Limescale impact on machinery equipment's function

With Aqua, you can optimise equipment performance for an entire system from a single point of installation and on the long-term basis. Aqua helps equipment managers to address significant risks, including those detailed below.

Get more out of heating and cooling systems

Enable low operational costs
Functional strategy to achieve optimal energy efficiency & minimal running costs

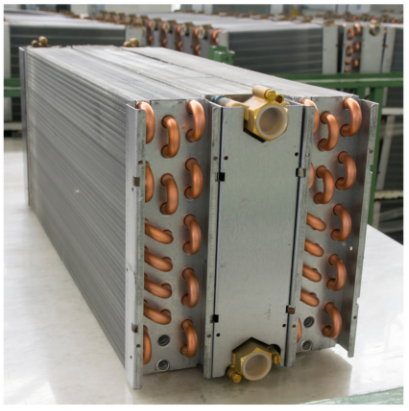
Avoid performance gaps
Allow system operating at peak capacity around the clock

Minimise capital investment costs
Increase system durability; avoid unscheduled maintenance and premature aging

Optimize Carbon savings
Permanently reducing energy demands

Heat Exchangers

Limescale reduces the output of heat exchangers, significantly increasing energy consumption and maintenance costs, while causing equipment damage and premature aging. It accumulates large financial and material costs, creating real challenges for efficient water management. Only 3 mm of scale deposits in heat exchangers can reduce energy efficiency by a staggering 21%, resulting in increased energy costs, production losses and constant demand for service and product replacement.



Cooling towers

In the cooling process water is reused, causing water to evaporate. Over time layers of dirt and limescale deposits are created on the surfaces of the piping and cooling tower, resulting in reduction of the system efficiency by up to 70%. Ultimate consequences the owners are facing are biological contamination, increased energy consumption, corrosion, frequent demands for parts replacement and interruption in operations. Various chemicals are usually used for the treatment, they are expensive and harmful for the environment.

Boiler rooms

IThe constant heating process of large quantities of water can result in scale build-up over a short period of time. Immediate consequences are visible by scale covered heat transfer surfaces, decreased heat efficiency, reduced production capacities, increased levels of corrosion and leaks that demand regular repairs and cause system downtime. Limescale deposit ultimately results in an energy efficiency drop of 50%, premature aging of equipment, and significantly increased operation costs.

Steam generators

The single biggest issue in steam generator operation is the buildup-of limescale. Left untreated, scale covers elements, blocks nozzles and traps heat, causing overheating and premature system failure. Another serious concern is the possibility that limescale impacts water-level sensors, impeding their function to refill the boiler and resulting in under- or overfilled water levels.

Water pumps

Increase in water temperature or pH-value in hard water areas will result in the formation of calcium carbonate deposits around hot surfaces of water pumps. The most typical issues caused by the deposits are overheating of the motor, interrupted function of the mechanical seal and imbalance on the impeller. Scale deposits will impactefficiency of water flow, causing failure, breaks and demanding regular maintenance. This will cause corrosion, ultimately leading to premature failure and demand for pump replacement.

Central heating systems

Central heating and under-floor heating are both closed water systems. When water is heated, limescale build-up will gradually increase over the course of time, together with sludge and debris. This may cause corrosion, leaks, noise pollution, losses in heat efficiency and increased energy bills.