

Water Efficiency Calculator for New Dwellings (V1f - Aug 2010)

While it is believed that the information produced by this spreadsheet is correct, users must accept full responsibility for any problems, please report them to john@nottsbc.org

Part G of the Building Regulations 2009 and the Code for Sustainable Homes require an assessment of design water use. This calculator issued a standard calculation methodology on which this spreadsheet is based.

This calculator establishes potential water use from dwellings should be used in conjunction with the guidance contained in the approved calculation method

Instructions for Use

Using the standard methodology the following information is required to establish design water use.

(1) Flow rate from taps (excluding bath and bidet taps) at a standard three bar dynamic pressure (0.3MPa)

(2) Flow rates from showers at a standard three bar dynamic pressure (0.3MPa) at temperature of 37 C (l/min)

(3) Capacity of Baths (litres) (Note - as the calculation works on bath capacity, there is no need to include bidet taps in the "Taps - excluding kitchen taps" section of the calculator)

(4) Flushing Volumes for Dual and Single Flush WCs (litres)

(5) Water use per place setting for Dishwashers (litres)

(6) Water use per kg of dry load for Washing Machines (litres)

(7) Whether a Waste Disposal unit is attached to the sink (litres)

(8) The amount of water over the standard 4% allowance used per regeneration cycle if installed (litres)

(9) The capacity of any grey or rainwater harvesting system installed (litres)

This information should be available from the suppliers of these products and a table is provided below with guidance of the average flow rates and capacities

The calculation allows the use of grey or rainwater to reduce mains water demand

Part G limits design water use to 125 litres per person per day

Sheet 2 Contains a worked example and Sheet 3 Contains a blank worksheet where you can enter property details

Further information is available in Approved Document G of the Building Regulations and The Water Efficiency Calculator for new Dwellings' available from www.communities.gov.uk or www.PlanningPortal.gov.uk

Look up Table of Sample Values based on information from www.waterwise.org.uk

Component	Typical Consumption	Range of Consumption
Taps		
Basin	6 l/min	2 - 20 l/min
Kitchen	9 l/min	6 - 25 l/min
Baths		
Undersized	165 l	
Corner	140 l	
Shower	250 l	
Standard	225 l	

Roll Top	205 l	
Whirlpool Spa	225 l	
Washing Machines	8 l/kg	6-12 l/kg
Dishwashers	0.9 l/place	0.8 - 1.6 l/place
Toilets		
Single Flush	6 l	
Dual Flush	6l / 3l	

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Project Details

Address/Reference	10a Orleans Road, Twickenham	Case Reference	
Number of Bedrooms	2	Occupancy for Calculation Purposes	3

Appliance/Usage Details

Taps (Excluding Kitchen Taps)

Tap Fitting Type	Flow Rate Litres/Min	Quantity (No.)	Total per Fitting type
Basin type 1	5.70	2	11.40
			0.00
			0.00
			0.00
			0.00
			0.00
Total No. of Fittings (No.)		2	
Total Flow (l/s)			11.40
Maximum Flow (l/s)			5.70
Average Flow (l/s)			5.70
Weighted Average Flow (l/s)			3.99
Flow for Calculation (l/s)			5.70

Showers

Showers fitting Type	Flow Rate Litres/Min	Quantity (No.)	Total per Fitting type
Bathroom	9.50	2	19.00
			0.00
			0.00
			0.00
			0.00
			0.00
Total No. of Fittings (No.)		2	
Total Flow (l/s)			19.00
Maximum Flow (l/s)			9.50
Average Flow (l/s)			9.50
Weighted Average Flow (l/s)			6.65
Flow for Calculation (l/s)			9.50

Baths

Bath Type	Capacity to Overflow	Quantity (No.)	Total per Fitting type
Main Bathroom	170.00	1	170.00
			0.00
			0.00
			0.00
Total No. of Fittings (No.)		1	
Total Capacity (l)			170.00
Maximum Capacity (l)			170.00
Average Capacity (l)			170.00
Weighted Average Capacity (l)			119.00
Capacity for Calculation (l)			170.00

