



WHAT LURKS BELOW THE WATERS OF YOUR CENTRAL HEATING SYSTEM?

The Fernox Guide to typical central heating and hot water problems and their solutions.

FERNOX
MAKES WATER WORK

PLEASE READ

IMPORTANT INFORMATION

**CORROSION IN PIPES. LIMESCALE BUILD-UP IN BOILERS.
BLACK SLUDGE IN RADIATORS. BACTERIA IN WATER TANKS.
LEAKS IN THE SYSTEM. DRUM SOLOS IN BOILERS.**

Without proper treatment, as soon as water enters a central heating or hot and cold water system, corrosion can occur. And because many signs of 'trouble' go unnoticed (let's face it, no one is that interested in radiators, pipes and valves until they go wrong!), the upheaval and cost in restoring a damaged system can be high. We've dealt with the problems your system may encounter for nearly 40 years. In the process, we've become the UK's leading manufacturer of cleansing, restoration and protection products for domestic water systems.

PREVENTION IS CHEAPER THAN CURE WITH FERNOX.

WE CAN'T EMPHASISE TOO STRONGLY THAT ALL THE PROBLEMS WE OUTLINE IN THIS LEAFLET CAN BE AVOIDED BY CLEANSING AND PROTECTING YOUR SYSTEM FROM THE START. BECAUSE, WITHOUT ANY CORROSIVE DEBRIS, THE SYSTEM IS LIKELY TO GIVE YOU MANY YEARS OF COST-EFFECTIVE, EFFICIENT PERFORMANCE.



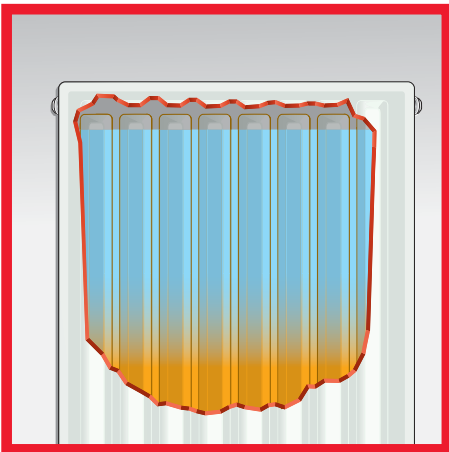
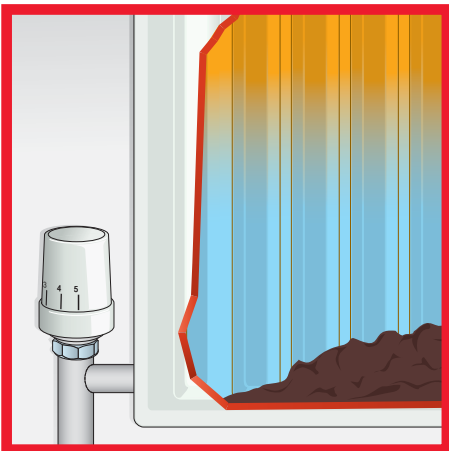
Central Heating Systems: The Problem Areas.

Radiator Cold Spots.

Typically caused by the build up of black metal oxide (rust) in the central lower parts of radiators. This corrosive debris can increase your fuel costs between 10 and 35% in five years, whilst reducing the efficiency of the whole system. Cleansing with Fernox Restorer followed by the addition of Fernox Protector will restore system efficiency and prevent corrosion.

Radiator Air Pockets.

Caused by hydrogen gas build-up as a by-product of electrolytic corrosion (water and metals chemically reacting) in an untreated system. The solution is to cleanse the system with Fernox Restorer and protect with Fernox Protector.



Radiator Failure.

Existing system radiators should be cleansed with Fernox Restorer, then flushed and treated with Fernox Protector to ensure efficiency. New system radiators must be pre-commission (i.e. before first use) cleansed and protected. Without any protection, brand new radiators can fail completely within a few years (and cost a small fortune to replace, along with the boiler).

Boiler Failure.

Older, improperly protected boilers suffer boiler noise (drumming, knocking and thumping) due to excessive limescale and black sludge build-up. In the case of failure, the insulating effects of scale and sludge effectively restrict the heat exchanger in the boiler to the point when it overheats and fractures (expensive!). The entire system should be cleansed with Fernox Restorer and protected with Fernox Protector.



Pump Seizure & Failure.

The abrasive qualities of corrosion debris, hard limescale and bits of solder, flux and copper swarf in the system gradually wear down or cause pumps and actuators (they control the direction of flow) to stick, seize and fail. The whole system should be cleansed and protected.

Leaking Valves & Pipes.

Usually caused by loose gland nuts, failed 'O' rings or failed packing around the stem of the valve. Valves should be replaced or the joints remade using Fernox Jointing Pastes and Solder. Leaking pipes can be a nightmare to detect especially if they are not visible or accessible – see later. Pre-commission cleansing with Fernox Restorer followed by the addition of Fernox Protector will ensure years of effective performance from your central heating system.





Fernox products. Designed to be more efficient, more effective, more reliable.

