The Rodin Group Ltd
the water friendly company

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Waterless Urinals Information sheet

About Urinals and Water

A standard urinal that is not flushed regularly will soon smell and eventually block up. Urine reacts with water, including water vapour in the air to produce ammonia, which has a strong odour. A urinal that is flushed every 3 minutes (the typical time it takes to fill a cistern) is unlikely to smell or block. However, a urinal that is unregulated is very expensive to operate and is bad for the environment.

A consequence of reducing the frequency and quantity of water passing through the waste pipes is that problem odours and blockages can result. Reducing flush frequency without serious negative consequences is achievable but it is necessary to find the right balance between reducing expenditure on water and increasing expenditure on maintenance. A rule of thumb is that a standard urinal should be flushed through within 20 minutes of use. Urinals with flush controllers tend to block more frequently than those that are flushed every few minutes.

Most blockages in urinal waste pipes are caused by uric acid salts that are contained in urine combined with the minerals dissolved in the water. Washrooms with naturally "soft" or artificially softened water are likely to experience fewer problems with blockages than those with hard water as there are fewer carbonate minerals dissolved in the water. When urine and hard water are static in the waste pipes, they combine to coat the pipework with a hard scale.

Over time, layer upon layer is added until the pipe blocks. The coating also provides an ideal medium for bacteria to develop and lead to odours.

How Waterless Urinals Avoid Blockages

Waterless urinals as their name suggest do not use any water to flush the urinals hence there is no hard water entering the waste pipes and therefore nothing for the urine to combine with to produce the scale and coat the pipework. Instead of hard scale, untreated and static urine eventually forms a soft sludge. In addition, hair and other debris inevitably enter the waste pipes and attract fats in urine that can also cause blockages and foul odours but is considerably easier to combat than the combination of urine and limescale.

Waterless urinals using the 'barrier fluid method' in the form of a cartridge collect debris so that there is less chance of a blockage forming within the waste pipes. The cartridges collect hair and other debris and are changed to prevent them from entering the pipework at all.

To avoid the problems of sludge build-up it is important to ensure the urine flows as quickly as possible through the urinal waste pipes to the main drain. To ensure 'free flow', the trap or u-bend usually found under the urinal is replaced with a right-angled pipe so that urine and debris cannot collect. For this method to work well, waste pipework should be near perfect in terms of the gradient (fall). It is very important to have clean pipes connected without any ridges behind which urine and debris can collect.

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How Waterless Urinals Avoid Odour Problems

There is no reason for any urinal to smell, regardless of whether it is a waterless one or a conventionally flushed urinal.

The primary cause of odours existing in washrooms is a result of inadequate cleaning regimes that fail to remove the bacteria either behind or underneath the urinal bowl and allows odour to develop. The inside of the urinal bowl needs to be cleaned regularly too. Many people are concerned that by not flushing the urinal bowl regularly, the bowls themselves become less hygienic and more likely to develop odours.

In fact, it is the minerals in the water that can form an absorbent layer within which odour-causing bacteria can develop. Waterless urinals, by contrast, have no such layer. Moreover, it is important to note that male urine is sterile unless the individual has a kidney infection. Another potential source of odours is the urinal waste outlets. Barrier waterless urinal systems prevent odours from the waste pipes from reaching the washroom by trapping the foul air in the waste pipework.

Falcon Waterfree Urinal Systems – barrier system

Urine and debris pass through an oil-based barrier fluid (Allseal liquid) that forms the seal to prevent odours from reaching the washroom. The Allseal liquid is held within a replaceable cartridge that captures debris that would otherwise fall into the waste pipes. Cartridges typically need to be replaced every 2 to 5 months, dependent on usage. The Allseal liquid can be degraded if the correct cleaning chemicals are not used.

Sluicing during maintenance of Falcon Waterfree urinals: When a Falcon cartridge needs changing, we recommend that the urinal is sluiced with 300ml of Bactericidal Cleaner with 2700ml of warm water - 3 litres of solution in total. This will help to break down any uric scale, fats, hair and debris in the waste pipes and flush it all through to the main drain.

IMPORTANT: Only dose Falcon Waterfree urinals after the cartridge has been removed, for example, when the cartridge is changed or cleaned out, as the Allseal liquid will be washed away if sluiced while the cartridge is still in place.

DO NOT SLUICE WHILE THE CARTRIDGE IS IN PLACE