

HEATING SYSTEM PROTECTION AND COSY NATURAL WARMTH



GRANDER® IMPROVES HEATING

With GRANDER® the water in the heating system is better protected against corrosion – This benefits the environment and creates a cosy atmosphere in the living rooms.

Water is the source of life.

Water in its original form is the bubbling source of vitality and life force. However, when it is pumped at high pressure in closed pipes over long distances, it loses its power and life.

GRANDER® water revitalization restores water to its original structure and energy – with all its multiple positive effects on drinking and process water. Water encounters very difficult and unnatural conditions in heating circuits with rust formation being a major problem in the heating system. Oxygen-rich heating water often has a corrosive effect on heating pipes, boilers and fittings. The consequences of which are pitting corrosion, leakage and the formation of deposits. The heating water itself becomes brown or black and foul smelling.

Lime-scale deposits impair heat transfer. **A single millimetre of lime scale on the heat exchanger increases the energy consumption by approximately 6%.**

Out-gassing due to temperature increases, bio-film formation and oxygen intake are responsible for disturbing noises in the heating pipes. Fittings are waterproof, but not gas-tight.

Bio-film and sludge formations consist of a thin layer of slime in which bacteria, fungi, algae and dirt are embedded. Especially in underfloor heating systems where they lead to an overgrowth within the heating pipes and reduction in efficiency.



*The GRANDER® -
Effect*



GRANDER® BRINGS A BETTER QUALITY OF LIFE TO YOUR HOME THROUGH HEATING

The quality of our water influences both our equipment and the feeling of warmth.

The “chemical malaise”

By adding chemicals and various processing methods, an attempt is made to reduce technical difficulties. This has the unfortunate result of taking the last “spark” of vitality from the water. Generally poor water quality in heating systems not only has a negative influence on the equipment itself, but also on the living climate in the rooms heated. The warmth tends to be perceived as dull and uncomfortable.

GRANDER® works “naturally”

GRANDER® water revitalization restores the load-bearing capacity, vitality and self-cleaning power to the heating water. This results in the contaminated and usually foulsmelling heating water becoming clear and largely odourless again within a few months due to its regained self-purification power. This is associated with an economic benefit and noticeable positive changes in the personal living area.





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*GRANDER® effect:
is clearly visible
as in heating water*

- > GRANDER® devices work without electricity and without chemicals
- > Clean and odourless heating water
- > Decrease in the tendency to silt up through a significant reduction of bio-film formation
- > Reduction of microbial susceptibility
- > Reduction or stabilisation of corrosiveness
- > Reduction of the sedimentation tendency
- > Heating pipes, radiators, floor and wall heating are again free and continuous
- > Reduction of out-gassing as a result of reduced gas formation

*GRANDER® pays off
from the first hour*

- > Energy saving
- > Increased operational safety
- > Optimization of the operating parameters
- > Improvement in the degree of efficiency
- > Increased protection of the boilers with regard to technical problems
- > Optimisation of the current operating and maintenance costs

*Increased well-being through
natural warmth*

> The renewed vitality of the heating water ensures a naturally pleasant and cosy room climate.



GRANDER® MAKES YOUR HOME REALLY COMFORTABLE

*Increased well-being through a natural
and comfortable indoor climate.*

Revitalizing the heating water has a very positive effect on the indoor climate. The room climate is perceived as very pleasant and the warmth as comfortable. Customers say they feel totally wrapped up by the revitalising warmth and feel a natural soft luxury living in a home where the heating water is full of life and energy.

Just like air is present in water, water is in the air, which is heated and revitalised by radiators or under floor heating.

Cost saving by lowering the room temperature

Long-term users of GRANDER® heating revitalization report that the heating temperature can also be lowered by several degrees due to the more intensive heat sensation and its lingering capacity. This has enabled energy savings. Because: 1°C temperature reduction means about 6% energy savings.

The heating system usually accounts for about 80% of the energy costs in a home. Therefore, it makes sense to include all possible savings steps, such as installing GRANDER® water revitalisation in the heating system.



INSTALLATION AND DIMENSION GUIDELINES

Heating systems are closed water circuits, where, depending on the degree of utilization, the entire water volume circulates through the system several times a day.

As a rule, GRANDER® heating systems should be installed in the return flow ($T < 95^{\circ}\text{C}$).

Dimensioning depends on the individual structural conditions and is determined by the GRANDER® expert consultant during a personal visit.

