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A Discussion of the Paper

"INFLUENCE OF THE MINERALOGICAL COMPOSITION, SPECIFIC SURFACE AREA AND STRAINS - CRYSTALLITE SIZE OF ALITE ON THE COMPRESSIVE MECHANICAL STRENGTH OF PORTLAND MORTARS. I. CLINKERS OF LOW TRICALCIUM ALUMINATE CONTENTS"

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We read with interest this paper as we are conducting studies relating to the correspondence between laboratory clinker and plant clinker. The first part of this study has been described in form of the paper which has been accepted for presentation in the ICMA seminar (Calgary, April 1995). We have used statistical methods for correlating the observed differences in minerology between the two types of clinkers and we are unable to work out a systematic correlation. The present authors attempted a more difficult and controversial topic which, we feel, requires extremely sophisticated approach to arrive at any meaningful end results. We would like to make the following observations regarding the paper:

(a) The specific surface area determined by Blaine permeability and the potential compound calculation by Bogue in this study would be rough estimate for getting any correlation. One should go for complete particle size distribution if possible instead of Blaine values.

(b) Instead of giving detailed calculated data it is useful to the researchers if the authors of such kind of work provide specific correlation equation and their validity ranges.

(c) The communality factors for group B cement as shown in table 8 to 11, show variation from expected value of unity. As mentioned by the authors this may be attributed to impurities and homogeneity differences of the materials. It is our experience that when you try to mathematically correlate the physical factors, the experimental/instrument error and intrinsic variability of material characteristics, bring down the accuracy of statistical prediction considerably.

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(d) Another important aspect is the use of different statistical software by different people which lead to focus on different set of variables. For example, while some people concentrate on the co-efficient of variance and of course correlation co-efficient, some other workers deal with R-Sq. value, communality factors etc. The sources, suppliers and features of such software tools should be standardised and systematically documented.

(e) Finally the authors resorted to qualitative information on the effect of various phases viz. C2S, C4AF, C2F, etc. for deriving any meaningful conclusion. We feel that similar study will not take us to any better understanding of the complex phenomenon.