BUREAU OF INDIAN STANDARDS

AGENDA

Panel for Loads, Forces and Effects, CED 46:P4 : **Sixth Meeting**

Tuesday, 23 April 2024 : **1030 h**

In Hybrid Mode from:

BSB 116, Department of Civil Engineering, Indian Institute of Technology Madras, Chennai 600036

Online Using:

1) Meeting link: https://bismanak.webex.com/bismanak/j.php?MTID=md01a3e416daff8474628c8fae34c298e

2) Meeting number: 2519 211 6835

3) Password: Nbc@2025

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Convener: Prof C. V. R. Murty

NBC Officer: Shri Abhishek Pal

Head (NBC Cell): Shri Arunkumar S.

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Item 0 OPENING REMARKS

Item 1 CONFIRMATION OF MINUTES OF THE LAST MEETING

1.1 The Minutes of the fifth meeting of the Panel held on 19 November 2015 in New Delhi, were circulated vide BIS DG letter No. CED 46:P4/A-2.5 dated 15 February 2016. No comments have been received.

The Panel may **CONFIRM** the Minutes.

Item 2 COMPOSITION

2.1 The present composition of the Panel as reconstituted by the National Building Code Sectional Committee, CED 46 is given at **Annex 1 (P-5)**.

The Panel may **CONSIDER**.

2.2 The Panel may also **NOTE** regarding the Structural Reforms in Standardization established by BIS to bring greater efficiency in standards formulation and revision work in BIS addressing speed, skill and scale. The same relates to aspect like:

a) technical committees of BIS having members with widely acknowledged domain area expertise and experience on the subjects
b) optimum size of the technical committee
c) review of membership with focus on continuity of participation including contribution by every member
d) holding periodic meetings (physical/virtual/hybrid)
e) decide on timelines to enable stage-wise development of the documents (draft standards)
f) resource centre to enable share the information and documents associated with the standardization work

2.3 Further, BIS has established in place systems such as action research projects, R&D for standards development and provision for having short-term Consultants. Also, focus should be made w.r.t developments on the subject happening world-wide including in technical events, literature, research publications, standard bodies, etc. Wherever possible research based inputs be generated including by associating with the various eminent institutions with whom BIS has entered into MoU with.

The Panel may **NOTE**.

Item 3 PROJECT OF REVISION OF NBC

3.1 Under the project of Revision of NBC, various Parts/Sections of NBC 2016 [a list of which is given in **Annex 2 (P-7)**] are being comprehensively revised, to bring out a most modern and state-of-the-art revision of the Code.

The Panel may consider revising the chapter (**Part 6/Sec 1** on **Loads, Forces and Effects**) taking into cognizance the latest developments in the field. In the revision exercise, due consideration may be given to ensuring coherence among various chapters of the Code. Where required, suggestions for improvements in the other chapters of the code may also be provided.

The Panel may **NOTE**

3.2 The Panel may therefore engage in a high-level review of the existing chapter namely ‘Loads, Forces and Effects’. The contents of existing Part 6/Sec 1 ‘Loads, Forces and Effects’ is given in **Annex 3 (P-9)**. This review may involve an examination of the structure, content, and alignment of the chapters with current industry standards and practices.

The Panel may **CONSIDER.**

3.3 To facilitate the revision process, the following working draft (existing content given in NBC 2016) has been prepared and circulated to the members for their comments:

Working Draft of National Building Code of India: Part 6/Sec 1 'Loads, Forces and Effects', Doc: CED 46 (0291)WD

Comments received on the drafts would be circulated (separately) among the members and also discussed during the meeting.

The Panel may **CONSIDER.**

3.4 The Convener, Prof C. V. R. Murty has provided his proposal on the contents of the *Part 6/Sec 1* and the same is circulated amongst members through the email.

The Panel may **CONSIDER.**

3.5 The Programme of Work of 'Structural Safety, CED 37' is given at **Annex 4** for the perusal of the Panel.

The Panel may **CONSIDER.**

Item 4 COMMENTS RECEIVED ON / INPUTS RELATED TO PART 6/SEC 1 LOADS, FORCES AND EFFECTS OF SP 7 : 2016

4.1 No comments were received on the above Chapter of NBC 2016.

The Panel may **NOTE**.