**The Fernox Restorer Range.
Restoring internal order.**

- neutral universal cleansers for pre-commissioning new systems in accordance with BS7593:1992
- removes sludge and scale and restores heating efficiency in existing systems
- suitable for use with all known makes of power flushing machine
- non-acid neutral formulations, COSHH-rated zero (0)
- easy to use – the system can run during application
- the Superconcentrate cartridge injects directly into the radiator in minutes
- compatible with all metals and materials commonly used in heating systems



**The Fernox Protector Range.
Protecting the asset.**

- provides long-term protection against corrosion of all metals, including aluminium
- prevents build up of black sludge
- effective scale reducer
- prevents pumps and actuators sticking
- prevents hydrogen gas build-up
- saves on fuel bills through improved efficiency
- the Superconcentrate cartridge injects directly into the radiator in minutes
- Protector Alpha-11 is a combined antifreeze and inhibitor
- compatible with all metals and materials commonly used in heating systems



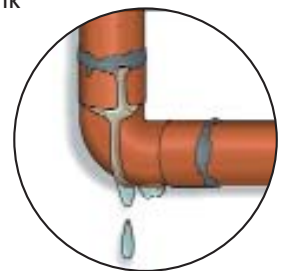
**Dealing with Micro and Macro Leaks:
Some airtight, watertight solutions.**

A leaking radiator valve is usually easily detected; either by damp patches or the telltale green oxidized copper pipework below a valve. Restoration work should be carried out using Fernox LS-X jointing compound.



Pin hole leaks are caused by oxidations (and therefore corrosion) of metal at points of natural stress, i.e. joins or bends. To stop small leaks and weeps, simply add Fernox Leak Sealer LS-I to the system via the header tank or other suitable point of application using a Fernox Injector. Alternatively, Fernox Superconcentrate Leak Sealer can be injected directly into a radiator.

Soldered joints, because they shrink unevenly during setting, can become porous. Minor pores can become active months or years after installation and are extremely difficult to locate. Cleansing the joints with wet and dry emery paper, followed by a smear of Fernox LS-X External Leak Sealer will prove effective.





Hot and Cold Running Water: What stops it?



In a word, limescale. The calcium and other minerals in hard water react to form hard deposits of scale. These in turn build up into deposits that restrict water flow and your boiler's efficiency. They're equally effective in fouling up

showerheads, taps, kettles and immersion tanks.



Three Ways to Stop Scale in its Tracks.

1. The Fernox Electronic Water Conditioner: Built-in Prevention I.

The Fernox Electronic Water Conditioner uses a microprocessor to magnetise calcium particles so that they cling to themselves rather than metal surfaces. As a result, the calcium remains in suspension and runs through the system without building up to form limescale. To fit, simply follow the instructions. No plumbing work is necessary, nor are the services of a professional plumber.



2. Fernox Quantomat: Built-in Prevention II.

This 'in-line' scale reducer is connected to the mains in horizontal or vertical pipework. It prevents the build up of limescale, and saves on future bills and maintenance. Each Fernox Quantophos H refill sachet lasts up to six months. Some knowledge of plumbing is required and full instructions are included.



3. Fernox Superconcentrate Limescale Preventer: Hands-on Prevention.

Fast, effective scale reducer and preventer. Simply add one 450 g sachet to the cold water tank, and see its effects working for months. The product is completely safe to use.



4. Fernox DS-3 Limescale Remover: Fast and Effective.

To remove scale, Fernox DS-3 Limescale Remover works effectively in kettles, showerheads and hot water cylinders. A concentration of 5-10% by volume is recommended. A colour change from yellow, through green, to blue indicates when the descaling power is exhausted.



Bacteria in Water: Worth a closer look.

Water tanks in lofts often have unwelcome visitors: birds, squirrels, mice, insects and wasps are some of the usual suspects, both dead and alive! To ensure that health risks such as Legionella and E.coli bacteria are avoided, the UK Health and Safety Executive recommend that water systems should be cleaned and chlorinated once a year. Fernox Sterox is provided in a complete kit to chlorinate a hot and cold domestic water system. Full instructions to this simple task are included in the pack.



Emergency Repairs: Well worth the effort.

Lady Luck usually determines a householder's fate when it comes to leaks, breakdowns and stoppages – usually on a Friday afternoon, or the start of a bank holiday! So it makes sense to have a few sensible products to keep you ticking over until a long-term professional repair can be done.



If your boiler suddenly starts sounding like a military parade, Fernox Boiler Noise Silencer will reduce the rattle and hum until it is cleansed and protected. Fernox Leak Fix is ideal for temporary repairs to valves and pipework, as is Fernox Fix-It (which you can apply to any surface). Fernox Leak Tester Spray is an effective gas leak detector that uses a pump action spray to reveal the trouble spot.





YOU'RE CLOSE TO THE ANSWERS WITH FERNOX.

We offer a 24-hour help line seven days a week.

Call 0870 870 0362 for information and advice on any of our products.

You can be sure of a professional answer.

FERNOX
MAKES WATER WORK



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