EN

All-round protection for heating water

SorbOx®

SorbOx
by ELYSATOR™

Installation
Function
Operation
Service

SorbOx® is the revolutionary water filter for energy efficient heating systems. It packs no less than 4 functions into a single device:

- Demineralization of heating water prevents limescale deposits
- Micro gas bubble separator removes oxygen and other gases from the circulating water
- Anode protection safeguards an optimum heat transfer
- Magnetic flow filter in the circulating water holds back sludge and rust particles

ELYSATOR
engineering water

www.elysator.com

EN

Content

Updates may be made without notice.
Web version supercedes print version.

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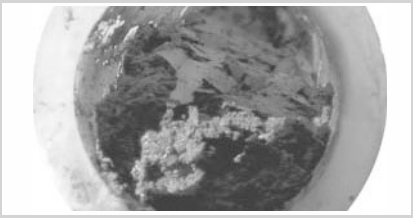
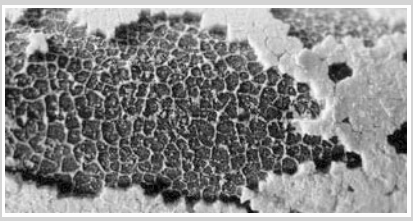
The problem

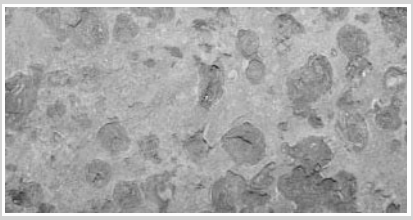


Sludge deposits

- Sludge in underfloor heating system pipework resulting from corrosion products
- Blocking of control valves and pumps
- Corrosion perforations in boilers
- Perforations resulting in water damage
- Flow noise through corrosion-related gassing
- Higher energy consumption through uneven heat distribution



Limescale



Rust

In days gone by, underfloor heating systems were often in-stalled using plastic pipes that were permeable to oxygen. By now, most manufacturers will produce underfloor heating pipes that are almost diffusion-proof. Nevertheless, valves, fittings, circulation pumps, con-trol units, automatic air vent valves and faulty expansion vessels represent major sources for possible oxygen ingress. Oxygen diffused into the heating water, pH values that are too low and increased electrical conduc-tivity of system water can result in corrosion and sludge deposits inside the heating system.

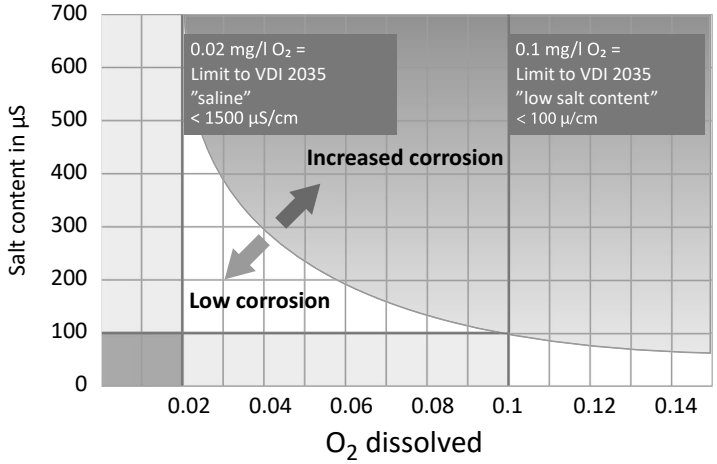
In the past, adding chemical corrosion inhibitors was the corrosion protection method of choice. However, in many cases it was noticed that in gaps or beneath dirt or corrosion depo-sits there was no active protec-tion. In other words, no lasting solution to the problem at hand. Furthermore, monitoring the correct dosing of inhibitors takes time and costs money. In the final analysis, the use of heat exchangers to separate the system into heating and boiler circuits only results in a separation of the problem into two parts without actually achieving active corrosion protection.

Advanced heating systems respond more sensitively to corrosion and the separating out of water constituents.

