Ideal STANDARD

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Part G

A guide to compliance with 2009 building regulations for new homes.

part G
at a glance

From 1 October 2009 new dwellings and new dwellings created by a change of use of an existing building must comply with new building regulation. This guide is provided to help you quickly understand the new regulations and how Ideal Standard products can help you comply. Two key areas affect sanitaryware and fittings:

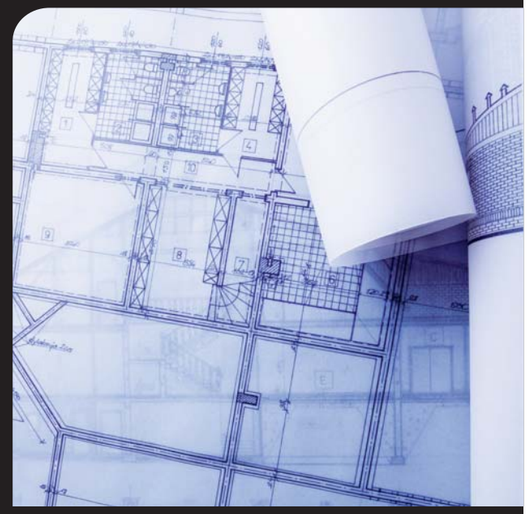
Water efficiency New homes must not exceed a new water efficency standard of 125 litres per person per day using the new 'water efficiency calculator'.

In the UK we use about 55%more water than we did 25 years ago*, and this is forecast to rise. It is all pure drinking water, yet 63% of it drains away in the bathroom. If, with every shower, bath or WC flush we save a little water, this mounts up to very large volumes conserved. The new building regulations require water saving to be planned into new homes. In this guide we explain how the water efficiency calculator works and which products to choose for the best ratings.

Hot water safety Baths in new homes are required to have thermostatic control of water temperatures. Water should not exceed 48˚C.

To prevent the risk of scalding all baths in new homes will be required to fit a device that limits the hot water temperature to a maximum 48˚C. Hot water needs to be stored at 60˚C or above in order to prevent growth of harmful bacteria – but at this temperature healthy adult skin can be scalded and the young and elderly are even more vulnerable. This guide will explain the options for meeting the new mandatory regulations.

*Environment Agency website



Ideal Standard guide:

This guide is provided to help you quickly understand Part G and the considerations you need to make when planning a building. It is not intended to be used in isolation and we would recommend you always consult the water regulations or planning officer before specifying any project.

The full Part G document can be downloaded at **www.planning portal.gov.uk.**

The Water Efficiency Calculator document can be downloaded at **www.communities.gov.uk.**

The Calculator

Part G introduces a new methodology and calculation tool, the **Water Efficiency Calculator for New Dwellings**. The new Calculator assesses the whole house water efficiency by using the manufacturer's stated performance against a number of generalised/assumed water usage patterns. This calculator is used for Part G and the Code for Sustainable Homes, replacing all previous published calculator tools.

Summary of water consumption targets for Part G and the Code for Sustainable Homes

Performance Target	Maximum 'Wholesome' consumption, litres per person, per day
Part G	125 litres
Code level 1–2	120 litres
Code level 1–2	105 litres
Code level 1–2	80 litres

How water consumption is measured
The calculated consumption figure is obtained by inputting the manufacturer's stated performance, of the specified fixtures and fittings, into the official new Water Efficiency Calculator tool. The Calculator contains predetermined daily water patterns that have been identified by BRE (Building Research Establishment).

The calculator multiplies each fitting's performance against a usage figure and for certain fittings adds on a 'fixed usage' figure.

The totals of all the house fittings are then added up and multiplied by a 'normalisation' factor. The sum is reduced by any positive effect from rain water or grey water recyling before being multiplied by a 'normalisation' factor of 0.91.*

Finally an automatic 5 litres of water is added on for Part G conformance to cover outdoor water usage.**

What is measured
The following list shows which fixtures and fittings are measured to calculate the water efficiency of a house and the performance information required.

WCs flushing capacity in litres (full and part for dual flush).

Taps and Mixers (inc. restrictors and regulators) full flow rate at 3bar dynamic.

Baths full capacity to overflow (excluding displacement).

Showers (inc. restrictors and regulators) full flow rate at 3bar dynamic delivered at 37°C.

