

## Book reviews

---

### **Méthodes générales d'essai et de contrôle en laboratoire**

#### **Livre 1: Mesures géométriques et mécaniques**

by R. L'Hermite

Published by Editions Eyrolles, Paris. 1st edition. 1959.  
pp. xii + 739. Price 9,965 francs.

This book on methods of testing and control in the laboratory is a fine production both as a book and for what it contains. The printing and layout is clear and pleasing and the following list of chapter headings (freely translated) will give some idea of the ground covered by M. L'Hermite and his team of helpers from the Institut Technique du Bâtiment et des Travaux Publics at Paris.

Introduction. Chapter I: Controlling and measuring. (This chapter mentions some of the reasons for which testing may be done and some of the different sorts of test.) Chapter II: Laboratory organization. (This chapter includes a list of laboratories, both in France and abroad, and describes the layout of a typical laboratory.) Chapter III: Statistics applied to tests and to the control of materials. (This chapter includes sections on the theory of probability, chance variables, laws of distribution, and theories of errors and approximations.) Chapter IV: Methods of and apparatus for measuring. Chapter V: Measurements of size. Chapter VI: Mechanical measurements. (This chapter includes methods of measuring time, speed, weight, and forces.) Chapter VII: Measuring stresses and strains. Chapter VIII: Equipment for mechanical testing.

### **Reinforced Concrete Fundamentals with Emphasis on Ultimate Strength**

by P. M. Ferguson

Published by John Wiley and Sons, Inc. New York and Chapman and Hall Ltd, London. 1st edition, 1958. pp. xi, 604. Price 76s.

It is indeed a refreshing experience to read a book on reinforced concrete design which is stimulating by virtue of its approach and deals with the most recent

advances in ultimate load methods in a simple but comprehensive manner.

As its title suggests, the fundamental properties of the material and design methods form the theme of the book; this theme is dealt with in a logical manner. A concise chapter on materials and specifications concludes with a discussion of design procedures, both elastic and plastic, in which the relative merits are discussed and the question of load factors for ultimate load design raised. The recommendations of the ASCE-ACI committee are given for assessing load factors in various circumstances but even in this country these recommendations will be useful as a guide. This section ends, very appropriately, with a short discussion on the accuracy of calculations.

Having introduced ultimate load, Mr Ferguson considers in detail the behaviour of axially loaded columns and then beams, and refers to the considerable amount of experimental work that is available. For columns, the ultimate load methods are shown to be the only logical approach and, for beams, the same approach is extended to cover the more complex behaviour. The basic behaviour is given initially and this is then related to the various recommendations of the ASCE-ACI committees which have dealt with these problems. This relating of basic principles to code requirements is of particular interest.

Then follows the conventional elastic method of analysis for reinforced concrete beams with a very detailed chapter on the design of sections for moment according to the ACI code and the introduction of design charts. Many examples of the method are given which will be of great value to the student. Shear, bond, and diagonal tension are next considered in relation to conventional design; the ultimate load approach to shear is discussed in detail and, since no satisfactory theory exists for shear in either the elastic or plastic range, the present methods to ensure adequate strength in shear are given. The design of cantilever retaining walls and of continuous beams and slabs is discussed and illustrated by numerous examples, all of which are based on elastic methods and the ACI recommendations.

Probably the most interesting chapter in the book is that on the yield-line theory for slabs. As the author explains, this theory has been available for some time