TT21

Quick scan system health?

Many think that a system water analysis protects against sludge formation and corrosion-related issues. TT20 explains why that is not the case...

By analogy with the annual fire safety check we clarify below which annual checks make sense in a heating or cooling installation to protect against corrosion damage caused by sludge deposition.

Physics first, then chemistry

The main cause of corrosion and sludge formation is due oxygen entering the system. By far the most common fault in this area is the lack of pressure control:

Hydraulic aspects:
- is the neutral point correct?
- does the pressure gauge measure accurately?
- check safety valves?
- water meter, note down the volume of water make-up?

Variable pressure expansion vessel:
- pre-pressure measured and noted? Compare with previous measurements.
- green zone on pressure gauge clear and correct with filling pressure and final pressure?
- red needle?
- check correct vessel sizing

Constant pressure expansion vessel:
- content indication correct?/ current content correct in relation to heating season?
- activate auto refill if required?
- check sizing

Other parameters

- check valve combinationation pressurisation system
- is it a closed system (think cl-o-pen system see Risycard 09)
- leaking DHW calorifier
- pipe sections not diffusion tight
- conductivity of system water and make-up water
- pH of system water and make-up water (important in case of aluminum components)
- water colour, particles, amount of sludge?
- dirt separator drained / filter checked?
- 'milky' water due to air bubbles when taking samples? (Particularly when checking the gas pressure of the expansion vessel)

Readout the Riscor(s)

- see TT17 for an explanation of the graphs

Updated: 07/03/2022