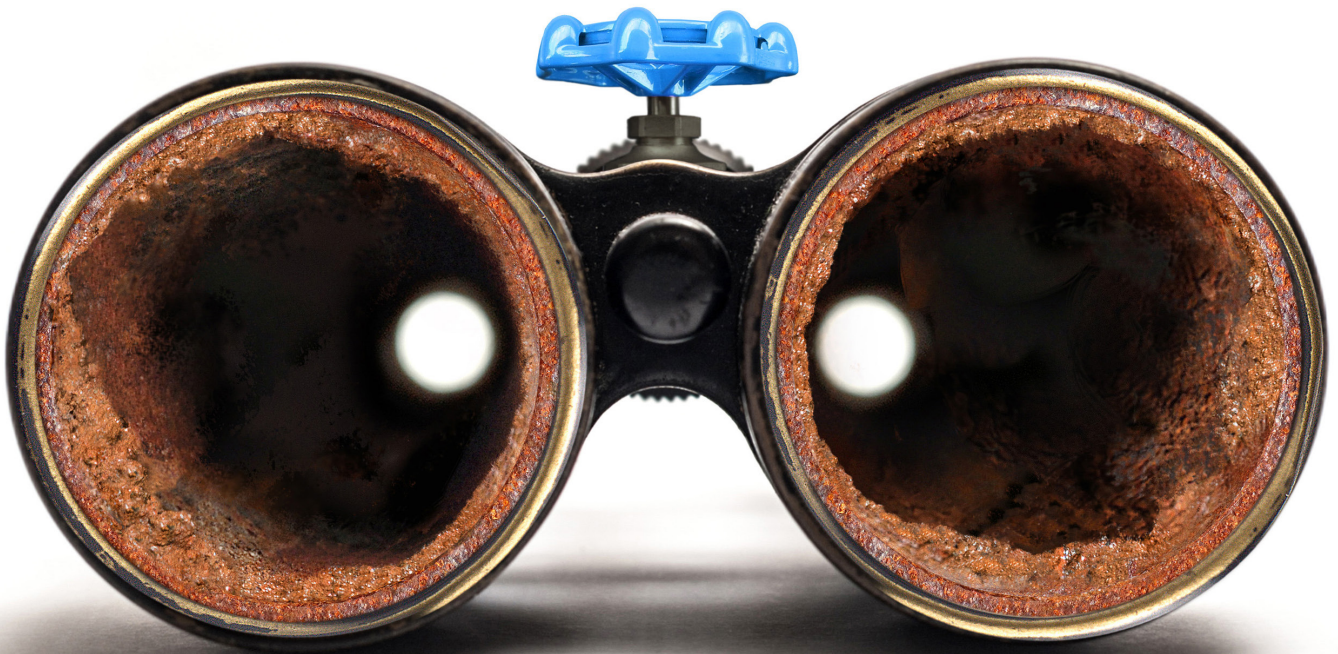


# HASL

SPECIALIST H&V DISTRIBUTORS

 risycor

## Look forward.



 resus

Smart sensor technology that warns you when corrosion threatens your heating or cooling system.

## THE INVISIBLE MENACE

Modern systems are regularly affected by corrosion sludge due to their small pipe diameters, ever smaller heat exchangers and high-efficiency pumps. An increase in breakdowns and a marked increase in energy consumption are the result. When the problems become noticeable from the outside it is often far too late and major, very costly repairs may already be required. Using Risycor's patented technology, we can now make the invisible, visible.

### Guidelines & Standards

Various national and European standards such as **BSRIA BG29/2020\***, **EN12828**, **EN14336**, **EN14868**, **BG50** and **BG75** provide information about the problem of corrosion.

The German **VDI2035** is probably the most respected technical guideline globally regarding the avoidance of damage to heating systems by corrosion or lime-scale. To avoid corrosion greater consideration should be given to Northern European guidelines, particularly in the UK.

However the best guidelines become ineffective when they are misunderstood or, worse, ignored, when humans make mistakes or when technical defects occur.

"Only systematic, continuous monitoring gives peace of mind."

