

# BALMORAL TANKS

Our products mean business



**Balmoral rainwater harvesting**  
Home-Harvest rainwater system™  
Garden-Harvest rainwater system™



# Balmoral Group

Balmoral Group is a privately owned business headquartered in Aberdeen, UK, and has been providing solutions to the offshore, energy, engineering, building, chemical and plastics sectors since 1980.

With offices in Aberdeen, Cardiff, Dublin, London and Manchester, the Group comprises three distinct business units: Balmoral Comtec Ltd, Balmoral Tanks Ltd and Balmoral Park Ltd.

The enterprise has been built upon research, development and technical innovation. It is this commitment to progress that has helped the company achieve its status as a market leader in its chosen fields of operation.

Balmoral is no stranger to best environmental practice and Best Available Technology Not Entailing Excessive Cost (BATNEEC). The company has, for a number of years, successfully operated two processes at Balmoral Park which are approved and strictly regulated by the Scottish Environment Protection Agency under Part B of the Environmental Protection Act 1990.

You can rest assured that products purchased or commissioned have been designed and manufactured with the environment in mind and with the conscious intention of creating minimal environmental impact.

## Quality Assurance

Balmoral Tanks Ltd is certified to BS EN ISO 9001 and the company's QA manuals are available for examination by all clients.



# Balmoral Tanks

Balmoral Tanks is one of the UK's leading design engineers and manufacturers of what is believed to be the most extensive range of tank products available from a single source. This is a result of significant investment in people and equipment.

Manufacturing processes include rotational moulding, hot pressed moulding, resin transfer moulding and hot pressed steel.

State-of-the-art equipment has been installed within the facility to ensure it has the ability to cope with the many application and industry demands of the rotational moulding process. Tanks ranging from capacities of 500 to 62,000 litres are currently produced, and it is this flexibility and wide product range which gives Balmoral Tanks its competitive advantage.

Balmoral Tanks manufactures a diverse range of products, although its main focus is in areas of civil engineering, drainage, fuel oil containment, chemical tanks and potable water storage for the mechanical and electrical industry.



# Harvest around 50% of your water needs

This chart shows the breakdown of water use in a typical household.

The Balmoral Home-Harvest and Garden-Harvest rainwater systems make it easy for you to gather and reuse this rainwater.

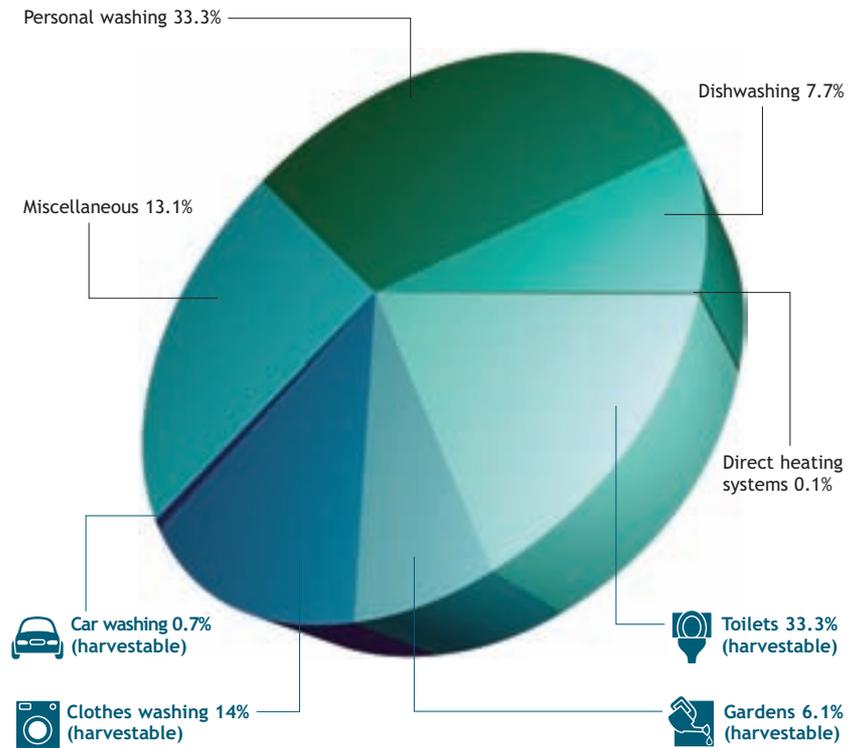
## Save on your water costs

By recycling your rainwater, a Balmoral rainwater harvesting system can help save up to 50% of your metered water costs. Meters are provided free of charge from most water companies so the sooner you fit a Balmoral system the sooner you start saving.

