

(PREVIEW)

HANDBOOK ON CONCRETE REINFORCEMENT AND DETAILING

FOREWORD

Users of various civil engineering codes have been feeling the need for explanatory handbooks and other compilations based on Indian Standards. The need has been further emphasized in view of the publication of the National Building Code of India in 1970 and its implementation. The Expert Group set up in 1972 by the Department of Science and Technology, Government of India carried out in-depth studies in various areas of civil engineering and construction practices. During the preparation of the Fifth Five-Year Plan in 1975, the Group was assigned the task of producing a Science and Technology plan for research, development and extension work in the sector of housing and construction technology. One of the items of this plan was the production of design handbooks, explanatory handbooks and design aids based on the National Building Code and various Indian Standards and other activities in the promotion of the National Building Code. The Expert Group gave high priority to this item and on the recommendation of the Department of Science and Technology, the Planning Commission approved the following two projects which were assigned to the Bureau of Indian Standards

- a) Development programme on Code implementation for building and civil engineering construction, and
- b) Typification for industrial buildings.

A Special Committee for Implementation of Science and Technology Projects (SCIP) consisting of experts connected with different aspects was set up in 1974 to advise the ISI Directorate General in identifying the Handbook and for guiding the development of the work. Under the first project, the Committee has so far identified subjects for several explanatory handbooks/compilations covering appropriate Indian Standards/Codes/Specifications which include the following:

Design Aids for Reinforced Concrete to IS : 456-1978 (SP : 16-1980)
 Explanatory Handbook on Masonry Code (SP : 20-1981)
 Explanatory Handbook on Codes of Earthquake Engineering (IS : 1893- 1975 and IS : 4326-1976)
 (SP : 22-1982)
 Handbook on Concrete Mixes (SP : 23-1982)
 Explanatory Handbook on Indian Standard Code of Practice for Plain and Reinforced Concrete (IS : 456-1978) (SP : 24-1983)
 Handbook on Causes and Prevention of Cracks in Buildings (SP : 25- 1984*)
 Summaries of Indian Standards for Building Materials (SP : 21-1983)
 Functional Requirements of industrial Buildings (Lighting and Ventilation) (SP : 32-1986)
 Timber Engineering (SP : 33-1986)
 Water Supply and Drainage with Special Emphasis on Plumbing (SP : 35-1987)
 Functional Requirements of Buildings*
 Foundation of Buildings
 Steel Code (IS : 800-1984)
 Building Construction Practices
 Bulk Storage Structures in Steel

Formwork
Fire Safety
Construction Safety Practices
Tall Buildings
Loading Code

This Handbook provides information on properties of reinforcing steel and detailing requirements, including storage, fabrication, assembly, welding and placing of reinforcement in accordance with IS : 456-1978. 'As a result of the introduction of limit state method of design for reinforced concrete structures and the concept of development length, detailing has become extremely important as many of the design requirements are to be met through detailing. This Handbook is expected to guide the designer in detailing which include correct positioning of bars for a particular type of structural element and preparation of bar bending schedule. The detailing requirements as specified in IS : 456 - 1978 have been brought out as applicable to different structural elements in a building and explained, wherever necessary. The relevant Indian Standards and other literature available on the subject have been taken into consideration in preparing the Handbook. The Handbook will be useful to concrete design engineers, field engineers and students of civil engineering.