\* **Newest edition adopts real time corrosion monitoring and embraces VDI2035**



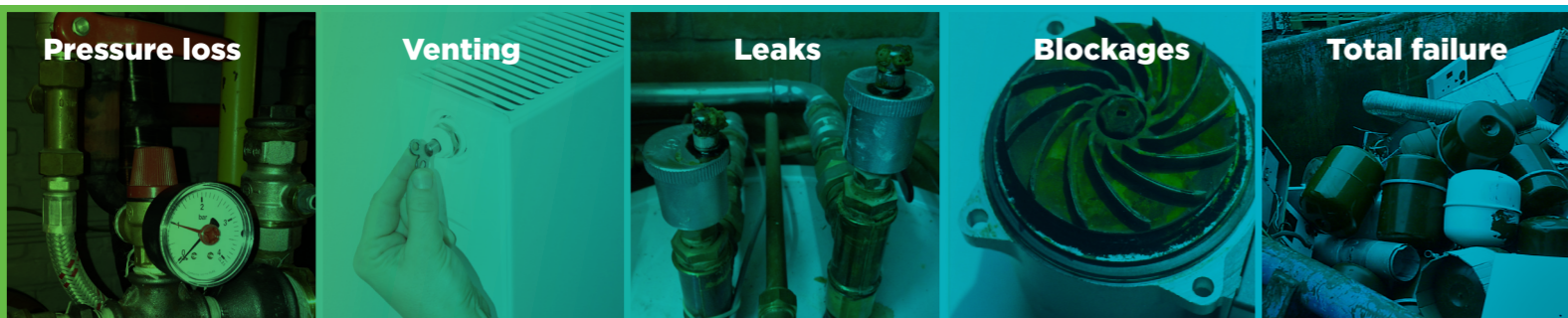
### The theory - 4 Basic principles of VDI2035

- The probability of corrosion damage occurring in water heating installations is low when:
- Planning and commissioning are implemented correctly
- The system is sealed as far as corrosion is concerned
- A correctly designed and operated pressure control system has been integrated
- The guide values for heating water given in section 8.1 are complied with
- Routine and corrective maintenance is carried out regularly

Trust is good, but control is better.

People make mistakes  
Pressurisation systems become defective  
Alterations and modifications of the system are routine  
Fixed diaphragm vessels lose inflation pressure over time

The reality



## COMMON CAUSES OF CORROSION

10%  
caused by

### Water quality & permeability

E.g. High conductivity, wrong pH values, incorrect chemical water treatment, microbiological activity, oxygen diffusion through non-diffusion-tight plastic pipes or rubber hoses.

30%  
caused by

### Excessive or frequent topping-up

Dissolved oxygen enters the system with the fresh water. Leaks and more often the loss of inflation pressure are the causes of topping up.

90%  
caused by

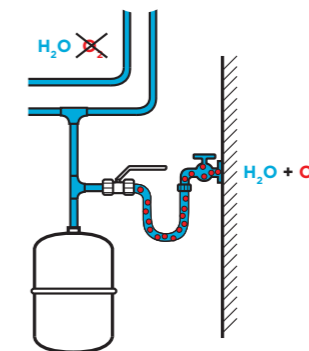
### Incorrect Pressure Maintenance

In many cases faulty pressure maintenance is responsible for oxygen entering the system through negative pressure, e.g.: incorrect inflation pressure, expansion vessel too small, defective membrane, incorrect vessel position etc.

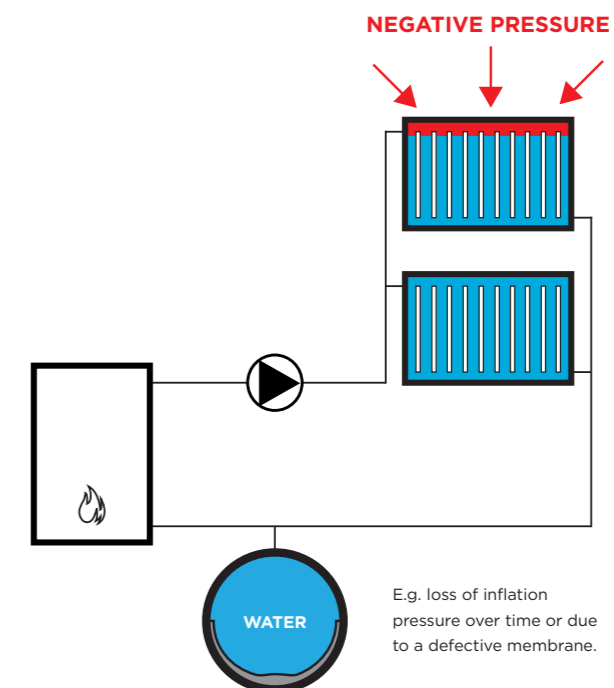
The devil is in the detail: Oxygen is the key cause of sludge creation in heating systems.