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

5.1 An ambitious Project for Promotion of use of National Building Code of India 2016 in all States and UTs of India was earlier taken up by BIS involving a comprehensive study and review of rules and regulations governing land development and building construction in various states and union territories of India. The Project involves preparing draft regulations which are aligned with provisions in National Building Code of India 2016 (NBC 2016), for use by the States and UTs in revising their existing regulatory documents in line with the revised state-of-the-art NBC 2016. The Project had 09 deliverables as below:

Sl No.	Deliverable
1	Compilation and study of existing processes, rules and regulations as existing in various States and UTs which govern the land development and building construction, and other statutory provisions which have to be complied with currently, etc
2	Classification of the Provisions in various Rules and Regulations as mandatory/recommendatory, identification of commonalities/dissimilarities, conflicts, if any

3	Mapping the existing Rules, Regulations, Processes against provisions given in NBC 2016
4	Identification of other best practices which may currently not be a part of the existing rules or of NBC 2016, which may be aspirational but will help further the Aim/Objective of this project
5	Preparation of a draft revised standardized/model Rules and Regulations aligned with the provisions of NBC 2016, for the consideration of the Bureau
6	Preparing State/UT-wise standardized/model regulatory documents, including such required documents for some metro/mega cities, which can be adopted by various authorities & obtaining approval of the Bureau as per scope of work
7	Creating pamphlets for an awareness campaign for general public
8	Creating a simplified booklet on using NBC which can be used by all stakeholders-academicians, students and professionals
9	Dissemination to designated States/UTs, the knowledge base created and presenting to them advantages of adopting the same through meetings and workshops

With the support of an external consultant, the main deliverable namely Draft Development and Building Regulations for each of the States and UTs of India was prepared. Followed by 20 number of 2-day workshops covering all the States and UTs, the inputs received as part of such workshops, the finalized regulations were shared with the respective States & UTs.

In addition, a new special publication, **SP 73 : 2023 'Standardized Development and Building Regulations, 2023'** was also published and released, which is available for access (free download) from the BIS' website and from: https://standardsbis.bsbedge.com/

The Panel may **NOTE.**

Item 6 DATE & PLACE OF THE NEXT MEETING

Item 7 ANY OTHER BUSINESS

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ANNEX 1
(*Item* **2.1**)

COMPOSITION OF THE PANEL FOR PANEL FOR LOADS, FORCES AND EFFECTS, CED 46:P4

SL. NO.	NAME OF THE ORGANISATION	REPRESENTED BY
1.	Indian Institute of Technology Madras, Chennai	Prof C. V. R. Murty (Convener)
2.	Association of Consulting Civil Engineers (India), Bengaluru	Shri Manoj Kawalkar Shri Rajkumar Kacharla (Alternate I) Shri Milind Manohar Tare (Alternate II) Shri Badam Sundar Rao (Alternate III)
3.	Building Materials and Technology Promotion Council, New Delhi	Dr. Shailesh Kr Agrawal Shri A. K. Tiwari (Alternate)
4.	Central Public Works Department, New Delhi	Shri Nagendra Prasad Shri Amrendra Kumar Jalan (Alternate)
5.	Creative Consultants & Engineers Pvt Ltd, Ghaziabad	Shri Aman Deep
6.	CSIR - Central Building Research Institute, Roorkee	Dr. A. K. Mittal Dr. Ajay Chourasia (Alternate)
7.	CSIR - Structural Engineering Research Centre, Chennai	Dr J. Rajasankar Dr G. S. Palani (Alternate I) Dr. J. Prawin (Alternate II)
8.	Delhi Metro Rail Corporation, New Delhi	**Nomination Awaited**
9.	Engineers India Limited, New Delhi	**Nomination Awaited**
10.	Geological Survey of India, Kolkata	**Nomination Awaited**
11.	Himachal Pradesh State Disaster Management Authority, Shimla	**Nomination Awaited**
12.	India Meteorological Department, New Delhi	Dr. Devendra Pradhan Shri K. N. Mohan (Alternate)
13.	Indian Association of Structural Engineers, New Delhi	Shri Vipul Ahuja Shri Manoj K. Mittal (Alternate)
14.	Indian Geotechnical Society, New Delhi	Prof. A Boominathan Dr. G.R. Dodagoudar (Alternate I) Dr. Divya Priya Balasubramani (Alternate II)
15.	Indian Institute of Technology Delhi, New Delhi	Dr. Vasant Matsagar Dr. Dipti Ranjan Sahoo (Alternate)
16.	Indian Institute of Technology Roorkee, Roorkee	**Nomination Awaited**
17.	Larsen & Toubro Ltd, Chennai	Shri Surya Prakash Karri Shri Krishna Somaraju (Alternate I) Shri Praveen Kumar Rai (Alternate II)
18.	National Council for Cement and Building Materials, Ballabgarh	Shri P. N. Ojha Shri Brijesh Singh (Alternate)
19.	National Institute of Disaster Management, New Delhi	**Nomination Awaited**
20.	National Remote Sensing Centre,	**Nomination Awaited**