Rust, limescale and sludge deposits destroy advanced heating systems and cost plentyd

Corrosion

relative to oxygen and salt content in heating water



The solution

Clean, safe heating water

No rust

The SorbOx® filter separates rust and sludge from the water without becoming blocked.
Rust and sludge particles are held back by means of a strong magnet on the underside of the filter and gravity. Close valves for cleaning. Then simply undo the filter and flush.

No gases

Insert the ELYSATOR® anode unit for degassing.
The anode system removes corrosive and acidic gases through an electro-chemical reaction using a sacrificial anode. Micro gas bubbles are separated, collected and removed through the venting network.

Option SorbOx® L

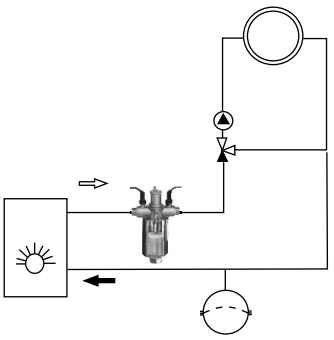
No limescale

Use the PUROTAP® cartridge for desalination. Within a few hours it absorbs all dissolved minerals in the circulating water.
This prevents the formation of limescale deposits, which also reduces the corrosion rate.

Correct installation

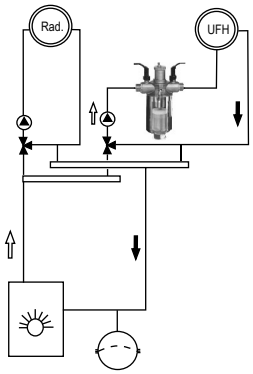
☑ Degassing ☑ Anode protection ☑ Sludge Removal

Installation in the main flow Installation in the main heating system flow (full flow rate) for maximum separation of micro gas bubbles. Circulating contamination is also filtered out via the flow.



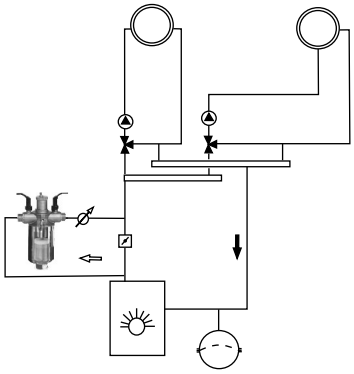
☑ Degassing ☑ Anode protection ☑ Sludge Removal

Installation in a system component (assembly)
If the source of oxygen diffusion is known (e.g. underfloor heating assembly), then the SorbOx® can also be used in assembly circulation.



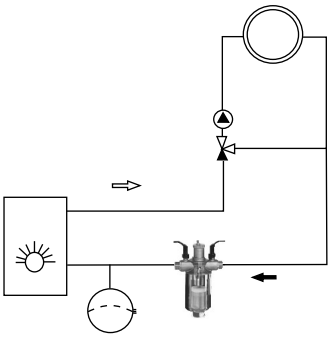
☑ Degassing ☑ Anode protection ☑ Sludge Removal

Installation in an ancillary circuit
The SorbOx® can be installed in an ancillary circuit, for which a flow meter should be installed. The smaller the partial flow, the less effective the degassing and filter performance.
However, water conditioning by means of a sacrificial anode is still effective down to a minimum flow rate of 2 l/min.



☐ Degassing ☑ Anode protection ☑ Sludge Removal

Installation in the main return
The SorbOx® can be installed in the main return if the function of the sludge collector is given top priority. Water conditioning by the sacrificial anode is also effective in the return; however, there will then be hardly any separation of micro gas bubbles.

