SENTIERO
IL INTERNATIONAL
CAMPUS

Corrosion simulator

SIMUCORR

This instrument, designed and built by Il Sentiero, provides useful information on the corrosion behaviour of different materials according to the environment they are used in.

The test consists of three tanks which can all be used independently. Each tank can house a maximum of 48 samples with a standard size of 150 X 150 mm and 2 mm thick. It can also house samples with the actual shape of the component to be analysed.

The system is able to automatically recreate the environments used by the customer in terms of electrolyte liquid concentration and temperature. The circuit is designed to use acid substances, basic substances, hydrogen peroxide and other substances, from room temperature to a maximum of 90°C.

There are 3 simulation zones: in the lower section the samples are completely immersed in the liquid; in the centre section there are two sprinklers to reproduce the external wash cycle and, in the upper section, there is a tank with calibrated holes that regulates the dripping of the liquid to simulate the drops of condensate that forms inside the machine.

Monitored corrosion:

- Uniform corrosion
- Pitting corrosion
- Crevice corrosion
- Inter-granular attack
- Galvanic corrosion
- Hydrogen damage (can be implemented)
- Microbiologically inducted corrosion (can be implemented)
- Stray currents (can be implemented)

The tests are based on:

- Visual inspection for a general analysis
- Level of free corrosion potential
- Level of free corrosion potential in the vicinity of crevice washers
- Visual and stereoscopic inspections to detect the presence of pitting
- Loss of weight after the removal of the oxides with an ultrasonic wash cycle