

Experiences with the Pyrex-Mortarbar-Test

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Summary

In order to investigate the specific influence of different admixtures, cement components or cement properties on their behaviour with reactive aggregates it is necessary to get quite a lot of comparable test results.

For this reason a test method with crushed Pyrex glass as a reactive "model" material was developed according to the U.S.-Mortarbar-Test. A great number of test series were carried through. It showed that this accelerated test method is very sensitive to slight alterations of the experimental conditions particularly to the grading of the Pyrex glass.

Therefore the method is very useful for observing and evaluating tendencies within one complete test series, but one must be very careful comparing different test series, and it is impossible to compare directly the test values of different laboratories.

By using the Pyrex-Mortarbar-Test the tendency of some parameters of the alkali reaction could be clarified. The quantitative effect of these parameters on concrete structures cannot be predicted by Mortarbar-Tests, but there has been no reason to suspect that the tendencies themselves could get controverse directions if an alkali reaction occurs in a concrete.