

Book review

The design and placing of high quality concrete

by D. A. Stewart, A.M.I.C.E., A.M.I.E.E.

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The absence of concrete and steel of sufficient strength has been the principal cause of the delay in the introduction of the technique of prestressing. The basic requirements for high strength in concrete have been well known to research workers for some time, but it is surprising how little attention has been paid to this subject until recently by practising engineers. It is for this reason and because of the sudden demand for concrete of suitable quality for prestressing that Mr. Stewart's book should prove extremely useful. Mr. Stewart has dealt with all phases of the production of high quality concrete from the analysis of the materials available to the use of this information in the design of the most suitable mix for the aggregate and concludes with the placing and compaction, by vibration, of the concrete.

Little attention has been paid to the design of the mixes suitable for hand tamping, but the growing demand for very high strengths beyond those obtainable with manual compaction and the economies, rightly stressed in the book, which can be effected by the use of vibration will no doubt lead soon to the discontinuance

of hand tamping for all but unimportant work. Mr. Stewart has emphasized the difficulty of obtaining correctly graded aggregates unless the stones are delivered in their separate sizes and recombined, and has shown that even though the grading of an aggregate meets the requirements of B.S.S.882 it may be quite unsuitable in this respect for the production of high strength concrete.

Mr. Stewart's method of designing concrete mixes is worthy of careful study because, as he points out, leaner mixes than those normally used may often be employed if proper attention is paid to the proportioning of the concrete. The author deals with the problems connected with early stripping of the moulds and it is perhaps a little surprising that he has not discussed the possibilities and advantages of steam curing in this connexion.

If this book serves, as it should, to focus more attention on the advantages to be obtained from the application of scientific methods to the production of one of the principal constructional materials, the author will have indeed rendered a very useful service.