

BUREAU OF INDIAN STANDARDS

Minutes

Panel for Masonry, CED 46:P7 : **Sixth Meeting**
Thursday, 21 March 2024 : **1430 h to 1700 h**

Convener: Shri V. V. Arora **Member Secretary:** Shri Arunkumar S.
NBC Officer: Shri Abhishek Pal

PRESENT

Members (Virtually):

- 1) Shri P. K. Adlakha (Adlakha Associates Private Limited, New Delhi)
- 2) Shri H. E. Iyer (Bhabha Atomic Research Centre, Mumbai)
- 3) Shri Ajay Chourasia (CSIR - Central Building Research Institute, Roorkee)
- 4) Shri M. Vinoth (CSIR - Central Building Research Institute, Roorkee)
- 5) Shri Siddharth (*Rep.* of CSIR - Central Building Research Institute, Roorkee)
- 6) Dr S.R. Balasubramanian (CSIR - Structural Engineering Research Centre, Chennai)
- 7) Shri Dinesh K Ujjainia (Central Public Works Department, New Delhi)
- 8) Ms Sangeeta Wij (Indian Association of Structural Engineers, New Delhi)
- 9) Dr Deepak Bansal (Indian Association of Structural Engineers, New Delhi)
- 10) Shri Srinivas Mogili (*Rep.* of Indian Institute of Technology Delhi, New Delhi)
- 11) Dr K. S. Nanjunda Rao (Indian Institute of Science, Bengaluru)
- 12) Dr Arun Menon (Indian Institute of Technology Madras, Chennai)
- 13) Shri Satya Prakash [The Institution of Engineers (India), Kolkata]
- 14) Shri Masarrat Noor Khan [The Institution of Engineers (India), Kolkata]

From BIS:

- 15) Shri Abhishek Sharma, Scientist B (Civil Engg)
- 16) Shri Prashant Yadav, Scientist B (Civil Engg)
- 17) Shri Shubham Chaudhary, Scientist B (Civil Engg)

Item 0 OPENING REMARKS

The Convener, Shri V. V. Arora warmly welcomed all the members to this sixth meeting of the Masonry Panel, CED 46:P7. He expressed his appreciation to the

experts and members for participating in the meeting and for their keenness in contribution to the revision of the Code . He suggested to add members who are currently engaged in the work of preparation/revision of Indian Standards related to masonry in the other technical committees under CEDC of BIS, to have coherence between the National Building Code and the relevant Indian Standards. He emphasized that for the revision of this chapter related to masonry in NBC, the members should actively participate in all the meetings and should share their inputs/suggestion relating to the draft of revision timely. He also appreciated the active role of BIS in revising NBC for inclusion of the latest development.

With these remarks and after a formal introduction of the members present, the Convener suggested to take up the Agenda item-wise.

Item 1 CONFIRMATION OF MINUTES OF THE LAST MEETING

1.1 There being no comments on the Minutes of the fifth meeting of the Panel held on 12 November 2015 in New Delhi that were circulated vide BIS DG letter No. CED 46:P7/A-2.5 dated 10 February 2016, the Panel confirmed the same, as circulated.

Item 2 COMPOSITION

2.1 The Panel noted its composition as given at Annex 1 to the Agenda, reviewed the same and decided/noted as follows:

- a) The Panel noted that Dr D. R. Sahoo and Dr Srinivas Mogili would represent IIT Delhi, New Delhi as the Principal and Alternate Members respectively.
- b) Delhi Development Authority to be represented by their professionals by way of designation so as to ensure continued participation.
- c) The Panel decided to send requests to the following for their interest and for co-option on the Panel:
 - 1) Indian Institute of Technology Guwahati (Dr Hemant Kaushik)
 - 2) Indian Institute of Technology Patna (Dr Vaibhav Singhal)
 - 3) Indian Institute of Technology Hyderabad (Dr K.V.L. Subramanian)

2.2 & 2.3 The Panel members noted the information as explained by BIS Secretariat.

All the members were requested to periodically visit the [Manak Online](#) (the [Standardization Portal](#) of BIS) including its Document Repository through which the related documents (other than the Meeting Notice, Agenda, Minutes, Working Draft, Preliminary Draft, Wide Circulation Draft) from BIS will be shared.

The following information has been recently listed under the Document Repository:

- 1) BIS' Library can be accessed ONLINE
- 2) TA/DA Guidelines
- 3) Guide to using the Standardization portal
- 4) Guide on HOW TO WRITE A STANDARD

Item 3 PROJECT OF REVISION OF NBC

3.1 The Panel noted the details of the project of Revision of NBC, the contents in terms of various proposed Parts and Sections being brought out in the revised NBC as given at Annex 2 to the Agenda and the necessity to bring required coherence of these Chapters (Part 6/Section 4) with other Chapters of the Code. The Panel also noted that already at appropriate places in the drafts under consideration, reference to other Parts/Sections of the NBC has been made to ensure that users of these Sections are given holistic information and comprehensive implementation is facilitated.

