Abstract

This dissertation investigates the possibility of artificially aging metals. Two methods are described for this purpose, the Impressed Current Technique and the Artificial Climate Environment method. The Artificial Climate Environment method is tested with 3 protocols. During each protocol 24 grade-A samples are placed in the Q-Fog installation for a period of two weeks. After each protocol the samples are assigned an age. As reference a literature review is made, describing the composition of an old corrosion layer. The samples from protocol 1 (constant fog at 35°C) are 6 to 11 years old. The corrosion products are unevenly distributed between the frontside and backside. The samples from protocol 2 (fog phase at 35°C, dry phase at 50°C) are 6 to 11 years old. The distribution of the corrosion products between the frontside and backside are more evenly distributed in comparison with protocol 1 and 3. The samples from protocol 3 (fog phase at 45°C, dry phase at 50°C) are older than 11 years. The corrosion products are unevenly distributed between the frontside and backside. Artificially aging metals is possible. During a period of two weeks it is possible to make a corrosion layer which is older than 11 years. The effects of protocol 2 and 3 for longer test periods is subject to further investigation.