUIDANCE

Section 0: General

Responsibility for compliance

The guidance contained in an Approved Document relates only to the particular requirements of the Regulations which this document addresses. The building work will also have to comply with the requirements of any other relevant paragraphs in Schedule 1 to the Building Regulations 2000.

It is important to remember that if you are the person (e.g. designer, builder, installer) carrying out building work to which the requirements covered by this Approved Document are relevant then it is your responsibility to ensure that the work you do complies with those requirements. The building owner may also have a responsibility for ensuring compliance with the requirements and could be served with an enforcement notice in cases of non-compliance.

Limitations of requirements

In accordance with **Regulation 8**, the requirements in Parts A to D, F to K, N and P (except for paragraphs G2, H2 and J6) of Schedule 1 to the Building Regulations do not require anything to be done except for the purpose of securing reasonable standards of health and safety for persons in or about buildings (and any others who may be affected by buildings or matters connected with buildings). This is one of the categories of purpose for which Building Regulations may be made.

Paragraphs H2 and J6 are excluded from Regulation 8 because they deal directly with prevention of the contamination of water. Parts E and M (which deal, respectively, with resistance to the passage of sound, and access to and use of buildings) are excluded from Regulation 8 because they address the welfare and convenience of building users. Part L is excluded from Regulation 8 because it addresses the conservation of fuel and power. It is intended that the new Part G2 consulted on in this document should be excluded from regulation 8 because it addresses the conservation of water. All these matters are amongst the purposes, other than health and safety, that may be addressed by Building Regulations.

Building work

Building work, as defined in Regulation 3 of the Building Regulations 2000, includes the erection and extension of a building, the provision or extension of a controlled service or fitting, and the material alteration of a building or a controlled service or fitting. In addition, Building Regulations may be made in cases where the purposes for which or the manner or circumstances in which a building or part of a building is used change or changes in a way that constitutes a material change of use.

Under Regulation 4 of the Building Regulations 2000 (as amended), building work should be carried out in such a way that, on completion of work,

(i) the building should be no worse in terms of the level of compliance with other applicable Parts of Schedule 1 of the Building regulations than before the work was undertaken or,

(ii) where it did not comply with any such requirement, is no more unsatisfactory in relation to that requirement than before the work was carried out.

Work described in G1 and G3 to G7 concerns the provision of controlled services or fittings. Work associated with installations covered in these sections may be subject to other relevant Parts of the Building Regulations.

Historic buildings

The types of building work covered by this Approved Document may include work on historic buildings. Historic buildings include:

(a) listed buildings;

(b) buildings situated in conservation areas;

(c) buildings which are of architectural or historic interest and which are referred to as a material consideration in a local authority's development plan; and

(d) buildings of architectural and historical interest within national parks, areas of outstanding or natural beauty and world heritage sites.

Special considerations may apply if the building on which the work is to be carried out has special historic or architectural value and compliance with the sanitation or hot water safety requirements would unacceptably alter the character or appearance of the building or parts of it.

When undertaking work on or in connection with buildings with special historic or architectural value, the aim should be to improve sanitation and hot water safety where and to the extent that it is possible provided that the work does not prejudice the character of the host building or increase the risk of long-term deterioration to the building fabric or fittings.

In arriving at a balance between historic building conservation and sanitation or hot water safety requirements, it would be appropriate to take into account the advice of the local authority's conservation office before work has begun. Guidance is also available in the English Heritage publication *Building Regulations and Historic Buildings, 2002* (revised 2004), which is available at www.english-heritage.org.uk.

Materials and Workmanship

Building Regulations are made for specific purposes including: securing the health, safety, welfare and convenience of persons in or about buildings, protecting and enhancing the environment, facilitating sustainable development and the conservation of fuel and power preventing crime or preventing waste, misuse, undue consumption or contamination of water.

Any building work, which is subject to the requirements imposed by Schedule 1 of the Building Regulations, should in accordance with Regulation 7 be carried out with proper materials and in a workmanlike manner.

You may show that you have complied with Regulation 7 in a number of ways. These include the appropriate use of a product bearing CE marking in accordance with the Construction Products Directive (89/106/EEC) and any other relevant Directives as amended by the CE Marking Directive (93/68/EEC) or a product complying with an appropriate technical specification (as defined in those Directives), a British Standard or an alternative national technical specification of any state which is a contracting party to the European Economic Area which in use is equivalent, or a product covered by a national or European certificate issued by a European Technical Approval Issuing body, and the conditions of use are in accordance with the terms of the certificate. You will find further guidance in the Approved Document supporting Regulation 7 on materials and workmanship.

Technical Specifications

Standards and technical approvals are relevant guidance to the extent that they relate to these considerations. However, they may also address other aspects of performance such as serviceability, or aspects that although they relate to health and safety are not covered by the Regulations.

When an Approved Document makes reference to a named standard, the relevant version of the standard is the one listed at the end of the publication. However, if this version of the standard has been revised or updated by the issuing standards body, the new version may be used as a source of guidance provided it continues to address the relevant requirements of the Regulations.

The appropriate use of a product, which complies with a European Technical Approval as defined in the Construction Products Directive, (89/106/EEC) should meet the relevant requirements.

Independent product certification schemes

There are many UK product certification schemes. Such schemes certify compliance with the requirements of a recognised document that is appropriate to the purpose for which the material is to be used. Materials, which are not so certified, may still conform to a relevant standard. Many certification bodies that approve such schemes are accredited by the United Kingdom Accreditation Service (UKAS).

Self-certification schemes

In almost all cases of building work except where exempt under the Building Regulations, it will be necessary to notify a Building Control Body (BCB) in advance of any work starting.

Under regulation 12(5) of the Building Regulations it is not necessary to notify a BCB in advance of work which is covered by this Approved Document if that work is of a type set out in column 1 of Schedule 2A to the Regulations and is carried out by a person registered with a relevant competent person self-certification scheme as set out in column 2 of that Schedule. In order to join such a scheme a person must demonstrate competence to carry out the type of work the scheme covers, and also the ability to comply with all relevant requirements in the Building Regulations. Detail of current schemes including those relating to sanitation, hot water safety and water efficiency can be found in Annex 2 of Approved Document G and from www.communities.gov.uk. These schemes may change from time to time, or schemes may change name or new schemes may be authorised; the full list should always be consulted. Full details of the schemes can be found on the individual scheme websites.

Where work is carried out by a person registered with a competent person scheme, Regulation 16A of the Building Regulations and Regulation 11A of the Building (Approved Inspectors etc) Regulations 2000 require that the occupier of the building be given, within 30 days of the completion of the work, a certificate confirming that the work complies fully with all applicable building regulation requirements. There is also a requirement that the BCB be given a notice of the work carried out, again within 30 days of the completion of the work. These certificates and notices are usually made available thorough the scheme operator.

BCBs are authorised to accept these certificates and notices as evidence of compliance with the requirements of the Building Regulations. However, local authority inspection and enforcement powers remain unaffected, although they are normally used only in response to a complaint that work does not comply.

Work where building control bodies need not be notified

Schedule 2B to the Building Regulations sets out types of work where there is no requirement to notify a Building Control Body (BCB) that work is to be carried out. These types of work are mainly of a minor nature where there is no significant risk to health, safety, water efficiency or energy efficiency. Health, safety, water efficiency and energy efficiency requirements continue to apply to these types of work; only the need to notify a BCB has been removed.

Where only non-notifiable work (as set out in Schedule 2B) is carried out by a member of a competent person self-certification scheme, there is no requirement for a certificate confirming that the work complies with building regulation requirements to be given to the occupier or the BCB.

The types of non-notifiable work in Schedule 2B relevant to the sanitation, hot water safety and water efficiency provisions of the Regulations are:

i) in an existing hot water service system, the replacement of any part which is not a combustion appliance or the addition of an output device or control device. The work will remain notifiable whenever commissioning is possible and necessary to enable a reasonable use

of fuel and power. This is most likely to occur where water heaters are being provided;

ii) the installation of a stand-alone, self-contained fixed hot water service.

Such services must consist only of a single appliance and any associated controls and must not be connected to, or form part of, any other fixed building service. However, if any of the following apply, the work will remain notifiable building work:

- the service is a combustion appliance
- any electrical work associated with the installation is notifiable
- commissioning is possible and would affect the service's energy efficiency, such as water heaters.

iii) the replacement of a sanitary appliance but only where the work does not include any work which could prejudice the health and safety of any person on completion of work to:

- underground drainage; or
- the hot or cold water system; or
- above ground drainage.

Examples of where work in category (iii) above might still be notifiable include, but are not limited to:

- work that involves the removal or reduction in effectiveness of any device that protects people from the effect of very hot water;
- the replacement of sanitary appliance by one that uses more water than the previously installed sanitary appliance.

Schedule 2B also sets out what types of electrical installation work in dwellings is non-notifiable. Full information on this is given in Approved Document P.

Interaction with other legislation

This Approved Document makes reference to other legislation, including those listed below that may also need to be considered.

The Water Supply (Water Quality) Regulations 2000 (SI 2000/3184 as amended) are made under the Water Industry Act 1991 and apply to the supply of water by a statutory water undertaker or a licensed water supplier. They make provision for the wholesomeness of water supplied for such domestic purposes as consist in or include, cooking, drinking, food preparation or washing; or to premises in which food is produced.

The Water Supply (Water Fittings) Regulations 1999 (SI 1999/1148 as amended) are made under the Water Industry Act 1991 and apply to any water fitting installed or used, or to be installed or used, in premises to which water is or is to be supplied by a water undertaker. They make provision for preventing contamination, waste, misuse, undue consumption and erroneous measurement of water supplied by a statutory water undertaker or licensed water supplier.

The Private Water Supplies Regulations 1991 (SI 1991/2790 as amended) are made under the Water Industry Act 1991 and are concerned with the quality of water supplied from private supplies in England and Wales for drinking, washing or cooking or for food production purposes. They make provision for standards of wholesomeness in respect of water from private supplies for drinking, washing or cooking or for food production purposes.

The Workplace (Health, Safety and Welfare) Regulations 1992 (SI 1992/3004) are made under the Health and Safety at Work etc. Act 1974 and apply to any workplace or part of a workplace. They apply to the common parts of flats and similar buildings if people such as cleaners, wardens and caretakers are employed to work in these common parts. They make provision for, amongst other matters, space requirements and space, cleaning of facilities and sanitary conveniences.

Food Hygiene (England) Regulations 2006 (SI 2006/14) and **the Food Hygiene (Wales) Regulations 2006** (SI 2006/31 W5) are made under European Communities Act 1972 and apply to measures relating to food (including drink) including the primary production of food. The provision of washbasins and sinks is relevant to Approved Document G.

Gas Safety (Installation and Use) Regulations (SI 1994/1886) extend to all dangers arising from the transmission, distribution, supply or use of gas conveyed from a gas storage vessel. The installation of gas heated water systems is relevant to Approved Document G.

Other documents

Where appropriate, other documents may be used to provide additional information material to aid interpretation of the guidance in Approved Documents.

Key Terms used in this Approved Document

The following meanings apply to terms in this Approved Document.

Note: Terms shown with * are defined by legislation.

Accessible toilet means toilet designed either for wheelchair users or for ambulant disabled users.

* **Building** means any permanent or temporary building but not any other kind of structure or erection and a reference to a building includes a reference to part of a building. This includes dwellings (houses, flats) and public buildings.

* **Building Work** means the erection or extension of a building, the provision or extension of a **controlled service or fitting** in or in connection with a building, the material alteration of a building, or a controlled service or fitting.

Combined Temperature and pressure relief valve means a mechanically operated valve that opens to discharge water when a fixed (factory set) temperature or fixed (factory set) pressure is exceeded.

Direct heating means a method of heating in which the heat source is integral with the hot water vessel. For example an electrical immersion heater or gas burner with a flue arrangement that passes through the vessel so that the flue transfers heat to the stored water, or the circulation of water from the vessel near a burner with a flue arrangement so that the flue transfers heat to the circulating water.

Domestic hot water means water that has been heated for cooking, food preparation, personal washing or cleaning purposes. The term is used irrespective of the type of building in which the hot water system is installed.

* **Exempt buildings and work** means the erection of any building or extension of a kind described in Schedule 2 of the Buildings Regulations 2000; or the carrying out of any work to or in connection with such a building or extension, if after the carrying out of that work it is still a building or extension of a kind described in that Schedule.

Expansion vessel means a vessel to temporarily accommodate the expansion of water from the hot water storage vessel as it is heated.

Grey Water (recycled) means the collection of shower, bath and tap water in order to replace the use of wholesome water in WCs, outdoor use and washing machines.

Heated wholesome water means water that when cold was wholesome in accordance with the definition below and has been subjected to a heat source to increase its temperature.

Hot water storage system means a vessel for storing:
a) heated wholesome hot water for subsequent use; or,
b) water that is used to heat water;
together with any ancillary safety devices described in paragraphs 3.11 or 3.15 of this Approved Document and all other applicable operating devices.

Hot water storage system package means a hot water storage system having the safety devices described in 3.11 or 3.15 of this Approved Document factory-fitted by the manufacturer, together with a kit containing other applicable devices supplied by the manufacturer to be fitted by the installer.

Hot water storage system unit means a hot water storage system having the safety devices described in 3.11 or 3.15 of this Approved Document and all other applicable operating devices factory-fitted by the manufacturer.

Indirect heating means a method of heating stored water through a heat exchanger.

Non self-resetting energy cut-out means a device that will interrupt the supply of heat to a hot water storage vessel when a fixed (factory set) temperature is exceeded. If this protective device is actuated it should only be possible to reset it manually after removal of a cover. Such a cover should be removable only with a tool.

Non wholesome water means cold water that does not meet the requirements for wholesome water, but is considered suitable for specified applications having regard to the risks to human health. This could include grey water or captured rainwater.

Preparation of food means handling, making and cooking of food.

Pressure relief valve means a mechanically operated valve that opens to discharge water when a fixed (factory set) pressure is exceeded.

Primary thermal store means a store of heat energy that can be used to heat domestic hot water by means of a heat exchanger. The thermal store can be heated by a variety of heat sources. Primary hot water thermal stores can be either vented or unvented.

Rainwater (captured or harvested) means the collection and storage of rainwater from roofs and/or other external surfaces.

Sanitary accommodation means a room containing a WC or urinal whether or not it also contains other sanitary appliances. Sanitary accommodation containing one or more cubicles counts as a single space if there is free circulation of air throughout the space.

Sanitary appliance means WC, urinal, bath, shower, washbasin, sink, bidet and drinking fountain. It also includes appliances that are not connected to a water supply or drain e.g. waterless urinals.

Sink means a receptacle used for holding water (for food preparation or washing up) supplied through a tap and having a waste pipe.

Tundish means a device, installed in the discharge pipe from a safety valve that provides an air break allowing discharge to be conducted safely to a place of termination. The tundish also functions as backflow prevention device.

Temperature relief valve means a mechanically operated valve that opens to discharge water when a fixed (factory set) temperature is exceeded.

Unvented (closed) hot water storage system means a vessel fed with cold water from a supply pipe or dedicated storage cistern (without a vent pipe) and in which water is heated directly or indirectly. Expansion of the water when it is heated is accommodated in an expansion vessel and the system is fitted with safety devices to prevent water temperatures exceeding 100ºC and other applicable operating devices to control primary flow, prevent backflow, control working pressure and accommodate expansion.

Urinal means an appliance used for reception and disposal of urine.

Vented (open) hot water storage system means a vessel fed with cold water from a dedicated storage cistern. Expansion of the water when it is heated is accommodated by through the cold feed pipe. A vent pipe connecting the top of the vessel to a point open to the atmosphere above the cold water storage cistern is provided as a safety device.

WC means an appliance for reception and disposal of urine and faecal matter.

* **Wholesome water** means water complying with the requirements of regulations made under Section 67 (Standards of wholesomeness) of the Water Industry Act 1991. The regulations made under this Section are the Water Supply (Water Quality) Regulations 2000 (SI 2000/3184) and the Private Water Supplies Regulations 1991 (SI 1991/2790 as amended).

G1: COLD WATER SERVICES

THE (DRAFT) REQUIREMENT

This Approved Document deals with the following Requirement from Part G of Schedule 1 to the Building Regulations 2000 (as amended).

	Limits on application
Provision of cold water supply **G1** (1) There shall be a suitable installation for the provision of wholesome water to **–** a) any place where drinking water is drawn off; b) any sanitary appliance used for washing provided in accordance with G4 and G5; and c) any sink provided in accordance with G6 and in a place kitchenware and utensils are washed. (2) There shall be a suitable installation for the provision of water of suitable quality to any WC or urinal fitted with a flushing device. (3) In this Part "wholesome water" has the same meaning as Section 67 (Standards of wholesomeness) of the Water Industry Act 1991.	

What is the proposed change? *Existing Requirements G1 and G2 already require a supply of water to WCs, urinals, washing facilities, bath and showers. Other legislation requires a supply of wholesome water (e.g. the Building Act 1984 (houses); the Workplace (Health, Safety and Welfare) Regulations 1992; and the Food Hygiene Regulations).. The existing Requirement G1 (sanitary conveniences and washing facilities) requires the provision of hot and cold water to wash basins.*

This means that most buildings require a water supply. The new Requirement G1 (1) here specifies those locations where this supply of water should be wholesome. The proposed changes would also have the effect of clarifying this situation by making the requirement for water supply to buildings more explicit and ensuring that supporting guidance is in place to assist compliance.

The buildings excluded from the Regulations are those controlled under other legislation, for example those associated with quarries, mines and dangerous processes. Some buildings that are not frequented by people, greenhouses and agricultural buildings, temporary buildings and ancillary buildings are exempt from

the Building Regulations. A full list can be found in Schedule 2 of the Regulations. Some small detached buildings, and certain extensions (e.g. conservatory or porch) may also be exempt.

Why do we need a change? *Through the requirements of other legislation, it is normal practice to bring a supply of water from either a public or private supply into dwellings and most other buildings. It is felt that stating this explicitly in the Building Regulations will increase awareness of the need for a wholesome supply of water for the protection of health and reflect current practice.*

Water from washbasins, baths and sinks could be used for drinking and water from showers could be consumed accidentally. Therefore this needs to be wholesome water (i.e. to drinking water standards). As it is proposed to allow non-wholesome water to be used in some applications, it becomes important to identify where it is essential that water must be wholesome.