## Do your bit for the environment

Balmoral rainwater harvesting systems reduce the demand for mains water provision. Many springs and rivers are naturally fed by groundwater and are important for wetlands and their ecosystems. More than 25% of groundwater sources are at risk because of abstraction pressures.

By gathering and recycling rainwater, Balmoral's harvesting systems reduce the volume of discharged rainwater and contribute to reduced flood risks. The loading on combined sewer overflows is also lowered resulting in improved river water quality.



**Total 45.8% harvestable** (Source: Environment Agency)

## The ultimate underground rainwater harvesting tank



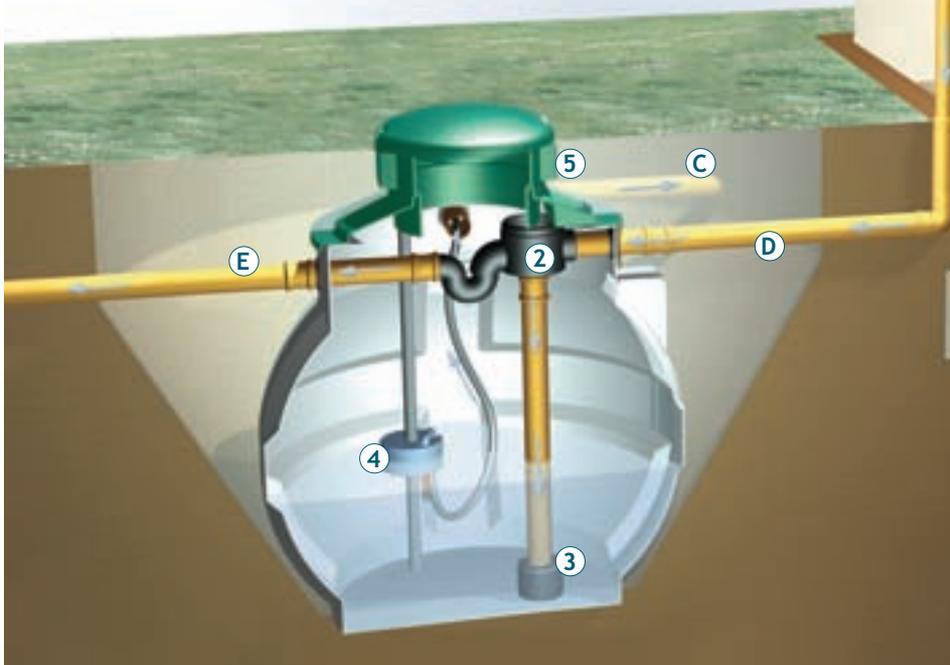
Feature
High impact strength at low temperatures
Single piece moulding with no joins
Lightweight
Corrosion resistant
UV protected
Stress free mouldings
Recyclable

Benefit
Tougher, easier installation
Leak proof
Easy to handle
Low maintenance
Gives longer life
Provides extra strength
Environmentally responsible

# Balmoral Home-Harvest Rainwater System™

The Balmoral Home-Harvest Rainwater System heralds a new level of quality and performance in domestic rainwater harvesting.

Designed for easy installation and reliable operation, each system provides the highest quality non-potable rainwater for toilet flushing, washing machines, garden irrigation and vehicle washing purposes.



- 1 Pump control unit
- 2 Filter assembly
- 3 Calmed inlet
- 4 Guided suction pipe
- 5 Telescopic turret
- A Mains bypass connection
- B Appliance connection
- C Suction line
- D Inlet
- E Inlet overflow

External pipework A, B, C, D and E are not supplied as part of the tank package.