Dishwashers litres per place setting as per energy label or assume 1.25 litres per setting.

Washing machine litres per kg of dry load as per energy label or assume 8.75 litres per kg.

External taps fixed usage of 5 litres per person per day. (Part G only, Code is assessed under WAT 2).

Multiple fittings
It is likely there will be more than one type of fitting, such as multiple WCs, installed within a project, however the Calculator tool requires just one performance figure to be entered. Additional tools are provided with the Calculator, to determine the average performance figure for 'multiple fittings'.

To encourage a consistency of water efficient products across the whole dwelling project, two methods of calculating the multiple fittings performance are required. The two derived performance figures, are then assessed against each other.

The first multiple fitting calculation is the **standard average** figure. When several stated values are presented, add them all together and divide them by the number of stated values. Example: (8 + 2 + 5) ÷ 3 = an average value of 5.

The second multiple fitting calculation is the **weighted average**. Multiply the highest performance value stated on your multiple fitting by 0.7. Example: flow rates, en-suite 8 litres per minute, cloakroom 2 litres per minute, bathroom 5 litres per minute. The en-suite tap is the highest figure so you multiply 8 x 0.7= 5.6.

When you have completed the two average calculation processes, compare them – the highest value is the one entered into the Calculator. In the two examples above, the weighted figure of 5.6 is higher than the average 5, so this is entered into the Water Efficiency Calculator.

With the introduction of the weighted average figure, the DCLG are ensuring that all of the fittings are water efficient and avoiding the installation of one mega-efficient product, to offset the performance of others.

* Normalisation Factor: the DLGC studied a cross-section of built and occupied Code for Sustainable Homes dwellings over one year and assessed the actual usage of the water efficient fittings. The results demonstrated that the real life usage was lower than the Calculator's assumed usage. The normalisation factor reflects real time patterns as users begin saving more water through changed behaviour.
**For Code compliance level 1–6, the 5 litres of external water use per day is not included, but section WAT 2 – External Water Use within the Code for Sustainable Homes is reverted to.

Installation type	Unit of measure	Capacity/ Flow rate column 1	Use factor x column 2	Fixed use + column 3	Litres/ person/day = column 4
WC single flush	Flush volume (litres)		4.42		
WC dual flush	Full flush volume (litres) Part flush volume (litres)		1.46 2.96		
WCs multiple fittings	Average effective flushing volume (litrres)		4.42		
Taps (not kitchen sink)	Flow rate (litres/minute)		1.58	1.58	
Baths (where shower also present)	Capacity to overflow (litres)		0.11		
Shower (where bath also present)	Flow rate (litres/minute)		4.37		
Bath only	Capacity to overflow		0.50		
Shower only	Flow rate (litres/minute)		5.60		
Kitchen sink taps	Flow rate (litres/minute)		0.44	10.36	
Washing machine	Litres/kg dry load		2.1		
Dishwasher	Litres/place setting		3.6		
Waste disposal unit	(litres/use)	1 or 0	3.08		
Water softener	(litres/person/day)		1.00		
					Total A
Deduct contributions from grey water and rainwater (separate calculation tables provided)					-Total B
Normalisation factor: (Total A – Total B) x 0.91					Total C
External water use: Total C + 5 litres					**Total Litres**

Bath capacity
The Water Efficiency Calculator requires the input of the capacity of baths up to the bottom of the bath overflow. Today there are a wide diversity of bath shapes and sizes and it is possible to purchase baths from Ideal Standard with a capacity as low as 116 litres (a typical average capacity for baths is around 190 litres).

To keep water usage down it is recommended that both a bath and a shower are installed in a dwelling. If there is only one bath or one shower it will be given a very high weighting.

Concept Arc 55cm basin; pedestal; close coupled wc with Arc cistern; 170cm water saving bath (right handed) with Ideal Waste System. Ceraplan single lever basin mixer, single lever bath filler.

WC flush volume
The calculator takes into account the amount of water required to flush WCs in the house. Modern WCs often require less water than they used to and by specifying a dual flush suite the smaller flush will be measured in a 2:1 usage ratio – dramatically reducing the amount of water consumed.

Tap and mixer flow rates
All taps and mixers inside the house are measured and they can account for high water consumption. Whether you need to reduce the flow rate on taps or mixers will be determined by the water pressure in the building. Most Ideal Standard mixers and pillar taps can be fitted with water regulators that either regulate the water into or out of the fitting.