CONSULTATION QUESTION 1: Requirement G1(1) would incorporate the requirements of existing legislation and standards on the provision of water and would provide a better understanding and visibility of requirements for water supplies in buildings. Some stakeholders have suggested that this requirement for the supply of water to all buildings would aid compliance and should not bring about additional costs. However, we would like to consider this further. Do you agree that this proposal would be beneficial and would not bring extra costs?

CONSULTATION QUESTION 2: Requirement G1(1) would clarify the provisions for the supply of a wholesome water supply to buildings (subject to the exemptions in the Building Regulations) where drinking water is drawn off, where food is prepared or where sanitary appliances are used for personal washing. Is it reasonable to expect all buildings, in this context, to be connected to a wholesome supply of water?

CONSULTATION QUESTION 3: Requirement G1(1) specifies that wholesome water be provided to locations where drinking water is drawn off, where food is prepared and where sanitary appliances are used for washing (e.g. basins, baths, showers). Are there any other points in a building (including dwellings) where you would consider wholesome water is essential?

What is the proposed change? *New Requirement G1 (2) specifies those locations where a water supply is essential but it is proposed that the water need not be to a wholesome standard. The guidance offers advice on those locations where non-wholesome water could be used. We also recognise that there are other points, e.g. external taps or connection points for washing machines, at which non-wholesome water might be suitable. However, there is no requirement in the Building Regulations for such outlets to be provided.*

Why do we need a change? *To encourage water efficiency in buildings, it is appropriate to allow the use of reclaimed water and captured rainwater as well as water from other non-wholesome sources e.g. boreholes etc.*

CONSULTATION QUESTION 4: Requirement G1(2) specifies those locations where a supply of water is considered essential, but where wholesome water is not necessarily needed. Is it safe and reasonable to allow the use of water from non-wholesome sources to be used in (i) dwellings and (ii) in other buildings for WCs, urinals, external taps and laundry (subject to the exclusions in the guidance in this document)?

G1: COLD WATER SERVICES

(DRAFT) GUIDANCE

Performance

In the Secretary of State's view Requirement G1(1) will be met if -

a) the water supplied is wholesome;
b) the pressure and flow rate is sufficient for the operation of sanitary appliances planned in the building;
c) the supply is reliable; and
d) the installation conveys wholesome water to the sanitary appliances and locations specified in the Requirement without waste, misuse, undue consumption or contamination of water.

The water will be wholesome if it is provided –

a) by a statutory water undertaker or a licensed water supplier; or
b) by a source complying with the Private Water Supplies Regulations 1991 (SI 1991/2790 as amended).

In the Secretary of State's view Requirement G1(2) will be met if –

a) the water is either wholesome or of suitable quality having regard to the risks to health;
b) the pressure and flow rate is sufficient for the operation of the sanitary appliances;
c) the supply is reliable; and
d) the installation conveys water to sanitary appliances and locations specified in the Requirement without waste, misuse, undue consumption or contamination of wholesome water.

What is the proposed change? *This new guidance sets out the performance of a cold water supply needed to meet Requirements G1(1) and (2). In addition, similar performance standards are set out for a cold water supply using non-wholesome water to meet Requirement G1(2).*

Why do we need a change? *Although the Water Supply (Water Quality) Regulations 2001 set out the quality of wholesome water and the Water Supply (Water Fittings) Regulations 1999 sets out the performance of water supply systems inside buildings, it was felt that awareness of these provisions could be improved by references in the Approved Document G. In addition, there is currently no guidance on performance standards for non-wholesome water systems inside buildings.*

Consultation Question 5:
It is expected that bringing together the various requirements to provide water to buildings will support better compliance. More consistent guidance would be beneficial to those seeking to comply and would assist consistent interpretation. Do you agree that it is helpful to include this guidance in the Approved Document? Are you satisfied with the guidance as drafted?

Section 1: Cold Water Services

Wholesome water (all buildings)

1.1 Water supplied to the building by a statutory water undertaker or a licensed water supplier through an installation complying with the requirements of the Water Supply (Water Fittings) Regulations 1999 (SI 1999/1148 as amended) may be assumed to be wholesome water.

1.2 Attention is drawn to the requirements of the Water Supply (Water Fittings) Regulations 1999 (SI 1999/1148 as amended) which make provision for preventing contamination, waste, misuse, undue consumption and erroneous measurement of water supplied by a water undertaker or licensed water supplier.

1.3 Where a building is supplied with water from a source other than a water undertaker or licensed water supplier, the water shall be considered to be wholesome if it meets the criteria set out in the Private Water Supplies Regulations 1991 (SI 1991/2790 as amended).

Non-wholesome water (all buildings)

1.4 Water treated to the high standards of wholesome water is not essential for all of the uses that water is put to in buildings, e.g. toilet flushing, irrigation. A variety of alternative sources are available for water. These include –
a) water abstracted from wells, springs, bore-holes or water courses;
b) captured rainwater;
c) reclaimed grey water; and
d) reclaimed industrial process water.

Note: Guidance on the marking of pipework conveying water from non-wholesome sources can be found in the WRAS Information & Guidance Note No. 9-02-05 *Marking and identification of pipework for reclaimed (grey water) systems*.

1.5 Water from non-wholesome sources not treated to wholesome water standards might contain particulate contaminants. Such water should be filtered prior to storage.

1.6 Water from non-wholesome sources that does not need treatment other than filtration should be stored prior to transfer to the point of use or a cistern either –
(a) underground; or
(b) above ground at a temperature not exceeding 25°C.

1.7 Where storage is above ground and the water is intended for use inside the building, the systems should be designed to minimise the retention time of the stored water. Systems should incorporate a mechanism that allows for (a) the automatic dumping of stagnant water (b) discharge of water to facilitate maintenance. Where practical, this should be an automatic system.

1.8 The design of treatment systems for water from non-wholesome water sources should incorporate measures to minimise the impact on water quality of –
a) failure of any components;
b) failure to undertake any necessary maintenance;
c) power failure where appropriate; and
d) any other measures identified in the risk assessment.

What is the proposed change? *The new guidance in 1.4 lists a number of alternative sources of water which could be used for the flushing of WCs and urinals, as well as external uses and laundry. This is not intended to be a complete list of sources or uses. Guidance in 1.5 to 1.7 sets out the minimum treatment and failure-safe mechanisms that systems should incorporate. Note: Work is currently in progress to draft a British Standard for rainwater and grey water – this could be referenced in Approved Document G in place of some or all of this guidance if available before publication of the final revised Approved Document G.*

Why do we need a change? *To encourage water efficiency in buildings, it is appropriate to allow the use of non-wholesome water sources. However, there are currently no suitable specifications for the quality of this water for different potential uses. In order to protect health, either water quality standards or minimum treatment standards should be in place. In the absence of these, a risk assessment should be carried out by the product manufacturer (or the system designer for bespoke systems) to ensure that human health will be adequately protected.*

CONSULTATION QUESTION 6: Have we included sufficient detail in terms of the risk assessment and testing or specification of treatment systems that should be necessary to allow use of water from non-wholesome sources whilst protecting health within a building?

Cold Water Services in Dwellings

1.9 Water from non-wholesome sources may be used in dwellings subject to the recommendations listed in Table 1 below.

1.10 Where indicated in Table 1, any system/unit used to supply dwellings with water from non-wholesome sources should be subject to a risk assessment by the manufacturer and appropriate testing carried out to demonstrate that the risks have been suitably addressed. The risk assessment should include consideration of the effect on water quality of system failure and failure to carry out necessary maintenance. Further information on risk assessment can be found in WRAS Information & Guidance Note No. 9-02-04 *Reclaimed water systems.*

1.11 Filtration or treatment systems for water from non-wholesome water sources should meet an appropriate performance standard (e.g. BSRIA Technical Note TN 6/2002 *Water Reclamation Standard*) taking into account the risk assessment discussed above (see 1.10).

Table 1 Examples of appropriate uses of non-wholesome water in dwellings

	WCs and Urinals	Laundry	Outdoors Use
Well, spring, borehole or water course	Yes with satisfactory risk assessment taking account of changing conditions	Yes with satisfactory risk assessment taking account of changing conditions	Yes
Rainwater	Yes	Yes	Yes
Reclaimed grey water	Yes with satisfactory risk assessment	Yes with satisfactory risk assessment	Yes with satisfactory risk assessment

What is the proposed change? *For each of the alternative sources of water listed in 1.4, appropriate uses are proposed in Table 1. This guidance applies to dwellings only i.e. houses, flats (separate and self-contained premises for use for residential purposes) and buildings containing a flat. Note: reclaimed industrial process water is not relevant to use in dwellings.*

Why do we need a change? *To encourage water efficiency in buildings, it is desirable to allow the use of non-wholesome water sources in some circumstances. However, it is felt that guidance should be provided to developers and building owners on which non-wholesome water sources might be suitable for any given application.*

CONSULTATION QUESTION 7: Is this guidance on appropriate sources and uses of non-wholesome water in dwellings sufficient?

Cold Water Services in Buildings other than Dwellings

1.12 Water from non-wholesome sources may be used in buildings other than dwellings subject to the recommendations listed in Table 2.

1.13 Where indicated in Table 2, any proprietary system/unit used to supply buildings other than dwellings with water from non-wholesome sources should be subject to a risk assessment by the manufacturer and appropriate testing carried out to demonstrate that the risks have been suitably addressed. The risk assessment should include consideration of the effect on water quality of system failure and failure to carry out necessary maintenance.

1.14 Where indicated in Table 2, any bespoke system/unit designed to supply a building with non-wholesome water should be subject to a risk assessment by the system designer and appropriate testing carried out to demonstrate that the risks have been suitably addressed. The risk assessment should include consideration of the effect on water quality of system failure and failure to carry out necessary maintenance.

Note 1: Further information on risk assessment can be found in WRAS Information & Guidance Note No. 9-02-04 *Reclaimed water systems.*

Note 2: It is good practice to provide a maintenance guide for any filtration or treatment system and for the building owner to put in place appropriate management arrangements to ensure maintenance is carried out.

Table 2 Examples of appropriate uses of non-wholesome water in buildings other than dwellings

	WCs and Urinals	Laundry	Outdoors Use
Rainwater	Yes	Yes	Yes
Wells, springs, bore-holes or water courses	Yes with satisfactory risk assessment taking account of changing conditions	Yes with satisfactory risk assessment taking account of changing conditions	Yes
Air-conditioning condensate	Yes	Yes	Yes
Reclaimed grey water	Yes with satisfactory risk assessment	Yes with satisfactory risk assessment	Yes with satisfactory risk assessment
Effluent (reclaimed industrial process water)	Yes with satisfactory risk assessment	Not normally practical	Not normally practical

What is the proposed change? *For each of the alternative sources of water listed in 1.4, appropriate uses are proposed in Table 2. This guidance applies to all buildings except dwellings or those already exempted under Schedule 2 of the Building Regulations 2000 or those covered by Table 1 for dwellings.*

Why do we need a change? *As for dwellings, it is felt that guidance should be provided to developers and building owners on which non-wholesome water sources might be suitable for any given application, primarily flushing of WCs and urinals, as well as external taps and laundry.*

It should be noted that the guidance recommends suitable arrangements be made for the maintenance of such systems. However, the Building Regulations apply up to the point at which building work has been satisfactorily completed and signed off and cannot insist on continued maintenance of systems.

CONSULTATION QUESTION 8: Is this guidance on appropriate sources and uses of non-wholesome water for buildings other than dwellings sufficient?

G2: WATER EFFICIENCY

THE (DRAFT) REQUIREMENT

This Approved Document deals with the following Requirement from Part G of Schedule 1 to the Building Regulations 2000 (as amended).

	Limits on application
G2 Provision shall be made for the efficient use of water in dwellings such that – a) the design of the cold and hot water systems shall allow for a level of wholesome water use not in excess of the target of 125 litres/head/day; and b) the sanitary appliances used in the design calculation undertaken to demonstrate compliance with paragraph (a) are provided in the dwelling; and c) any alternative sources of water provided in accordance with G1(2) and used in the design calculation undertaken to demonstrate compliance with paragraph (a) are supplied to the dwelling.	Requirement G2 applies only to new dwellings

What is the proposed change? *New Requirement G2 means that the cold and hot water systems should be designed to allow the efficient use of water in new dwellings. The efficiency of a new dwelling is determined by adding together the maximum water usage of each sanitary appliance and comparing the sum of these with the minimum regulatory standard of 125 litres/head/day (making an allowance where appropriate for the supply of any non-wholesome water sources).*

The Government policy statement in July 2007 announced the minimum regulatory standard of 125 litres/head/day, following a joint Communities and Local Government /Defra consultation in 2006/7. In developing the method of calculation, we have been consistent with the methodology set out in the Code for Sustainable Homes.

Why do we need a change? *There is an increasing awareness that growth in demand for water is becoming unsustainable across much of England and Wales and that we are coming close to exceeding environmental limits. If we are to maintain the balance of supply and demand and secure sustainable supplies into the future, then we must ensure that our buildings are designed with water efficiency in mind.*

When Government consulted on options for encouraging water efficiency, respondents overwhelmingly supported the introduction of a whole building performance standard for new dwellings in Building Regulations. This would allow flexibility in the choice of sanitary appliances used in a dwelling and achieve lower water usage with limited impact on the people living in the dwelling.

This commitment is being translated through the addition of this section to Part G of the Building Regulations. We are not consulting on the principles behind this change, nor on the minimum standard as this was done as part of the consultation in 2006/07, but we are seeking views on the usefulness of the guidance on achieving the standard and in particular on the calculation tool through questions 9 and 10.

It is important that the designs prepared under G2(a) are translated into practice by the installation of those appliances (or ones of equivalent specification) and/or alternative water sources specified at the design stage. This is the intention of G2(b) and (c).

CONSULTATION QUESTION 9: Do you agree this requirement effectively implements the Government's policy for improving water efficiency in new homes, as signalled in its July 2007 statement?

G2: WATER EFFICIENCY

(DRAFT) GUIDANCE

Performance

In the Secretary of State's view requirement G2 will be met for new dwellings if –

a) the design of cold and hot water systems (calculated in accordance with the guidance set out in this Approved Document and taking into account the use of any alternative sources of water provided in accordance with G1(2)) is not greater than the standard set by the Secretary of State of 125 litres/head/day of wholesome water;

b) sanitary appliances and white goods used in the design calculation undertaken to demonstrate compliance with paragraph (a) are provided and installed in the dwelling taking account of the other provisions in this Approved Document;

c) alternative sources of water used in the design calculation undertaken to demonstrate compliance with paragraph (a) are supplied to the dwelling taking account of other provisions in this Approved Document;

d) a record of the sanitary appliances and white goods used to meet the target and installed in the dwelling is provided along with sufficient other information enabling buildings owners or occupiers to maintain the building and its services so as to maintain the water efficiency of the building.

e) a record of the alternative sources of water used to meet the target and supplied to the dwelling is provided along with sufficient other information enabling buildings owners or occupiers to maintain the building and its services so as to maintain the water efficiency of the building.

In this context, relevant white goods are washing machines, dishwashers, water softeners and food waste disposal units.

Where a building consists of more than one dwelling (such as a block of flats) it should be designed so that the cold and hot water systems for each individual dwelling should be no greater than the target.

Where it can be demonstrated that a dwelling meets the minimum water efficiency provisions in the Code for Sustainable Homes, the dwelling shall be deemed to meet requirement G2.

Section 2: Water Efficiency

General

2.1 The water used by sanitary appliances and relevant white goods in a new dwelling should be calculated using the manufacturer's declared value for water consumption of each of those appliances and white goods.

2.2 The maximum design water usage of a new dwelling should be calculated using the method given in Annex 1 to this Approved Document.

2.3 The maximum designed wholesome water usage of a new dwelling should be not more than 125 litres/head/day (l/h/d). This includes a fixed factor of water for outdoor use of 5 litres/head/day.

2.4 Where alternative sources of non-wholesome water are to be used in the dwelling design, the full calculation method in the Code for Sustainable Homes should be used.

What is the proposed change? *New guidance in 2.1 – 2.3 and Annex 1 sets out a means of calculating the design water usage for a new dwelling. This calculation is a simplified version of the one used for the Code for Sustainable Homes. Most new dwellings will be supplied only with wholesome water, therefore we believe it is appropriate to include a simplified version of the calculation method used for the Code for Sustainable Homes which reflects this.*

We have offered two calculation tables: one of which allows the designer to specify the manufacturer's declared water use for washing machines and dishwashers and one which gives a fixed usage figure. The latter approach can be used where the water consumption is not known or where these appliances are not installed by the builder.

Where new homes are designed to include alternative non-wholesome water sources (e.g. captured rainwater), the full calculation included in the Code for Sustainable Homes is to be used to demonstrate compliance with the target. Guidance on how to do this is available in the Code Technical Guidance available at www.planningportal.gov.uk/uploads/code_for_sustainable_homes_techguide.pdf.

The calculator will give an indication of whether the dwelling is water efficient or not, but is not designed to give an accurate prediction of the actual water used in the house by occupants.

Where a dwelling meets the performance standard for water for any level of the Code, then it will be deemed to satisfy requirement G2.

Why do we need a change? *Guidance is required to provide developers and designers a means by which to demonstrate that the proposed dwelling meets the target set out in Requirement G2.*

CONSULTATION QUESTION 10: A method of calculation for water use is provided in the Code for Sustainable Homes. We propose a simplified version of this calculation for use where dwellings will be supplied only with wholesome water. Do you agree that a simplified version of the calculation should be used in these situations?

CONSULTATION QUESTION 11: We propose that the water use calculation method provided in the Code for Sustainable Homes should be used where the design includes alternative water sources to demonstrate a greater level of water efficiency. Do you agree that the full calculation be used in these situations?

CONSULTATION QUESTION 12: Some of our stakeholders have expressed concern that the low flows in drains and sewers resulting from the proposed reductions in water use could lead to problems with blockages in drains and sewers. Do you agree that this may be an issue and if so do you have any evidence of this?

G3: HOT WATER SERVICES

THE (DRAFT) REQUIREMENT

This Approved Document deals with the following Requirement from Part G of Schedule 1 to the Building Regulations 2000 (as amended).