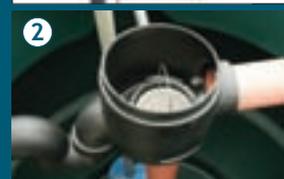
## 1 Pump control unit

Located inside the house	Easy access to all electro-mechanical parts
No pump in the tank	Simpler installation
Auto mains water backup	No loss of service. Does not refill tank from mains so less pipework and wasted water
Fully insulated cover	Quiet operation
10 litre break tank with air gap	Meets water regulations



## 2 Filter assembly

Lift out 0.2mm stainless steel filter	Improved water quality
Self cleaning filter	Low maintenance
Located within tank	Saves space. Easier installation and access
Overflow skimmer with U-bend overflow	Improved water quality
90% water yield	Saves more water



## 3 Calmed inlet

Minimises disturbance of settled matter	Improved water quality
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## 4 Guided suction pipe

Unique precision guided system ensures that water is taken only from the cleanest part of the tank	Improved water quality
Additional filter on suction inlet	Improved water quality
Precisely locates the tank low level sensor	Minimises wasted water



## 5 Telescopic turret

Adjustable height	Minimises installation depth. Allows a neat flush finish with the ground
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# Balmoral Garden-Harvest Rainwater System™

The Balmoral Garden Harvest Rainwater System is the complete rainwater harvesting system for garden irrigation use.

An easy to install, high performance and economic solution for the keen gardener providing free water, even during hosepipe bans, all year round.



- 1 Submersible pump
- 2 Filter assembly
- 3 Calmed inlet
- 4 Guided suction pipe
- 5 Telescopic turret
- 6 IP rated switch
- A Suction line
- B Inlet
- C Inlet overflow

External pipework A, B and C are not supplied as part of the tank package.



## 1 Submersible pump

Pump located in tank	Self contained easy installation
High power pump	High flow over long hose length
Remote On/Off switch	Convenient and simple operation



## 2 Filter assembly

Lift out 0.2mm stainless steel filter	Improved water quality
Self cleaning filter	Low maintenance
Located within tank	Saves space. Easier installation and access
Overflow skimmer with U-bend overflow	Improved water quality
90% water yield	Saves more water



## 3 Calmed inlet

Minimises disturbance of settled matter	Improved water quality
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## 4 Telescopic turret

Adjustable height	Minimises installation depth. Allows a neat flush finish with the ground
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# What size of tank do you need?

The size of a rainwater holding tank must match the demand for water with its availability as closely as possible. The tank size chosen must be a balance between budget, storage capacity and the need to enable an overflow at least twice a year to flush out floating debris. The Environment Agency publication 'Harvesting rainwater for domestic uses: an information guide' provides an authoritative and independent means of calculating the optimum size of tank for household water use and suggests that 5% of the annual rainwater supply, or of the annual rainwater demand, is used to determine the optimum size of tank, using the lower figure of the two.

## What is your annual rainwater supply?

$$\text{Tank size (litres)} = \text{Catchment area (m}^2\text{)} \times \text{Drainage coefficient} \times \text{Filter efficiency} \times \text{Annual rainfall (mm)} \times 5\%$$

Example =  $130\text{m}^2 \times 0.8 \times 0.9 \times 1125 \times 5\%$   
= 5,265 litres

### Catchment area

Is the width and length of your roof in m<sup>2</sup>. Remember you do not have to collect water from the entire roof. This can help to reduce installation costs.

### Drainage coefficient

It is difficult to collect every drop of rain that falls on your roof. Light rainfall will only wet your roof and then evaporate and heavy rainfall can overflow gutters. A drainage coefficient is used to adjust the tank size calculation to allow for this.

Roof type	Drainage coefficient
Pitched roof tiles	0.75-0.9
Flat roof smooth tiles	0.5
Flat roof with gravel layer	0.4-0.5

### Filter efficiency

During initial rainfall some rainwater will skim over the filter, clearing away any debris. During heavy flow some rainfall will also bypass the filter to overflow ensuring that the filter is not overloaded. 90% of rainfall is caught, therefore the Balmoral filter coefficient is 0.9.

### Annual rainfall

This can vary dramatically over a relatively small area, so a reading (in mm) within 10 miles of the property is preferable. The local Environment Agency or the Met Office can supply rainfall data or you can use the regional guide figures we have provided in the table below. In the 'annual rainwater supply example' above we have used the average figure for the UK.