Low flush WCs

As in most areas of water consumption it is important to balance the optimum use of water against the performance of the product. Some Ideal Standard WCs now flush on as low as 4/2.6 litres of water (dual flush). Although they perform well to the regulations it wouldn't be advisable to install these in an old property where the pipework between the house and the main sewer may block if low volumes of water are used.


Alto 4/2.6 litre close coupled WC suite


Concept Cube 4/2.6 litre close coupled WC suite

Water usage by WC flush

There is a big difference in water usage in the Calculator when using different WCs:

Cistern capacity	Water usage
6 litre	26.52 litres
6/4 litre Dual Flush	20.60 litres
4/2.6 litre Dual Flush	13.54 litres


New Studio Arc 4/2.6 litre close coupled WC suite


Concept 4/2.6 litre back to wall WC


Studio 4/2.6 litre close coupled WC suite.

4/2.6 litre dual flush = 13.54 litres per person per day

Close coupled WC suites	Bowl	Cistern	Seat and cover	Measurements
1. Alto	E753301	E754301	E759001	H.805 W.360 D.685
2. Concept Cube	E787101	E796901	E791801	H.780 W.365 D.665
3. Concept Arc	E787101	E785501	E791801	H.780 W.365 D.665
4. New Studio Cube	E801501	E796901	E791801	H.780 W.365 D.665
5. New Studio Arc	E801501	E785501	E791801	H.780 W.365 D.665

Back to wall WCs	Bowl	Conceala Cistern	Seat and cover	Measurements
Concept	E784901	S365867	E791801	H.400 W.365 D.550
New Studio	E801601	S365867	E791801	H.400 W.365 D.550

4.5 litre single flush = 19.89 litres per person per day

Close coupled WC suites	Bowl	Cistern	Seat and cover	Measurements
1. Alto	E753301	E592301	E759001	H.805 W.360 D.685
2. White	E000101	E592401	E002101	H.815 W.380 D.680
3. Create Drift	E301201	E592701	E303501	H.790 W.360 D.650
4. Create Edge	E301201	E592801	E303401	H.790 W.360 D.650
5. Jasper Morrison	E622001	E592901	E620301	H.815 W.360 D.705

Back to wall WCs	Bowl	Cistern	Seat and cover	Measurements
1. Alto	E757301	S427067	E759001	H.390 W.360 D.550
2. White	E000101	S427067	E002101	H.400 W.380 D.530
3. Create Drift	E301301	S427067	E303501	H.400 W.360 D.500
4. Create Edge	E301301	S427067	E303401	H.400 W.360 D.500
5. Jasper Morrison	E622101	S427067	E620301	H.400 W.365 D.545

Wall hung WCs	Bowl	Cistern	Seat and cover	Measurements
1. Alto	R341901	S427067	E759001	H.400 W.360 D.530
2. White	E000501	S427067	E002101	H.400 W.380 D.530
3. Create Drift	E301401	S427067	E303501	H.400 W.360 D.540
4. Create Edge	E301401	S427067	E303401	H.400 W.360 D.540
5. Jasper Morrison	E621701	S427067	E620301	H.400 W.365 D.560

Concept water saving bath, 118–149 litres

Water saving baths

The Concept water saving bath uses a clever design that takes into account you need less space at the foot end of the bath whilst bathing. The bath has a capacity of 116 litres and accounts for only 12.76 litres of water when there is a shower in the house as well. This compares with an average bath of 190 litres which would use 20.9 litres of water.

Alto 170 x 70cm bath, 149 litres

Low volume **baths**

It is still possible to enjoy a bath without using excessive amounts of water. Water saving baths save water by design: either the overflow is dropped down to reduce capacity or the shape is altered to reduce the bath's capacity but maintain the water depth.

Always ensure the house has both a bath and a shower as the water calculator will calculate a high consumption figure if there is only one fixture.

