

(PREVIEW)
HANDBOOK
ON
CONSTRUCTION SAFETY PRACTICES

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FOREWORD

Users of various civil engineering codes have been feeling the need for explanatory handbook and other compilations based on Indian Standards. The need has been further emphasized in view of the first publication of the National Building Code of India in 1970 (which has since been revised in 1983) 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, 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 formulation 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 recommendations of the Department of Science and Technology, the Planning Commission approved the following two projects which were assigned to the Bureau of Indian Standards (erstwhile Indian Standards Institution):

- a) Development programme on code implementation for building and civil engineering construction, and
- b) Typification of industrial structures.

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

Handbooks published:

1. Design Aids for Reinforced Concrete to IS 456 : 1978 (SP 16 : 1980)
2. Handbook on Masonry Design and Construction (*first revision*) (SP 20 : 1991)
3. Summaries of Indian Standards for Building Materials SP 21 : 1983
4. Explanatory Handbook on Codes for Earthquake Engineering (IS 1893 : 1975 and IS 4326 : 1976) (SP 22 : 1982)
5. Handbook on Concrete Mixes (SP 23 : 1982)
6. Explanatory Handbook on Indian Standard Code of Practices for Plain and Reinforced Concrete (IS 456 : 1978) (SP 24 : 1983)
7. Handbook on Causes and Prevention of Cracks in Buildings (SP 25 : 1984)

8. Handbook on Functional Requirements of Industrial Buildings (Lighting and Ventilation) (SP 32 : 1986)
9. Handbook on Timber Engineering (SP 33 : 1986)
10. Handbook on Concrete Reinforcement and Detailing (SP 34 : 1987)
- II. Handbook on Water Supply and Drainage with Special Emphasis on Plumbing (SP 35 : 1987)
12. Handbook of Typified Designs for Structures with Steel Roof Trusses (with and without Cranes) (based on IS codes) (SP 38 : 1987)
13. Handbook on Structures with Steel Portal Frames (without Cranes) (SP 40 : 1987)
14. Handbook on Functional Requirements of Buildings (Other than Industrial Building) (SP 41 : 1987)
15. Handbook on Structures with Reinforced Concrete Portal Frames (without Cranes) (SP 43 : 1987)
16. Handbook on Structures with Steel Lattice Portal Frames (without Cranes) (SP 47 : 1988)
17. Handbook on Building Construction Practices (Other than Electrical Services) [SP 62 (S&T) : 1997]

This Handbook on construction safety practices which is one of the handbooks in the series has been prepared to meet the urgent needs of constructors, project managers and site engineers and deals with the safety in construction. Primarily, it is based on the Indian Standards the subject. This Handbook which is a manual on the safety practices in construction projects has universal applications to all construction activities, whether they result in buildings or dams or power stations.

The following points are to be kept in view while using the Handbook:

- a) The Handbook does not form part of any Indian Standard on the subject and does not have the status of an Indian Standard. Wherever there is any dispute about the interpretation or opinion expressed in this Handbook, the provision of the code(s) only shall apply; the provisions of this Handbook should be considered as only supplementary and informative.
- b) The list of Indian Standards published in the field of safety construction (see Annex E) and the bibliographical references used in preparation of the Handbook are given in Annex F.

This Handbook is based on the draft prepared by National Institute of Construction Management and Research, Mumbai. The draft handbook was circulated for review to Northern Railway, Delhi; Public Works Department, Punjab (B&R), Patiala; Bhabha Atomic Research Centre, Mumbai; Engineer-in-Chief's Branch, Army Headquarter, New Delhi; Public Works Department, Lucknow; Life Insurance Corporation of India, New Delhi; Housing & Urban Development Corporation Limited, New Delhi; Public Works Department, Maharashtra, Mumbai; Builder's Association of India, Chennai; Shri D.N. Chopra, New Delhi; Research Designs & Standards Organization, Lucknow; Chief Engineer, Army Headquarters, Delhi Zone, Delhi; Hindustan Pre-Fab Ltd, New Delhi; National Buildings Construction Corporation, New Delhi; Directorate General of Factory Advice Service and Labour Institute, Mumbai; Central Road Research Institute, New Delhi; Forest Research Institute, Dehradun; Gammon India Limited, Mumbai, Central Water Commission, New Delhi, Shri Tilak Raj Takulia, New Delhi; Plant Construction Organization, Durgapur; Acrow India Limited, Mumbai; Shri J. P. Mittal, Lucknow; Geological Survey of India (Western Region), Jaipur; Bhakra Beas Management Board, Chandigarh; Chief Technical Examiner (Vigilance), Bhopal; Central Board of Irrigation & Power, New Delhi; Central Electricity Authority, New Delhi; Continental Construction Pvt Ltd, New Delhi; Jaiprakash Associates Pvt Ltd, New Delhi; Karnataka Power Corporation Ltd, Bangalore; Kodampurai PSHE Project, Minparai Post (Tamil Nadu); Salal Hydroelectric Project, Jyotipuram; Tungabhadra Steel Projects Ltd, Tungabhadra; Central Vigilance Commission, New Delhi; Shri A. Nagabhushan Rao, Bangalore; Ministry of Transport (Roads Wing), New Delhi; Chief Engineer (Bridges), Central Railway, Mumbai; Bharat Heavy Electrical Ltd, Power Sector, Construction Management Safety Department, New Delhi; Som Dutt Builders Pvt Ltd, New Delhi; National Council for Cement & Building Materials, New Delhi; Structural Engineering Research Centre, Madras; Central Building Research Institute, Roorkee; Department of Science & Technology, New Delhi; Central Public Works Department, CDO, New Delhi; Metallurgical & Engineering Consultants (India) Ltd, Ranchi; Planning Commission, New Delhi; National Industrial Development Corporation Ltd, New Delhi..