Region	Average rainfall (mm)
UK	1125
S England	781
N England	944
Wales	1433
Scotland	1520
NI	1111
EIRE E	875 (source Irish Met service)
EIRE W	1125

## What is your annual rainwater demand?

On average, each person in the UK uses around 150 litres of water every day and 45.8% of this total could be rainwater instead of mains water.

$$\text{Tank size (litres)} = \text{Average usage} \times \text{people in household} \times \text{days/year} \times \% \text{ harvestable} \times 5\%$$

Example =  $150 \text{ litres} \times 4 \times 365 \times 45.8\% \times 5\%$   
= 5,015 litres

## What is the right tank for you?

Balmoral produces four tanks for domestic use so all you need to do is select the tank that best suits your needs. To help you we have calculated the correct size of tank for you based on your annual rainwater supply and your annual rainwater demand. Select the tank size from either table and if they indicate different tank sizes then you should choose the smaller of the two. These tables have been produced using the average annual rainfall for the region and assumes a pitched roof with a conservative drainage coefficient of 0.8. If your roof area is beyond the capacity of our largest tank or if the number of people indicates a smaller tank than your roof area will collect, then this is acceptable as it will mean that the tank will overflow more often, flushing out any floating debris.

# Tank size calculator

Calculate the size of tank required using the 'Rainwater supply' and 'Rainwater demand' tables below then select the smaller of the two tank sizes.

## Rainwater supply

Region	Roof size m <sup>2</sup>																		
	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230
South England	BST27				BST38				BST45				BST60						→
North England	BST27				BST38				BST45				BST60						→
Wales	BST27	BST38		BST45		BST60												→	
Scotland	BST27	BST38		BST45		BST60												→	<b>Balmoral tank sizes</b> <span style="border: 1px solid gray; padding: 2px;">BST27</span> <span style="border: 1px solid gray; padding: 2px;">BST38</span> <span style="border: 1px solid gray; padding: 2px;">BST45</span> <span style="border: 1px solid gray; padding: 2px;">BST60</span>
Northern Ireland	BST27		BST38			BST45			BST60										→
Eire E	BST27				BST38				BST45				BST60						→
Eire W	BST27	BST38		BST45		BST60												→	

## Rainwater demand

Tank	Number of people					
	1	2	3	4	5	6+
	BST27		BST38		BST60	



## Tank specifications

Home-Harvest Order code	Pop served	Capacity		Dimensions	
		Litres	Gallons	Dia	Height
BST-27-HH	1	2728	600	1860	2515
BST-38-HH	2	3800	836	2060	2755
BST-45-HH	3	4546	1000	2180	2885
BST-60-HH	4+	6000	1320	2380	3120

Garden-Harvest Order code	Pop served	Capacity		Dimensions	
		Litres	Gallons	Dia	Height
BST-27-GH	1	2728	600	1860	2515
BST-38-GH	2	3800	836	2060	2755
BST-45-GH	3	4546	1000	2180	2885
BST-60-GH	4+	6000	1320	2380	3120



## Other products from the Balmoral range

### Balmoral Continuous Aeration Plant (CAP)

The Balmoral Continuous Aeration Plant (CAP) offers an efficient, economic and environmentally friendly alternative to either septic tanks or other sewage treatment plant.

### Balmoral Sewage Treatment Plant (SBR)

The Balmoral patented Sequential Batch Reactor (SBR) combines the efficiency of activated sludge aeration with batch treatment to provide exceptional effluent quality even under extreme influent loadings.

### Balmoral fuel oil storage tanks

With sizes ranging from 500-10000 litres, Balmoral single skin, bunded and waste oil storage tanks are rotationally moulded in corrosion resistant polyethylene that is environmentally sensitive and cost effective. All tanks can be used to contain a variety of liquid products such as heating oils, diesel and non-potable water.

### Balmoral Bulk Liquid Storage

Balmoral bulk liquid tanks, available in capacities from 500-10000 litres, are rotationally moulded in one-piece to provide a seamless unit that is environmentally sensitive and cost effective.

### Superfill™ integrated fuelling station

Available in sizes from 500-10000 litres, Balmoral Superfill tanks are supplied with state-of-the-art pollution control and electronic filling/monitoring equipment - all safely stored behind a lockable 'front door'.

Providing a safe and efficient re-fuelling solution for the haulage, agriculture, plant and site industries, the Superfill range is easily the most comprehensive on the market.

## Contact Information

### Balmoral Tanks

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