

# Intelligent water monitoring and treatment



# BG50i – Intelligent water monitoring and treatment

BG50i is Guardian Water Treatment's intelligent maintenance and real-time monitoring package, designed to help responsible parties, such as Facilities Managers and maintenance teams, meet the requirements of BSRIA's BG50/2021 - Water Treatment for Closed Heating and Cooling Systems.

Available as a one-off 'health check' or for ongoing support, BG50i incorporates real-time corrosion monitoring technology – which provides an efficient and instantaneous alternative to sampling and corrosion coupons – combined with industry-leading water treatment.

Utilising real-time data from Hevasure's award-winning 24/7 monitoring system, BG50i gives FMs a greater understanding of the corrosion process and how it can be mitigated, leading to site-specific water treatment programmes that tackle the root cause of corrosion: optimising energy usage, minimising maintenance costs, preventing off-plan call outs and extending the life of valuable assets.

# Using real-time monitoring saves £200,000

#### What is BSRIA BG50/2021?

BG50 provides best practice advice to those responsible for the management of closed heating and cooling systems once a building has been handed over, including maintenance engineers and facilities managers.

It explains how common problems, such as corrosion, scale, sedimentation and biofouling, can be prevented through proper design, construction, maintenance and real-time monitoring, covering a range of water treatment techniques.

The updated guidance highlights the importance of eliminating the root cause of such issues with a particular focus on minimising dissolved oxygen (DO) levels to ensure system performance, energy efficiency and extended life of plant and components.





### Water treatment experts

Guardian Water Treatment is a leading water treatment expert working with Facilities Managers in some of London's most iconic buildings – including the Scalpel, Broadgate Estates and the Leadenhall building.

Advanced treatments - Our closed-circuit water system management techniques utilise the best methods and technology available, such as side stream filtration, chemical and non-chemical treatments.

**Innovative monitoring -** With the addition of Hevasure's real-time monitoring technology into this mix, irregularities within the system can be swiftly identified and rectified, saving considerable time and money – around  $\pounds 200,000$  in the example below (F1).







### Hevasure explained

Hevasure's state-of-the-art 24/7 monitoring solution detects a range of parameters that signify corrosive conditions, including dissolved oxygen, pH, pressure, inhibitor levels, corrosion rates.

The fully integrated system incorporates a wide range of high-quality sensors connected to a sophisticated data acquisition system. Live data is relayed up to the cloud where it can be viewed via the Hevasure dashboard on laptops and mobile devices.

#### Parameters Hevasure monitors include:

- Dissolved oxygen
- Make-up water flow
- Pressure
- Temperature
- Conductivity / chemical dosing level
- pH
- Galvanic currents (related to corrosion rate of
- steel)
- Crevice corrosion





Any event, whether planned or unplanned (such as leaks or loss of pressure), is flagged on the inbuilt charts, allowing PCC and maintenance teams to keep electronic records all in one place.

#### Hevasure benefits:

- Readings are taken every 15 minutes, 24/7
- Clients have direct-access to Hevasure dashboard
- Alerts sent to responsible parties' inbox if critical levels are exceeded
- Reports show trends during a period, with recommendations to keep a water system healthy
- Real-time monitoring of key parameters, no waiting for expensive lab results
- Instant notification of unplanned events, such as water loss

Problem: Heavily contaminated Chilled Hot Water (CHW) system with high levels of dissolved iron and suspended solids



Hevasure unit installed alongside sampling and corrosion coupons over a two-week period to check system condition following flushing.



Through immediate identification and rectification of the problem, Hevasure saved £200,000\* by preventing the need for remediation works.

## Quick and accurate resolution

Traditionally, FMs and building managers have relied on sampling and corrosion coupons to identify issues within closed circuit water systems; methods that are not instantaneous, prone to misinterpretation and fail to identify dissolved oxygen – the precursor to almost all types of corrosion.

When it comes to sampling, laboratory analysis can take days or weeks to return, by which time the conditions within the system may have changed. This leaves responsible parties open to potentially unchecked issues which could lead to expensive problems – repairs, or in the worst case scenario, breakdown.

In contrast, the BG50i approach continuously monitors a range of parameters to give a true and real-time picture of system condition. Anomalies are identified and analysed before corrosion has occurred. This means problems can be swiftly dealt with and maintenance regimes are fit for purpose, potentially cutting site visits and dramatically reducing the time and cost involved in rectifying issues.

All the information about a system is available on a dedicated dashboard, with alerts sent regarding changes in condition via SMS or email.

Where changes in condition are identified, they can be pin pointed back to a single event – following routine maintenance for example. If conditions return to normal quickly, no action needs to be taken. In this scenario, Hevasure prevents unnecessary intervention, avoiding flushing and dosing that may historically have been used as a routine step.

## Improved efficiency and sustainability

Closed circuit water systems are essential for the efficient operation of HVAC plant, so ensuring pipes and associated components are corrosion free will aid in this efficiency, prolonging operational life and meeting sustainability targets.

Water wastage can also be reduced, by avoiding routine flushing. Combined with other water saving technologies, such as in-line filtration, the BG50i package will help FMs ensure client systems work at their optimum.

And, by giving FMs and building managers the benefit of cumulative data, BG50i helps to build a true and accurate picture of condition - an ideal basis to plan ongoing maintenance strategies that are lean and system specific.

# BG50i – control and transparency

For FMs and building managers a key attraction of our BG50i package approach are control and transparency.

Having access to 24/7 data not only ensures closed systems work better and are less prone to corrosion, it also puts FMs back in control, resulting in fewer site visits and a reduced requirement for external contractors.

Closed circuit water systems are hugely complex and the consequences of inadequate water system management can be disastrous, with the price of downtime, replacement and litigation potentially running into the millions. With Guardian's BG50i package these risks can be dramatically reduced an investment that will save in the long run.



#### Monitoring with Hevasure



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