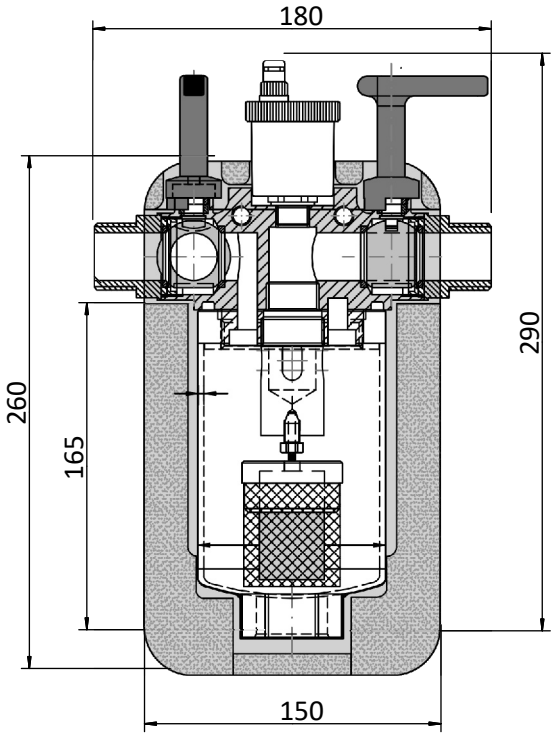


SorbOx® improves the efficiency and reliability of ecological advanced heating systems.

- ↗ Heat pump systems
- ↗ Condensing boilers
- ↗ Heating systems with solar backup
- ↗ Underfloor, wall and ceiling heating systems
- ↗ Heat recovery
- ↗ Regulated mechanical ventilation
- ↗ Green technology

Data and dimensions

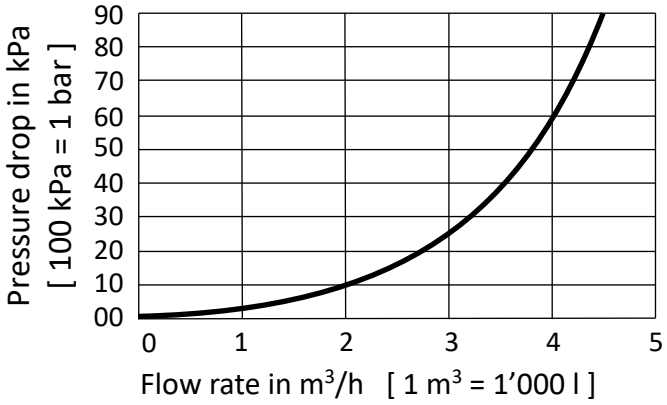
SorbOx® S/SI (against rust, gases)



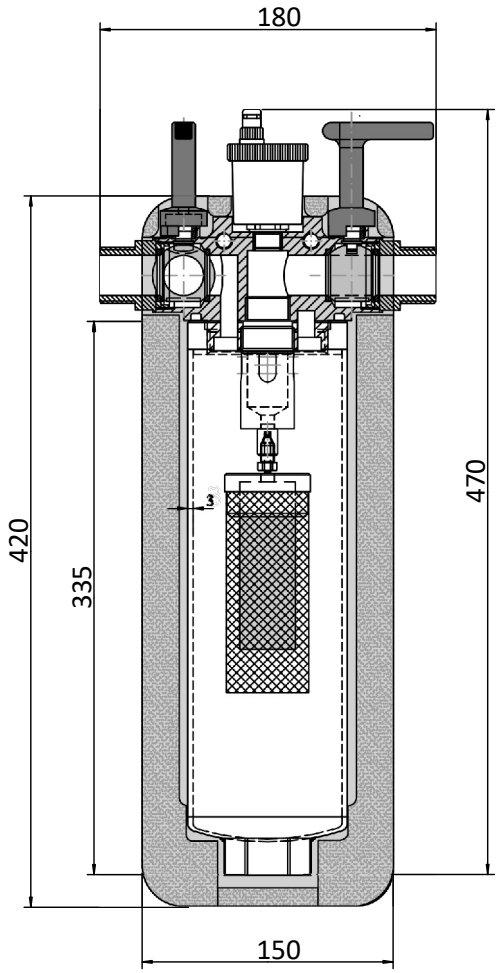
SorbOx S/SI L/LI performance details

Flow rate	< 3 m^3/h
Connection dimension:	1 “
Max. operating pressure:	< 6 bar
Max. temperature:	< 90° C

