

# **Building Regulations Part G – Water Efficiency Calculations**

**Railshead Road, Twickenham**

**Produced for: Mizen**

**Produced by: AECOM**

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## 1 Introduction

The Water Efficiency Calculator for New Dwellings is the Government's national calculation method for the assessment of water efficiency in new dwellings in support of Building Regulations Part G 2009 and the Code for Sustainable Homes May 2009 and subsequent versions. The calculator tool assesses the contribution that each internal water fitting has on the overall water consumption of the whole house; this is measured in litres per person per day.

### 1.1 Calculation Procedure

The water efficiency tool multiplies each fitting's performance against a usage figured, which is produced by the BRE and calculates how often the fitting is used per person per day. The totals of all the dwellings fittings are then added up before being multiplied by a 'normalisation' factor of 0.91. This is a fixed figure, produced following a survey undertaken by the Department for Communities and Local Governments, which showed that actual water consumption in new dwellings, is lower than the calculators assumed usage.

Finally, for Building Regulations, an automatic 5 litres of water is added on to cover outdoor water usage. The outdoor water usage does not apply to Code for Sustainable Homes Assessments.

Where dishwashers and washing machines have not been specified, a default usage figure is applied. This is 8.17 litres per kg for washing machines and 1.25 litres per place setting for dish washers.

The BRE 'Water Efficiency Tool' has been completed using indicative fixtures/fittings and flow rates as exact specifications have not yet been produced.

## 2 Fitting Schedule

Fitting	Details	Water Consumption
<b>Basin Tap</b>	Flow restricted	3.8 litres/minute
<b>Kitchen Tap</b>	Flow restricted	3.8 litres/minute
<b>Shower</b>	Flow restricted	6 litres/minute
<b>Bath</b>	Kaldewei Eurowa	156 litres to overflow
<b>WC</b>	Dual flush WC	4/2.6 litre dual flush
<b>Dishwasher</b>	Not specified, default value used at this stage	0.91 litres/place setting
<b>Washer Dryer</b>	Not specified, default value used at this stage	8.17 litres/kg

### 2.1 Results Summary

Code for Sustainable Home Actual Water Consumption (litres/person/day)	88.2
Code for Sustainable Homes Level 4 (Mandatory Requirements)	105
Building Regulations Actual Water Consumption (litres/person/day)	93.2
Building Regulations Compliance Target (litres/person/day)	125

### 3 BRE Calculator Tool

#### WATER EFFICIENCY CALCULATOR FOR NEW DWELLINGS - (BASIC CALCULATOR)

	House Type:	Type 1	
	Description:		
Installation Type	Unit of measure	Capacity/ flow rate	Litres/ person/ day
Is a dual or single flush WC specified?		Dual	
WC	Full flush volume	4	5.84
	Part flush volume	2.6	7.70
Taps (excluding kitchen and external taps)	Flow rate (litres / minute)	3.8	7.58
Are both a Bath & Shower Present?		Bath & Shower	
Bath	Capacity to overflow	156	17.16
Shower	Flow rate (litres / minute)	6	26.22
Kitchen sink taps	Flow rate (litres / minute)	3.8	12.03
Has a washing machine been specified?		Yes	
Washing Machine	Litres / kg	8.17	17.16
Has a dishwasher been specified?		Yes	
Dishwasher	Litres / place setting	0.91	3.28
Has a waste disposal unit been specified?		No	
Water Softener	Litres / person / day		0.00
Calculated Use			97.0
Normalisation factor			0.91
Code for Sustainable Homes	Total Consumption		88.2
	Mandatory level		<b>Level 3/4</b>
Building Regulations 17.K	External use		5.0
	Total Consumption 17.K Compliance?		<b>Yes</b>

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