

# The Engineer's Library

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## BOOK REVIEWS.

**Materials of Construction: Their Manufacture, Properties and Uses.** By Adelbert P. Mills, Assoc. M. Am. Soc. C. E.; Assistant Professor of Materials, College of Civil Engineering, Cornell University. Published by John Wiley & Sons, Inc., New York; Canadian selling agents, Renouf Publishing Co., Montreal. First edition, 1915. 682 pages; 346 illustrations; 6 x 9 ins.; cloth. Price, \$4.50 net.

This is a primary reference book for engineers and a text book for students, rather than a treatise. It covers its particularly broad field in a comparatively concise and thoroughly modern manner, and older text books on the subject are surpassed in the matter of up-to-date information concerning new processes of manufacture, with consequent change in properties of materials, and in information concerning new materials themselves.

In Part I. the materials of masonry construction are treated as cementing and non-cementing materials. Under the former are chapters devoted to gypsum, plasters, quicklime, hydrated lime, hydraulic lime and grappier cements, Puzzolan and slag cements, natural cements, Portland cement, and concrete, the manufacture, properties and uses of the material being dealt with in each case. This section of Part I. comprises 200 pages. Under non-cementing masonry materials are building stones and stone masonry, bricks and other clay products, to which 20 pages are devoted.

The ferrous metals are considered in Part II., 284 pages, the chapter headings including pig iron, cast iron, malleable cast iron, wrought iron, steel, and the special alloy steels. Some of these chapters, such as that dealing with the manufacture of steel, are quite extensive, and in good accord with the importance of the materials.

The third section of the book treats of the non-ferrous metals and alloys and timber, taking up the remaining

120 pages of text. In each case, the processes of manufacture, properties and uses are dealt with in a very systematic and logical order. The method of treatment is to preface the consideration of each material by a discussion of its ordinary application in engineering construction and a study of its manufacture or natural occurrence. The main treatment is then devoted to a discussion of its physical properties in relation to its use.

The book is certainly a valuable one for use in the dual capacity to which we have referred above.

**Economics of Contracting:** A Treatise for Contractors, Engineers, Manufacturers, Superintendents and Foremen Engaged in Engineering Contracting Work; Vol. II. By Daniel J. Hauer, Construction Economist and Consulting Engineer. Published by E. H. Baumgartner, Chicago, Ill. First edition, 1915. 334 pages; 27 illustrations; 6 x 9 ins.; cloth. Price, \$2.50.

Volume I. of "Economics of Contracting" appeared two years ago. It dealt with contracting in its infancy as a profession, calling for expert knowledge and previous training. It entered with detail and precision into questions of contracts, proposals, bonds, arbitration and other features of contracting. It analyzed separately and fully the business and the clerical ends of contracting, construction camps, outfit, plant, etc. The management of contracts and of men was also dealt with. In short, the book is a valuable one to the contractor, whose library is not extensive at best, in that it gets him away, for a while at least, from his well-thumbed handbooks and cost sheets, and gives him a broader and a better balanced view of his work.

In Volume II. the author takes up new subjects of special interest to contractors, pertaining both to the field and the office. Its chapter headings are as follow: Estimating and Bidding Upon Contracts; Making Contracts and Obtaining Bonds; Financial End of Contracting; Preventing Law Suits; Planning Construction Jobs; Handling and Training Men; Office Filing Systems; Organization of a Construction Company; Lines of Contracting and Specialization and the Standing of Contractors, with an appendix, By-laws for a Construction Company.

The book deals with the vital points in a contractor's business, the questions upon which his success depends. No other book in print indicates more plainly or directly the pitfalls that beset the inexperienced or even the veteran contractor. The author lays great stress upon the importance of cost records and upon careful analytic estimating, upon care and training of men, upon open and honest dealing, and numerous other stepping stones to better and more efficient contracting.

It is well worth the reading of all men engaged in contracting work and should be of considerable value to young engineers contemplating taking up general contracting.