

Abstract

Microbiologically induced corrosion or abbreviated MIC is not a separate or new form of corrosion, but corrosion, accelerated by the metabolism of microbiological organisms.

In the summer of 2021, an abnormally high rate of corrosion was established on the hull of some steel yachts moored in the Zelzate marina and a local investigation was launched. MIC was quickly identified as a possible culprit and an explanation was sought for its rapid rise and spread along the canal. Based on 16S rRNA sequence analyses, the main species of bacteria related to MIC were identified. The situation was monitored over the course of a year by means of small steel plates set out over the entire length of the canal. After 12 months there is already a clear picture and it can be said that the epicenter of the infection is near Zelzate.

The research is scaled up with the COMIC project and a smaller study on accelerated low water corrosion (ALWC). The latter being broadly discussed in this thesis, explaining the connection between weight loss and the depth to which the steel is exposed.