

**WRAS Newsletter** A newsletter to publicise issues relating to the Water Fittings Regulations and Scottish Byelaws, Water Supply Industry interpretations and the work done by WRAS.

To receive a copy directly or to send feedback comments, contact [newsletter@wras.co.uk](mailto:newsletter@wras.co.uk).

## Reaping the wrong type of Harvest!

Families living in an eco-home development were drinking water contaminated with stored rainwater.

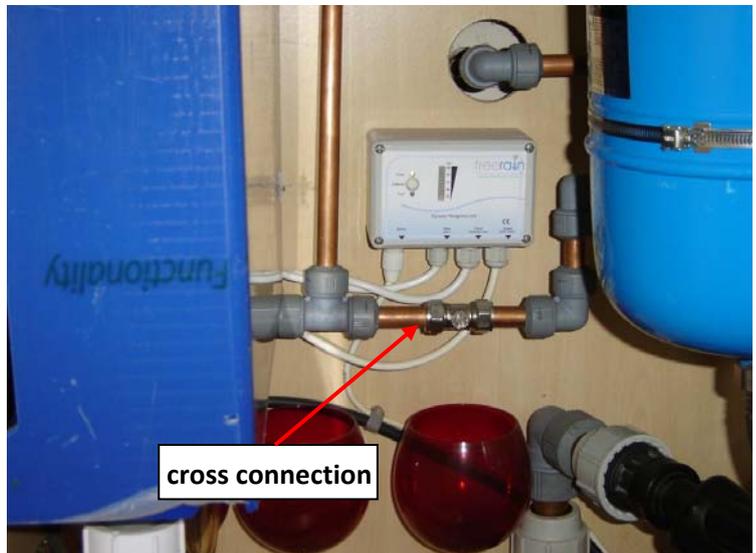
Residents living on an eco-home development in eastern England were drinking mains water contaminated with stored rainwater, as a result of a direct cross connection between the drinking water supply and the rainwater harvesting system installed in their homes.

Alerted by a complaint that the tap water smelt of sewage, a water supplier was deeply concerned to discover e.coli in the drinking water supply of a property. Having carried out a regulations inspection of the property the water supplier identified a cross connection between a rainwater harvesting system and the mains supply as the likely source of the contamination.

Having identified an illegal connection in one property the water supplier's attention was immediately drawn to the other 149 homes with rainwater harvesting systems on the site. All were subsequently inspected and the same cross connection found in an additional 86 properties.

The system installed was a proprietary rainwater harvesting system of a design, which had it been installed correctly would have satisfied the requirements of the Water Fittings Regulations and Scottish Byelaws. However in all 87 affected homes one firm of contractors had made a cross connection between the rainwater harvesting system and the mains drinking water supply, suggesting persistent and deliberate deviation from the manufacturer's installation instructions.

In all cases the only means of separating the supplies was an isolation valve, which in three properties was found in the open position. An isolation valve is not a recognised backflow prevention device and the installers committed criminal offences by creating a cross connection without adequate backflow prevention. The Water Fittings Regulations and Scottish Byelaws require fluid category 5 backflow protection, usually by using a Type AA or AB air gap, between mains and reclaimed water.



Cross connection between domestic drinking water supply and rainwater harvesting system

Other breached identified included inadequate marking of the pipework to distinguish the rainwater system from the drinking water pipes and one installation an inadequate air gap in a cistern which had both mains drinking water and rainwater entering it. (Continued on page 2)

## INTERPRETATIONS

The WRAS Technical Committee have endorsed several interpretations suggested by the Regional Technical Support Groups-

**Spa and Floatation tanks** all spa pools and floatation tanks pose the same level of risk as swimming pools and should be categorised as fluid category 5.

**Whirlpool baths** designed for use by one or two bathers, filled and emptied between uses should be considered a fluid category 3 risk - unless installed in healthcare premises where they should be regarded a fluid category 5 risk.

**Hose union taps** at the side of swimming pools, floatation tanks, whirlpool and spa baths supplying a hand held hose used for topping up and washing down in domestic

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## News in Brief

Several changes have been made to WRAS publications and advice notes in the last few months, all of which are available from the WRAS website:

### New:

Advice on preventing frost damage in caravan holiday homes.