SorbOx S/SI L/LI flow pressure drop

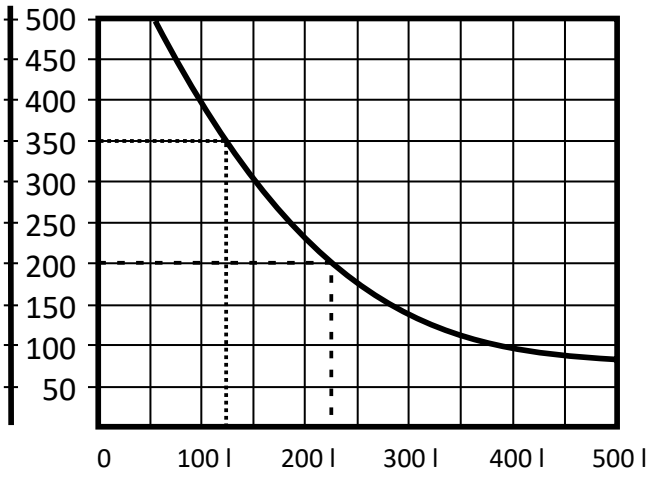


SorbOx® L/LI (against limescale, rust, gases)



System water conductivity µS/cm

SorbOx® cartridge capacity: Liters demineralized water



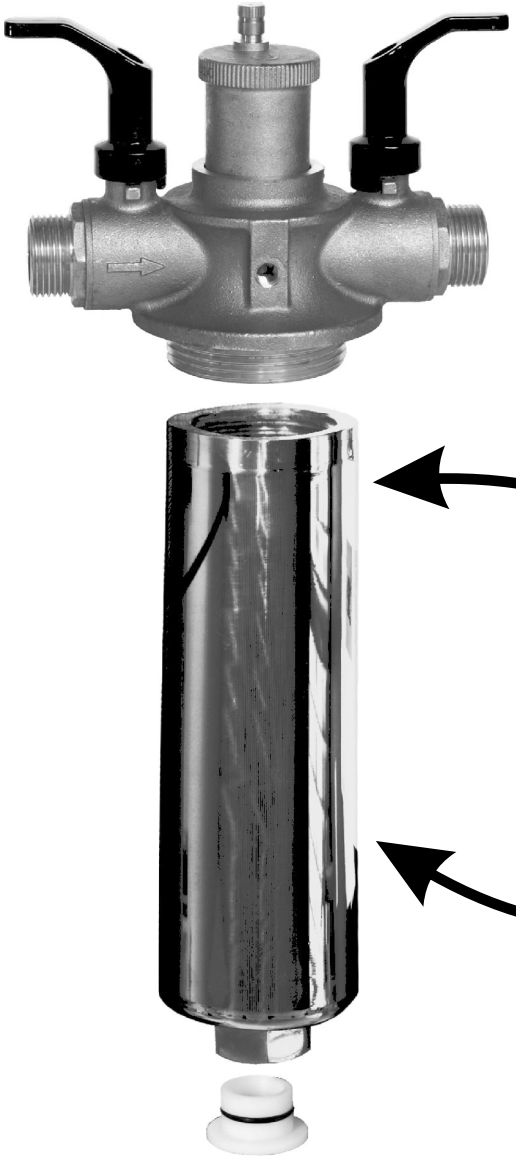
Example 1 ·····

At a conductivity of 350 µS/cm the SorbOx® cartridge will handle around 125 liters FD [fully desalinated] water

Example 2 - - - - - - - - - - - -

At a conductivity of 200 µS/cm the SorbOx® cartridge will handle around 225 liters FD [fully desalinated] water

Service



Option SorbOx® L Demineralization cartridge

Insert into the filter head in place of the protective anode and replace the filter trap. For 1 to 3 days, allow to run concurrently with the circulation pump in heating mode. For full desalination of around 150 l system water or to remove residual minerals. Rechecking the electrical conductivity is recommended.

Replace protective anode with gas bubble separator every 3 years or as required.

1. Close both ball valves
2. Undo trap
3. Undo protective anode
4. Insert new protective anode
5. Check gasket
6. Replace trap
7. Open inlet valve until all air has escaped
8. Open outlet valve

Drain sludge collector annually or as required.

1. Close both ball valves
2. Undo trap
3. Extract magnet from the bottom of the trap
4. Flush trap
5. Check gasket
6. Replace trap
7. Insert magnet
8. Open inlet valve until all air has escaped
9. Open outlet valve