

Chloride resistance of concrete – relations and approaches

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The service life requirements of reinforced concrete structures demand a high chloride resistance. However, a general trend towards a decreased chloride resistance of concrete is observed during recent years. As a result, concrete producers have difficulties to reach the prescribed limit values. The goal of the project is to identify possible causes for this development.

The following points are investigated using literature review, concrete tests and thermodynamic modelling:

- Basics of rebar corrosion caused by chlorides in the passivated environment
- Influence of the cement clinker composition
- Influence of selected mineral additions
- Influence of an optimized grain size distribution in the sand

It is expected that the results of the project will help to efficiently adapt concrete mix designs in order to improve their chloride resistance.

The predominant part of the literature review and the concrete tests have been conducted. It is planned to perform the remaining tests and the thermodynamic modelling in the first half of 2024. Afterwards, the final report will be written.