A warning to caravan and park homeowners and site managers about the use of antifreeze

Clarification of the status of BS 6700

Information regarding the 'Water Widget'

A risk assessment tool to assist local authorities in enforcing the Private Water Supplies Regulations (2009)

Replacing the 'Fancy a drink' video with a new WRAS DVD 'H<sub>2</sub>O...! What ARE you drinking?'

### Revised:

WRAS IGN 9-02-05 Marking of reused water pipe work

Updated information regarding products manufactured from EPDM

### Withdrawn

WRAS IGN 9-04-03 'Laying pipes in contaminated ground' (see page 4 for further information.)

## NJUG Volume 1 Publication

Having obtained assurances that the issue of possible permeation between gas and water services was given consideration when NJUG recently revised its guidance regarding the positioning and colour coding of underground services, it has been agreed that moving forward the revised NJUG recommendations made in Volume 1 can be used to demonstrate compliance with the requirements of G4.15.

## WHO publication – Water Safety in Buildings

providing guidance for managing water supplies in buildings is available to download from

[http://www.who.int/water\\_sanitation\\_health/publications/2011/9789241548106/en/index](http://www.who.int/water_sanitation_health/publications/2011/9789241548106/en/index).

## INTERPRETATIONS (continued from page 1)

### Hose union taps (cont.)

properties may be considered as a fluid category 3 risk - providing that the hose is fitted with a self-closing trigger, the hose outlet is not immersed in the pool, drains or any other fluid and an air gap is maintained at all times.

For the purposes of this interpretation a domestic installation is considered to be a bath, pool or tank used by the occupants of a single privately owned or rented property for their and their friends personal use.

Hose union taps used in the same way in non-domestic premises, providing the same conditions are met, may be considered as a fluid category 4 risk.

**Closed heating systems** (primary circuits) in a mobile home or caravan containing ethylene glycol (anti freeze) is no different to any other domestic property and should be considered as a fluid category 3 risk.

Filling or topping up such systems using a filling loop would therefore be acceptable provided that a double

check valve is installed on the supply pipe connection and remains in place when the filling loop is disconnected.

**Tapes used to wrap pipe and fittings** as plastic pipe and fittings are susceptible to permeation by hydrocarbons, including those present in the adhesive glues and mastics used in tapes for wrapping pipe and fittings, it is recommended that such products only be applied to plastic pipe if the pipe incorporates an aluminium layer or is under-wrapped with aluminium foil.

**WIS 4-32-19** it has been agreed that pipe and fittings which comply with WIS 4-32-19 meet the requirements of the Water Fittings Regulations and Scottish Byelaws. However to gain WRAS Approval products will still have to satisfy the Regulators' Specification.

**Caravan disinfection requirements** caravans fed by a privately owned distributing pipe are considered to be single occupancy dwellings and as such only require disinfection in specific circumstances (refer to G13.2 for further information).

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## Getting it RIGHT – The Do's and Don'ts of installing a rainwater harvesting system

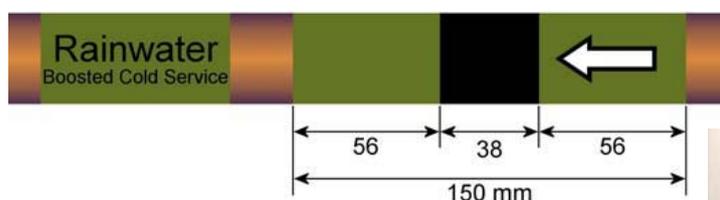
Always install in accordance with the manufacturer's installation manual – systems should never be adapted or altered without firstly consulting with the local water supplier.

Do not install any direct cross-connections between mains and any alternative water supply. Rainwater like all other reused water is considered a fluid category 5 risk requiring the highest level of backflow protection.

Rainwater harvesting systems usually have a mains water back-up to provide water during dry weather. This connection must have fluid category 5 back flow protection, provided by a suitable air gap.

Be aware that in addition to any point of use protection the water supplier may require the installation of a double check valve either at the boundary or on the incoming supply.

Both internal and external pipework carrying reused water including rainwater MUST be made clearly identifiable. Please refer to WRAS IGN 9-02-05 for further information.



Examples of internal and external marking of domestic pipework conveying rainwater



Labels and marked plastic pipe which satisfy the recommendations made in the WRAS IGN are now widely available. If not using pre-marked pipe, labels should be attached at a maximum of every 0.5m and at key connection points.

Consider further training. All the water supply industry approved contractors' schemes are currently working on the development of an 'alternative water supply systems' training module.