	Limits on application
G3 (1) There shall be a suitable installation for the provision of heated wholesome water to – a) any sanitary appliance for washing provided in accordance with Part G4 and G5; and b) any sink provided in accordance with G6. (2) A hot water system, including any cistern or other vessel that supplies water to or receives expansion water from a hot water system, shall be designed, constructed and installed so as to resist the effects of temperature and pressure that may occur either in normal use or in the event of such malfunctions as may reasonably be anticipated. (3) A hot water system that has a hot water storage vessel shall incorporate precautions to – (a) prevent the temperature of the water stored in the vessel at any time exceeding 100ºC; and (b) ensure that any discharge from safety devices is safely conveyed to where it is visible but will not cause a danger to persons in or about the building. (4) Any hot water storage system to which paragraph (3) applies and which does not incorporate a vent pipe to the atmosphere shall be installed by a person competent to do so.	Requirement G3(3) does not apply to (a) a hot water storage system that has a storage vessel with a capacity of 15 litres or less; and (b) a system providing space heating only (c) a system which heats or stores water for the purposes only of an industrial process.

What is the proposed change? *New requirement G3 (1) is based on the existing requirement for the provision of hot water, which covers only washbasins and bathrooms. It has been extended to explicitly cover food preparation areas and all personal washing facilities in all buildings.*

Why do we need a change? *It is common practice to provide a supply of heated wholesome water to all personal washing facilities and food preparation areas in buildings. Hot water at these locations could be used for drinking or cooking and therefore needs to be wholesome.*

CONSULTATION QUESTION 13: Is it reasonable to expect a supply of heated wholesome water to be provided in all personal washing facilities and to sinks used in association with food preparation and washing up?

What is the proposed change? *New requirement G3(2) specifies that hot water systems should be able to resist the effects of temperature and pressure during normal operation and foreseeable failure modes. This will apply to all parts of the system including cisterns receiving discharges from vent pipes from vented hot water storage systems.*

Why do we need a change? *This new requirement has been included following two recent fatal incidents involving failure of the temperature control device in vented hot water systems. In both cases the fatality occurred when the discharge from the vent pipe heated the water in the cistern to a very high temperature. As a result the cistern failed and discharged a large volume of hot water through the ceiling into the accommodation below. In both cases a contributory factor was the inadequate support provided when the cistern was replaced with one of different specification requiring different support.*

CONSULTATION QUESTION 14: Do you agree that it should now be a Requirement of the Building Regulations that all parts of hot water systems including cold water cisterns which could receive high temperature discharges from vented hot water storage systems should be able to withstand the effects of temperature and pressure that may occur either in normal use or in the event of such malfunctions as may reasonably be anticipated?

CONSULTATION QUESTION 15: Do you agree that this requirement should apply to (a) new installations;(b) replacement of parts of installations including cisterns?

What is the proposed change? *New requirement G3(3) is based on existing requirement G3 which only applied to unvented hot water storage systems over 15 litres in capacity. It has been extended to include all hot water storage systems over 15 litres in capacity whether vented or unvented. It also applies to primary thermal storage vessels.*

For vented hot water storage systems it is proposed that the amended requirement G3(3) should apply to:

(a) the installation of new hot water storage systems;
(b) the replacement of a hot water storage system for which there would be a requirement to incorporate a non-self resetting thermal cut-out in so far as the requirements apply to the direct heat source.
(c) all other building work to the extent that it should to 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.

CONSULTATION QUESTION 16: The amendment of G3(3) is proposed to address failures of the temperature control devices in vented hot water systems. Is it reasonable to bring control of vented systems into the Building Regulations?

CONSULTATION QUESTION 17: If you agree that vented systems should be brought into the building regulations, in which cases should this apply: (a) new installations (b) when replacing a hot water boiler (c) when replacing a hot water storage vessel (cylinder)?

What is the proposed change? *Stakeholders have suggested it is not clear whether the existing requirement G3 applies to hot water storage systems used as primary thermal stores for heating domestic hot water. It is proposed to clarify that hot water storage systems used as primary thermal stores are within the scope of requirement G3.*

Why do we need a change? *The safety issues are the same for primary thermal stores containing hot water as for other hot water storage systems.*

Stakeholders have also pointed out that if hot water storage systems used as primary thermal stores are within the scope of the requirement G3, it is innappropriate to exclude hot water storage systems used as primary thermal stores used only for space heating.

CONSULTATION QUESTION 18: Do you agree that primary thermal storage systems containing more than 15 litres of water should be treated the same as other hot water storage systems under the proposed requirement G3: (a) where the thermal store is used to heat domestic hot water; (b) where the thermal store is only used for space heating? Please give reasons for your answer.

What are the proposed changes? *Requirement G3(4) (this is the same as the existing requirement G3(b)) makes provision for an unvented hot water storage system to be installed by "a person competent to do so". This provision was made before the introduction of Self Certification Schemes (also known as "competent persons schemes").*

Compliance with the existing G3 competency requirement does not remove the need for notification of the work to the Building Control Body in accordance with Regulations 13 or 14 except where the installation is undertaken by an installer registered with a competent person scheme.

Some stakeholders have questioned its relevance and now limited scope, and have suggested it should be removed because:

- *The introduction of competent person schemes means that a very large proportion of the installations are carried out by installers registered with those schemes and these have demonstrated their competence in order to be registered with a scheme; and*
- *The most important point is that the installation when completed is safe and complies with all relevant requirements in the Building Regulations. Where the installer is not registered with a competent person scheme the work should have been notified to a building control body in advance and, it is for the building control body to check the safety and compliance of the installation. The "competence" of an installer does not mean that the work will necessarily BE SAFE OR COMPLIANT.*

CONSULTATION QUESTION 19: Do you agree with the view that the requirement in G3(4) (G3(b) in the existing Regulations) should be removed? YES/NO/Don't know. If No, please provide details.

CONSULTATION QUESTION 20: Are you aware of other appropriate approaches to ensuring safety of all controlled hot water?

Costs Associated with Proposals in relation to Hot Water Systems

CONSULTATION QUESTION 21: Industry has advised that the proposed requirements and guidance for hot water systems outlined above are in line with current good practice in the industry. Their inclusion in the Approved Document will help raise awareness of such practice and ensure that clear guidance is available to all parts of the industry to support compliance. However they should result in no additional costs to industry. Do you agree with this assessment? Please provide details of which elements of the proposals you believe will add cost or benefits, and what you think the additional costs will be and who you think they will fall on.

CONSULTATION QUESTION 22: Do you consider that there would be additional costs to Building Control Bodies as a result of the introduction of any of the above proposals, and, if so are you able to provide us with information on these?

Temperature Control at Hot Water Outlets. *This review of Part G has considered whether it would be appropriate to introduce an amendment to the regulations to require the installation of a Thermostatic Mixing Value (TMV) on baths and bidets in homes to limit the temperature of water to a safe level*. Should such a requirement be included it is likely that it would mirror the requirement recently introduced in Scotland which limits the temperature of water delivered to these outlets to *48°C*.

The Government would support any cost effective provision that would help to reduce the risk of scalding incidents from new sanitary appliances. However, the evidence currently available on the costs of installing suitable temperature control devises and the readily monetised benefits of reducing the risk of serious injury or death from

The Government would support any cost effective provision that would help to reduce the risk of scalding incidents from new sanitary appliances. However, the evidence currently available on the costs of installing suitable temperature control devises and the readily monetised benefits of reducing the risk of serious injury or death from scalding does not support regulatory change. The accompanying Impact Assessment to this consultation document shows that the identified costs currently outweigh the monetised benefits by about 3 to 1.

As part of this consultation we are therefore seeking further quantifiable evidence on the costs of treating injuries and the human impacts of these injuries (see the Impact Assessment and relevant questions) whilst at the same time seeking views on the applications and limitations of this provision ***should a revised Impact Assessment support the implementation of such a provision in the future.***

Background *Research studies show that annually there are on average 21 fatalities due to hot water scalding in baths and 615 serious injuries due to hot water scalding in baths. These account for 93.5% of scalds due to contact with excessively hot water for personal washing. Showers account for 2.5% and basin taps 4% of injuries. (Source: Home accident surveillance system & Leisure accident surveillance system 1992 – 1996). The most serious injuries occur when the whole body is exposed to hot water – in baths and showers. Scalding to hands and arms under running taps is significant but reaction times will be quicker and the consequences less severe. There has been little change in these numbers despite an information campaign and research suggests that any information campaigns should be repeated frequently to have any sustained effect.*

In Scotland, the Building Regulations have introduced a temperature limit of 48°C at hot water outlets by the installation of thermostatic mixing valves which introduce cold water into the hot water supply close to the outlet. This means that the temperatures within the hot water system and storage cylinders can be maintained at a higher level to prevent bacterial growth. It is recommended that temperatures in the system should be above 60°C to prevent the growth of legionella, but serious scalding occurs at these temperatures.

The purpose of this aspect of the consultation is to seek initial views on a number of issues which would need to be explored further ***if a future Impact Assessment prepared following this consultation period supported further action.*** *These issues include:*

- *whether in principle introducing temperature controls at certain outlets is the right approach to preventing scalding and whether Building Regulations are the right place to do it;*
- *whether a single temperature limit of 48°C would be appropriate and if so which outlets it should apply to;*
- *whether kitchens sink should be excluded from any future provisions, as elevated temperatures are required for everyday domestic tasks and most injuries from kitchen taps are minor.*
- *Whether the same level of protection should be provided to people in buildings other than dwellings.*

CONSULTATION QUESTION 23: We would like to introduce controls to limit water temperatures at hot water outlets, however the current cost benefit analysis does not support a regulatory change (costs are currently assessed at about three times the benefits). Are you able to provide more information which we could use in further analysis of the costs and benefits? Please provide any additional information you can.

CONSULTATION QUESTION 24: If further evidence is forthcoming which reduces the gap between costs and benefits in the initial analysis would you wish to see a provision which controlled the temperature at hot water outlets?

CONSULTATION QUESTION 25: If you support the principle of introducing temperature control on hot water outlets in dwellings, subject to the preparation of a supporting Impact Assessment, which sanitary appliances would you like to see included?

CONSULTATION QUESTION 26: If temperature controls were introduced, subject to the preparation of a supporting Impact Assessment, do you agree that all controlled outlets should be limited to 48°C, similar to provisions in Scotland? If No please state which outlets should be controlled to different temperatures and give details of the proposed temperature and why?

CONSULTATION QUESTION 27: If temperature controls were introduced, subject to the preparation of a supporting Impact Assessment, do you think that the same level of protection should be applied in buildings other than dwellings, and if so, which sanitary appliances would you like to see included?

CONSULTATION QUESTION 28: If temperature controls were introduced, subject to the preparation of a supporting Impact Assessment, to which types of work would you like to see regulations applied:(a) the erection or extension of a dwelling or the creation of a dwelling by material change of use;(b) the erection or extension of a building with rooms for residential purposes (e.g. residential homes, hostels, hotels) or the creation of rooms for residential purposes by material change of use; (c) the erection or extension of any new building; (d) the replacement of a sanitary appliance and/or associated taps which are controlled fittings in any building; (e) the replacement of a sanitary appliance and/or associated taps which are controlled fittings in a dwelling; (f) the replacement of a sanitary appliance and/or associated taps which are controlled fittings in a building with rooms for residential purposes?

G3: HOT WATER SERVICES

(DRAFT) GUIDANCE

Performance

In the Secretary of State's view requirement G3(1) will be met if –

a) the installation conveys hot water to the sanitary appliances and locations specified in the requirement without waste, misuse or undue consumption of water; and

b) the water supplied is wholesome except in so far as its aesthetic quality is impaired by a change in temperature and presents no human health hazard.

In the Secretary of State's view requirement G3(2) will be met if all components of the hot water system including any cistern that supplies water to, or receives expansion water from the hot water system continues to safely contain the hot water –

a) during normal operation of the hot water system;

b) following failure of any thermostat used to control temperature and;

c) during operation of any of the safety devices fitted in accordance with paragraph G3(3).

In the Secretary of State's view requirement G3(3) will be met for a hot water system that has an unvented storage vessel if –

a) the storage vessel has at least two safety devices that prevent the temperature of the stored water at any time exceeding 100°C in addition to any thermostat; and

b) the hot water system has pipework that incorporates a provision for the discharge to be visible at some point and safely conveys any discharge of hot water from safety devices to an appropriate place open to the atmosphere where it will cause no danger to persons, in or about the building.

In the Secretary of State's view requirement G3(3) will be met for a hot water storage system that has a vented storage vessel if –

a) the storage vessel has a suitable vent pipe connecting the top of the vessel to a point open to the atmosphere above the cold water storage cistern; and

b) in addition to any thermostat, either the heat source, or the storage vessel is fitted with a device that will prevent the temperature of the stored water at any time exceeding 100°C; and

c) the hot water system has pipework that incorporates a provision for the discharge of hot water from safety devices to an appropriate place open to the atmosphere where it will cause no danger to persons, in or about the building.

In the Secretary of State's view requirement G3(4) will be met if an unvented hot water storage system is installed by a person competent to do so.

What is the proposed change? *This has been adjusted to support the new requirements for vented hot water storage systems in G3(3).*

Why do we need a change? *This will be of particular assistance to those seeking to demonstrate compliance with the requirement.*

CONSULTATION QUESTION 29: For vented hot water storage systems, we have proposed that systems incorporating one safety device in addition to the vent pipe and any thermostat would meet the requirements of G3(3). Do you agree that this is adequate to ensure the safety of people in the building?

CONSULTATION QUESTION 30: For vented hot water storage systems, we have proposed that systems with a boiler overheat control would meet the requirement G3(3). Do you agree?

What is the proposed change? *Requirement G3(3)(b) is the same as existing requirement G3(b). However it has been suggested that, provided the discharge from a safety device is visible at some point (e.g. at the tundish), it is not necessary for the discharge to be visible at the outlet and that this should be explicitly stated.*

Why do we need a change? *This provides additional flexibility and brings the Building Regulations into line with the guidance issued by DETR (now Defra) in support of the Water Supply (Water Fittings) Regulations 1999.*

G3: HOT WATER SERVICES

(DRAFT) GUIDANCE

Section 3: Hot water services

General

3.1 The delivered hot water can be considered as heated wholesome water where:
a) the cold water supply to the hot water system is wholesome; and
b) the installation complies with the requirements of the Water Supply (Water Fittings) Regulations 1999 (SI 1999/1148 as amended).

3.2 The Water Supply (Water Fittings) Regulations make provision for preventing contamination, waste, misuse, undue consumption and erroneous measurement of water supplied by a water undertaker or licensed water supplier. Guidance on the application of the Water Supply (Water Fittings) Regulations can be found in the Water Regulations Guide published by the Water Regulations Advisory Scheme.

3.3 Attention is also drawn to the requirements of the Gas Safety (Installation and Use) Regulations for all gas installation work.

3.4 Electrical work associated with hot water systems should be carried out in accordance with BS7671:2008 *Requirements for electrical installations (IEE Wiring Regulations 17th Edition)*.

3.5 For installations in dwellings and associated buildings, attention is drawn to Building Regulations 2000 Schedule 1 Part P (Electrical safety – Dwellings) and to Approved Document P.

3.6 Attention is also drawn to the HSC publication Legionnaires' Disease: Control of Legionella Bacteria in Water Systems. Approved code of practice and guidance. L8, Health and Safety Commission 2000. ISBN 0717617726.

3.7 Pipework should be designed and installed in such a way as to minimise the transfer time between the hot water storage system and hot water outlets.

What is the proposed change? *The guidance in 3.1 explains how to ensure water delivered to the tap is "heated wholesome water". Paragraphs 3.2 to 3.7 make reference to specific issues in other relevant legislation for the provision of hot water systems.*

Why do we need a change? *There are a number of other parts of the Building Regulations and other legislation and guidance which apply to the provision of hot water systems in buildings. It was felt that awareness of these could be improved by referring to them in the Approved Document G.*

Design and installation of directly or indirectly heated hot water storage systems

General

3.8 Hot water storage systems should be designed and installed in accordance with BS 6700:2006 *Specification for design, installation, testing and maintenance of services supplying water for domestic use within buildings and their curtilages* or BS EN 12897:2006 *Water supply. Specification for indirectly heated unvented (closed) storage water heaters*.

3.9 Hot water storage vessels should conform to BS 853: *Specification for vessels for use in heating systems*. Part 1:1996 *Calorifiers and storage vessels for central heating and hot water supply,* BS 1566 *Copper indirect cylinders for domestic purposes*. Part 1: 2002 *Open vented copper cylinders. Requirements and test methods*, or BS 3198:1981 *Specification for copper hot water storage combination units for domestic purposes* as appropriate.

What is the proposed change? *In paragraphs 3.8 and 3.9, the references to standards have been updated. There is no other change. Note: Reference to current standards has also been made in the rest of this section.*

Why do we need a change? *This is to reflect the current British and European Standards.*

Vented hot water storage systems

3.10 Vented hot water storage systems should incorporate a vent pipe of an adequate size, but 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.

3.11 In addition to the vent pipe referred to in 3.10 and any thermostat provided to control the temperature of the stored water to a desired temperature, vented hot water storage systems should incorporate either:
a) for all direct heat sources, a non self-resetting energy cut-out to disconnect the supply of heat to the storage vessel in the event of the system overheating and all indirect heat sources should incorporate an overheat cut-out to disconnect the supply of heat to the storage vessel in the event of the system overheating; or
b) a temperature relief valve or a combined temperature and pressure relief valve to safely discharge the water in the event of significant over heating.

3.12 Vent pipes should discharge over a cold water storage cistern conforming to BS 417: *Specification for galvanized low carbon steel cisterns, cistern lids, tanks and cylinders.* Part 2: 1987 *Metric units* or BS 4213:2004 *Cisterns for domestic use. Cold water storage and combined feed and expansion (thermoplastic) cisterns up to 500 litres. Specification* as appropriate.

3.13 The cold water storage cistern into which the vent pipe discharges should be supported on a flat, level, rigid platform which is capable of safely withstanding the weight of the cistern when filled with water to the rim and fully supporting the bottom of the cistern over the whole of its area. The platform should extend a minimum of 150mm in all directions beyond the edge of the cistern.

Note: Where an existing metal cistern is replaced, or a plastic cistern is replaced by one with larger base dimensions, the existing support should be replaced, where necessary with one in accordance with paragraph 3.13.