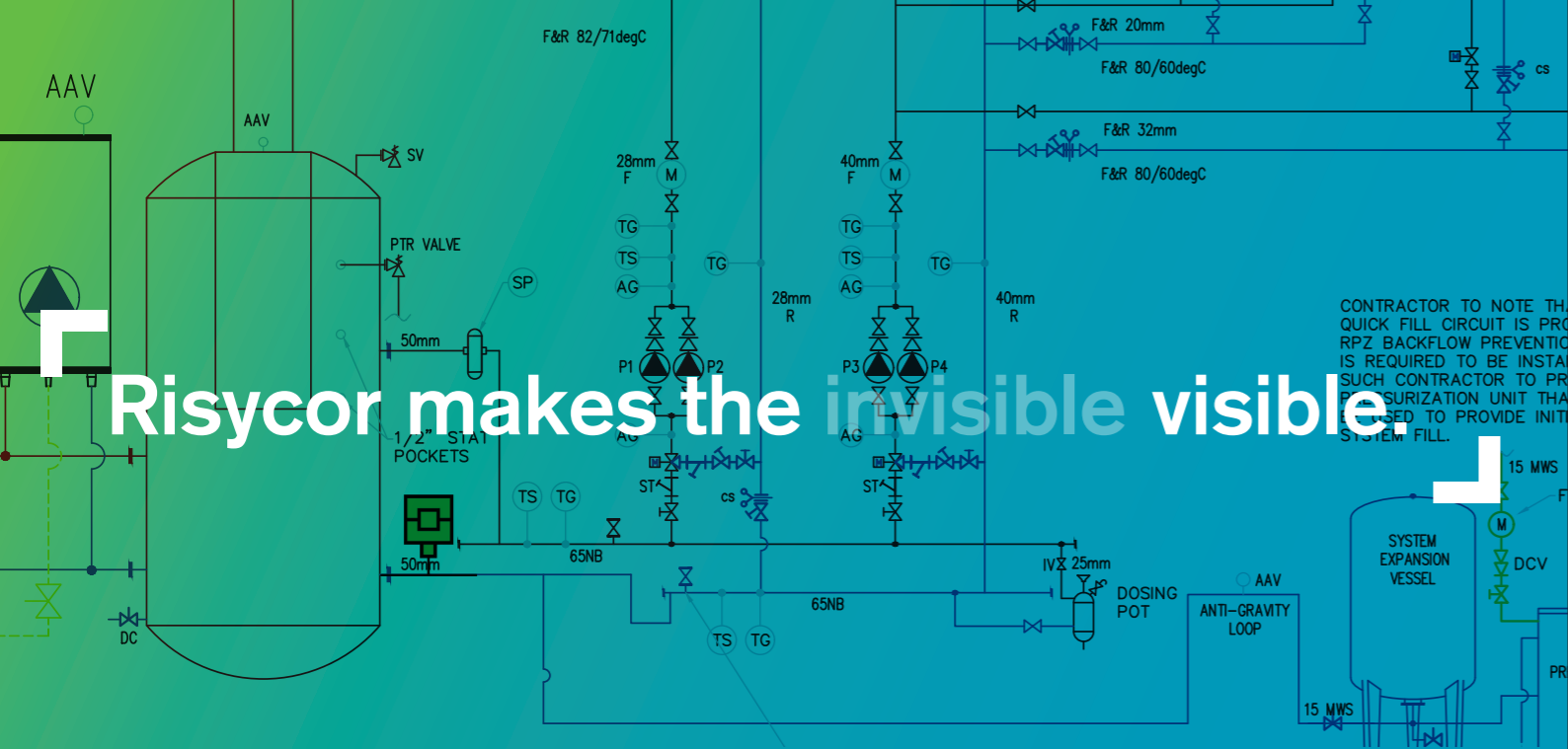


Oxygen continuously combines with the metallic materials of a system. It reacts especially with steel and thus creates rust and magnetite. Instead of fighting the symptoms (e.g. with chemicals) one should first deal with the causes. Without oxygen corrosion can no longer take place. This is sometimes referred to as 'dead' water.



