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25 August 1994

**Committee C01 on Cement
Subcommittee C01.29 on Sulfate Resistance**

Research Report C01-1004

**Interlaboratory Study to Establish Precision Statements for ASTM
C452, Test for Potential Expansion of Portland Cement Mortars
Exposed to Sulfate**

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December 26, 1980

Mrs. Katharine Mather
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Dear Kay:

Following the Subcommittee's deliberations at the Buena-Vista meeting I have now completed the data analysis for the reaffirmation of Method C-452.

This letter is a continuation of my letter of November 25, 1980 to you with copies distributed to all Subcommittee Members. The attached Table 5 shows the overall expansion averages \bar{x} , the standard deviations, and the coefficients of variations for each cement, at the age of 14 days.

By taking an average level of expansion between 0.01% and 0.04% we have the averages for the standard deviation and the coefficient of variation of the nine sulfate resisting cements. The following diagrams 1 and 2 show the plots of the standard deviations and the coefficients of variations versus the average expansions \bar{x} , for between and within laboratory results on each of the \bar{x}_A cements analysed. From these two diagrams we can take the standard deviation within-laboratory as 0.003% and between laboratory as 0.005%. Or, we can take the coefficient of variation within-laboratory as 12% and between-laboratory as 17%.

Following ASTM C-670 recommended practice for precision measured by the standard deviation, we can write the following statement:

The single operator standard deviation has been found to be: 0.003% for expansions between 0.01% and 0.04%. Therefore, results of two properly conducted tests by the same operator on the same material, should not differ from each other by more than 0.009%.

Mrs. Katharine Mather
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December 23, 1980

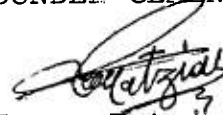
The multi-laboratory standard deviation has been found to be 0.005% for expansions between 0.01% and 0.04%. Therefore, results of two properly conducted tests on the same material in two different laboratories, would not differ from each other by more than 0.014%.

I am attaching the report of the Subcommittee meeting also to be distributed to the Members. In the meantime, I am working on the completion of the data analysis from the remaining laboratories and I expect to have finished within one month or less.—

Happy New Year.

Sincerely,

DUNDEE CEMENT COMPANY



Terry Patzias
Chief Chemist

TP:pdv

cc: Members: C01-29

DUNDEE