

Table A1: The water efficiency calculator

Installation type	Unit of measure	(1) Capacity/ flow rate	(2) Use factor	(3) Fixed use (litres/ person/ day)	(4) Litres/ person/day = [(1) × (2)] + (3)
WC (single flush)	Flush volume (litres)	/	4.42	0.00	
WC (dual flush)	Full flush volume (litres)	6	1.46	0.00	8.76
	Part flush volume (litres)	4	2.96	0.00	11.84
WCs (multiple fittings)	Average effective flushing volume (litres)	6	4.42	0.00	
Taps (excluding kitchen/utility room taps)	Flow rate (litres/minute)	/	1.58	1.58	
Bath (where shower also present)	Capacity to overflow (litres)	N/A	0.11	0.00	
Shower (where bath also present)	Flow rate (litres/minute)	N/A	4.37	0.00	
Bath only	Capacity to overflow (litres)	N/A	0.50	0.00	
Shower only	Flow rate (litres/minute)	5.6	5.60	0.00	31.36
Kitchen/utility room sink taps	Flow rate (litres/minute)	23.1	0.44	10.36	20.48
Washing machine	Litres/kg dry load	N/A	2.1	0.00	
Dishwasher	Litres/place setting	N/A	3.6	0.00	
Waste disposal unit	Litres/use	If present = 1 If absent = 0	3.08	0.00	
Water softener	Litres/person/day	N/A	1.00	0.00	
	(5)	Total calculated use = (Sum column 4)			72.44
	(6)	Contribution from greywater (litres/person/day) from Table 4.6			0
	(7)	Contribution from rainwater (litres/person/day) from Table 5.5			0
	(8)	Normalisation factor			0.91
	(9)	Total water consumption = [(5) - (6) - (7)] × (8)			57.95
	(10)	External water use			5.0
	(11)	Total water consumption = (9) + (10) (litres/person/day)			62.95

Consumption from multiple fittings

A8 Where terminal fittings with varying flow rates and capacities are specified (e.g. hot and cold taps with different flow rates, two types of shower etc.), the average consumption should be calculated as set out in Tables A2.1 to A2.7:

- Enter the full flow rate or volume of each type of fitting into column (a) of the relevant table.
- For taps, where there are separate hot and cold water taps, the flow rate of each tap should be entered separately as two tap types to calculate the average flow rate.
- Calculate the total consumption per fitting type.
- Calculate the average flow rate/volume of the fittings detailed.

- Enter the flow rate/volume of the fitting with the highest flow rate/volume into box (f) with the exception of WCs, where this step is not relevant.
- Calculate the proportionate flow rate/volume by multiplying the highest flow rate/volume by a factor of 0.7 with the exception of WCs, where this step is not relevant.

A9 Where the average flow rate/volume is lower than the proportionate flow rate/volume, the proportionate figure must be entered into Table A1. The proportionate figure limits the flow rate/volume that can be specified to a proportion equal to 70 per cent of the highest flow rate/volume. This reduces the benefit of specifying ultra low fittings to bring the average flow rate/volume down, where such ultra low fittings may not be acceptable to dwellings occupants.

A10 The figure which is the greater of the average or proportionate flow rate/volume should be used. This is so that, where the average flow rate/volume is significantly lower than the highest flow rate/volume specified, the calculation sets a limitation for what figure can be assumed.

Table A2.1: Consumption calculator for multiple taps (excluding kitchen sink taps)

	(a)	(b)	(c)
Tap fitting type	Flow rate (litres/min)	Quantity (No.)	Total per fitting type = [(a) × (b)]
1			
2			
3			
4			
(d)	Total (Sum of all quantities)		
(e)	Total (Sum of all totals per fitting type)		
	Average flow rate (litres/min) = [(e)/(d)]		
(f)	Maximum flow rate (litres/min)		
	Proportionate flow rate (litres/min) = [(f) × 0.7]		

Table A2.2: Consumption calculator for multiple baths

	(a)	(b)	(c)
Bath fitting type	Capacity to overflow (litres)	Quantity (No.)	Total per fitting type = [(a) × (b)]
1			
2			
3			
4			
(d)	Total (Sum of all quantities)		
(e)	Total (Sum of all totals per fitting type)		
	Average capacity to overflow = [(e)/(d)]		
(f)	Highest capacity to overflow (litres)		
	Proportionate capacity to overflow (litres) = [(f) × 0.7]		