As well as the WRAS IGN, BS 8515:2009 'Rainwater harvesting systems – Code of practice' is a valuable source of advice and information providing guidance on the design, installation, testing and maintenance of rainwater harvesting systems supplying non-potable water in the UK.

## What is a WRAS Product Approval?



Following the creation of WRAS Limited, in April 2009, the administration of the Water Industry's Approval Scheme became the sole responsibility of WRAS.

WRAS Approval is not a compulsory requirement in the UK but one of the ways in which compliance with Regulation 4 of the Water Supply (Water Fittings) Regulations and Scottish Water Byelaws can be demonstrated.

WRAS Approval is however unique in that it is the only approval granted by the Water Industry, the same authorities which have the legal duty to enforce the regulations and make decisions about the acceptability of a fitting.

WRAS product or fittings approval is only granted to fittings that satisfy the Regulators' Specification and other reasonable performance requirements to achieve the objectives of the Regulations. A full list of the tests which make up the Regulators' Specification as well as examples of what testing is appropriate to particular products can be found on the WRAS Approval Process page on the WRAS website

[www.wras.co.uk/approval.asp](http://www.wras.co.uk/approval.asp)

WRAS product approvals are usually valid for five years with all currently approved products listed in the fittings section of the WRAS Water Fittings & Material Directory, published on the WRAS website, where it can be viewed free of charge.



Examples of some of the many types of product approved by WRAS.

The Water Supply Industry not WRAS grant approvals, WRAS only processes applications in accordance with the Scheme's acceptance requirements for WRAS product approval. WRAS does not carry out testing and is independent of all test facilities.

Whilst the Scheme only accepts test reports from suitably accredited test facilities, applicants are free to choose any suitably accredited test facility to undertake the testing appropriate to their product.

Irrespective of whether or not an approval is ultimately granted WRAS charges a set fee to either the organisation submitting a completed technical file (application form, test reports and supporting documentation) or to the applicant for processing the application.

The cost and scheduling of mechanical and water quality testing is determined by the test facility contracted by the applicant to carry out the work. WRAS recommends that applicants obtain a number of quotes for testing as costs and timescales can and do vary.

Further information about the WRAS Approval process, including details regarding accreditation and sampling requirements can be found in the WRAS Approval Guidance documents, which are published on the WRAS Approval Process page on the WRAS website

[www.wras.co.uk/approval.asp](http://www.wras.co.uk/approval.asp).

## Installation Requirement & Note (IRN)

Whilst an Installation Requirement & Note (IRN) is an integral part of a WRAS product approval its importance is often, unfortunately, overlooked.

An IRN details the installation and any other requirements that apply to a product as a condition of its WRAS product approval.

All WRAS product approvals are subject to one or more IRNs; these are identified in both the directory entry and approval documentation. Only when a fitting is installed in accordance with these conditions and requirements does it comply with the requirements of the Water Supply (Water Fittings) Regulations in England, Wales and Northern Ireland and Water Byelaws in Scotland.

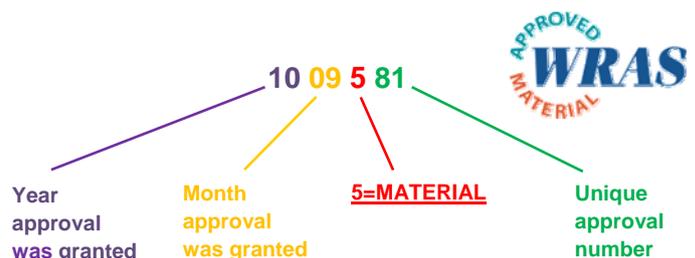
A full list of IRNs can be accessed from the approved fittings page of the WRAS Water Fittings & Material Directory [www.wras.co.uk/Directory/Fittings\\_Search.asp](http://www.wras.co.uk/Directory/Fittings_Search.asp)

## Understanding Approval numbers

All WRAS Approved products and materials are given a unique 7 digit approval number.

WRAS Product approval is only granted to those fittings which satisfy both the mechanical performance requirements and BS 6920 parts 1-3 testing of the scheme.

WRAS Material approval is only granted to non-metallic materials, including hoses and liners which satisfy the requirements of BS 6920 parts 1-3. If the 5<sup>th</sup> digit in the approval number is a 5 then it's not an approved fitting but an approved material – remember no mechanical testing is undertaken to obtain a material approval



## Prosecutions



### Veolia Water advises developers to only use water-industry approved plumbers

A developer was fined £500 by Hertford Magistrates Court and ordered to pay £750 costs after pleading guilty to two breaches

of the Water Supply (Water Fittings) Regulations 1999.

