FORCE Technology

Derisking Tomorrow



Treatment and monitoring of boiler water

Strengthen plant safety, service life and operating economy through systematic monitoring of boiler water and feedwater.

Force Technology provides consultancy, water analyses and technical support for optimising steam boiler plants and water treatment.

Safe and reliable steam production in boiler plants below 20 bar

The quality of boiler water and feedwater is critical to the safety, energy efficiency and service life of steam boiler plants. Incorrect water quality can lead to corrosion, scale formation, carryover, operational disruptions and, in the worst case, damage to the plant.

Systematic monitoring of boiler water, feedwater, make-up water and return condensate provides a documented basis for ensuring stable operation, compliance with applicable standards and optimum operating costs.

Typical monitoring parameters include:

- pH value and alkalinity (P- and M-alkalinity)
- Conductivity and salt content
- Total hardness
- Phosphate residual
- Sulphite residual
- Silica
- Oxygen content

Requirements for boiler feedwater and boiler water are set out in the following standards:

- DS/EN 12953-10 Shell boilers – Part 10: Requirements for feedwater and boiler water quality
- DS/EN 12952-12 Water-tube boilers – Part 12: Requirements for feedwater and boiler water quality

Regular water sampling and analysis are necessary, as deviations from the specified limit values should be corrected immediately through additional dosing and/or blowdown, as well as adjustment of the chemical dosing. In the event of significant deviations, the boiler should be shut down and only restarted once the water quality in the boiler system has been restored.

For troubleshooting, we can provide the following types of assistance:

- A site visit by an inspector with in-depth knowledge of the specific plant
- Verification analyses carried out in our laboratory
- Advice in connection with reviews of water treatment systems and water analysis facilities
- Advice in connection with inspection, corrosion and deposit formation
- Non-destructive testing and inspection

The outcome

With systematic monitoring, you gain:

Documented control of water quality	Ongoing analyses of key parameters such as pH, conductivity, hardness, alkalinity, phosphate and sulphite help ensure that the plant is operated within the recommended limits.
Prevention of corrosion and deposits	Correct water treatment reduces the risk of oxygen corrosion, scale formation and deposits that can impair heat transfer and increase energy consumption.
Increased operational reliability	Early identification of deviations makes it possible to correct dosing, optimise blowdown and identify faults in water treatment systems or condensate systems before they develop into operational problems.
Optimised chemical consumption	Monitoring ensures that chemical dosing is adjusted to the actual requirement and is not higher than necessary.
Technical advice and troubleshooting	The results can be used to identify the causes of deviations in water quality and provide a basis for targeted improvements to plant operation and maintenance.

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