WCs

WC Type	Full Flush Volume	Part Flush Volume	Quantity (No.)
Standard Dual	4.50	0.00	2
Total number of fittings			2
Average effective flushing volume			4.50

Dishwashers

Dishwasher Type	L per Place Setting	Quantity (No.)	Total per Fitting type
Bosch	0.90	1	0.90
			0.00
Total No. of Fittings (No.)		1	
Total Consumption (l)			0.90
Maximum Consumption (l)			0.90
Average Consumption (l/s)			0.90
Weighted Average Consumption (l)			0.63
Consumption for Calculation (l/s)			0.90

Washing Machines

Washing Machine Type	L per Kg Dry Load	Quantity (No.)	Total per Fitting type
Bosch (Washer Dryer)	6.30	1	6.30
			0.00
Total No. of Fittings (No.)		1	
Total Consumption (l)			6.30
Maximum Consumption (l)			6.30
Average Consumption (l/s)			6.30
Weighted Average Consumption (l)			4.41
Consumption for Calculation (l/s)			6.30

Kitchen Taps

Tap Fitting Type	Flow Rate Litres/Min	Quantity (No.)	Total per Fitting type
Main Sink	7.40	1	7.40
			0.00
			0.00
Total No. of Fittings (No.)		1	
Total Flow (l/s)			7.40
Maximum Flow (l/s)			7.40
Average Flow (l/s)			7.40
Weighted Average Flow (l/s)			5.18
Flow for Calculation (l/s)			7.40

Other Fittings

Waste Disposal Y/N	Y
Water softner	
Consumption beyond 4% l/p/d	0.00

Use of grey water and harvested rainwater

Total Grey water from WHB taps (l)	0
Total Available Grey Water Supply (l)	180.65
Possible Demand (l)	99.36
Grey/Rain Installed Capacity (l)	
Figure for Calculation lit/person/day	0.00

Water Use Assessment

Installation Type	Unit	Capacity/ Flow Rate	Use Factor	Fixed use (l/p/day)	Total Use (l/p/day)
WC Single Flush	Volume (l)	0.00	4.42	0.00	0.00
WC Dual Flush	Full Flush (l)	0.00	1.46	0.00	0.00
	Pt Flush (l)	0.00	2.96	0.00	0.00
WC's (Multiple)	Volume (l)	4.50	4.42	0.00	19.89
Taps Exc. Kitchen	Flow Rate	5.70	1.58	1.58	10.59
Bath (shower present)	(l/s)	170.00	0.11	0.00	18.70
Shower (bath present)	(l/s)	9.50	4.37	0.00	41.52
Bath Only	(l)	0.00	0.50	0.00	0.00
Shower Only	(l/s)	0.00	5.60	0.00	0.00
Kitchen Taps	(l/s)	7.40	0.44	10.36	13.62
Washing Machines	(l/kgdry)	6.30	2.10	0.00	13.23
Dishwashers	(l/place)	0.90	3.60	0.00	3.24
Waste Disposal	(l/s)	1.00	3.08	0.00	3.08
Water Softner	(l/s)	0.00	1.00	0.00	0.00
Total Calculated Water Use (l/p/day)					123.86
Grey/RainWater Reused (l)					0.00
Normalisation Factor (Factor)					0.91
Total Consumption CSH (l/p/day)					112.71
External Water Use Allowance (l)					5.00
Total Consumption Part G (l/p/day)					117.71

Assesment Result

PASS



Bathroom Tap

ESSENCE 2-HOLE BASIN MIXER M-SIZ

5.7 l/m



Kitchen Tap

Vola KV1 Single Lever Basin Mixer

7.4 Litres Per Minute At 2 Bar



Bath

Duravit DuraSquare Inset Bath

170L Capacity



Shower

Rainshower Cosmopolitan 310

27 478 000

shower arm Rainshower 380 mm

28 361 000

9.5l/min

WC

Duravit ME by Starck Rimless Compact Wall-Mounted Pan

4.5l flush volume



Dishwasher

Series 6 Fully-integrated dishwasher 60 cm

Class A Energy Performance

9.5l



Washing Machine
Series 6 Washer dryer 7/4 kg