Book reviews

Uniformity of cement strength

Editors: E. Farkas and P. Klieger

American Society for Testing and Materials, Philadelphia, 1987, Special Technical Publication 961. 228 mm × 152 mm. 108 pp. Illustrated, paperback. ISBN 0 8031 0961 X. £16.

This compact volume contains seven papers presented at an ASTM symposium organized to record user application on the ASTM *Method for evaluation of cement strength uniformity from a single source*. The prime aim is the pursuit of closer uniformity of cement strength as one controlling factor of concrete produced from it.

To cope with such a subject statistics have to be used and there is a wealth of such data gathered, not only from the USA but also from Belgium, India and Saudi Arabia, in all covering 200 individual cement works.

The successful application of the ASTM technique is reported by the Illinois Department of Transport who can be supplied by up to 17 separate works in their projects. 95 cement sources were similarly evaluated by the US Army Waterways Experiment Station who further reviewed sampling types and caution the influence of 'composite samples' in such analysis.

On a smaller scale a modern Saudi plant follows cement uniformity usefully through to concrete output, albeit over a short period.

More detailed statistics from the Cement and Concrete Reference Laboratory describe work in checking over 500 testing laboratories (who enter into this programme on a voluntary basis) and cover 19 050 items for conformance to ASTM specifications.

An interesting segmentation approach is presented from Belgium and breaks down an apparent continuous strength sequence to reveal sudden jumps in levels of strength.

A 30 year review of cement quality and production from India shows tremendous growth, particularly over the past ten years. Output has doubled to 29 Mt per annum with over 70% containing pozzolana or slag. Strengths have steadily increased, as has the distribution of alkalis, and aggregates previously believed to be innocuous have been involved in alkali-silica reaction in structures over 25 years old.

The final paper describes the Saudi cement industry running at an output approaching that of the UK from eight modern works. Informative comparison is made between cement testing national standards and the influence of prime test requirements on the quality of cement.

The reader should not be deterred by the prospect of statistics as most of those applied here are familiar and, these aside, the development of the cement industry in other countries makes interesting reading.

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Fly ash and coal conversion by-products: characterization, utilization and disposal IV

Editors: G. J. McCarthy, F. P. Glasser, D. M. Roy and R. T. Hemmings

Materials Research Society, Pittsburgh, 1988. 228 × 152 mm. 364 pp. Illustrated, hardback. ISBN 0 931837 81 2. \$42.00 US. Available from Clarke Associates-Europe Ltd, Unit 2, Pool Road Trading Estate, West Molesey, Surrey KT8 0HE, UK; £32.00.

This volume consists largely of papers presented at the autumn 1987 meeting of the Materials Research Society held in Boston, USA. This was the Society's sixth meeting on fly ash and the fourth to be published

in this series. The contents are supplemented by six additional papers.

As the title indicates, the subject matter falls into three categories. The first two of these contain most of