The plumber he employed to provide a new water supply to an office redevelopment failed to sever the existing connection to a building in a neighbouring street, creating a cross connection between two water mains.

If only the developer had used a plumber approved by the Water Industry Approved Plumber's Scheme he would have not only had the peace of mind that the work had been done properly but more importantly he could not have been prosecuted.

In a separate case Dwr Cymru/Welsh Water prosecuted a Swansea laundry for two related offences under s73 Water Industry Act 1999 and a third offence under the Water Supply (Water Fittings) Regulations 1999.

The owner was given notice of the breaches and infringements as far back as June 2009, but in spite of several re-inspections and a number of letters over the following 10 months failed to carry out the remedial work. Magistrates imposed a fine of £650 for each offence and awarded costs to the prosecution, totalling £2511

## Addition to the WRAS Guidance

The Scheme is always looking into ways of developing and improving the approval process for all those involved.

Part of this review process has identified the need to clarify 'who does what', so that everyone, including the applicant, is aware of their responsibilities and understand their role. To remedy this situation the Scheme has, with the co-operation of the two test laboratories that regularly prepare and submit applications, WRC-NSF Ltd and Kiwa Quality Services (UK), developed a new guidance document - 'Overview of the roles & responsibilities of those parties involved in the process for gaining WRAS fittings approval'.

It is hoped that the publication of this document – which also identifies suggested timescales for specific stages of the process - will increase awareness and streamline the process, improving the experience of those seeking WRAS Approval.



Question: Is a temporarily disconnected system still subject to the Water Supply (Water Fittings) Regulations 1999?

Answer: Yes, Regulation 2(1) stipulates that fittings which are '**intended**' to be installed or used with mains supplied water are subject to the requirements of the Regulations. Consequently if a system is temporarily disconnected, for example for maintenance, then the Regulations still apply and must be complied with.

## New guidance for laying pipes in brown field sites

When WRAS first published IGN 9-04-03 'Laying Pipes in Contaminated Land' the recommendations it made were based upon the best available advice.

However this resulted in the adoption of threshold levels which took into consideration a range of risks and not just those which could affect the integrity of the water supply.

Not wishing to be seen to offer advice on matters which could be seen as outside of its remit the Scheme has always acknowledged that this particular publication should be reviewed when, more appropriate guidance become available. Which is exactly what happened when UK Water Industry Research Ltd (UKWIR) recently published new guidance entitled "Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites".

The new UKWIR report, unlike previous publications, has separated the requirements of the Water Supply (Water Fittings) Regulations from other issues, such as health and safety, a change in approach which has resulted in significant differences to the process for selecting suitable pipe material. No longer are contaminants such as cadmium, arsenic and cyanide included, now the focus is organic compounds.

Having reviewed the new UKWIR guidance the WRAS Technical Committee have concluded that the advice and values it provides are more appropriate than that given in the WRAS IGN and in the circumstances agreed that the WRAS publication should be withdrawn.

In its place it is intended to publish a replacement IGN which will summarise the advice given in the UKWIR report as well as offering general guidance in respect of below ground installation.

Copies of the UKWIR Guidance (Ref 10/WM/03/21 ISBN 1 84057 5697) are available from UKWIR <http://ukwir.forefront-library.com/reports/10-wm-03-21/93452>

## Bob the plumber – the end of an era

Bob Chambers, Byelaws and Regulations guru, retired at the end of March.

After joining Bristol Water in 1979, Bob progressed to senior inspector and Byelaws Manager and became a regular on the byelaws/regulations scene. In the early days of Regulations he helped to develop the curriculum for NVQ qualifications in Water Fittings Regulations.



Bob has always been a keen supporter of, and contributor to, the work done by WRAS. Since its inception he chaired the WRAS Technical Support Group Southern Region, he served on the WRAS Technical Committee and the WRAS Product Assessment Group, of which he was Chairman for the last nine years. He also represented the water supply industry and WRAS on various British and European standards working groups including those reviewing BS 6700 and BS EN 806.

Bob's contribution to the world of regulations will be greatly missed by all, and so on behalf of the industry WRAS would like to thank Bob for all his advice and assistance over the years and wish him a very long and happy retirement.