PROJECT

AGB2002/016

Corrosion inhibitors for the innovative and cost effective repair of chloride contaminated reinforced concrete structures

Korrosionsinhibitoren für die innovative und kosteneffiziente Instandsetzung von chloridverseuchten Stahlbetonbauten

Funding: National (Switzerland)
Duration: Nov 2005 - Oct 2010
Status: Complete with results

Background & policy context:

Given the technical and economic importance of repairing traffic infrastructure all possible methods should be carefully considered. In particular, procedures and measures should be examined, which represent an innovation that allows an increase in efficiency and / or a reduction in costs.

For these reasons, research in Switzerland on the use of inhibitors for the repair of reinforced concrete structures focuses on exploring the economic and technical potential and the limits of the repair process of chloride contamination.

Objectives:

The goal of this research project is to investigate the economic and technical potential of new corrosion inhibitors for the cost effective repair of chloride contaminated reinforced concrete structures. The efficacy of corrosion inhibitors should be tested using laboratory experiments simulating the practical conditions of repairs.

Advice for a practical use of inhibitors and for pilot projects will be derived from the project results.

Methodology:

First: In-depth literature review, contact with other research groups and potential suppliers, laboratory tests to assess the impact of the order of liquid inhibitors. Concrete cone surfaces on the tensile bond strength of repair mortars as in repairs will be used after the concrete removal was investigated.

Based on these results, systems for the subsequent corrosion tests will be selected. Using the corrosion tests, the conditions are in the use of inhibitors for the repair of reinforced concrete structures with chloride-induced corrosion. Simulated reinforcement on the laboratory scale and the effectiveness of inhibitors (Inhibitor-containing repair mortars etc.) are reviewed and assessed.

Parent Programmes:
ARAMIS - ARAMIS information system

Institute type: Public institution
Institute name: Swiss Government: State Secretariat for Education and Research
Funding type: Public (national/regional/local)

Partners:

Switzerland:
Research organisation:
Involvement:

Dr. F. Hunkeler
Technische Forschung und Beratung für Zement und Beton
Lindenstrasse 10
CH-5103 Wildegg
062 887 72 25
hunkeler@tfb.ch

Organisation: Technische Forschung und Beratung für Zement und Beton
Address: Lindenstrasse 10
Zipcode: 5103
City: Wildegg
Contact country: Switzerland
Telephone: 062 887 72 25

Key Results:

Publications and lectures:


Practical recommendation for the use of inhibitors for the repair of reinforced concrete structures chloride contaminated.

Basis for a test standard for assessing the efficacy of inhibitors.

STRIA Roadmaps: Infrastructure
Transport mode: Road transport
Transport sectors: Passenger transport, Freight transport
Geo-spatial type: Other