Bath	Code	Measurements	Volume in litres	Usage per person with shower	Usage per person with no shower
Concept Water Saving Bath LH Concept Water Saving Bath RH (Volume adjustable on installation)	E754301 E754301	H.805 W.360 D.685	118 130 149	**12.98** **14.30** **16.39**	59.00 65.00 75.50
Alto Water Saving Bath	E754301	H.805 W.360 D.685	118	**16.39**	74.50
Alto Contract Bath	E754301	H.805 W.360 D.685	118	**15.40**	70.00
Nisa Lowline Steel Bath	E754301	H.805 W.360 D.685	118	**13.53**	61.50

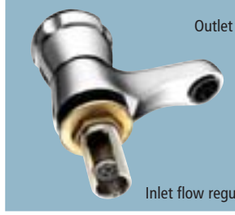
Reducing the flow

It is possible to reduce the flow from taps and mixers to achieve good performance whilst reducing the total house's water consumption. Consider having different flow rates in different rooms of the house. A cloakroom mixer does not require the same pressure for simple hand washing as a basin mixer that will be used to fill a basin.

Flow regulators

There are two types of flow regulator that can be fitted. Some mixers use outlet regulators that are screwed onto or fitted into (cache) the outlet; some taps and mixers use inlet flow regulators that are fitted into the base of the fitting. Regulators are available in 5, 4 or 2 litres per minute.

Outlet flow regulator



Inlet flow regulator

Cone basin mixer

The **Attitude** classic basin mixer and vessel basin mixer are supplied with a 5 litre per minute flow regulator which is fitted to the outlet if required.
Litres per person per day = **9.48**

Attitude basin mixer
A4592AA single lever, one taphole, basin mixer with pop-up waste

Attitude vessel basin mixer
A4755AA single lever, one taphole, vessel basin mixer – no waste

Attitude basin mixer

Ceraplan SL basin mixer

Silver basin mixer

Silver basin mixer

Basin mixer outlet flow regulator

Litres per minute	Code	Usage per person, litres
5 litres per minute	L6982NU	**9.48**
4 litres per minute	E6936NU	**7.90**
2 litres per minute/spray (cloakroom)	E6937NU	**4.74**

Cone basin mixer
B5107AA single lever, one taphole, basin mixer with pop-up waste

Academy basin mixer
E0106AA single lever, one taphole, basin mixer with pop-up waste

Ceraplan basin mixer
B7886AA single lever, one taphole, basin mixer with pop-up waste

B7887AA single lever, one taphole, basin mixer – no waste

Ceraplan Disc basin mixer
B8242AA single lever, one taphole, basin mixer with pop-up waste

Ceraplan Duo dual control basin mixer
B8247AA dual control, one taphole, basin mixer with pop-up waste

B8248AA dual control, one taphole, basin mixer – no waste

Ceramix basin mixer
A5410AA single lever, one taphole, basin mixer with pop-up waste

Basin mixer cache outlet flow regulator

Litres per minute	Code	Usage per person, litres
4 litres per minute	L6939NU	**7.90**

Jasper Morrison basin mixer
E6396AA single lever, one taphole, basin mixer with pop-up waste

Jasper Morrison vessel basin mixer
E6423AA single lever, one taphole, basin mixer with pop-up waste

Silver 3 taphole basin mixer
E0061AA single lever, one taphole, basin mixer with pop-up waste

E0062AA single lever, one taphole, basin mixer – no waste

Silver basin mixer
E0067AA single lever, one taphole, basin mixer with pop-up waste

E0068AA single lever, one taphole, basin mixer – no waste

Silver vessel basin mixer
E0069AA single lever, one taphole, basin mixer with pop-up waste

Silver dual control basin mixer
E0065AA single lever, one taphole, basin mixer with pop-up waste

E0066AA single lever, one taphole, basin mixer – no waste

Basin mixer inlet flow regulator

Litres per minute	Code	Usage per person, litres
6 litres per minute (pair)	S8011NU	**11.06**
4 litres per minute	L6935NU	**7.90**

Active basin taps
B8074AA standard pair basin taps

Ceraplan Duo basin taps
B8256AA standard pair basin taps

Kitchen mixer outlet flow regulator

Litres per minute	Code	Usage per person, litres
5 litres per minute	L6982NU	**9.48**
4 litres per minute	L6963NU	**7.90**

Cerasprint
B5344AA single lever monoblock mixer

Cerasprint
B5347AA single lever monoblock mixer with pull out spout

Ceravie
A3876AA single lever monoblock mixer

Ceravie
A3879AA single lever monoblock mixer with pull out spout

Shower flow outlet limiters

An uncontrolled shower can use a considerable amount of water under high pressure. Showers are highly penalised by the Calculator when there is no bath installed in the house.

