

The mystery of salt damages – a challenge for consultants

Background

Salt is added for many reasons to buildings – by salting, via the air, airborne, decay of plants, presence in original materials, etc. These salts challenge the materials' need for maintenance and their durability depending on the climate, which salts are present and the material.

Together with frost and mechanical strength, salts are one of the most tested durability factors. None the less, it is internationally known that the existing test for investigating materials durability to salt is not true and fair, meaning that the results achieved from laboratory test are not similar to the damages that subsequently can be documented in practice. It is thus not possible to give satisfactory consultancy and prevent damages to a satisfactory extent and salt damages are still a general challenge for consultants.

Purpose

The project covers participation in international collaboration, communication and research support to elaboration of a new accelerated salt test. The research support is related to estimation of building material (bricks and brick work by natural stones) remaining useful life time when exposed to salt impact based on the elaboration of a new accelerated salt test.

Project period and collaboration partners

In August 2016, a European expert group started within RILEM (den international material organisation) consisting of approx. 20 experts from 12 European countries with the purpose to elaborate a new and more accurate test to assess building materials' durability when exposed to salts. The group's work is expected to be finalized in 2021. See more information here: <https://www.rilem.net/groupe/271-asc-accelerated-laboratory-test-for-the-assessment-of-the-durability-of-materials-with-respect-to-salt-crystallization-355>

Perspective

When making a more accurate salt test, more valid results can be achieved which is a condition for being able to give satisfactory consultancy. In the long term, this will make it possible to select materials with a reduced decomposition and need for less repair (meaning less costs) in relation to construction of new buildings and renovation of existing ones, which again will benefit building owners and residents. Furthermore, it will be a beneficial for the society as it is better use of resources; a positive contribution to sustainable constructions.