3.14 The cistern should be accessible for maintenance, cleaning and replacement.

What is the proposed change? *This guidance in 3.10 to 3.14 has been included to support the application of the provisions to vented hot water storage systems. The guidance covers two key aspects; the prevention of overheating of the water in the hot water storage vessel in accordance with requirement G3(3) and the integrity of cisterns when receiving discharges during overheating in accordance with requirement G3(2).*

Unvented hot water storage systems (all systems)

3.15 In addition to any thermostat provided to control the temperature of the stored water to a desired temperature, unvented hot water storage systems should incorporate a minimum of two temperature activated safety devices operating independently:
a) a non self-resetting energy cut-out to disconnect the supply of heat to the storage vessel in the event of the system overheating; and
b) a temperature relief valve or a combined temperature and pressure relief valve to safely discharge the water in the event of serious over heating.

Unvented hot water storage systems – systems up to 500 litres capacity and 45 kW power input

3.16 Paragraphs 3.17 to 3.20 are in addition to the provisions of 3.15 above.

3.17 If an indirect supply of heat to an unvented hot water storage system incorporates a boiler, the energy cut-out may be on the boiler.

3.18 Any unvented hot water storage system up to 500 litres or 45kW should be in the form of a proprietary hot water storage system unit or package. The package and components should be appropriate to the circumstances in which they are used. Compliance can be demonstrated by independent certification schemes such as the following:
a) approved by a certification body having accreditation from the United Kingdom Accreditation Service (UKAS) or an equivalent European accreditation body as complying with:

(i) the relevant requirement of regulation G3(3) or
(ii) an appropriate standard that will ensure the requirement of regulation G2(3) will be met (e.g. BS EN 12897:2006 Water Supply. *Specification for indirectly heated unvented (closed) hot water storage systems* or BS 6700:2006 *Design, installation, testing and maintenance of services supplying water for domestic use within buildings and their curtilages*);

or
b) the subject of an independent assessment that clearly demonstrates an equivalent level of verification and performance to a) above.

What is the proposed change? *The provision for certification of unvented hot water systems in paragraphs 3.18 is taken from the existing provision in Approved Document G. In effect these provide for third party approval of such products. This is not something that is normally included in Approved Documents.*

CONSULTATION QUESTION 31: Should the provision for third party approval in paragraphs 3.18 be retained? Please provide reasons.

3.19 Any unvented hot water storage system unit or package should be indelibly marked with the following information:
a) the manufacturer's name and contact details;
b) a model reference;
c) the rated storage capacity of the storage water heater;
d) the operating pressure of the system and the operating pressure of the expansion valve;
e) the operating temperature of the temperature relief valve or the operating temperature and pressure of the combined temperature and pressure relief valve; and
f) the maximum primary circuit pressure and flow temperature of indirect hot water storage system units or packages.

3.20 In addition the following warning should be indelibly marked on the hot water storage system unit or package so that it is visible after installation.

WARNING TO USER
a) Do not remove or adjust any component part of this unvented water heater; contact the installer.
b) If this unvented water heater develops a fault, such as a flow of hot water from the discharge pipe, switch the heater off and contact the installer.

WARNING TO INSTALLER

a) This installation is subject to the Building Regulations.
b) Use only appropriate components for installation or maintenance.

Installed by:

Name …….....

Address …….....

Tel No. …….....

Completion date: …….....

What is the proposed change? *The guidance (3.19 – 3.20) has been amended to include guidance on marking of unvented hot water storage units. This guidance was previously included in BS 7206 which has now been superseded by BS EN 12897. This is therefore indirectly included in the current Approved Document G which provides that systems should comply with BS7206.*

Why do we need a change? *This guidance (3.19 – 3.20) is to ensure that appropriate maintenance is carried out on such systems.*

CONSULTATION QUESTION 32: Paragraphs 3.19 and 3.20 contain provisions on marking of unvented hot water storage systems that were previously included in BS7206 but not in the replacement standard BS EN 12897. Do you agree that the Approved Document should include provisions for marking of unvented hot water storage systems with: a) the information listed in 3.19?
b) the information listed in 3.20? If no please state which items should not be included and give your reasons.

What is the proposed change? *The guidance previously contained in paragraph 3.11 of the existing Approved Document G gave guidance on the circumstances in which inspection by a Building Control Body is likely to be necessary. This paragraph has been removed. However, it is still open to building control bodies to determine what inspection they carry out.*

Why do we need a change? *Under the existing arrangements any installer who is not part of a competent persons self-certification scheme, in accordance with Regulation 12(5), is required to give a building notice in accordance with Regulation 13 or submit full plans in accordance with Regulation 14. We have been made aware that many installers fail to notify the Building Control Body when installing unvented hot water systems and some building control officers do not receive any notifications.*

The paragraph 3.11 in existing Approved Document G appears to be contributing to a misconception that notification is not required.

Unvented hot water storage systems – systems over 500 litres capacity or over 45 kW power input

3.21 Paragraph 3.22 and 3.23 are in addition to the provisions of 3.15 above.

3.22 Systems over 500 litres capacity will generally be bespoke designs for specific projects and as such are inappropriate for approval by a body registered with UKAS or similar European accreditation body. Where this is the case, the unvented hot water storage system should be designed to the safety requirements in 3.15 by an appropriately qualified engineer.

3.23 Any unvented hot water storage vessel having a power input of more than 45kW, but a capacity of 500 litres or less should be in the form of a proprietary hot water storage system unit or package which is either:

a) approved by a certification body having accreditation from the United Kingdom Accreditation Service (UKAS) or an equivalent European accreditation body as complying with:

(i) the relevant requirement of regulation G3(2) and G3(3) or
(ii) an appropriate standard that will ensure the requirement of regulation G3(3) will be met (e.g. BS EN 12897:2006 Water Supply. *Specification for indirectly heated unvented (closed) hot water storage systems* or BS 6700:2006 *Design, installation, testing and maintenance of services supplying water for domestic use within buildings and their curtilages*);

or

b) the subject of an independent assessment that clearly demonstrates an equivalent level of verification and performance to a) above.

What is the proposed change? The guidance in Section 4 of the existing Approved Document G envisages that all unvented hot water storage systems over 500 litres and over 45kW would be bespoke systems. Stakeholders have pointed out that although this is true of systems over 500 litres in capacity, systems over 45kW and less than 500 litres are generally supplied as hot water storage system units or packages. It is therefore proposed to mirror the guidance in paragraph 3.18 for these systems.

Why do we need a change? The costs of a qualified engineer checking an individual design is more than use of using an approved package or unit.

CONSULTATION QUESTION 33: Do you agree that unvented hot water storage systems over 45kW, but less than 500 litres in capacity are normally supplied by a manufacturer as packages or units?

CONSULTATION QUESTION 34: If so should the provision for third party approval in paragraphs 3.18 be extended to cover these systems? Please provide reasons for your answer.

Safety devices

Non self-resetting energy cut-outs

3.24 Non-self resetting energy cut-out may only be used where they would have the effect of instantly disconnecting the supply of energy to the storage vessel.

3.25 Non self-resetting energy cut-outs should conform to:
(a) BS EN 60335-2-73:2003 *Specification for safety of household and similar electrical appliances*. *Particular requirements. Fixed immersion heaters* and BS EN 60730-2-9:2002 *Automatic electrical controls for household and similar use. Particular requirements for temperature sensing control*; or
(b) BS EN 257:1992 *Mechanical thermostats for gas-burning appliances*.

3.26 Where a non self-resetting energy cut-out operates indirectly on another device (see paragraph 3.15) to interrupt the supply of heat (e.g. it is wired up to a motorised valve or some other suitable device to shut off the flow to the primary heater), the energy cut-out should be either:
a) certified as complying with the relevant European Standard by a body registered with UKAS or an equivalent European accreditation body; or
b) the subject of a proven independent assessment that will clearly demonstrate an equivalent level of verification and performance to a) above.

3.27 Where an electrical device is connected to the energy cut-out, such as a relay or motorised valve, the device should operate to interrupt the supply of energy if the electrical power supply is disconnected.

3.28 Where there is more than one energy cut-out (see paragraph 3.30), each non self-resetting energy cut-out should be independent (e.g. each should be wired up to a separate motorised valve).

3.29 Where a system has more than one heat source, each heat source should have a separate non self-resetting energy cut-out.

Pressure and temperature relief valves

3.30 Temperature relief valves and combined temperature and pressure relief valves should not be used in systems which have no provision to automatically replenish the stored water (e.g. unvented primary thermal storage vessels). In such cases there should be a second non self-resetting energy cut-out independent of the one provided in accordance with paragraph 3.15(b).

3.31 Temperature relief valves should conform to BS 6283 *Safety and control devices for use in hot water systems*: Part 2:1991 *Specifications for temperature relief valves for pressures from 1 bar to 10 bar.*

3.32 Combined temperature and pressure relief valves should conform to BS EN 1490:2000 *Building valves. Combined temperature and pressure relief valves. Tests and Requirements.*

3.33 Temperature relief valves specified in paragraph 3.15 should be sized to give a discharge rating at least equal to the total power input to the hot water storage system, when measured in accordance with Appendix F of BS 6283 *Safety and control devices for use in hot water systems*: Part 2:1991 *Specifications for temperature relief valves for pressures from 1 bar to 10 bar* or BS EN 1490:2000 *Building valves. Combined temperature and pressure relief valves. Tests and requirements*.

3.34 The temperature relief valve(s) or combined temperature and pressure relief valve(s) specified in paragraph 3.15 should be located directly on the storage vessel, such that the stored water does not exceed 100°C.

3.35 In hot water storage system units and packages, the temperature relief valve(s) specified in paragraph 3.15 should be:

a) factory fitted and should not be disconnected other than for replacement; and

b) not relocated in any other device or fitting.

Electric water heating

3.36 Electric fixed immersion heaters should comply with the provisions of BS EN 60335-2-73:2003 *Household and similar electrical appliances. Safety. Particular requirements for fixed immersion heaters*

3.37 Electric instantaneous water heaters should comply with the provisions of BS EN 60335-2-35:2002 *Specification for safety of household and similar electrical appliances*.

3.38 Electric storage water heaters should comply with the provisions of BS EN 60335-2-21:2003 *Household and similar electrical appliances. Safety. Particular requirements for storage water heaters.*

What is the proposed change? *Specific guidance has been provided on electric heating. Paragraphs 3.36 to 3.38 give guidance on electrical water heaters that incorporate the inclusion of non-self resetting thermal cut-outs.*

Why do we need a change? *Failure of the temperature controls in electric immersion heaters was a contributory factor of two recent fatal accidents. It was felt that awareness of risks and safety could be improved by referencing these standards in the Approved Document G. This guidance supports the requirement for provision of safety devices.*

Solar water heating

3.39 Factory made solar water heating systems should comply with the provisions of BS EN 12976: Part 1: 2001 *Thermal solar systems and components. Factory made systems. General requirement.*

3.40 Other solar water heating systems should comply with the provisions of DD ENV 12977-1:2001 *Thermal solar systems and components. Custom built systems. General requirement or BS5918:1989 British Standard Code of Practice for Solar heating systems for domestic hot water* as appropriate.

3.41 Where solar water heating systems are used, an alternative back-up heat source should be available.

Note: The alternative back-up heat source should be used, when necessary, to maintain the water temperature to restrict microbial growth.

3.42 Some solar hot water systems operate at elevated temperatures and pressures, all valves should be rated to the appropriate temperatures and pressures.

What is the proposed change? *New guidance (3.39 – 3.42) has been provided on solar heating.*

Why do we need a change? *Solar hot water systems are now commonly used. Therefore, as this option is available to designers, guidance should be provided to establish a minimum acceptable performance. It was felt that awareness of available standards could be improved by references in the Approved Document G.*

Discharge pipes from safety devices

Discharge pipe D1

3.43 Each of the temperature relief valves or combined temperature and pressure relief valves specified in 3.11 or 3.15 should discharge either directly or by way of a manifold via a short length of metal pipe (D1) to a tundish.

3.44 The diameter of discharge pipe (D1) should be not less than the nominal outlet size of the temperature relief valve.

3.45 Where a manifold is used it should be sized to accept the total discharge from the discharge pipes connected to it.

3.46 Where valves other than the temperature and pressure relief valve from a single unvented hot water system discharge by way of the same manifold that is used by the safety devices, the manifold should be factory fitted as part of the hot water storage system unit or package.

Tundish

3.47 The tundish should be vertical, located in the same space as the unvented hot water storage system and be fitted as close as possible to the valve with no more than 600mm of pipe between the valve outlet and the tundish. (see Diagram 1)

Note: To comply with the Water Supply (Water Fittings) Regulations, the tundish should incorporate a suitable air gap.

3.48 Any discharge should be visible at the tundish. In addition where discharges from safety devices may not be apparent i.e. in dwellings occupied by people with impaired vision or mobility, consideration should be given to the installation of a suitable safety device to warn when discharge takes place e.g. electronically operated.

Discharge pipe D2

3.49 The discharge pipe (D2) from the tundish should–

(a) have a vertical section of pipe at least 300mm long below the tundish before any elbows or bends in the pipework (see Diagram 1); and
(b) be installed with a continuous fall of at least 1 in 200.

3.50 The discharge pipe (D2) should be made of metal or a material capable of safely withstanding temperatures of the water discharged.

3.51 The discharge pipe D2 should be at least one pipe size larger than the nominal outlet size of the safety device unless its total equivalent hydraulic resistance exceeds that of a straight pipe 9m long (i.e. discharge pipes between 9m and 18m equivalent resistance length should be at least two sizes larger than the nominal outlet size of the safety device, between 18 and 27m at least 3 sizes larger, and so on, Bends must be taken into account in calculating the flow resistance. See Diagram 1, Table 3 and the worked example.

Note: An alternative approach for sizing discharge pipes would be to follow Annex D, section D.4 of BS 6700:2006 *Specification for design, installation, testing and maintenance of services supplying water for domestic use within buildings and their curtilages*.

Diagram 1 Typical discharge pipe arrangement

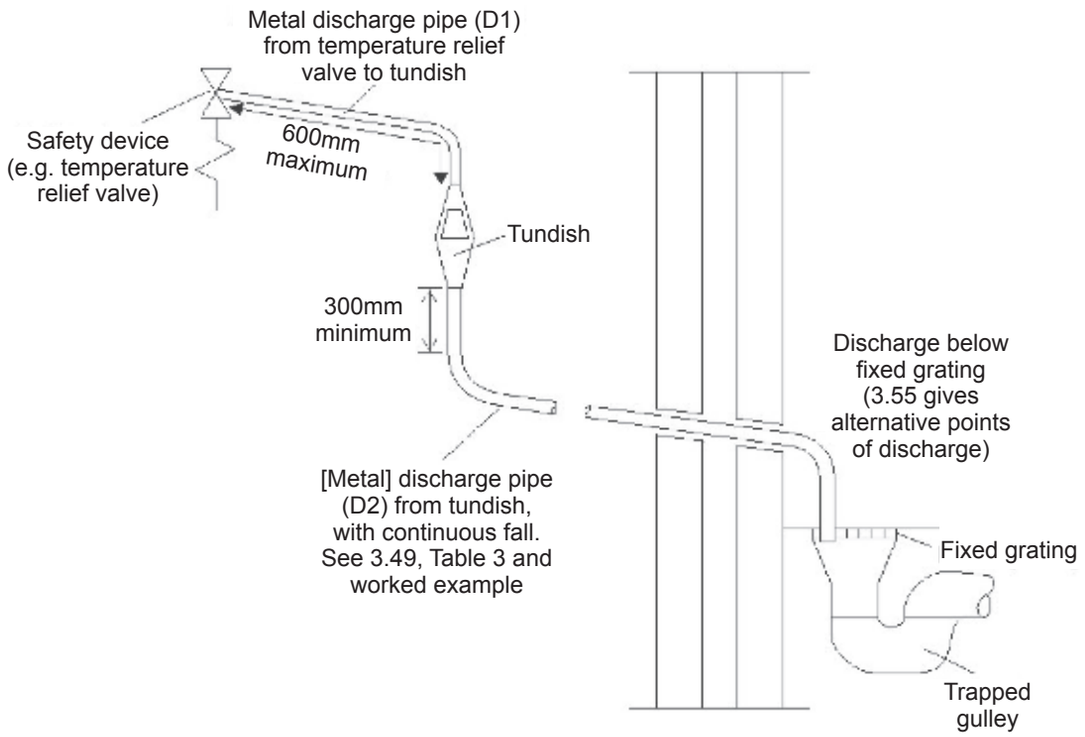


Table 3 Sizing of copper discharge pipe 'D2' for common temperature relief valve outlet sizes

Valve outlet size	Minimum size of discharge pipe D1*	Minimum size of discharge pipe D2* from tundish	Maximum resistance allowed, expressed as a length of straight pipe (i.e. no elbows or bends)	Resistance created by each elbow or bend
G½	15mm	22mm 28mm 35mm	up to 9m up to 18m up to 27m	0.8m 1.0m 1.4m
G¾	22mm	28mm 35mm 42mm	up to 9m up to 18m up to 27m	1.0m 1.4m 1.7m
G1	28mm	35mm 42mm 54mm	up to 9m up to 18m up to 27m	1.4m 1.7m 2.3m
*see 3.44 and 3.51 and Diagram 1				

Worked example:- The example below is for a G½ temperature relief valve with a discharge pipe (D2) having 4No. 22mm elbows and length of 7m from the tundish to the point of discharge From Table 3: Maximum resistance allowed for a straight length of 22mm copper discharge pipe (D2) from a G½ temperature relief valve is: 9.0m Subtract the resistance for 4 No 22mm elbows at 0.8m each = 3.2m Therefore the maximum permitted length equates to: 5.8m	5.8. is less than the actual length of 7m therefore calculate the next largest size. Maximum resistance allowed for a straight length of 28mm copper discharge pipe (D2) from a G½ temperature relief valve is: 18m Subtract the resistance for 4 No 28mm elbows at 1.0m each = 4m Therefore the maximum permitted length equates to: 14m As the actual length is 7m, a 28mm (D2) copper pipe will be satisfactory.

3.52 Where the discharge pipe is connected to a soil stack discharge pipe, it should –
a) contain a mechanical seal, not incorporating a water trap, which allows water into the branch pipe without allowing foul air from the drain to be ventilated through the tundish;
b) be a separate branch pipe with no sanitary appliances connected to it; and
c) be continuously marked with a warning that no sanitary appliances should be connected to the pipe.

3.53 Where a single common discharge pipe serves more than one system, it should be at least one pipe size larger than the largest individual discharge pipe (D2) to be connected.

