

Materials in contact with drinking water:

Damage analysis to avoid/prevent damage

12/2016

Background:

Plant sections like pipes, components, taps, etc. in contact with water can get damaged by diverse corrosion processes. A corrosion damage can either include an impairment of a component by malfunction or a quality deterioration of the medium (water) by the uptake of corrosion products.

Possible clients:

Operators of water-bearing facilities e.g. piping networks, drinking water installations, cooling or heating circuits with industrial process waters and much more.

Processing:

After the damage survey – including information about the course of events, if possible – the damaged object is prepared and the actual investigations are conducted. The aim is to determine the cause of damage by considering all damage causing circumstances and suggestions for the avoidance of similar cases in the future.

If required the damage event will be simulated under predefined and real-life conditions in a model experiment.

Results:

The results will be presented in a written report or in a court-proof assessment.

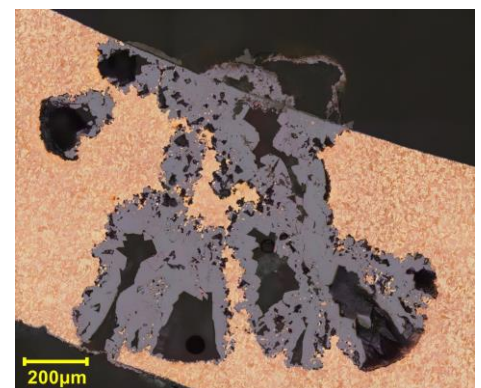
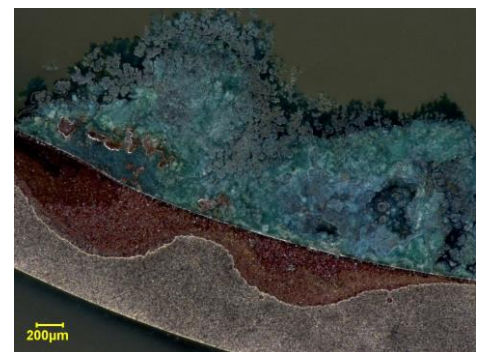
Our Services:

- Destructive analysis of the damaged object with target preparation in metallography and microscopy
- Analysis of water composition and corrosion products
- Analysis of surface layers and surfaces
- Electrochemical analysis, e.g. for inspection of welding seams, determination of typical material characteristics, simulation of damage causing mechanisms, etc.
- Development of remedial and/or prevention measures

Available equipment at IWW:

- Fully equipped metallographic workplace ((vacuum-)embedding, grinding, polishing, etching)
- Latest microscope technology (digital microscope, laser microscope)
- Photographic equipment for macroscopic and microscopic documentation
- Accredited Laboratory for inorganic chemical analysis
- Several electrochemical measuring stations (parallel use possible)
- Classical and modern electrochemical methods (e.g. three-electrode cell, impedance, EC-Noise, frequency-modulation, EC-Pen (rapid sensor) and others)

Contact at IWW
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Example: Metallography