

# Cisterns and Tanks

## As Time Goes By

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An insight as to how new regulations, product standards, codes of conduct and appropriate product application have provided great benefit to water customers and why they remain under constant review.

In a traditional industry such as water engineering and supply one might think nothing much changes when viewed from a consumer aspect. Water still flows out of the tap on demand.

However the last ten years has seen considerable activity behind the scenes, resulting in a safer, more efficient water product and the ATCM and its cistern and tank manufacturers have played their part.

From participating in drafting British and European cistern product standards to the dissemination and adoption of these advances in delivering value for money products whilst providing practical guidance as to product application and design, encompassing the requirements of the new Water Regulations, the ATCM and its members have been most proactive.



BS 7491, Parts 1 to 3 (GRP cisterns for cold water) was published in the early 90's only to be superseded in 2001 by European Standard BS EN 13280, encompassing in one document both One Piece and Sectional GRP cistern products. Members are currently engaged in redrafting BS 4213, (Thermoplastic cisterns for cold water), to be published in 2004.

At the instigation of the ATCM and in partnership with the Water Regulation Advisory Scheme a WRAS Information and Guidance Note has been published in December 2003 providing

practical design guidance for mains inlet supplies to cold water cisterns and how to achieve appropriate backflow protection measures for the full range of Fluid Categories 1 to 5.

It is the aim of this advisory document to provide a simplified and unified route through the Regulations related to ‘backflow’ in order the Project Consultant, Tank Designer, Manufacturer, Contractor, End Client and most importantly the Water Inspector can all sing from the same song sheet.

Elements within the Regulations still give rise to further debate and interpretation, namely; is it allowable to screen Type ‘AB Weir Spill Slots and is it a requirement to insulate all water tanks whose purpose is the containment of wholesome water? Taking each in turn,

### **Type ‘AB Air Gaps**

The Regulations are quite specific; the slot opening requires to be ‘unrestricted’. Category 5 fluids present a serious health hazard and an open weir slot is appropriate as further contamination of a tank's content is of no concern. Industrial cisterns, butchery and meat trades, laboratories, grey water recycling systems, etc., etc. are the listed examples.

All very reasonable one might think. But what about industrial cisterns requiring to maintain their contents at a potability standard? Food processing, soft drinks factories to name but a few.

The Regulations state this to be a Fluid Category 5 risk and Type ‘AA’ or Type ‘AB’ protection must be installed. The only practical course of action for a Type ‘AB’ is to appropriately screen the open spill slot. The WRAS IGN publication mentioned previously provides the necessary guidance on this topic, which should minimise the potential for inconsistent opinion, protracted debate potential project delay and increased costs.

### **Water Tank Insulation – Is it required?**

The Regulations are quite specific. The answer is yes. Schedule 2-16(4c) advises “every storage cistern shall be fitted with thermal insulation to minimise freezing or undue warming”.

The European Drinking Water Directive advises a 25 deg. C maximum, The UK adopted a more conservative 20 deg. C. to take it below the level at which legionella bacteria can multiply.



It's not difficult to accept the need for cistern insulation when considering a domestic household loft environment (hot in summer, freezing in winter) however no statutory or advisory insulating properties or performance are provided.

Larger tanks may be in a different category dependant on their shape and overall holding capacity. Environmental conditions do not have such a significant effect as is possible with smaller cisterns and tanks.

However the general recommendation is that all cisterns and tanks containing wholesome water be insulated against the influences of environmental conditions.

Cisterns and tanks subject to freezing conditions should also have all exposed pipework insulated and a low powered immersion heater installed below the inlet float valve controlled by a frost stat, thus preventing ice formation at the water surface and ensuring valve freedom of movement at all times.

Further information of the purpose and objectives of the ATCM is available at [www.atcmtanks.org.uk](http://www.atcmtanks.org.uk) or contact the Association of Tank and Cistern Manufacturers, 22 Grange Park, St. Arvans, Chepstow, NP16 6EA.

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