3.54 Notwithstanding the provisions of 3.52, a condensate drain may be connected to a discharge pipe D2, provided that:
a) it has its own separate tundish;
b) the condensate drain pipe is made from a material which is resistant to the temperatures of any water that could discharge through the discharge pipe D2; and
c) the discharge pipe D2 is resistant to chemical properties of the condensate.

Termination of discharge pipe

3.55 The discharge pipe (D2) from the tundish should terminate in a safe place where there is no risk to persons in the vicinity of the discharge.

3.56 Examples of acceptable discharge arrangements are:

a) to a trapped gully with the end of the pipe below a fixed grating and above the water seal;

b) downward discharges at low level; i.e. up to 100mm above external surfaces such as car parks. hard standings, grassed areas etc. are acceptable providing that a wire cage or similar guard is positioned to prevent contact, whilst maintaining visibility;

c) discharges at high level: e.g. into a metal hopper and metal down pipe with the end of the discharge pipe clearly visible or onto a roof capable of withstanding high temperature discharges of water and 3 m from any plastics guttering system that would collect such discharges; and

d) discharge directly into a soil stack made from a material which is suitably heat resistant, at a level which is above the spillover level of the lowest connected sanitary appliance through a dedicated branch pipe through a waterless trap (see 3.52).

3.57 The discharge would consist of high temperature water and steam. Asphalt, roofing felt and non-metallic rainwater goods may be damaged by such discharges.

What is the proposed change? *Guidance in 3.47 has been amended to clarify how the distance between the safety device and the tundish is to be measured and to reduce the distance between the safety device and the tundish. The intention of the 600mm dimension is to keep the tundish close to the safety device to minimise risk of hydraulic resistance restricting the safe disposal of high temperature water.*

Why do we need a change? *The guidance the 1992 edition of Approved Document G was not clear as to how this distance should be measured.*

What is the proposed change? *Guidance in 3.49 to 3.54 has been amended to permit use of non-metallic discharge pipes D2 provided that they are capable of withstanding the appropriate temperatures. Suitable temperature resistant plastic pipes are now available; however there are concerns that it will be difficult to ensure that the correct grade of plastic pipe is used.*

Why do we need a change? *Permitting the use of non-metallic pipes will give greater flexibility to installers.*

CONSULTATION QUESTION 35: If the guidance permits the use of temperature resistant plastic pipes for the discharge pipe D2, will it be possible to adequately distinguish the pipe material from other plastic pipes in order to ensure that the correct grade of pipe is used? If Yes, please explain how this might be achieved.

What is the proposed change? *Paragraph 3.52 has been included to show how the discharge pipe can be connected to a soil stack. It is important that the discharge pipe D2 does not become blocked. There should therefore be no other connections to the pipe except possibly a condensate drain. The pipe should also be continuously marked to ensure that no future connections are made to the pipe. Since there will not normally be any flow in the pipe a waterless trap is necessary. The soil stack will also need to be made from a temperature resistant material. There are, however, concerns that it will not possible to establish whether the soil stack is made from a temperature resistant material particularly where it is installed in a service duct. It should be noted that in practice the acceptability of connecting a condensate drain depends on the acceptability of using of non-metallic discharge pipes because of the need for resistance to corrosion.*

Why do we need a change? *This gives an additional option which gives greater flexibility which will be particularly useful in flats.*

CONSULTATION QUESTION 36: It is proposed to permit the termination of a discharge pipe in a soil stack provided the soil stack is made from a suitably temperature resistant material. Do you believe it will be possible to ensure that a soil stack is made from a temperature resistant material particularly where the soil stack is in a service duct. If Yes, please explain how this might be achieved.

Prevention of excessive temperatures

3.58 Where the operating temperature of domestic hot water in the storage vessel in a dwelling is capable of exceeding 80°C under normal operating conditions (a situation that may occur in vessels used as heat stores and those connected to solar heat collectors or solid fuel boilers that do not have intervening controls between the boiler and the vessel containing the hot water) the outlet from the storage vessel should be fitted with a device, such as an inline hot water supply tempering valve in accordance with EN15092, to ensure that the temperature supplied to the domestic hot water distribution system does not exceed 60°C.

What is the proposed change? *Guidance has been provided in paragraph 3.58 on the limitation of water temperatures delivered from the water storage vessel to the distribution pipework.*

Why do we need a change? *To maximise the benefits of solar energy, systems are used for both space heating and water for sanitary appliances. Water can be stored at very high temperatures. These temperatures are much higher than occur in hot water systems that are linked to gas or oil fired central heating boilers To prevent such high temperature water being present in the distribution pipework or delivered to any outlets which are otherwise unprotected (see 3.58), solar heating system manufacturers add* inline hot water supply tempering valves *to the outlet from the water storage vessel. This practice is reflected in this guidance and is also recommended in the Domestic Heating Compliance Guide.*

Installation

3.59 Any unvented hot water storage unit or package should be installed by a person competent to do so, i.e. one holding a current Registered Operative Identity Card for the installation of unvented domestic hot water storage systems.

3.60 Good workmanship is essential. Workmanship should be in accordance with BS 8000 Workmanship on Building Sites Part 15: 1990 Code of practice for hot and cold water services (domestic scale).

What is the proposed change? *Additional guidance has been included on workmanship for issues other than unvented hot water storage systems.*

Why do we need a change? *The guidance has been included as issues other than unvented hot water storage systems are now included in G3, but are not covered by the requirement for installation by a competent person. BS 8000 Part 15 provides helpful guidance on workmanship and is written in a style intended to be suitable for installers.*

Commissioning of fixed building services

3.61 Water heaters require the input of energy to raise the temperature of water. It is therefore necessary to ensure their efficiency by proper installation and commissioning in the same way as any product or installation that uses energy.

3.62 Fixed building services should be commissioned by testing and adjusting as necessary to ensure that they use no more fuel and power than is reasonable in the circumstances**.** Fixed building service includes controls in its meaning. Hot water service systems are a fixed building service that may require commissioning.

3.63 Commissioning means the advancement of these systems from the state of static completion to working order to the specifications relevant to achieving compliance with Part L, without prejudice to the need to comply with health and safety requirements. For each system it includes setting-to-work, regulation (that is testing and adjusting repetitively) to achieve the specified performance, the calibration, setting up and testing of the associated automatic control systems, and recording of systems and the performance test results that have been accepted as satisfactory.

3.64 Not all fixed building services will need to be commissioned. For example, with some systems it is not possible as the only controls are “on” and “off” settings. In other cases commissioning would be possible but in the specific circumstances would have no effect on energy use.

3.65 Where commissioning is carried out it must be done in accordance with a procedure approved by the Secretary of State. For new and existing dwellings the approved procedure for hot water service systems is set out in the Domestic Heating Compliance Guide; for new and existing buildings other than dwellings CIBSE Code M.

3.66 Commissioning must be carried out in such a way as not to prejudice compliance with any applicable health and safety requirements.

3.67 Commissioning is often carried out by the person who installs the system. Sometimes it may be carried out by a subcontractor or by a specialist firm. It is important that whoever carries it out follows the relevant approved procedure in doing so.

Notice of completion of commissioning

3.68 The Building Regulations (Regulation 20C(2)) and the Building (Approved Inspectors etc) Regulations (Regulation 12C(2)) require that a notice be given to the relevant Building Control Body that commissioning has been carried out according to a procedure approved by the Secretary of State.

3.69 Where a building notice or full plans have been given to a Building Control Body the notice should be given within 5 days of the completion of the commissioning work. In other cases, for example where work is carried out by a person registered with a competent person scheme it must be given within 30 days.

3.70 Where the installation of *fixed building services* which require commissioning is carried out by a person registered with a competent person scheme the notice of commissioning will be given by that person.

3.71 Until the Building Control Body receives commissioning notices it is unlikely to be satisfied that Part L has been complied with and consequently is unlikely to be able to give a completion/final certificate.

G4: WCs AND ASSOCIATED FACILITIES

THE (DRAFT) REQUIREMENT

This Approved Document deals with the following Requirement from Part G of Schedule 1 to the Building Regulations 2000 (as amended).

	Limits on application
WCs and associated facilities **G4** (1) Adequate and suitable WCs or WCs and urinals shall be provided in rooms provided for that purpose or in bathrooms.	
(2) Adequate hand washing facilities shall be provided in – (a) rooms containing WCs and urinals; or (b) rooms or spaces adjacent to rooms containing WCs or urinals.	
(3) Any room containing WCs, urinals or hand washing facilities provided in accordance with paragraph (2) shall be separated from places where food is prepared or where kitchenware and utensils are washed.	
(4) Walls and floors in any room containing WCs, urinals or containing hand washing facilities provided in accordance with paragraph (2) shall be designed and constructed to allow effective cleaning.	Requirement G4 (4) does not apply to dwellings

What is the proposed change? *The terminology has been amended throughout the Approved Document from:*

- *'sanitary conveniences' to 'WCs and urinals';*
- *'water closets' to 'WCs';*
- *'washbasins' to 'hand washing facilities' to reflect the use of small cloakroom basins, as well as combined washing and drying units.*

Note:
Requirement G4 (1) is the same as G1 (1) in Approved Document G (1992 edition). Requirements G4 (2) and G4 (3) are the same as G1 (2) in Approved Document G (1992 edition). They have been divided for clarity.
Requirement G1 (3) in Approved Document G (1992 edition) has been moved to G1 and G3 on Cold and Hot Water Services. Requirement G1 (4) in Approved Document G (1992 edition) has been moved to G7 on Sanitary Appliances.

Why do we need a change? *No technical changes were needed to G1 (1) and G1 (2) in Approved Document G (1992 edition). However it was felt that terminology should be updated to reflect common usage.*

What is the proposed change? *The Approved Code of Practice to the Workplace (health, safety and welfare) Regulations includes provisions for the effective cleaning of walls and floors in sanitary accommodation in workplaces. The proposed new requirement G4 (4) for the effective cleaning of walls and floors would extend this to sanitary accommodation in all buildings other than dwellings.*

Why do we need a change? *The provisions in the ACOP protect the health of people using sanitary accommodation in workplaces. It is proposed to give the same level of protection to people in other non-domestic buildings. Stakeholders have suggested there wil be no additional burdens from this change.*

CONSULTATION QUESTION 37: Requirement G4 (4) would apply to other buildings such as institutions, hotels etc which may be workplaces and covered by current requirements. Do you agree that the Building Regulations the right place for this Requirement and that this change would not impose additional costs or other burdens?

G4: WCs AND ASSOCIATED FACILITIES

(DRAFT) GUIDANCE

Performance

In the Secretary of State's view Requirement G4 will be met if –

a) WCs and/or urinals of the appropriate type for the sex and age of the persons using the building are provided in sufficient numbers taking into account the nature of the building; and

b) hand washing facilities are provided in, or adjacent to, rooms containing WCs or urinals and are sited, designed and installed so as not to be prejudicial to health.

Section 4: WCs and associated facilities

General

4.1 Attention is also drawn to the requirements for accessible toilets, urinals and hand washing facilities of Part M of Schedule 1 to the Building Regulations 2000 (Access to and use of buildings) and to Approved Document M.

4.2 Requirements for ventilation of sanitary accommodation are given in Part F of Schedule 1 to the Building Regulations 2000 (Ventilation). Guidance is given in Approved Document F.

4.3 The number, type and siting of WCs and urinals for staff in workplaces are also subject to the Workplace (Health, Safety and Welfare) Regulations 1992. Attention is drawn to the Approved Code of Practice issued with respect to those Regulations.

4.4 Further guidance on washbasins associated with WCs and urinals may be found in the Food Standards Agency's Code of Practice *Food hygiene – a guide for businesses.*

4.5 Where hot and cold taps are provided on a sanitary appliance, the hot tap should be on the left.

What is the proposed change? *This general section makes reference to specific issues in other relevant legislation for the provision of WC and urinal facilities.*

Why do we need a change? *There are a number of Regulations which apply to the provision of WCs, urinals and hand washing facilities. It was felt that awareness of these could be improved by mention in the Approved Document G. There is a benefit to designers and architects in being aware of all relevant legislation and guidance at the beginning of the design stage to save changes being made late in the process, and to assist compliance.*

Scale of Provision and Layout in Dwellings

4.6 Any dwelling (house, or flat) should have at least one WC and associated hand-washing facility. This can include a WC provided in accordance with Part M of Schedule 1 to the Building Regulations 2000 (Access to facilities and buildings) and with Approved Document M.

Note: Part M requires that a WC should be located in the principal/entrance storey of a dwelling, this being the 'accessible toilet'. This WC can be located in a bathroom on that storey.

4.7 Where additional WCs are provided, each WC should have an associated hand washing facility.

4.8 To allow for basic hygiene, hand washing facilities should be located in –

(a) the room containing the WC; or

(b) an adjacent room or place providing the sole means of access to the room containing the WC (provided it is not used for the preparation of food).

4.9 A place containing a WC and/or associated hand washing facilities should be separated by a door from any place used for the preparation of food (including a kitchen and any space where kitchenware and utensils are washed) (see Diagrams 2 and 3).

4.10 Guidance on the provision of activity space around sanitary appliances is given in BS 6465 *Sanitary installations*. Part 2: 1996 *Code of practice for space requirements for sanitary appliances*.

Diagram 2 Separation between hand washbasin/WC and food preparation area – single room

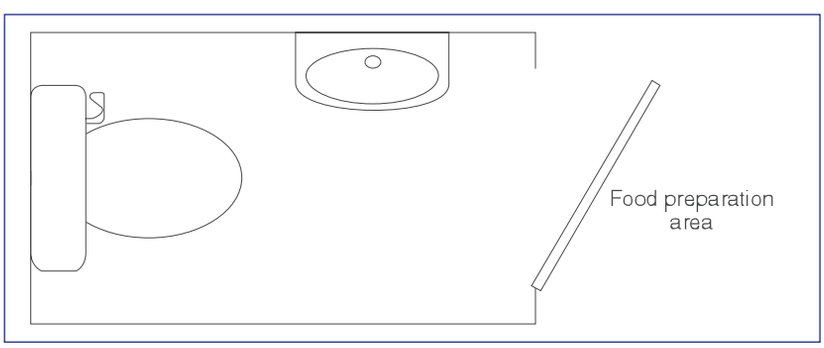
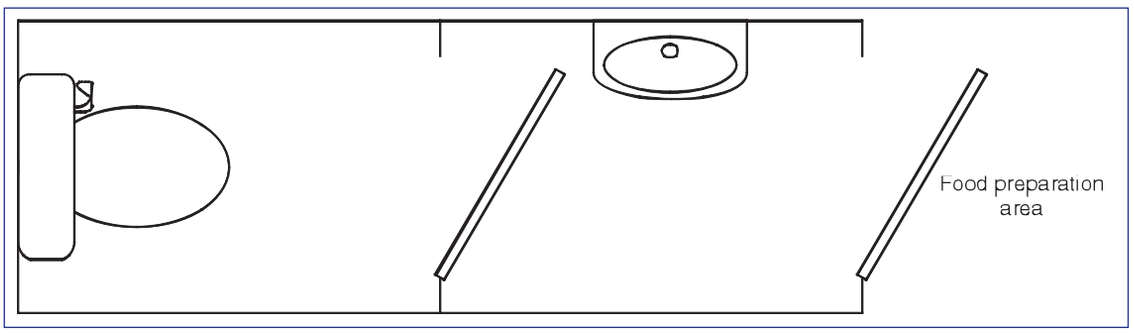


Diagram 3 Separation between hand washbasin/WC and food preparation area – two rooms



What is the proposed change? *Sinks and hand washing facilities for food preparation areas is dealt with separately in Requirement G6. The location of WCs and hand washing facilities in relation to food preparation areas is dealt with in 4.8 and 4.9 above. Note: The scale of provision in dwellings has not changed since the 1992 edition of Approved Document G.*

The rewording of this guidance (which has been aligned with the Scottish Building Standards Agency Technical Handbook – Domestic 2007) and the addition of diagrams does not change the provisions, but seeks to clarify them.

Why do we need a change? *Some confusion over the layout and space between WCs and food preparation areas persists. The intention is that hand washing facilities should be suitably located to discourage the use of the kitchen sink for hand washing. Therefore to help clarity, the guidance on the relative location of facilities in relation to food preparation areas could be simplified and illustrated by a diagram.*

CONSULTATION QUESTION 38: Are the changes to the wording of the guidance and the inclusion of diagrams 2 and 3 helpful in clarifying how WCs and associated hand washing facilities are provided in relation to kitchens in dwellings? If no, what alternative changes would you like to see?

Scale of Provision and Layout in Buildings other than Dwellings

4.11 The number of WCs and urinals in buildings other than dwellings should be in accordance with BS 6465 *Sanitary installations*. Part 1:2006 *Code of practice for the design of sanitary facilities and scales of provision of sanitary and associated appliances*.

4.12 Part M of Schedule 1 to the Building Regulations 2000 (Access to and use of buildings) and to Approved Document M sets out a minimum number of 'accessible toilets'. It is acceptable to include these in the total number of WCs and urinals.

4.13 A WC may be provided in –
(a) a self contained room which also contains hand washing facilities;
(b) in a cubicle with shared hand washing facilities located in a room containing a number of cubicles; or
(c) in a self-contained room with hand washing facilities provided in an adjacent room.

4.14 Urinals, WC cubicles and hand washing facilities may be in the same room.

4.15 A place containing a WC and/or associated hand washing facilities should be separated by a door from workplaces and any place used for the preparation of food (including a kitchen and any place where kitchenware and utensils are washed).

4.16 Guidance on the provision of activity space around sanitary appliance is given in BS 6465 *Sanitary installations*. Part 2: 1996 *Code of practice for space requirements for sanitary appliances*.

What is the proposed change? *Reference to BS 6465-1 has been included.*

Why do we need a change? *The scale of provision in buildings other than dwellings was covered in the 1992 edition of Approved Document G by reference to relevant Acts and Regulations only. It is felt that the inclusion of a specific reference to BS 6465 which includes scale of provision for a wider range of buildings would aid developers in the design of buildings.*

CONSULTATION QUESTION 39: References to other sources of guidance and standards on the scale of provision of WCs, urinals and hand washing facilities in buildings other than dwellings has been added to aid in the design of buildings. Do you agree it is appropriate and helpful to include this in Approved Document G?

