SENTINEL®

Clean Protect Maintain

Cleaning a heating system

Preparing a system for high efficiency and long component life

PROTECT YOUR
BOILER

TINY PARTICLES BIG PROBLEMS

It's more important than ever to protect ErP rated boilers against pump and heat exchanger failures

Treat it with Sentinel

PROTECT YOUR
BOILER

Approximately 87% of boiler call-outs are to systems without correct water treatment.

Source: major boiler manufacturer testing and research

Scale and corrosion are often the primary causes of boiler and component failures.

In new high efficiency boilers it's crucial that the system is cleaned and protected.

The Sentinel System

All systems are vulnerable to corrosion and limescale build-up if left untreated.

Follow The Sentinel System to **Clean, Protect and Maintain** your customers' heating systems, helping to keep their homes warm and their bills low, reducing your call outs.

The benefits of cleaning

- **Compliance with best practice and BS 7593**
- **Helps prevent boiler breakdown**
- **Prolonged system and component life**
- **Maximised heating performance**
- **Potential savings on household energy bills**

When to clean

New systems

A new system should always be cleaned during commissioning.

New components are usually treated with oil and grease in the manufacturing process. Unless completely removed, these can promote corrosion. Flux residues and other installation contaminants could also lead to localised corrosion and even pump failure.

Older systems

An older system should be cleaned when fitting a new boiler or if you suspect its performance is being affected by sludge.

Here are some of the symptoms:

- Cold spots at top or bottom of radiator
- Noisy boiler
- Heat exchanger failure
- Valve or pump failure
- Rooms not heating properly

Whether you are fitting a new boiler, replacing a smaller component or simply trying to restore efficiency, a thorough clean and flush can return the system to a healthier state.

Which cleaner to use

New systems

X300 Cleaner for New Systems

This is designed to target the kinds of debris found uniquely in newly installed systems.

- **Fast action cleaning to target oil, greases and insoluble debris**
- **Passivates, protects and prepares virgin system metals for long term protection by Sentinel X100**

Older systems

X400 High Performance Cleaner

This is ideal if you are doing planned maintenance of a system. It can be added to the system up to 3 weeks before the drain and flush.

- **High performance formula lifts sludge ready for removal from system**
- **Long acting formula holds sludge in suspension for up to 3 weeks, making it ideal for servicing work**

X800 Fast Acting Cleaner

This is ideal if you are doing same-day or emergency maintenance of a system. It cleans rapidly to save time on site.

- **Fast acting cleaner cleans systems in 1 hour**
- **Suitable for use in systems that are running cold**
- **Excellent performance in combination with power-flushing machines**

How to clean a heating system

Powerflushing

These are the basic steps of a power flush suitable for cleaning old systems. For more detailed guidance please refer to British Standard BS 7593.

Sentinel's lightweight and portable powerflushing unit, the JetFlush Rapid

1. If the system is open vented, cap off the cold feed and expansion pipe.
2. Ensure all valves are open and connect the power flushing machine to the system following manufacturer's instructions.
3. Run the unit for 10 minutes, reversing flow periodically, then dump the dirty water to a foul drain whilst adding clean water until the water runs clear.
4. Add Sentinel X800 Fast Acting Cleaner to the machine's water reservoir. If the boiler can heat the water, this will increase cleaning effectiveness.
5. Circulate cleaner around the system for 15 minutes.
6. Work your way around the system cleaning each radiator individually with frequent reversal of flow for 5 minutes by isolating other radiators and the main circuit.
7. Isolate all radiators and clean the main circuit for at least five minutes with frequent reversal of flow.
8. Dump the water to waste from each radiator individually and flush with fresh water until the water runs clear.
9. Isolate all radiators and flush the main circuit for at least 5 minutes, dumping the water to drain until the water runs clear.
10. Open all radiator valves and flush the entire system to drain until the water is clear.
11. During the final fill add Sentinel X100 Inhibitor to the system before circulating for at least 30 minutes.
12. Check correct Inhibitor dosage using Sentinel X100 Quick Test to ensure protection has been achieved.

Simple gravity chemical clean

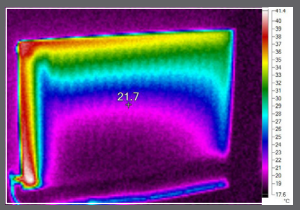
These are the basic steps of a gravity flush suitable for cleaning both new and old systems. For more detailed guidance please refer to British Standard BS 7593.

1. Totally drain the system ensuring all gate valves and TRVs are fully open.
2. Introduce the appropriate Sentinel cleaner into the system and refill completely, bleeding and venting air as necessary.
3. Run the boiler and circulate the cleaner in accordance with product instructions.
4. Fully drain the system. Open all bleed valves to ensure system is emptied.
5. Refill while venting the system and repeat steps 4 and 5 for a minimum of 2 further times. Repeat as necessary until the water appears clear.
6. On final fill, add Sentinel X100 Inhibitor to the system before circulating for at least 30 minutes.
7. Check correct Inhibitor dosage using Sentinel X100 Quick Test to ensure protection has been achieved.

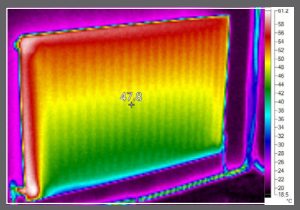
Inside the radiator

Images of a typical radiator using a thermal imaging camera:

Before cleaning...



...and after



Quick guide to choosing a cleaner

Is the system new?

YES

Use **X300 Cleaner for New Systems**

NO

Can you dose the system before the day of the clean?

YES

Use **X400 High Performance Cleaner**

NO

Use **X800 Fast Acting Cleaner**

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