Note :

Even when using GRANDER® water revitalization, the basic technical rules of the heating system must be observed: Possible additional technical measures may be necessary in individual cases. GRANDER® is also successfully used in large-scale projects, where the savings often pay for the investment in as little as 1–3 years.

GRANDER® Water and
Circulation Revitalization
for home and garden

On-site consultation

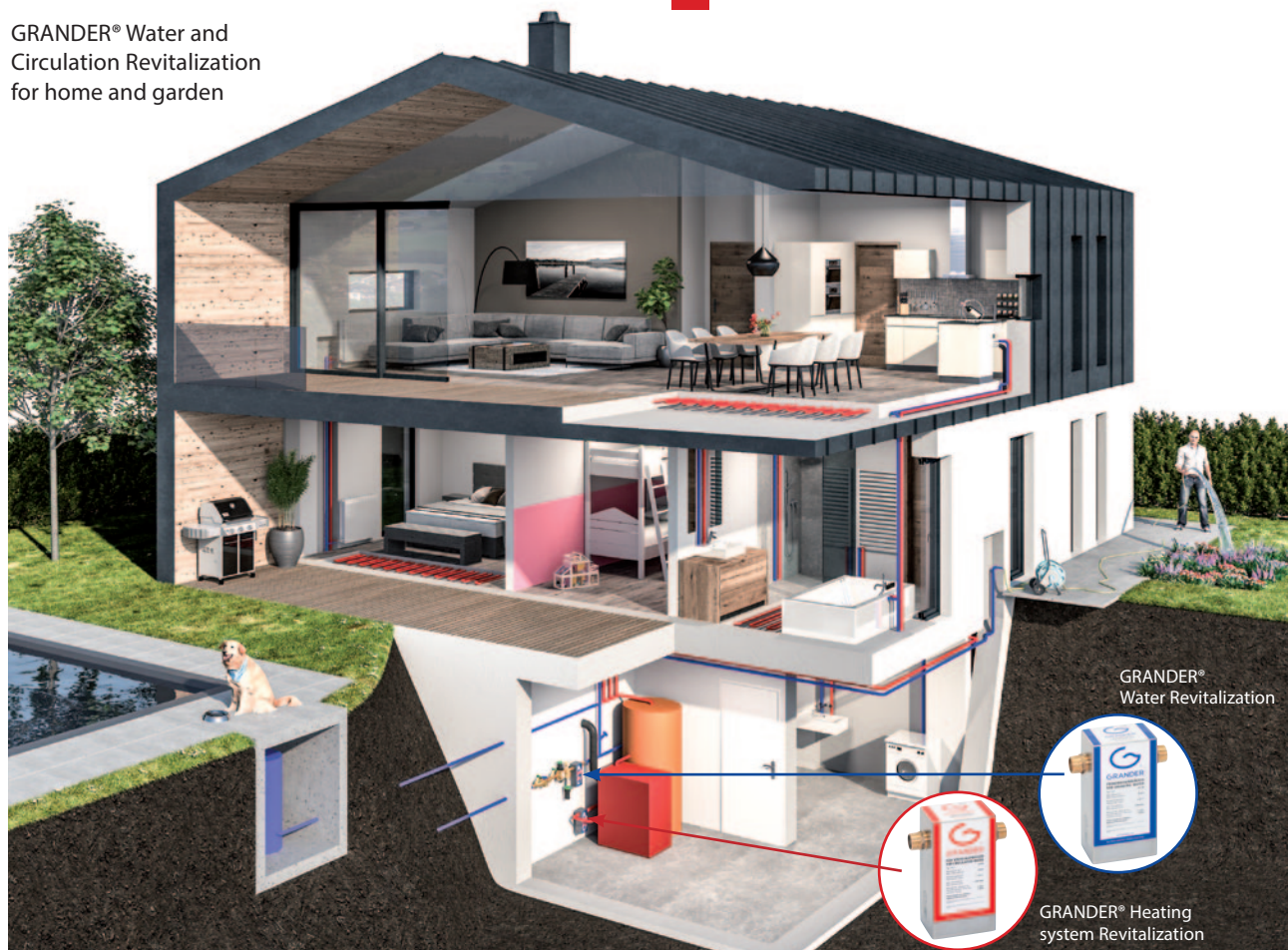
To optimise your heating system, you are welcome to receive a non-binding and free on-site consultation with a welltrained and competent GRANDER® expert advisor.

For complex technical problems, a chargeable analysis of the heating water can be carried out by our research laboratory on request.

**Technical safety and reliability of
the heating system**

Increased well-being through revitalized heat

Cost reduction through energy saving





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