Chemical and composting toilets

4.18 Chemical toilets or composting toilets may be used where –
a) suitable arrangements can be made for the disposal of the waste either on or off the site; and,
b) the waste can be removed from the premises without carrying it through any living space or food preparation areas; and,
c) no part of the installation would be installed in any places where it might be rendered ineffective by the entry of flood water.

4.19 There are currently no British or European standards for composting toilets. Appropriate guidance can be found in ANSI/NSF 41-1999 *Non-liquid saturated treatment system*.

4.20 Composting WCs should not be connected to an energy source other than for purposes of ventilation or sustaining the composting process.

What is the change? *New guidance in 4.18 and 4.19 has been introduced.*

Why do we need the change?
Although it is not anticipated that composting toilets will be widely installed in buildings (except those already exempted under Schedule 2 of the Building Regulations 2000), it was felt that as this option is available to designers, guidance should be provided to establish a minimum acceptable performance.

CONSULTATION QUESTION 40: Is it appropriate to include guidance on the performance of chemical and composting toilets in the Approved Document G?

Alternative approach

4.21 The Requirement can also be met, subject to other legislation, by following the relevant recommendations of BS 6465 *Sanitary installations*: Part 1: 2006 *Code of practice for the design of sanitary facilities and scales of provision of sanitary and associated appliances.*

G5: BATHROOMS IN DWELLINGS

THE (DRAFT) REQUIREMENT

This Approved Document deals with the following requirement from Part G of Schedule 1 to the Building Regulations 2000 (as amended).

Draft Requirement	Limits on application
Bathrooms in dwellings G5 A bathroom shall be provided containing either a fixed bath or shower and a washbasin.	Requirement G5 applies only to dwellings

What is the proposed change? *There is currently no proposed change to this requirement. However, it is suggested that the provision of adequate bathing facilities might be extended to buildings which contain rooms for residential purposes (as defined in the Building Regulations 2000) such as hostels, halls of residence etc.*

Why do we need a change? *The previous edition of Approved Document G (1992) limited the provision of a bathroom to dwellings. Bathrooms are also provided in other buildings with 'rooms for residential purposes' e.g. residential institutions, hostels, hotels etc. These bathing facilities might not necessarily be provided in a bathroom containing a washbasin as basins are commonly provided in individual bedrooms.*

Note: Requirement G5 is the same as the first part of G2 in Approved Document G (1992 edition). Requirement G2 in Approved Document G (1992 edition) has been divided and the second part moved to the Sections on Cold and Hot Water Services.

CONSULTATION QUESTION 41: The application of this Requirement is currently limited to dwellings. Do you consider that there is a need for a new requirement for the provision of adequate bathing facilities in buildings containing rooms for residential purposes e.g. hostels, hotels etc.?

G5: BATHROOMS

(DRAFT) GUIDANCE

Performance

In the Secretary of State's view requirement G5 will be met if a bathroom is provided containing a fixed bath or shower, and a washbasin.

Section 5: Bathrooms

General

5.1 The Water Supply (Water Fittings) Regulations 1999 make provisions for appropriate backflow protection on taps including mixer fittings and hose connections.

5.2 Requirements for ventilation of sanitary accommodation are given in Part F of Schedule 1 to the Building Regulations 2000 (Ventilation). Guidance is given in Approved Document F.

5.3 Requirements for electrical safety are given in Part P of Schedule 1 to the Building Regulations 2000 (Electrical safety). Guidance is given in Approved Document P.

5.4 Where hot and cold taps are provided on a sanitary appliance, the hot tap should be on the left.

What is the proposed change? *This general section makes reference to specific issues in other relevant legislation for the provision of bathroom facilities.*

Why do we need a change? *There are a number of Regulations which apply to the provision of bathroom facilities. It was felt that awareness of these could be improved by mention in the Approved Document G.*

Scale of provision and Layout in Dwellings

5.5 Any dwelling (house or flat) should have at least one bathroom with a fixed bath or shower, and a washbasin.

5.6 Guidance on the provision of activity space around sanitary appliances is given in BS 6465 *Sanitary installations*. Part 2: 1996 *Code of practice for space requirements for sanitary appliances*.

What is the proposed change? *G5 has been amended to clarify the need for a washbasin in the primary bathroom.*

Note 1: The need for a bath or a shower, and a washbasin only applies to the primary bathroom. Additional bathrooms may have some or all of these sanitary appliances.
Note 2: The scale of provision in dwellings has not changed since the 1992 edition of Approved Document G.

Why do we need a change? *A washbasin is needed in the main bathroom and it is common practice to provide this. However, not every bathroom in a dwelling needs a washbasin (e.g. an additional room containing only a shower).*

Note: Showers in workplaces are not covered by this Requirement but where these are provided, other Parts of the Building Regulations including Part M might apply.

Alternative approach

5.7 The Requirement can also be met, subject to other legislation by following the relevant recommendations of BS6465 *Sanitary installations* Part 1:2006 *Code of practice for the design of sanitary facilities and scales of provision of sanitary and associated appliances*.

G6: FOOD PREPARATION AREAS

THE (DRAFT) REQUIREMENT

This Approved Document deals with the following requirement from Part G of Schedule 1 to the Building Regulations 2000 (as amended).

Draft Requirement	Limits on application
Food preparation areas G6 A suitable sink shall be provided in any place used for the preparation of food (including a kitchen or place where kitchenware and utensils are hand washed).	

What is the proposed change? *New Requirement G6 introduces the need for a sink for areas where food is prepared.*

Why do we need a change? *This addition would be formalising current practice to provide a sink in food preparation areas. It is felt that including this requirement will increase awareness of the need for a separate sink for the hygienic preparation of food. It is not intended that, if a dishwasher is provided in a separate room to the kitchen, an additional sink would need to be provided in the same room as the dishwasher.*

Note: The location of WCs and hand washing facilities in relation to food preparation areas is dealt with in G4.

CONSULTATION QUESTION 42: The introduction of a new Requirement has been proposed to align Part G with current practice.Stakeholders advise us that this will impose no new burdens. Do you agree that it would be beneficial to include this new requirement, and that it will introduce no additional cost or other burdens?

G6: FOOD PREPARATION AREAS

(DRAFT) GUIDANCE

Performance

In the Secretary of State's view requirement G6 will be met if a sink is provided in any place used for the preparation of food (including a kitchen or place where kitchenware and utensils are hand washed).

Where a dishwasher is provided in a separate room, an additional sink need not be provided in that room.

Section 6: Food Preparation Areas

Scale of provision in dwellings

6.1 A sink should be provided in any place used for the preparation of food or where kitchenware and utensils are washed by hand.

Scale of provision in buildings other than dwellings

6.2 In all buildings other than dwellings, there should be at least the same provision as described in 6.1.

6.3 In buildings where the Food Hygiene (England) Regulations 2006 (SI 2006/14) and the Food Hygiene (Wales) Regulations 2006 (SI 2006/31 W5) apply, separate hand washing facilities may be needed. This is in addition to any hand washing facilities associated with WCs in accordance with G4.

G7: SANITARY APPLIANCES

THE (DRAFT) REQUIREMENT

This Approved Document deals with the following requirement from Part G of Schedule 1 to the Building Regulations 2000 (as amended).

Draft Requirement	**Limits on application**
G7 Sanitary appliances shall be designed and installed so as to allow effective cleaning.	Requirement G7 applies only to WCs, urinals and wash basins.

What is the change? *Requirement G7 is the same as the existing requirement G1 (4). However some stakeholders have suggested that we could expand this to all sanitary appliances, so additionally to baths, showers, bidets, and sinks, whilst others have suggested that there is no need for a Requirement on cleanability for any sanitary appliances.*

Why do we need a change? *Some stakeholders have suggested that the ability to clean baths, showers, bidets, and sinks is equally important as the cleaning of WCs, urinals and washbasins. In addition, the provisions for WCs, urinals and wash basins currently appear in two different places – bringing these together will help users of the document. However other stakeholders have suggested that there is no need for this Requirement as the market behaviour of consumers ensures this is satisfied.*

CONSULTATION QUESTION 43: The Requirement to install appliances to allow adequate cleaning is currently limited to WCs, urinals and washbasins. Is it reasonable to extend this to include other appliances (and which ones)?

CONSULTATION QUESTION 44: The Requirement to design appliances through the correct choice of profile and materials to allow adequate cleaning is currently limited to WCs, urinals and washbasins. Some stakeholders have suggested this should be extended to include baths, shower trays, sinks, bidets, taps and shower hoses/heads. Do you agree this is necessary?

CONSULTATION QUESTION 45. Some stakeholders have suggested that there is no need for a Requirement on cleanability of baths, shower trays and cubicles, sinks, bidets, taps and shower hoses/heads. Do you agree?

G7: SANITARY APPLIANCES

(DRAFT) GUIDANCE

Performance

In the Secretary of State's view requirement G7 will be met if they are constructed from materials that are smooth and non absorbent and having a profile to allow them to be easily cleaned.

Section 7: Sanitary Appliances

General

7.1 Attention is drawn to British and European Standards for sanitary appliances and BS 6465: Part 3 *Sanitary installations. Code of practice for the selection, installation and maintenance of sanitary and associated appliances*.

Cleanability

7.2 Sanitary appliances should have a surface that is smooth and non-absorbent.

Note: Sanitary appliances are normally constructed from glazed ceramics, enamelled steel, enamelled cast iron, stainless steel or glass. Sanitary appliances made from other materials should have surfaces having similar properties.

7.3 The surfaces of sanitary appliances should have a profile designed to allow them to be easily cleaned. For example, internal corners should have a large enough radius to allow effective cleaning with hand held cloths or tools that are normally available.

7.4 Sanitary appliances should be installed so that there is sufficient space around the appliance to allow effective cleaning.

7.5 Any flushing apparatus on a WC or urinal should be capable of cleansing the receptacle effectively. No part of the receptacle should be connected to any pipe other than a flush pipe or discharge pipe.

What is the proposed change? *The guidance in 7.2 is the same as Section 1.5 in Approved Document G (1992 edition). However some stakeholders have suggested that the guidance should also apply additionally to baths, shower trays, taps, bidets, and sinks. The guidance in 7.3 and 7.4 is new.*

Why do we need the change? *The material and design will dictate whether a sanitary appliance can be effectively cleaned to maintain a hygienic environment and protect health.*

CONSULTATION QUESTION 46: If the Requirement, and so this guidance, was either removed or was extended to include other sanitary appliances, would this have implications for products currently on the market? Please specify.

Slip resistance

What is the proposed change? *There is currently no proposed guidance on slip resistance. We are seeking your views on the addition of such guidance through this consultation.*

Why do we need the change? *Slip resistance is a characteristic which can help to prevent accidents, although it affects the cleanability of surfaces. Shower trays commonly have slip-resistant surfaces. Part M of the Building Regulations requires a slip resistant surface for shower areas.*

CONSULTATION QUESTION 47: It has been suggested that we might consider new guidance for slip-resistance on shower and bath surfaces. This has not yet been included and your views are sought. Do you think guidance on this in Approved Document G would be appropriate?

CONSULTATION QUESTION 48: If there is a place for this guidance, which surfaces and products might it cover?

Discharges to drains

Note: See Approved Document for requirement H1 *Sanitary pipework and drainage* for guidance on provision for traps, branch discharge pipes, discharge stacks and foul drains.

7.6 Any WC fitted with flushing apparatus should discharge to an adequate system of drainage.

7.7 A urinal fitted with flushing apparatus should discharge through a grating, a trap or mechanical seal and a branch pipe to a discharge stack or a drain.

7.8 A WC fitted with a macerator and pump may be connected to a small bore drainage system discharging to a discharge stack if –

a) there is also access to a WC discharging directly to a gravity system, and

b) the macerator and pump meets the requirements of BS EN 12050: Part 2 *Wastewater lifting plants for buildings and sites. Principles of construction and testing. Lifting plants for faecal-free wastewater*.

7.9 Any sink or sanitary appliance used for personal washing should discharge through a grating, a trap and a branch discharge pipe to an adequate system of drainage.

7.10 A sanitary appliance used for personal washing fitted with a macerator and pump may be connected to a small bore drainage system discharging to a discharge stack if –

a) there is also access to washing facilities discharging directly to a gravity systems; and

b) the macerator and pump meets the requirements of BS EN 12050: Part 2 *Wastewater lifting plants for buildings and sites. Principles of construction and testing. Lifting plants for faecal-free wastewater*.

What is the change? *Guidance in 7.6 has been amended (previously Section 1 1.8) to be less prescriptive. 7.7 has been amended (previously Section 1 1.9) to allow a mechanical seal in place of a trap and is therefore less restrictive. 7.9 has been amended (previously Section 1 1.11) to include sinks.*

Why do we need the change? *Approved Document G (1992) called for discharges from a WC through a trap and discharge pipe to stack or drain. This revised guidance allows for designs of waterless urinals.*

Approved Document G (1992) called for discharges from a urinal through a trap. Waterless urinals for example use mechanical seals in place of traps – this amendment is therefore less restrictive.

Approved Document G (1992) did not include any guidance on discharges from sinks. With the inclusion of the proposed Section 6 (Food Preparation areas), sinks need to be covered.

ANNEX 1 TO APPROVED DOCUMENT G

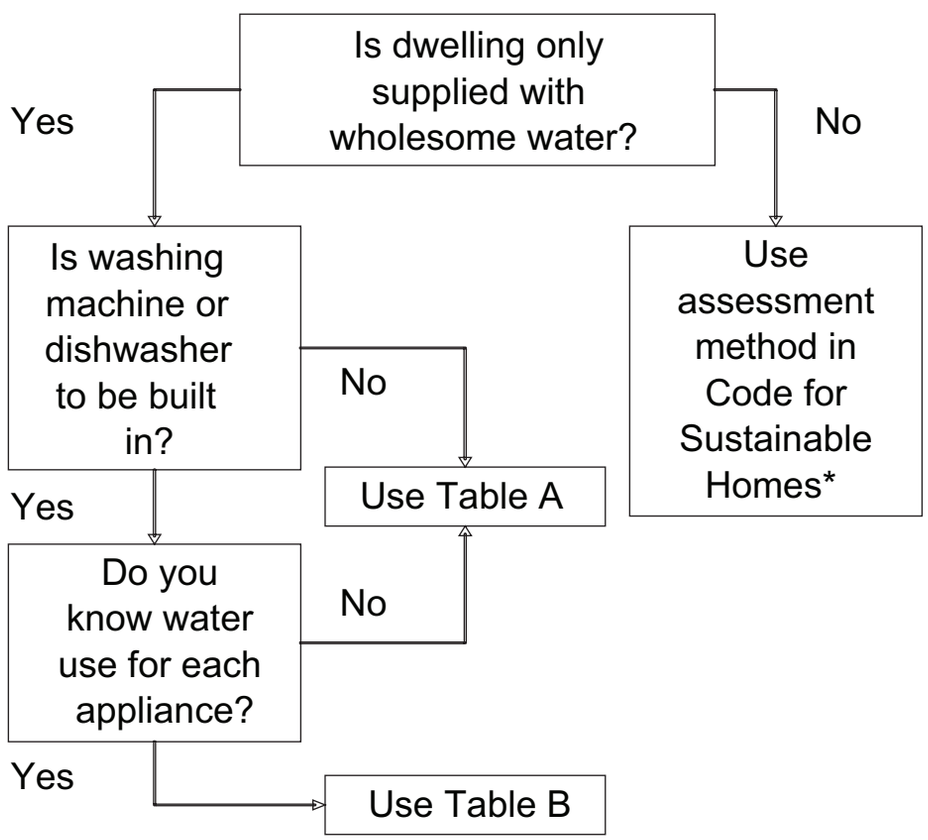
Method of calculation of maximum design water usage of a new dwelling

INTRODUCTION

The method of calculation used to demonstrate compliance with Requirement G2 is the same as that used for the Code for Sustainable Homes.

A simplified version is presented here for dwellings which are designed to be supplied only with wholesome water.

Where a building design includes the use alternative sources of non-wholesome waters such as captured rainwater or recycled grey water, the full calculation in accordance with the Code for Sustainable Homes is to be used.



* Available from
http://www.communities.gov.uk/publications/planningandbuilding/codeguide.

The water use is determined by the water consumption levels of the sanitary appliances and relevant white goods (washing machines, dishwashers, water softeners and food waste disposal units) proposed for installation in the dwelling. It is not affected by the number of appliances, only by the variation in their performance.

Where more than one appliance of the same kind is installed, the consumption of the appliance with the highest water use should be used in the calculation.

The water consumption figures for each appliance (in litres/head/day) are then added together to give the total calculated water consumption in (litres/head/day). This final calculated water consumption is an estimate of how much water would typically be used (per occupant per day), given the flow rates and capacities of the water consuming devices and assumptions about frequency of use. This calculator is not designed to give an accurate prediction of the water used by occupants, but will give an indication of whether the dwelling can be water efficient or not. The total calculated water consumption is not affected by the size of the house.

INSTRUCTIONS FOR USE OF SIMPLIFIED METHOD

1, Identify the water use for each appliance to be used in the dwelling.

2. Identify whether Table A or Table B is to be used for the calculation,

- Where a washing machine or dishwasher is not to be built in to a dwelling or the consumption of the appliance is not known, use Table A to calculate the total water use.
- Where a washing machine or dishwasher is to be built into a dwelling and the water consumption is known, use Table B to calculate the total water use.

3. Enter the design water use for each appliance in to Table A or B as appropriate, using the guidance below. Sum all of the values in the total water use by appliance boxes to give a total water usage for the dwelling.

WC

For a single flush WC, enter the flush volume in litres of the full cistern into the first box (full flush volume) and enter this same value again in the second box (reduced flush volume).

For a dual flush WC, enter the flush volume in litres of the full cistern into the first box and the volume of the reduced flush into the second box.

Calculate the water usage from the WC by following the steps below and enter this value in the total water use by appliance box.

- Multiply the value in the full flush volume box by 1.6 (usage factor)
- Multiply the value in the reduced flush box by 3.2 (usage factor)
- Add together the two numbers calculated above to give the total water use.

Bidet

If a bidet is fitted, delete “no” in the box and enter the fixed value of 5.28 litres/head/day in the total water use by appliance box.

For information: The 5.28 litres/head/day is made up of an assumption of 2.64 litres per use and 2 uses per head per day.

Basin

Enter the nominal maximum flow rate of the tap in litres per minute into the first box.

Note: Where there are separate hot and cold taps, use the nominal maximum flow rate of the tap with the highest flow rate.