In order to further understand why continuous monitoring can be used to prevent corrosion **contact us to arrange our CIBSE accredited CPD**. The introduction of relatively inexpensive technology can assist greatly to mitigate the risk of pipework corrosion, improve efficiency and system performance for the long term. This is surely a worthwhile minimal investment.



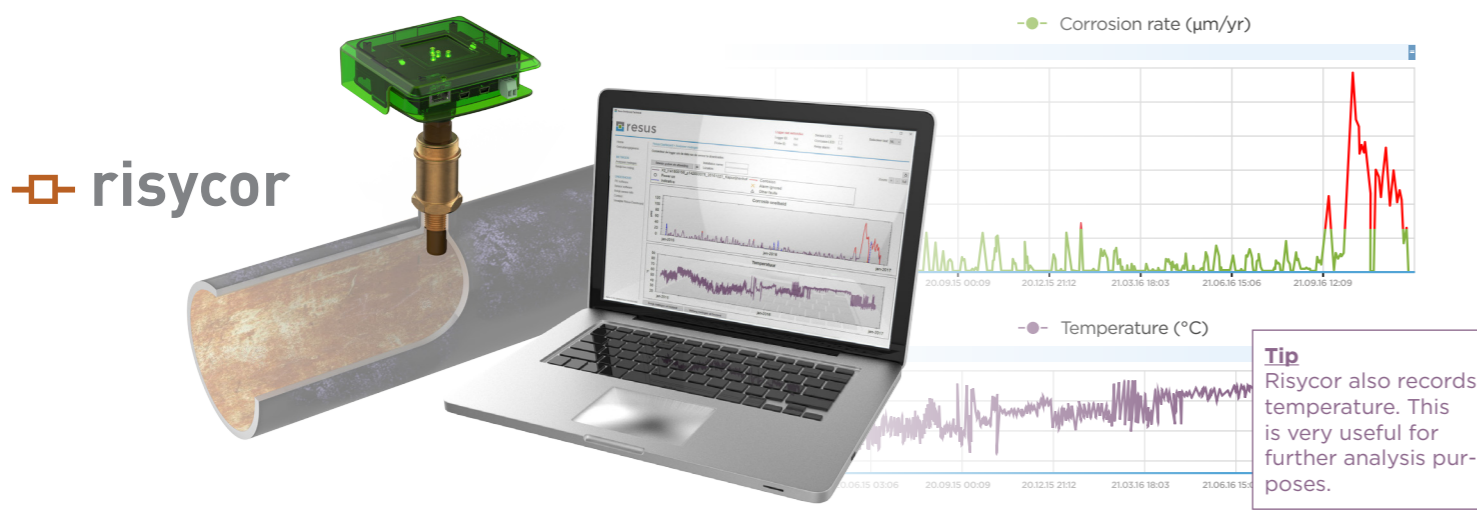


# Risycor makes the invisible visible.

**The technology**  
At the tip of the probe sits a small iron coupon, which can corrode and thus reduces its mass. Resus's patented technology [EP2081008] measures this mass-loss very precisely.

**This is how corrosion is measured**  
The rate of corrosion, measured in micron / year, and the interval temperature are continuously stored by the logger. A specially developed (free) software package, the Resus Dashboard, enables that data to be quickly and simply visualised and evaluated by all parties.

**An early alert protects against damage**  
The alert function enables the operator of a system to be warned in-time when the corrosion rate reaches a critical value (e.g. via the Building Management System). An optional LAN or cloud-based readout is available for remote monitoring purposes on our CX units, please see the Product Options table overleaf.



