

Ref: 288

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Mandatory Requirement

Requirements for products used in high Chlorine/Chloramine water supplies

Equipment:

Rada Products using EPDM seals that may be at risk of attack due to higher chloramine concentrations present within the water supply or failed disinfection processes.

Reason:

In water supply conditions with high Chloramine levels the EPDM seals used within thermostatic cartridges and associated components, such as check valve assemblies will be affected. Where degradation occurs, sealing performance may be compromised, which in turn can affect valve operation, and in some cases result in scalding water being delivered from the outlet.

Details below indicate chloramine levels in the water supply and recommendations:

- 0.5mg/L – 1.0mg/L seals begin to degrade over longer periods and standard testing, and maintenance practises as laid out in the product manual should be observed
- 1.0mg/L – 2.0mg/L will present a higher risk of premature failure and increased testing, and maintenance must be performed along with part replacement as laid out in this bulletin
- > 2.0mg/L will cause rapid degradation of EPDM rubber. Increased testing, and maintenance must be performed along with part replacement that may exceed timescales as laid out in this bulletin.
- > 2.0mg/L may also include other measures such as using products with chloramine resistant seals

Action:

Where products are regularly used outside of our designed water supply specifications, we recommend the following actions are taken. Particular consideration should be given to installations serving vulnerable users, including those in Care & Nursing facilities or any environment where users may be at increased risk from unintended temperature variations.

1. Anyone who may have difficulty understanding or operating the controls of any shower or bathing facility should be attended whilst bathing. Particular consideration should be given to the young, the elderly, the infirm or anyone inexperienced in the correct operation of the controls. In all cases, the user or attendant must exercise due diligence to ensure that warm water is delivered at a stable and safe temperature. This is particularly important during supervised bathing or healthcare procedures where users may be unable to respond immediately to unsafe temperatures
2. In-service tests must be carried out at regular intervals, with the frequency determined by a suitable risk assessment. This assessment should establish the schedule of future testing, taking into account the level of risk to vulnerable users, the application, and the characteristics of the water system being used. As a guide, a recommended test frequency is at least every 6 to 8 weeks. Guidance on performing these checks is attached to this bulletin and must be used in conjunction with the product installation manual.

Maintenance personnel should ensure that Attendants, Carers, and Nursing staff are aware of the requirement to report temperature variations. Any reported or observed variations should be recorded in line with site procedures.

3. Where sites operate with higher chlorine dosing or enhanced disinfection regimes within the water supply, thermostatic cartridges and check valve assemblies may be subject to accelerated material degradation. In such conditions, these components should be considered at increased risk of performance deterioration. As a precaution, replacement is recommended at intervals of no more than 6 months, or sooner if in-service test results fall outside the required criteria

Performance Check – Every 6 to 8 Weeks

1. Exercising the Thermostat

If the valve has not been in regular or recent use, the thermostat must be exercised before carrying out any further checks.

- Where user adjustment of the blend temperature is available, exercise the thermostat as described in **COMMISSIONING**.
- For valves with locked temperature control, isolate and restore each supply in turn several times.

2. Blend Temperature

Check the blend setting and/or maximum preset temperature. Reset as necessary.

3. Performance

Check blend stability against a known datum (e.g. commissioning results) by inducing a pressure or flow change. Renew the thermostatic cartridge where performance does not meet requirements.

4. Function

- Check inlet pipework temperatures to confirm correct operation of check valves; maintain or renew as necessary.
- Check and clean strainers as required.
- Lubricate accessible seals using **silicone-based lubricant only**, where necessary.

Temperature Testing

Warm water temperature must be checked and recorded regularly to confirm correct valve operation.

- In healthcare applications (e.g. hospitals, aged persons facilities, nursing homes), checks must be carried out at least monthly.
- More frequent checks are recommended where increased risk is identified, such as:
 - users unable to respond immediately to unsafe temperatures; or
 - water supply conditions that may affect product components (e.g. seals).

All temperature checks must be recorded in a log book.

Thermostatic Mixing Valve Performance Records (Log Book)

It is recommended that the user maintains a log of all in-service tests, service work, and component replacements. Maintenance personnel should sign the log for all TMVs examined at each attendance.

The Maintenance Log should record:

Valve details, location, and risk

- Valve make and model
- Unique valve identification number
- Location
- Date installed
- Application (e.g. bath, shower)
- Risk assessment report number
- Risk level identified (e.g. user vulnerability and/or water system conditions)
- Frequency of critical component replacement
 - *Critical components: thermostatic cartridges, inlet check valves, and filters*
- Frequency of temperature monitoring
- Responsibility for temperature monitoring
- Location of temperature monitoring records
- Source of spares and advice
- Issue number of the product Installation, Operating & Maintenance Manual

In-service testing and maintenance records

- Initial commissioning test data (supply pressures and temperatures, mixed water temperature, flow rate, cold water isolation test result, date, and signature)
- First in-service test due date and results
- Details of any remedial work carried out
- Subsequent in-service test due dates and results
- Details of any remedial work, including part replacement
- Product age and original installation date

Note: Local requirements may require additional information to be recorded.

Training

Maintenance personnel should ensure that user staff are aware of the importance of reporting any temperature variations and that all reported or observed variations are recorded in the log.

Reporting

Please ensure that the above records are available for any correspondence relating to a reported product failure.