Calculate the water usage from the basin tap by multiplying the flow rate by 3.54 and enter this value in the total water use by appliance box.

For information: A flow rate adjustment is made to reflect actual usage of the tap, i.e. taps are rarely used at 100% flow. The flow rate adjustment is 0.67. This is then multiplied by a usage factor of 5.29. This factor is made up of 7.9 uses per head per day with a duration of use of 40 seconds.

Bath and Shower

There are three scenarios; a) bath only, b) shower only and c) bath & shower.

a) If only a bath is to be installed, then the “Bath only” line is to be completed.

Enter the total bath capacity in litres in the appropriate box. Calculate the bath fill volume by multiplying the total bath capacity by 0.40. Enter this value in the total water use by appliance box.

b) If only a shower is to be installed, then the “Shower only” line is completed.

Enter the shower flow rate in litres per minute. Calculate the water usage from the shower by multiplying the flow rate by 5 and enter this value in the total water use by appliance box.

c) If both a bath and shower are to be installed, leave the “Bath only” and “Shower only” lines blank and complete the “bath & shower” line. Follow the steps below:

- Enter the total bath capacity in litres in the appropriate box. Calculate the bath fill volume by multiplying the bath capacity by 0.16. Enter this value in the total water use by appliance box.
- Enter the shower flow rate in litres per minute. Calculate the water usage from the shower by multiplying the flow rate by 3. Enter this value in the total water use by appliance box.

For information: Where there is a bath only, 1 bath per head per day is assumed. Where there is a shower only, 1 shower per head per day with a duration of 5 minutes is assumed. Where there is a bath and shower, the bath fill volume is multiplied by 2.8 uses per week (i.e. 2.8/7 = 0.4 uses per day) and the shower flow rate is multiplied by 4.2 uses per week, (i.e. 4.3/7 = 0.6 uses per day).

Kitchen Sink

There are two scenarios for kitchen taps; a) click tap, b) other tap.

a) If a click tap is installed, enter the nominal maximum flow rate of the tap in litres per minute into the first box. Calculate the water usage from the kitchen sink tap by multiplying the flow rate by 5.29 and enter this value in the total water use by appliance box.

b) For other types of taps, enter the nominal maximum flow rate of the tap in litres per minute into the first box.

Calculate the water usage from the kitchen sink tap by multiplying the flow rate by 3.54 and enter this value in the total water use by appliance box.

For information: By multiplying the flow rate by these values, it is adjusted in the same way as basin taps (see above) to reflect actual usage. For click taps, the flow rate at 'first' stop position is used and no factor is applied to the flow.

Food Waste Disposal Unit

If a food waste disposal unit is fitted, delete "no" in the box and enter 8 litres/head/day in the total water use by appliance box.

For information: The 8 litres/head/day is made up of 16 litres per use and 0.5 uses per head per day.

Washing Machine

Where a washing machine is to be fitted in the new dwelling, enter the volume of water per use in litres obtained from manufacturer's information in Table B. Calculate the water use of the machine in litres/head/day by multiplying the volume of water per use by 0.34 (the usage factor) and enter this value in the total water use by appliance box (Table B).

Where a washing machine is to not to be fitted in the new dwelling by the developer or the water use of the machine is not known, enter the fixed allowance of 16.66 litres/head/day in the total water use by appliance box (Table A).

For information: The 16.66 litres/head/day is made up of 49 litres per use and a usage factor of 0.34 uses per head per day.

Dishwasher

Where a dishwasher is to be fitted in the new dwelling, enter the volume of water per use in litres obtained from manufacturer's information in Table B. Calculate the water use of the dishwasher in litres/head/day by multiplying the volume of water per use by 0.30 (the usage factor) and enter this value in the total water use by appliance box (Table B).

Where a dishwasher is to not to be fitted in the new dwelling by the developer or the water use of the dishwasher is not known, enter the fixed allowance of 3.9 litres/head/day into the total water use by appliance box (Table A).

For information: The value of 3.9 litres per head per day for a dishwasher is made up of a value of 13 litres per use and 0.3 uses per head per day.

Outside Water Use

No entry needed in Table A or B.

For information: A fixed allowance for outdoor use is incorporated in the calculation.

Water Softener

If a water softener is installed, delete “no” in the box.

Where the volume of water consumed per regeneration cycle does not exceed 4% of the total capacity of the water softener, the water consumption can be entered as zero. Insert 0 in the total water use by appliance box.

Where the volume of water consumed per regeneration cycle exceeds 4% of the total capacity of the water softener, the volume of water consumed per regeneration cycle must be calculated in accordance with the Code for Sustainable Homes. Calculate the water use of the water softener in litres/head/day and enter this value in the total water use by appliance box.

WATER CALCULATOR – TABLE A

New Build Domestic Water Efficiency Calculation Tool - Table A

											Total water by appliance
WC	Full flush volume in litres		x	1.6	+	Reduced flush volume in litres		x	3.2	=	
Bidet	Is bidet fitted?		If yes add 5.28 litres/head/day, otherwise zero							=	
Basin	Manufacturer's flow rate (l/min)		x	3.54						=	
Bath Only	Bath capacity in litres		x	0.40						=	
Shower only	Flowrate (l/min)		x	5						=	
Bath & Shower	Bath capacity in litres		x	0.16						=	
	Shower Flowrate (l/min)		x	3						=	
Kitchen Sink Click Tap	Manufacturer's flow rate at first stop (l/min)		x	5.29						=	
Kitchen Sink Other Tap	Manufacturer's flow rate (l/min)		x	3.54						=	
Waste disposal unit	Is unit fitted?	Yes/No	If yes add 8 litres/head/day, otherwise zero							=	
Washing machine	No machine fitted		Fixed allowance of 16.66 litres/head/day							=	16.66
Dishwasher	No machine fitted		Fixed allowance of 3.9 litres/head/day							=	3.9
SUB-TOTAL (INTERNAL WATER USE)			**=Sum of above**							**=**	
Outside use			Fixed allowance of 5 litres/head/day							=	**5**
TOTAL WATER USE			**= Internal water use + outside use**							**=**	

WATER CALCULATOR – TABLE B

New Build Domestic Water Efficiency Calculation Tool - Table B

												Total water by appliance
WC	Full flush volume in litres		x	1.6	+	Reduced flush volume in litres		x	3.2	=	
Bidet	Is bidet fitted?		If yes add 5.28 litres/head/day, otherwise zero							=	
Basin	Manufacturer's flow rate (l/min)		x	3.54						=	
Bath Only	Bath capacity in litres		x	0.40						=	
Shower only	Flowrate (l/min)		x	5						=	
Bath & Shower	Bath capacity in litres		x	0.16						=	
	Shower Flowrate (l/min)		x	3						=	
Kitchen Sink Click Tap	Manufacturer's flow rate at first stop (l/min)		x	5.29						=	
Kitchen Sink Other Tap	Manufacturer's flow rate (l/min)		x	3.54						=	
Waste disposal unit	Is unit fitted?	Yes/No	If yes add 8 litres/head/day, otherwise zero							=	
Washing machine	Volume of water per use in litres		x	0.34						=	
Dishwasher	Volume of water per use in litres		x	0.30						=	
Water Softener	Is softener fitted fitted?	Yes/No	If yes add 0 l/person/day or calculated value (see notes)							=	
SUB-TOTAL (INTERNAL WATER USE)			**=Sum of above**							**=**	
Outside use			Fixed allowance of 5 litres/head/day							=	**5**
TOTAL WATER USE			**= Internal water use + outside use**							**=**	

WATER CALCULATOR: EXAMPLE CALCULATION

An example of using Table A for checking the contribution of individual appliances to the whole house performance is given below. This will not be included in the final published Approved Document G.

Scenario:

A three bedroom house is to be constructed. The house will contain 1 family bathroom, 1 en-suite bathroom and a downstairs cloakroom.

The family bathroom will incorporate a bath, bath/shower mixer, WC and basin.
The en-suite bathroom will incorporate one shower, WC and basin.
The downstairs cloakroom will incorporate one WC and a basin.

In addition, the kitchen/utility is to incorporate kitchen taps but no white goods.

Choose appropriate calculation method:

The dwelling is only supplied with wholesome water. Therefore the simplified method in Annex 1 can be used.

Table A will be used as white goods are not included in the dwelling specification.

Water consumption levels of sanitary appliances:

All WCs in the property are of 6/3 litre dual flush specification.

WC full flush volume = 6 litres
WC part flush volume = 3 litres

It is proposed to install a standard mixer shower in the en-suite, which should deliver 10 litres of water per minute according to the manufacturer's information. The bath/shower mixer will deliver a lower water consumption than this, however in the calculation the poorest performing product must be included.

Shower flow rate = 10 litres per minute

The bath to be installed is a standard bath, with a capacity to overflow of 225 litres.

Bath capacity = 225 litres

In the downstairs cloakroom, a mono-bloc mixer tap is to be installed with a spray fitting. The manufacturer's specification for these taps is a flow rate of 2.5 litres per minute.

In the en-suite bathroom and family bathroom, a pair of basin taps are to be installed, delivering a flow rate of 6 litres per minute. As this is the product with the highest water use in the house, this product must be included within the calculation.

Basin tap flow rate = 6 litres per minute

The kitchen tap proposed to be installed is also a mixer tap, which has an eco-brake fitting limiting flow to 5 litres per minute initially unless the user requires a higher flow in which case the tap can deliver 13 litres per minute. The nominal maximum flow rate to immediate stop of this tap is therefore 5 litres per minute.

Kitchen tap flow rate = 5 litres per minute.

Usage assumptions for washing machine and dishwashers are provided in Table A.

Example 1 Calculation using Table A

New Build Domestic Water Efficiency Calculation Tool - Table A (Example 1)

											Total water by appliance
WC	Full flush volume in litres	6	x	1.6	+	Reduced flush volume in litres	3	x	3.2	=	19.2
Bidet	Is bidet fitted?	No	If yes add 5.28 litres/head/day, otherwise zero							=	0
Basin	Manufacturer's flow rate (l/min)	6	x	3.54						=	21.27
Bath Only	Bath capacity in litres		x	0.4						=	
Shower only	Flowrate (l/min)		x	5						=	
Bath & Shower	Bath capacity in litres	225	x	0.16						=	36
	Shower Flowrate (l/min)	10	x	3						=	30
Kitchen Sink Click Tap	Manufacturer's flow rate at first stop (l/min)	5	x	5.29						=	26.45
Kitchen Sink Other Tap	Manufacturer's flow rate (l/min)		x	3.54						=	
Waste disposal unit	Is unit fitted?	No	If yes add 8 litres/head/day, otherwise zero							=	
Washing machine	No machine fitted		Fixed allowance of 16.66 litres/head/day							=	16.66
Dishwasher	No machine fitted		Fixed allowance of 3.9 litres/head/day							=	3.9
SUB-TOTAL (INTERNAL WATER USE)			**=Sum of above**							**=**	153.48
Outside use			Fixed allowance of 5 litres/head/day							=	**5**
TOTAL WATER USE			**= Internal water use + outside use**							**=**	158.48

The total water use value calculated is too high (exceeds 125 litres/ head/ day) and does not meet the requirements of the Building Regulations.

Adjustments have to be made to the proposed specification of appliances.

An alternative shower product is identified which should deliver only 8 litres of water per minute according to the manufacturer’s information.

In addition, the decision is taken to install spray fittings to all basin taps, reducing the flow rate to 2.5 litres per minute.

Example 2 Calculation using Table A

New Build Domestic Water Efficiency Calculation Tool - Table A (Example 2)

											Total water by appliance
WC	Full flush volume in litres	6	x	1.6	+	Reduced flush volume in litres	3	x	3.2	=	19.2
Bidet	Is bidet fitted?	No		If yes add 5.28 litres/head/day, otherwise zero						=	0
Basin	Manufacturer's flow rate (l/min)	2.5	x	3.54						=	8.86
Bath Only	Bath capacity in litres		x	0.4						=	
Shower only	Flowrate (l/min)		x	5						=	
Bath & Shower	Bath capacity in litres	225	x	0.16						=	36
	Shower Flowrate (l/min)	8	x	3						=	24
Kitchen Sink Click Tap	Manufacturer's flow rate at first stop (l/min)		x	5.29						=	
Kitchen Sink Other Tap	Manufacturer's flow rate (l/min)	2.5	x	3.54						=	8.86
Waste disposal unit	Is unit fitted?	No		If yes add 8 litres/head/day, otherwise zero						=	
Washing machine	No machine fitted			Fixed allowance of 16.66 litres/head/day						=	16.66
Dishwasher	No machine fitted			Fixed allowance of 3.9 litres/head/day						=	3.9
SUB-TOTAL (INTERNAL WATER USE)				**=Sum of above**						**=**	117.48
Outside use				Fixed allowance of 5 litres/head/day						=	**5**
TOTAL WATER USE				**= Internal water use + outside use**						**=**	122.48

The total water use calculated is now 122 litres/ head/day. The specification of appliances conforms to the requirements of the Building Regulations.

ANNEX 2 TO APPROVED DOCUMENT G

Competent person self-certification schemes relevant to sanitation, hot water safety and water efficiency work

(i) Installation of a hot water service system connected to a heat producing gas appliance

Corgi Services Limited

(ii) Installation of a hot water service system connected to an oil-fired combustion appliance

Association of Plumbing and Heating Contractors (Certification) Limited [APHC]
Building Engineering Services Competence Accreditation Limited [BESCA]
NAPIT Registration Limited
NICEIC Group Limited
Oil Firing Technical Association Limited [OFTEC]

(iii) Installation of a hot water service system connected to a solid fuel burning appliance

Association of Plumbing and Heating Contractors (Certification) Limited [APHC]
Building Engineering Services Competence Accreditation Limited [BESCA]
NAPIT Registration Limited
NICEIC Group Limited
Oil Firing Technical Association Limited [OFTEC]
HETAS

(iv) Installation of a hot water service system in a dwelling, other than a combustion appliance

Association of Plumbing and Heating Contractors (Certification) Limited [APHC]
Building Engineering Services Competence Accreditation Limited [BESCA]
CORGI Services Limited
NAPIT Registration Limited
NICEIC Group Limited

(v) Installation of a hot water service system in a building other than a dwelling, other than a combustion appliance

Building Engineering Services Competence Accreditation Limited [BESCA]
NICEIC Group Limited

(vi) Installation of a sanitary convenience, washing facility or bathroom in a dwelling (not involving work on underground drainage)

Association of Heating and Plumbing Contractors (Certification) Limited [APHC]
CORGI Services Limited
NAPIT Registration Limited
NICEIC Group Limited

For a full and current list of all schemes, consult www.communities.gov.uk

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Approved Document B (Fire safety) – Volume 1: Dwellinghouses (2006 Edition)

Approved Document B (Fire safety) – Volume 2 – Buildings other than dwellinghouses (2006 Edition)

Approved Document C – Site preparation and resistance to contaminates and moisture (2004 edition)

Approved Document D – Toxic substances (1992 edition)

Approved Document E – Resistance to the passage of sound (2003 edition)

Approved Document F – Ventilation (2006 edition)

Approved Document H – drainage and waste disposal (2002 edition)

Approved Document J – Combustion appliances and fuel storage systems (2002 edition)

Approved Document K – Protection from falling collision and impact (1998 edition)

Approved Document L1A: Conservation of fuel and power (New dwellings) (2006 edition)

Approved Document L1B: Conservation of fuel and power (Existing dwellings) (2006 edition)

Approved Document L2A: Conservation of fuel and power (New buildings other than dwellings) (2006 edition)

Approved Document L2B: Conservation of fuel and power (Existing buildings other than dwellings) (2006 edition)

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BS 6283 *Safety and control devices for use in hot water systems*: Part 2:1991 *Specifications for temperature relief valves for pressures from 1 bar to 10 bar*. BSi, 1991.

BS 6283 *Safety and control devices for use in hot water systems*: Part 3:1991 *Specification for combined temperature and pressure relief valves for pressures from 1*

bar to 10 bar or equivalent. BSi, 1991.

BS 6465-1: 2006 *Sanitary installations. Code of practice for the design of sanitary facilities and scales of provision of sanitary and associated appliances.*

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BS 6465: Part 3 *Sanitary installations. Code of practice for the selection, installation and maintenance of sanitary and associated appliances.* BSi, 2006.

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Annex A

RESPONSE FORM

Proposals for amending Part G (Hygiene) of the Building Regulations and Approved Document G: Consultation

Respondent Details:	
Name:	Please return by: **5 August 2008** to: **Part G Consultation Sustainable Buildings Division Communities and Local Government Floor 2, Zone J6, Eland House, Bressenden Place, London SW1E 5DU** **Email: partgconsultation@communities.gsi.gov.uk** **Fax: 0207 944 5719**
Organisation:	
Address:	
Telephone:	
Fax:	
e-mail:	
Is your response confidential? If so please explain why. (See disclaimer on page 9) **Yes** ☐ **No** ☐ **Comments:**	
Provision is made throughout this questionnaire for you to provide additional comments. If, however you wish to provide more detailed comments on any aspect of the consultation then please feel free to append additional materials and supplementary documents, clearly marked and cross referenced to the relevant questions, as necessary.	

The Department of Communities and Local Government wishes to engage better with its stakeholders by automatically notifying you of changes to the regulations and approved documents and of consultations on building regulations issues. Because of the UK Data Protection Act 1998 we need your consent before we can do this. Please indicate your consent by ticking the consent box below.

I/We hereby consent to the recording, storage and processing of my/our personal information by the Department of Communities and Local Government, and any data processor you may use, for the purpose of enabling stakeholder engagement ☐

Organisation type (tick one box only)			
House or property developer	☐	Approved Inspector Corporate Individual	☐ ☐
Commercial Developers	☐	Local authority – other (please specify)	☐
Housing Association (Registered Social Landlords)	☐	Fire & Rescue Authority	☐
Property Management	☐	Other non-governmental organisation	☐
Builder – Main Contractor (commercial/volume housebuilder)	☐	Householder	☐
Builder – Small Builders (repairs/maintenance/extensions)	☐	Trade body or association	☐
Builder – Specialist Sub Contractor	☐	Research/academic organisation	☐
Manufacturer	☐	Professional body or institution	☐
Architects	☐	Testing bodies	☐
Civil/Structural Engineer	☐	Specific interest or lobby group	☐
Consultancy	☐	Journalist/media	☐
Individual in practice, trade or profession	☐	Insurer	☐
Local authority – Building Control	☐	Other (please specify):	☐
	☐		☐
	☐		☐
Geographical Location			
England	☐	Wales	☐
England and Wales	☐	Other (please specify)	☐

Cold Water Services

Q1. Requirement G1(1) would incorporate the requirements of existing legislation and standards on the provision of water and would provide a better understanding and visibility of requirements for water supplies in buildings. Some stakeholders have suggested that this requirement for the supply of water to all buildings would aid compliance and should not bring about additional costs. However, we would like to consider this further. Do you agree that this proposal would be beneficial and would not bring extra costs?