Table A2.3: Consumption calculator for multiple taps (kitchen/utility room sink)

	(a)	(b)	(c)
Tap fitting type	Flow rate (litres/min)	Quantity (No.)	Total per fitting type = [(a) × (b)]
1 Mixer	33 (max)	1	33
2 Cold Water			
3			
4			
(d)	Total (Sum of all quantities)		1
(e)	Total (Sum of all totals per fitting type)		33
	Average flow rate (litres/min) = [(e)/(d)]		33
(f)	Highest flow rate (litres/min) (litres)		33
	Proportionate flow rate (litres/min) = [(f) × 0.7]		23.1

Table A2.4: Consumption calculator for multiple dishwashers

	(a)	(b)	(c)
Type of dishwasher	Litres per place setting	Quantity (No.)	Total per fitting type = [(a) × (b)]
1			
2			
3			
4			
(d)	Total (Sum of all quantities)		
(e)	Total (Sum of all totals per fitting type)		
	Average litres per place setting = [(e)/(d)]		
(f)	Highest litres per place setting		
	Proportionate litres per place setting = [(f) × 0.7]		

Table A2.5: Consumption calculator for multiple washing machines

	(a)	(b)	(c)
Type of washing machine	Litres per kg dry load	Quantity (No.)	Total per fitting type = [(a) × (b)]
1			
2			
3			
4			
(d)	Total (Sum of all quantities)		
(e)	Total (Sum of all totals per fitting type)		
Average litres per kilogram of dry load = [(e)/(d)]			
(f)	Highest litres per kilogram of dry load		
Proportionate litres per kilogram of dry load = [(f) × 0.7]			

Table A2.6: Consumption calculator for multiple showers

	(a)	(b)	(c)
Shower fitting type	Flow rate (litres/min)	Quantity (No.)	Total per fitting type = [(a) × (b)]
1 Airion Aspirate	8	1	8
2 electric 2.5kW	8	1	8
3			
4			
(d)	Total (Sum of all quantities)		16
(e)	Total (Sum of all totals per fitting type)		16
Average flow rate (litres/min) = [(e)/(d)]			8
(f)	Highest flow rate (litres/min)		8
Proportionate flow rate (litres/min) = [(f) × 0.7]			5.6

A11 Where more than one type of WC is provided, the average effective flushing volume is calculated using Table A2.7 below. The average effective flush volume should then be entered into Table A1 in the row 'WCs (multiple fittings)'.

Table A2.7: Consumption calculator for multiple WCs

	(a)	(b)	(c)
WC type	Effective flushing volume* (litres)	Quantity (No.)	Total per fitting type = [(a) × (b)]
1 Close coupled	6	2	12
2 Dual flush			
3 GL			
4			
(d)	Total (Sum of all quantities)		2
(e)	Total (Sum of all totals per fitting type)		12
Average effective flushing volume (litres) = [(e)/(d)]			6

* The effective flushing volume for dual flush WCs is:
(full flushing volume (litres) × 0.33) + (part flushing volume (litres) × 0.67)

$$(6 \times 0.33) + 0.67 \times 4 = 4.66$$

Ion exchange water softener

A12 Ion exchange water softeners use water in order to clean the resin that is used to absorb the mineral content of the dwelling's water supply. This cleaning process is referred to as the regeneration cycle, which occurs on a frequency dependent on the type of water softener specified and the hardness of the water. The water efficiency calculator looks at the water consumed per regeneration cycle that is beyond a level of good practice. The good practice level has been determined at a level of water consumption as a percentage of the water softener's total capacity which is set at 4 per cent.

A13 The figure entered into the calculator is the volume of water consumed beyond this level of good practice to promote the use of more efficient water softeners. Where the water softener achieves a percentage that is equal to, or lower than this good practice benchmark figure, zero can be entered into Table A1 of the calculator for water softeners. The following formula is used to determine the litres of water consumed per person per day that is beyond the good practice level of 4 per cent.