



**Scottish
Water**
Always serving Scotland

Rainwater harvesting and other water reuse systems

A guide to safe installation and use

Scottish Water provides good, clean, safe and high quality drinking water to homes and businesses throughout Scotland, and we strive to ensure that the quality of tap water is maintained to the highest standard. We also support drives to use water wisely and efficiently, reducing water usage, costs and the carbon footprint and emissions associated with producing high quality water.

As many people proactively look at ways of using water wisely and more efficiently, the use of water reuse systems is becoming more popular. When installed, maintained and used correctly, such systems offer excellent options when considering efficiency measures. However, there are risks associated with these systems when they are misused or inappropriately altered or maintained.

This guide identifies some of the potential issues and offers guidance on how to make sure water reuse systems don't pose a risk to drinking water quality and health and safety.

Water reuse

Water reuse is the term used for systems we commonly know as water recycling or reclamation (reclaimed water). The purpose of these systems is to provide an alternative source of water that can be used in daily activities, appliances or processes which don't necessarily need to use fresh, high quality drinking water. The most common systems used in the UK are rainwater harvesting and greywater recycling.

Rainwater harvesting

Rainwater harvesting means collecting rainwater from surfaces such as roofs and diverting it to a collection tank which is normally sited underground. The collected rainwater can then be pumped through separate identified plumbing systems for flushing toilets, or to outside taps for washing the car or garden use and for use in some industrial processes.

Rainwater is likely to contain some animal and bird waste, in addition to traces of atmospheric and environmental pollutants. The level of contaminants will vary from site to site therefore some degree of contamination must always be assumed. Protection against such contaminants must be allowed for in the design of the reuse system.

Greywater recycling

Greywater is waste water from kitchen sinks, washing machines, wash hand basins, showers and baths, which can be collected then recycled for similar uses as rainwater, such as watering plants and washing the car. Waste water from these fittings and appliances will contain contaminants such as food waste, detergents, body fluids etc. and, just like rainwater harvesting systems, protection against such contaminants must be allowed for in the design.

What are the risks

Properly installed, maintained and operated water reuse systems present little risk to the end user. However, the possibility of Backflow of reclaimed water into the drinking water supply, and/or illegal or accidental cross connections between reuse systems and drinking water systems remain constant risks.

Backflow and cross connections present a high risk of contaminated water being used for drinking, cooking, brushing teeth and washing etc... This can lead to sickness or ill health.

How to protect against the risks

If you intend to install a water reuse system, make sure you use a competent installer who is familiar with water reuse systems and the requirements for their installation. As a first step you should consider using a Licensed Plumber or Contractor, one who is a member of a recognised National Licensing Scheme*. You can also access free information on the Water Regulations Advisory Schemes' web site. Visit www.wras.co.uk and under the "Publications" tab, look for Information and Guidance Note 9-02-04 "Reclaimed Water Systems".

Make sure your system is installed in compliance with the relevant British Standards, these are BS8515:2009 for rainwater harvesting systems and BS8525-1:2010 for greywater systems. These recently published standards cover the design, installation and maintenance requirements for water reuse systems and include water quality requirements for the end uses.

All reuse systems which contain a "back-up" supply from the public mains **MUST** comply with the requirements of the **Scottish Water Byelaws 2004**^{**}. Compliance with the Water Byelaws will ensure that adequate backflow protection at the back-up supply point is provided. In addition to this, all pipework will be properly identified, greatly reducing the risk of accidental cross connection. If you use a Licensed Plumber or Contractor, they will be able to issue you with a Byelaws Compliance certificate[‡].

Notification

As mentioned above, all water reuse systems which contain a back-up supply from the public mains must comply with the requirements of the Scottish Water Byelaws 2004. In order that we can be sure your proposed system meets these requirements, you can give written notification to Scottish Water prior to installation going ahead.

Why is this necessary? Scottish Water has a duty to ensure the Water Byelaws are complied with and this helps ensure the water supply, and public health, are protected. Scottish Water must be satisfied that these high risk systems cannot contaminate either our mains network or your drinking water supply, therefore we need your co-operation and support.

You can notify us in writing at: Scottish Water, PO Box 8855, Edinburgh, EH10 6YQ. Alternatively, complete an on-line notification form on our Water Byelaws page on our website at www.scottishwater.co.uk You can also contact the Water Byelaws team via email at byelaws@scottishwater.co.uk

Finally

Water reuse systems offer a good way to help save water. However, to ensure that drinking water quality is maintained, and that health and safety is protected, please follow these few simple checks to help guarantee systems are properly installed:

- Notify Scottish Water of the installation at an early stage;
- Select a design suitable for your needs or the needs of the end user;
- Ensure the installation complies with the Water Byelaws and there are no cross-connections;
- Follow the appropriate British Standard's; and
- Make sure users have a clear, in-depth understanding of the systems, particularly operation and maintenance requirements.

Scottish Water takes great care to provide good clean, safe and high quality drinking water. We want to work with you to ensure that everybody does everything they can to protect our water supplies in Scotland. By ensuring a properly designed, Byelaw compliant, reuse system is installed helps protect and conserve drinking water supplies.

* Scottish Water supports and promotes the Scottish and Northern Ireland Plumbers Employers Federation (S.N.I.P.E.F) Plumbing Industry Licensing Scheme. Please call S.N.I.P.E.F directly on 0845 224 0391 (Monday - Thursday 8.30am to 5 pm and Friday 8.30am to 4.30pm) and they will be able to recommend a registered plumber in your area. Alternatively details of their members can also be found on their website www.needaplumber.org

We also support the national Water Industry Approved Plumbers' Scheme (WIAPS). For full details of the scheme and to obtain a list of registered plumbers in your area visit www.wras.co.uk/plumber_scheme/

**Scottish Water Byelaws 2004 are made under section 70 of The Water (Scotland) Act 1980 and are intended to prevent Waste, Misuse, Undue Consumption and Contamination of the public water supply. They set out legal requirements for plumbing systems connected to the public water supply.

† Only Licensed Plumbers or Contractors can issue a Byelaw Compliance certificate. The issue of this certificate shows that the Plumber/Contractor's work complies with the Water Byelaws. If it later transpires there is non-compliance in the work covered by the certificate, the legal responsibility falls upon the plumber/contractor, not the owner/occupier.

For more information on Water Byelaws and tips on how to use water wisely visit www.scottishwater.co.uk or call our Customer Helpline on 0845 601 8855.