Shower outlet regulators are fitted between the shower valve and the shower hose and head. Regulators are available to achieve a flow rate of 9, 8, 7, 6 or 5 litres per minute.

Litres per minute	Code	Usage, litres per person with bath in home	Usage, litres per person with no bath in home
9	L6749AA	**39.33**	50.40
8	L6961AA	**34.96**	44.80
7	L6960AA	**30.59**	39.20
6	L6959AA	**26.22**	33.60
5	L6938AA	**21.85**	28.00

Trevi Link exposed shower valve.

Thermostatic Bar Valves On exposed valves the flow limiter is fitted between the fitting and the hose.

Alto Ecotherm
A4740AA

Active
A4049AA

Trevi Link
A3543AA

Trevi Flight
A3550AA

also available:
Melange A4336AA
Attitude A4614AA

Exposed thermostatic concentric valves

Trevi CTV
A3101AA

Exposed manual valves

Trevi Blend A3086AA
Idyll Two A2700AA
Ceramix A5023AA
Ceraplan SL B3699AA
Alfiere N9788AA

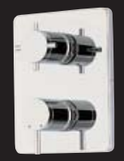
Built-in thermostatic shower valves On built-in valves the flow limiter is fitted between the fitting and the pipe.

Trevi CTV
A3102AA

Trevi TT Ascari
A3971AA faceplate
A3969NU TT valve body

Trevi TT Kurve
A3973AA faceplate
A3969NU TT valve body

Trevi TT Rivage
A3972AA faceplate
A3969NU TT valve body



Trevi TT Oposta
A3974AA faceplate
A3969NU TT valve body

Trevi TT Cone
A4020AA faceplate
A3969NU TT valve body

Trevi TT Silver
A3642AA faceplate
A3969NU TT valve body

Trevi TT Jasper Morrison
A6410AA faceplate
A3969NU TT valve body

Trevi TT Active
A4105AA faceplate
A3969NU TT valve body

also available with TT Valve body:
Attitude A4613AA
Melange A4290AA
Moments A3918AA

Built-in manual shower valves

Trevi Blend A4000AA
Idyll Two A9005AA
Ceramix A5026AA
Moments A3912AA

Solutions for safer bathing

The new requirement to provide safe bathing water delivered at a maximum temperature of 48˚C is a sensible one; it will hopefully save an average of 15 deaths, and many more serious burn injuries, each year. Water needs to be stored at 60˚C or more in the house and the young or old are particularly vulnerable if water is left uncontrolled at these temperatures. Ideal Standard offer two solutions to this problem – bath mixers with built-in thermostats and under bath thermostats.

Built-in thermostats

Bath mixers or bath shower mixers with built-in thermostats allow the user to alter the hot water input temperature using the mixer handle. These offer a very neat solution as everything is incorporated in the one fitting.

Built-in thermostats offer complete control and the selected temperature will remain constant even if someone turns on a tap elsewhere in the house. They also include Cool Body design, an additional safety feature, which means the fitting doesn't get hot and is always safe to touch.

Melange dual control thermostatic bath filler

Melange thermostatic
2 hole bath filler
A4283AA

Melange thermostatic
2 hole bath/shower mixer
A4284AA

Melange thermostatic
bath/shower mixer
A4337AA

Active thermostatic
rim mounted bath filler
A4053AA

Active thermostatic rim
mounted bath/shower mixer
A4054AA

Attitude thermostatic rim
mounted bath/shower mixer
A4616AA

Active thermostatic rim mounted bath filler

Under bath thermostat

Under bath thermostats are fitted under the bath, behind the bath panel; they control the water temperature into the hot inlet. The advantage is that they can be used with any standard bath fitting but the maximum temperature will be fixed and cannot be altered by the user. The under bath thermostat is TMV3 approved (Thermostatic Mixing Valve Scheme).

Code: S7436AA

Active thermostatic rim mounted bath/shower mixer

Recommendations in this guide are based on Ideal Standard's interpretation of information from Part G of the Building Regulations. The onus is on the specifier to ensure their designs are in line with current legislation and best practice, wherever possible by direct reference to relevant publications.

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