Yes: ☐ **No:** ☐ **Don't know:** ☐

Comments:

Q2. Requirement G1(1) would clarify the provisions for the supply of a wholesome water supply to buildings (subject to the exemptions in the Building Regulations) where drinking water is drawn off, where food is prepared or where sanitary appliances are used for personal washing. Is it reasonable to expect all buildings in this context to be connected to a wholesome supply of water?

Yes: ☐ **No:** ☐ **Don't know:** ☐

Comments: (e.g. are there any additional types of buildings that should be excluded?)

Q3. Requirement G1(1) specifies that wholesome water be provided to locations where drinking water is drawn off, where food is prepared and where sanitary appliances are used for washing (e.g. basins, baths, showers). Are there any other points in a building (including dwellings) where you would consider wholesome water is essential?

Yes: ☐ **No:** ☐ **Don't know:** ☐

Comments:

Q4. Requirement G1(2) specifies those locations where a supply of water is considered essential, but where wholesome water is not necessarily needed. Is it safe and reasonable to allow the use of water from non-wholesome sources to be used in (i) dwellings and (ii) in other buildings for WCs, urinals, external taps and laundry (subject to the exclusions in the guidance in this document)?

Yes: ☐ **No:** ☐ **No opinion:** ☐

Comments: (e.g. are there any types of buildings where the use of non-wholesome water should not be allowed?)

Q5. It is expected that bringing together the various requirements to provide water to buildings will support better compliance. More consistent guidance would be beneficial to those seeking to comply and would assist consistent interpretation. Do you agree that it is helpful to include this guidance in the Approved Document? Are you satisfied with the guidance as drafted?

Yes: ☐ **No:** ☐ **Don't know:** ☐

Comments: (e.g. what else should the guidance cover?)

Q6. Have we included sufficient detail in terms of the risk assessment and testing or specification of treatment systems that should be necessary to allow use of water from non-wholesome sources whilst protecting health within a building?

Yes: ☐ **No:** ☐ **Don't know:** ☐

Comments:

Q7. Is this guidance on appropriate sources and uses of non-wholesome water in dwellings sufficient?

Yes: ☐ **No:** ☐ **Don't know:** ☐

Comments:

Water Efficiency

Q8. Is this guidance on appropriate sources and uses of non-wholesome water for buildings other than dwellings sufficient?

Yes: ☐ **No:** ☐

Comments:

Q9. Do you agree this requirement effectively implements the Government's policy for improving water efficiency in new homes, as signalled in its July 2007 statement? If no, please explain why not.

Yes: ☐ **No:** ☐ **No opinion:** ☐

Comments:

Q10. A method of calculation for water use is provided in the Code for Sustainable Homes. We propose a simplified version of this calculation for use where dwellings will be supplied only with wholesome water. Do you agree that a simplified version of the calculation should be used in these situations?

Yes: ☐ **No:** ☐ **No opinion:** ☐

Comments:

Q11. We propose that the water use calculation method provided in the Code for Sustainable Homes should be used where the design includes alternative water sources to demonstrate a greater level of water efficiency. Do you agree that the full calculation be used in these situations?

Yes: ☐ **No:** ☐ **No opinion:** ☐

Comments:

Q12. Some of our stakeholders have expressed concern that the low flows in drains and sewers resulting from the proposed reductions in water use could lead to problems with blockages in drains and sewers. Do you agree that this may be an issue and if so do you have any evidence of this?

Yes: ☐ **No:** ☐ **No opinion:** ☐

Comments:

Hot Water Services

Q13. Is it reasonable to expect a supply of heated wholesome water to be provided in all personal washing facilities and to sinks used in association with food preparation and washing up?

Yes: ☐ **No:** ☐ **No opinion:** ☐

Comments:

Q14. Do you agree that it should now be a Requirement of the Building Regulations that all parts of hot water systems including cold water cisterns which could receive high temperature discharges from vented hot water storage systems should be able to withstand the effects of temperature and pressure that may occur either in normal use or in the event of such malfunctions as may reasonably be anticipated?

Yes: ☐ **No:** ☐ **No opinion:** ☐

Comments:

Q15. Do you agree that this requirement should apply to (a) new installations; (b) replacement of parts of installations including cisterns?

(a) new installations?

Yes: ☐ **No:** ☐ **No opinion:** ☐

(b) replacement cisterns?

Yes: ☐ **No:** ☐ **No opinion:** ☐

Comments:

Q16. The amendment of G3(3) is proposed to address failures of the temperature control devices in vented hot water systems. Is it reasonable to bring control of vented systems into the Building Regulations?

Yes: ☐ **No:** ☐ **Don't know:** ☐

Comments:

Q17. If you agree that vented systems should be brought into the building regulations, in which cases should this apply:

(a) new installations?

Yes: ☐ **No:** ☐ **No opinion:** ☐

(b) when replacing a hot water boiler?

Yes: ☐ **No:** ☐ **No opinion:** ☐

(c) when replacing a hot water storage vessel (cylinder)?

Yes: ☐ **No:** ☐ **No opinion:** ☐

Comments:

Q18. Do you agree that primary thermal storage systems containing more than 15 litres of water should be treated the same as other hot water storage systems under the proposed requirement G3:

(a) where the thermal store is used to heat domestic hot water?

Yes: ☐ **No:** ☐ **No opinion:** ☐

(b) where the thermal store is only used for space heating?

Yes: ☐ **No:** ☐ **No opinion:** ☐

Comments:

Q19. Do you agree with the view that the requirement in G3(4) (G3(b) in the existing Regulations) should be removed?

Yes: ☐ **No:** ☐ **No opinion:** ☐

Comments:

Q20. Are you aware of other more appropriate approach to ensuring safety of all controlled hot water storage systems?

Yes: ☐ **No:** ☐ **Don't know:** ☐

Comments:

Q21. Industry has advised that the proposed requirements and guidance for hot water systems outlined above are in line with current good practice in the industry. Their inclusion in the Approved Document will help raise awareness of such practice and ensure that clear guidance is available to all parts of the industry to support compliance. However they should result in no additional costs to industry. Do you agree with this assessment? Please provide details of which elements of the proposals you believe will add cost or benefits, and what you think the additional costs will be and who you think they will fall on.

Yes: ☐ **No:** ☐ **No opinion:** ☐

Comments:

Q22. Do you consider that there would be additional costs to Building Control Bodies as a result of the introduction of any of the above proposals, and, if so are you able to provide us with information on these?

Yes: ☐ **No:** ☐ **No opinion:** ☐

Comments:

Q23. We would like to introduce controls to limit water temperatures at hot water outlets; however the current cost benefit analysis does not support a regulatory change (costs are currently assessed at about three times the benefits). Are you able to provide more information which we could use in further analysis of the costs and benefits? Please provide any additional information you can.

Yes: ☐ **No:** ☐ **No opinion:** ☐

Comments:

Q24. If further evidence is forthcoming which reduces the gap between costs and benefits in the initial analysis would you wish to see a provision which controlled the temperature at hot water outlets?

Yes: ☐ **No:** ☐ **No opinion:** ☐

Comments:

Q25. If you support the principle of introducing temperature control on hot water outlets in dwellings, subject to the preparation of a supporting Impact Assessment, which sanitary appliances would you like to see included?

(a) baths?

Yes: ☐ **No:** ☐ **No opinion:** ☐

(b) showers?

Yes: ☐ **No:** ☐ **No opinion:** ☐

(c) washbasins?

Yes: ☐ **No:** ☐ **No opinion:** ☐

(d) bidets?

Yes: ☐ **No:** ☐ **No opinion:** ☐

(e) kitchen sinks?

Yes: ☐ **No:** ☐ **No opinion:** ☐

Comments:

Q26. If temperature controls were introduced, subject to the preparation of a supporting Impact Assessment, do you agree that all controlled outlets should be limited to 48°C? If No please state which outlets should be controlled to different temperatures and give details of the proposed temperature and why?

Yes: ☐ **No:** ☐ **No opinion:** ☐

Comments:

Q27. If temperature controls were introduced, subject to the preparation of a supporting Impact Assessment, do you think that the same level of protection should be applied in buildings other than dwellings, and if so, which sanitary appliances would you like to see included?

(a) baths?

Yes: ☐ **No:** ☐ **No opinion:** ☐

(b) showers?

Yes: ☐ **No:** ☐ **No opinion:** ☐

(c) washbasins?

Yes: ☐ **No:** ☐ **No opinion:** ☐

(d) bidets?

Yes: ☐ **No:** ☐ **No opinion:** ☐

(e) kitchen sinks?

Yes: ☐ **No:** ☐ **No opinion:** ☐

Comments:

Q28. If temperature controls were introduced, subject to the preparation of a supporting Impact Assessment, to which types of work would you like to see regulations applied?

(a) the erection or extension of a dwelling or the creation of a dwelling by material change of use?

Yes: ☐ **No:** ☐ **No opinion:** ☐

(b) the erection or extension of a building with rooms for residential purposes (e.g. residential homes, hostels, hotels) or the creation of rooms for residential purposes by material change of use?

Yes: ☐ **No:** ☐ **No opinion:** ☐

(c) the erection or extension of any new building?

Yes: ☐ **No:** ☐ **No opinion:** ☐

(d) the replacement of a sanitary appliance and/or associated taps which are controlled fittings in any building?

Yes: ☐ **No:** ☐ **No opinion:** ☐

(e) the replacement of a sanitary appliance and/or associated taps which are controlled fittings in a dwelling?

Yes: ☐ **No:** ☐ **No opinion:** ☐

(f) the replacement of a sanitary appliance and/or associated taps which are controlled fittings in a building with rooms for residential purposes?

Yes: ☐ **No:** ☐ **No opinion:** ☐

Comments:

Q29. For vented hot water storage systems, we have proposed that systems incorporating one safety device in addition to the vent pipe and any thermostat would meet the requirements of G3(3). Do you agree that this is adequate to ensure the safety of people in the building?

Yes: ☐ **No:** ☐ **No opinion:** ☐

Comments:

Q30. For vented hot water storage systems, we have proposed that systems with a boiler overheat control would meet the requirement G3(3). Do you agree?

Yes: ☐ **No:** ☐ **Don't know:** ☐

Comments:

Q31. Should the provision for third party approval in paragraphs 3.18 be retained? Please provide reasons

Yes: ☐ **No:** ☐ **Don't know:** ☐

Comments:

Q32. Paragraphs 3.19 and 3.20 contain provisions on marking of unvented hot water storage systems that were previously included in BS7206 but not in the replacement standard BS EN 12897. Do you agree that the Approved Document should include provisions for marking of unvented hot water storage systems with:

a) the information listed in 3.19? If no please state which items should not be included and give your reasons?

Yes: ☐ **No:** ☐ **Don't know:** ☐

Comments:

b) the information listed in 3.20? If no please state which items should not be included and give your reasons?

Yes: ☐ **No:** ☐ **Don't know:** ☐

Comments:

Q33. Do you agree that unvented hot water storage systems over 45kW, but less than 500 litres in capacity are normally supplied by a manufacturer as packages or units?

Yes: ☐ **No:** ☐ **Don't know:** ☐

Comments:

Q34. If so should the provision for third party approval in paragraphs 3.18 be extended to cover these systems? Please provide reasons for your answer.

Yes: ☐ **No:** ☐ **Don't know:** ☐

Comments:

Q35. If the guidance permits the use of temperature resistant plastic pipes for the discharge pipe D2, will it be possible to adequately distinguish the pipe material from other plastic pipes in order to ensure that the correct grade of pipe is used? If Yes, please explain how this might be achieved.

Yes: ☐ **No:** ☐ **Don't know:** ☐

Comments:

Q36. It is proposed to permit the termination of a discharge pipe in a soil stack provided the soil stack is made from a suitably temperature resistant material. Do you believe it will be possible to ensure that a soil stack is made from a temperature resistant material particularly where the soil stack is in a service duct? If Yes, please explain how this might be achieved.

Yes: ☐ **No:** ☐ **No opinion:** ☐

Comments:

WCs and Associated Facilities

Q37. Requirement G4 (4) would apply to other buildings such as institutions, hotels etc which may be workplaces and covered by current requirements. Do you agree that the Building Regulations the right place for this Requirement and that this change would not impose additional costs or other burdens?

Yes: ☐ **No:** ☐ **No opinion:** ☐

Comments:

Q38. Are the changes to the wording of the guidance and the inclusion of diagrams 2 and 3 helpful in clarifying how WCs and associated hand washing facilities are provided in relation to kitchens in dwellings? If no, what alternative changes would you like to see?

Yes: ☐ **No:** ☐ **No opinion:** ☐

Comments:

Q39. References to other sources of guidance and standards on the scale of provision of WCs, urinals and hand washing facilities in buildings other than dwellings has been added to aid in the design of buildings. Do you agree it is appropriate and helpful to include this in Approved Document G?

Yes: ☐ **No:** ☐ **No opinion:** ☐

Comments:

Q40. Is it appropriate to include guidance on the performance of chemical and composting toilets in the Approved Document G?

Yes: ☐ **No:** ☐ **No opinion:** ☐

Comments:

Bathrooms

Q41. The application of this Requirement is currently limited to dwellings. Do you consider that there is a need for a new requirement for the provision of adequate bathing facilities in buildings containing rooms for residential purposes e.g. hostels, hotels etc.?

Yes: ☐ **No:** ☐ **No opinion:** ☐

Comments:

Food Preparation Areas

Q42. The introduction of a new Requirement has been proposed to align Part G with current practice. Stakeholders advise us that this will impose no new burdens. Do you agree that it would be beneficial to include this new requirement, and that it will introduce no additional cost or other burdens?

Yes: ☐ **No:** ☐ **No opinion:** ☐

Comments:

Sanitary Appliances

Q43. The Requirement to install appliances to allow adequate cleaning is currently limited to WCs, urinals and washbasins. Is it reasonable to extend this to include other appliances (and which ones)?

Yes: ☐ **No:** ☐ **No opinion:** ☐

Comments:

Q44. The Requirement to design appliances through the correct choice of profile and materials to allow adequate cleaning is currently limited to WCs, urinals and washbasins. Some stakeholders have suggested this should be extended to include baths, shower trays, sinks, bidets, taps and shower hoses/heads. Do you agree this is necessary?

Yes: ☐ **No:** ☐ **Don't know:** ☐

Comments:

Q45. Some stakeholders have suggested that there is no need for a Requirement on cleanability of baths, shower trays and cubicles, sinks, bidets, taps and shower hoses/heads. Do you agree?

Yes: ☐ **No:** ☐ **Don't know:** ☐

Comments:

Q46. If the Requirement (on cleanability), and the guidance, was either removed or was extended to include other sanitary appliances, would this have implications for products currently on the market? Please specify.

Yes: ☐ **No:** ☐ **Don't know:** ☐

Comments:

Q47. It has been suggested that we might consider new guidance for slip-resistance on shower and bath surfaces. This has not yet been included and your views are sought. Do you think guidance on this in Approved Document G would be appropriate?

Yes: ☐ **No:** ☐ **Don't know:** ☐

Comments:

Q48. If there is a place for this guidance, which surfaces and products might it cover?

(a) shower trays

Yes: ☐ **No:** ☐ **No opinion:** ☐

(b) baths

Yes: ☐ **No:** ☐ **No opinion:** ☐

(c) wet rooms

Yes: ☐ **No:** ☐ **No opinion:** ☐

(d) other products/surfaces

Yes: ☐ **No:** ☐ **No opinion:** ☐

Comments:

Impact Assessment

Q49. There are a number of proposed changes to Approved Document G. Those listed under Option 2 of the Impact Assessment are considered not to be a change in current practice and reflect guidance in standards and the Water Regulations Guide. Do you agree with stakeholder views that these changes would not lead to additional costs, and are you able to provide additional information on this?

Yes: ☐ **No:** ☐ **Don't know:** ☐

Comments:

Q50. The benefits and costs of introducing temperature control to sanitary appliances have been presented in this Impact Assessment. Do you think these benefits and costs are reasonably represented? If you are able to provide additional information for use in the modelling, please note this in the comments.

Yes: ☐ **No:** ☐ **No opinion:** ☐

Comments:

Q51. Introducing in-line blending valves to new build properties, extensions and changes of use impose significant costs which greatly exceed the financial benefits of this measure. Whilst we would like to support the introduction of these to control the temperature on bath taps in order to start addressing the most sever and fatal injuries from hot tap water associated with baths, we cannot justify a proposal to do this. Are you able to provide us with additional information to inform our assessment of the costs and benefits of these?

Yes: ☐ **No:** ☐

Comments:

Other Comments:
(eg. Do you find the Guidance helpful?)

Annex B to the consultation

The Code of Practice for Consultation

Consultation criteria

The Government has adopted a code of practice on consultations. The criteria below apply to all UK national public consultations on the basis of a document in electronic or printed form. They will often be relevant to other sorts of consultation.

Though they have no legal force and cannot prevail over statutory or other mandatory external requirements (e.g. under European Community Law), they should otherwise generally be regarded as binding on UK departments and their agencies, unless Ministers conclude that exceptional circumstances require a departure.

1. Consult widely throughout the process, allowing a minimum of 12 weeks for written consultation at least once during the development of the policy.
2. Be clear about what your proposals are, who may be affected, what questions are being asked and the timescale for responses.
3. Ensure that your consultation is clear, concise and widely accessible.
4. Give feedback regarding the responses received and how the consultation process influenced the policy.
5. Monitor your department's effectiveness at consultation, including through the use of a designated consultation co-ordinator.
6. Ensure your consultation follows better regulation best practice, including carrying out a Regulatory Impact Assessment if appropriate.

The full consultation code may be viewed at:
http://www.cabinetoffice.gov.uk/regulation/consultation/code/index.asp

Are you satisfied that this consultation has followed these criteria? If not, or if you have any other observations about ways of improving the consultation process please contact:

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