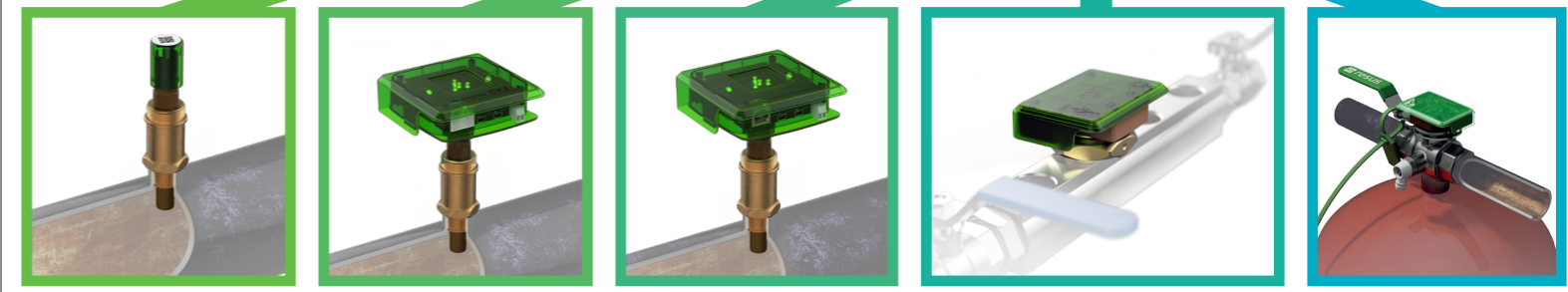
## PRODUCTS

**Resus Dashboard Software**  
Free software to download and analyse recorded data.  
Go to [www.resus.eu/en](http://www.resus.eu/en)



NBS Source provides designers and specifiers with product information in just one click, helping them to specify quickly, accurately and with the most relevant and up to date information at the time of specification. Pr80\_51\_51\_15 is the relevant NBS clause for Corrosion Monitors.

	Risytest TXV-fix set	Risycor CX2-fix set	Risycor CX1-fix set	Risycor CBU-fix set	Risycor CBU-Zerofix set
<b>SYSTEMS</b>					
Heating systems	✓	✓	✓	✓	✓
Cooling systems	✓	✓	✓	✓	✓
<b>INSTALLATION</b>					
Installation with 1/2" BSP male thread	✓	✓	✓	✓	✓
Installation in equipment that can be isolated	✓	✓	✓	✓	✓
Installation between isolating valves	✓	✓	✓	✓	✓
Installation with a lock shield valve fitting (included)	✓	✓	✓	✓	✓
Replaceable under pressure	✓	✓	✓	✓	✓
<b>FUNCTIONS</b>					
Corrosion rate (measure and log)	✓	✓	✓	✓	✓
Temperature (measure and log)	✓	✓	✓	✓	✓
Warning function (adjustable) LED	✓	✓	✓	✓	✓
Warning function (adjustable) volt-free contact	✓	✓	✓	✓	✓
<b>READ OUT</b>					
Visual inspection	✓	✓	✓	✓	✓
Memory locally readable by means of USB via laptop or optional Risycor	✓	✓	✓	✓	✓
Memory remotely readable through internet	✓	✓	✓	✓	✓





The smallest component with the biggest savings potential.



Sometimes it is sufficient to change your perspective to see clearly.



**Antony Corbett - Product Manager for Geberit supply piping systems - Geberit Mapress & Geberit Mepla multilayer pipe**

"Ongoing water monitoring in carbon steel systems should be included as part of any specification and design. Modern water monitoring devices offer greater visibility of the system with early warning detection of potential issues, especially corrosion - all with greater flexibility and lower costs than before."



**Chris Thompson - Research Engineer - BSRIA**

"...for routine maintenance and correcting simpler problems a smart system could definitely have its advantages."

*From the April 2018 Delta-T BSRIA journal titled: 'Smarter system role in predicting failure'*



**John Blake - Engineer - Midlothian Council**

"The Risycor is proving invaluable in existing systems that we have installed and are providing excellent graphical information on both corrosion and temperatures. An additional benefit on maintenance contracts is that we are seeing when systems are being shut down or being unknowingly interrupted. Excellent and hopefully we will continue to retrofit."



**James Culbertson - Director - The Keenan Consultancy**

"The Risycor has principally filled an industry hole allowing transparency for all parties to pro-actively tackle corrosion both in a preventative and ongoing way, it is the insurance policy you do not need to keep paying."



**Dawn Armstrong - Principal Engineer - Hulley & Kirkwood**

"In the hidden depths of closed heating & cooling pipework systems lies an unforeseen relentless attacker which is corrosion. The installation of a Risycor unit provides early warning signs, and even aid the prevention, of pipework corrosion that all Clients & Building Owners fear."



# Only continuous monitoring protects systems from corrosion.

#RisyCord



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