	Hyderabad	
21.	Odisha Disaster Management Authority, Bhubaneswar	**Nomination Awaited**
22.	The Institution of Engineers (India), Kolkata	Dr Anil Joseph Er. Shilpi Ranjan (Alternate)
23.	Uttarakhand State Disaster Management Authority, Dehradun	**Nomination Awaited**
24.	Tandon Consultants Pvt Ltd, New Delhi	**Nomination Awaited**
25.	In Personal Capacity, Gurugram	Dr Prem Krishna
26.	In Personal Capacity, Chennai	Dr Nagesh R. Iyer
27.	In Personal Capacity, Thiruvananthapuram	Shri V. Suresh

ANNEX 2
(*Item* **3.1**)

Details of Chapters of NBC 2016

Part/Section		*Title*
1	**PART 0**	**INTEGRATED APPROACH – A PRE-REQUISITE FOR APPLYING THE PROVISIONS OF THE CODE**
2…….	**PART 1**	**DEFINITIONS**
3……..**PART 2**		**ADMINISTRATION**
4……..**PART 3**		**DEVELOPMENT CONTROL RULES AND GENERAL BUILDING REQUIREMENTS**
5……..**PART 4**		**FIRE AND LIFE SAFETY**
6……..**PART 5**		**BUILDING MATERIALS**
	PART 6	**STRUCTURAL DESIGN**
7……	Section 1	Loads, Forces and Effects
8……	Section 2	Soils and Foundations
	Section 3	Timber and Bamboo
9……	3A	Timber
10……	3B	Bamboo
11……	Section 4	Masonry
	Section 5	Concrete
12…… ……	5A	Plain and Reinforced Concrete
13…… ……	5B	Prestressed Concrete
14…….....Section 6		Steel
	Section 7	Prefabrication and Systems Building and Mixed/Composite Construction
15……7A		Prefabricated Concrete
16……7B		Systems Building and Mixed/Composite Construction
17..... Section 8		Glass and Glazing
18…… **PART 7**		**CONSTRUCTIONAL PRACTICES AND SAFETY**
	PART 8	**BUILDING SERVICES**
19……	Section 1	Lighting and Ventilation
20……	Section 2	Electrical and Allied Installations
21……	Section 3	Air-conditioning, Heating and Mechanical Ventilation
22……	Section 4	Acoustics, Sound Insulation and Noise Control
	Section 5	Installation of Lifts and Escalators and Moving Walks
23……..	5A	Lifts
24…….	5B	Escalators and Moving Walks
25.....	Section 6	Information and Communication Enabled Installations

ANNEX 3
(*Item* **3.2**)

CONTENTS OF PART 6 SECTION 1 'LOADS, FORCES AND EFFECTS' OF NBC

CONTENTS

Annex 4
(*Item* **3.5**)

PROGRAMME OF WORK OF STRUCTURAL SAFETY, CED 37

CED 37 SCOPE	STRUCTURAL SAFETY STANDARDIZATION IN THE FIELD OF STRUCTURAL SAFETY INCLUDING LOADING STANDARDS
LIAISON	ISO/TC 98 (P) BASES FOR DESIGN OF STRUCTURES ISO/TC 98/SC 1 (P) TERMINOLOGY AND SYMBOLS ISO/TC 98/SC 2 (P) RELIABILITY OF STRUCTURES ISO/TC 98/SC 3 (P) LOADS, FORCES AND OTHER ACTIONS

Sl No.	**IS Number/ DOC Number**	**Title**	**Reaffirm Date**	**No. of Amd.**	**Aspect**
STANDARDS PUBLISHED					
1	IS 875 (Part 1):1987	Code of practice for design loads (other than earthquake) for buildings and structures: Part 1 Dead loads − Unit weights of building material and stored materials (*second revision)* (Incorporating IS:1911-1967)	May 2023	1	C
2	IS 875 (Part 2):1987	Code of practice for design loads (other than earthquake) for buildings and structures: Part 2 Imposed loads (*second revision)*	May 2023	1	C
3	IS 875 (Part 3):2015	Design loads (other than earthquake) for buildings and structures — Code of practice: Part 3 Wind loads (*third revision*)	Apr 2020	2	C
4	IS 875 (Part 4):2021	Design loads (other than earthquake) for buildings and structures — Code of practice: Part 4 Snow loads (*third revision*)			C
5	IS 875 (Part 5):1987	Code of practice for design loads (other than earthquake) for buildings and structures: Part 5 Special loads and load combinations (*second revision)*	May 2023	1	C
6	SP 64 (S&T):2001	Explanatory Handbook on Indian Standard Code of practice for design loads (other than earthquake) for buildings and structures: Part 3 Wind loads [IS 875 (Part 3):1987]			O