**Characterization of corrosion behaviour of two defferent brasses in three types of sintetic water**

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Brasses are widely used in drinking water for elements such are valves and fittings because of their good machinability. This property is achieved by adding lead (Pb) in brass in certain amounts (up to 2.5 mass %). Pb acts as a lubricant during the cutting process. However, in many types of waters commonly used α-β brasses dezinficate, which means that β phase dissolves and lead migrates into water. In Europe, the concentration of lead in drinking water is restricted by Drinking water directive and is limited to 10 µg/L. However, dezincification of small components of drinking water installation can rise its concentration above the allowed value.

In the present study, two types of brasses were selected for the investigation: the first type with the composition allowed (approved) by 4 MS, and the second with the composition, which is not approved. Both of materials were exposed to three different types of syntetic water that differ in pH, alkalinity and chloride concentration. During the 10 month exposure, electrochemical impedance spectroscopy measurements were conducted regularly – at the beggining every week, later on once per month. At the same time, visual inspection of exposed surfaces is regularly performed. Ocasionally, Pb concentration in water where specimens are exposed, is measured.

So far, brasses are exposed for more than half of year. It is observed that the level of Pb in particular water (highest pH, concentration of chlorides and lowest alkalinity) on not approved brass is becoming higher than in two other waters. The most probable source of Pb in water is dezincification of brass.

Electrochemical impedance spectroscopy results were not yet analysed, however it is belived that it will be possible to differentiate between corrosion systems with different susceptibility to dezincification.