3.2 The meeting addressed several important topics related to masonry construction. For the purpose of revision of this Part 6/Sec 4, the following decisions were taken by the Panel considering the existing contents as mentioned in Annex 3 of the Agenda:

- a) Provisions relating to the use of cement/binders based on fly ash, slag and other industrial wastes and new materials to be suitably included.
- b) To add definitions of brick and block that are used in the masonry construction for the purpose of clarification.
- c) To include the provisions relating to dry masonry/interlocking bricks that do not use mortar.
- d) To delve further in Clause 10.3.1 regarding masonry unit that are obtained by dismantling of existing structures, as a sustainable material and decide whether a new title should be added for the same. It was also decided to consider adding the strength testing or an acceptance criterion for masonry unit that are obtained by dismantling of existing structures.
- e) CED 13 to take up research studies on tensile stresses and shear stresses for masonry made using bricks and blocks, on priority mode for revising the Indian Standards relating to masonry construction and for updating this chapter.
- f) The existing data relating to stress properties, influence of normal stress on shear stress, prism test, triple shear test available with IISc and other IITs to be collated and shared with BIS. Where needed, fresh studies for the missing information regarding properties and stresses of brick and block masonry units be generated, including for use in CED 06 and CED 30.
- g) To suitably include the precautions (say in the form of informatory Annex as DOs and DONTs) to be taken in the use of masonry units for their construction, plastering, painting and any chase cutting by taking inputs from manufacturers of light weight blocks (like AAC) and BMTPC.
- h) To consider making a caution regarding the use of reinforced brick and reinforced brick concrete considering the inherent labour-intensive construction and possible corrosion, if not maintained well.
- i) Considering the harmonization of Indian Standards under the Earthquake Engineering Sectional Committee, CED 39, to suitably make reference to the three series of standards namely IS 1893, IS 13920, IS 13935 and IS 17848.
- j) To introduce a new annex regarding assessment and retrofitting of existing masonry construction; and include guidelines towards maintenance of old

structures. To also suitably refer this Annex in the Part 2 'Administration' of NBC to enable engineered assessment by the professionals and ensuring retrofitting as per the standards.

- k) To decide regarding limiting the number of stories for reinforced masonry, as done in the case of unreinforced masonry construction (4 stories) in the next meeting with the participation of members from CED 39 and CED 13 as invitees.
- l) All members are to suggest specific comments on Clause 10 'Reinforced Masonry' as in the working draft circulated by BIS, addressing the limit on a number of floors and the specifications for materials.
- m) A new Indian Standard is being developed on rat trap bond masonry as informed by the member secretary of Sectional Committee CED 13. The developments in CED 13 on the working draft will be reflected in the chapter on NBC which has been taken up for revision.
- n) The following Core Group of Experts were decided to be constituted to consider reviewing the existing provisions of Structural design of reinforced masonry and introduce new/special requirements based on the developments in the field:

- 1) Dr Arun Menon, IIT Madras, Chennai (*Convener*)
- 2) Dr Hemant Kaushik, IIT Guwahati,
- 3) CSIR- Central Building Research Institute, Roorkee

NOTE – Other interests can be co-opted by the above Group.

- o) Other Core Groups will be constituted in the next meeting of the Panel before which members of the Panel to share their inputs on the Working Draft of the chapter circulated by BIS.

3.3 The Panel requested members to send their inputs/suggestions in writing (**before 20 May 2024**) – preferably in the form of draft clauses on the Working Draft of Part 6/Section 4 of NBC circulated through email dated 14 March 2024.

Item 4 COMMENTS RECEIVED ON / INPUTS RELATED TO PART 6/SEC 2 'SOILS AND FOUNDATIONS' OF SP 7 : 2016

4.1 It was informed by the NBC officer to the participants that the no comments have been received for Part 6/ Sec 2 "Soils and Foundations" of SP 7:2016. However, considering the various new related building materials (bricks, blocks, cement, sand, etc) the updation of the Working Draft to capture all the material options to enable for suitable decision by the users.

Item 5 PROJECT OF PROMOTION OF USE OF NBC 2016 IN ALL STATES AND UTs OF INDIA

5.1 The Panel noted the details, as given under the item of the Agenda, on the seminar organized by BIS jointly with the School of Planning and Architecture (SPA),

with a view to disseminate information about the ongoing revision of the Code. The Panel suggested that BIS, upon publication of the revised NBC, may take up more dissemination programmes particularly to create awareness and explain the provisions of the Code for ensuring orderly, safe and sustainable buildings and developments.

Item 6 DATE & PLACE OF THE NEXT MEETING

6.1 As discussed and decided by the meeting participants, the next meeting will be held in May 2024.

Item 7 ANY OTHER BUSINESS

7.1 Shri V.V. Arora thanked the participants for their inputs/suggestions during the meeting. He also requested for the continued cooperation by the Panel members.

7.2 The BIS' Secretariat extended his gratitude to all members of the Panel for their valuable insights and suggestions and to the Convener for his guidance.
