Flushing of hot and cold water pipework systems

Introduction

The combined efforts of pipework manufacturers, design engineers, water treatment specialists, installers, etc., to provide trouble-free, long-lasting installations can be undone in the early life of a system. This can lead to breakdown of pipework services and/or problems in terms of the preservation of water quality, callbacks for the installer and a general loss of confidence by the building owner or operator in the integrity of pipework systems

However, such problems are avoidable by paying attention to detail and adhering to best practice, particularly in terms of flushing and avoidance of stagnation in the period between first fill and an installation coming into regular use.

Flushing During Commissioning

All systems should be thoroughly flushed with clean water as soon as possible after completion in order to remove foreign matter including filings, PTFE tape, fluxes, etc. Flushing should continue until the discharge water is completely clear.

However, it should be borne in mind that simply filling a system and then draining down does not constitute a flush and in most cases will serve merely to move extraneous matter from one point in a pipework installation to another. Whilst it is generally recognised that new systems should not be left charged with stagnant water for long periods, it is in practice notoriously difficult to affect a 100% drain down of an installation, particularly in large installations where long, horizontal tube runs are involved.

Instead is is recommended, from the point of view of minimising the risk of pipework corrosion and/or water quality problems,

Why flush pipework systems?
To comply with:
- British and European Standards
- Water Regulations
- Good Practice
- Manufacturers installation instructions

to leave systems completely full and flush through at regular intervals (i.e. at least twice a week, by opening all terminal fittings such as taps etc.), prior to the installation coming into regular use. However, under such circumstances consideration should also be given to frost protection, including the use of trace heating.

Reference to the need to avoid stagnation is also made in various literature including a Health and Safety publication (1), which provides information on how to prevent the development of Legionella bacteria. After flushing, systems should be pressure tested and where appropriate disinfected in accordance with the requirements of BS6700 (2) and manufacturers instructions.

References

(1) Paragraph No. 165 of the HSE Approved Code of Practice, L8, “The Control of Legionella Bacteria in Water Systems”

(2) BS 6700: 2006 - Specification for design, installation, testing and maintenance of services supplying water for domestic use within buildings and their curtilages.