



भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS

MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG, NEW DELHI 110002

कार्यवृत्त

हमारा संदर्भ: सीईडी 38/ए-2.17

29 अक्टूबर 2024

विषय : विशेष संरचना विषय समिति, सीईडी 38, की सत्रहवीं बैठक के कार्यवृत्त

सीईडी 38 के सभी सदस्य

प्रिय महोदय,

विशेष संरचना विषय समिति, सीईडी 38, की सत्रहवीं बैठक जो 10 अक्टूबर 2024 को नई दिल्ली में सम्पन्न हुई, के कार्यवृत्त भेजते हुए प्रसन्नता हो रही है। कार्यवृत्त की पुष्टि सीईडी 38 समिति के अध्यक्ष सुश्री अल्पा शेठ, द्वारा की जा चुकी है।

आपसे अनुरोध है कि कृपया कार्यवृत्त का अवलोकन करें और इसकी यथार्थता पर अगर कोई सम्मितियाँ हों तो अधोहस्ताक्षरकर्ता को भेज दें। यदि सम्मति प्राप्त नहीं होती तो आपकी सुविधा के लिए यह समझा जाएगा कि आपने कार्यवृत्त का अनुमोदन कर दिया है।

धन्यवाद।

भवदीय,

(अशोक सारण)

सदस्य सचिव सीईडी 38

वैज्ञानिक 'बी' (सिविल इंजीनियरी)

ई-मेल: ced38@bis.gov.in

फोन न. 011-23238121

संगलन : उपरिलिखित



भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS

**MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG, NEW DELHI
110002**

MINUTES

Our Ref: CED 38/A-2.17

29 October 2024

**Subject: Minutes of the Seventeenth Meeting of Special Structures
Sectional Committee, CED 38**

ALL MEMBERS OF CED 38

Dear Sirs,

We are glad to send herewith a copy of the Minutes of the Seventeenth Meeting of Special Structures Sectional Committee, CED 38 held on 10 October 2024 in Manak Bhawan through Video Conferencing. The Minutes have been approved by Ms. Alpa Sheth, Chairperson, CED 38.

We would be grateful if you kindly study the Minutes and let us know whether you are in agreement with its correctness. If no reply is received within two weeks, we may be permitted to presume that you have no comments to offer and that you approve the Proceedings as recorded.

Thanking you,

Yours faithfully,

Sd/-

(Shri Ashok Saran)
Member Secretary CED 38
Scientist 'B', Civil Engg.
ced38@bis.gov.in
Ph: 011-2323 8121

Encl: As above

As a part of Green Initiative by BIS, no Hard Copy of these Minutes are being sent

BUREAU OF INDIAN STANDARDS

MINUTES

Special Structures Sectional committee, CED 38 : 17th Meeting

Thursday, 10 October 2024 : 1100 Hours

Video Conferencing (through WEBEX)

PRESENT

Chairperson: Ms. Alpa R. Sheth

Member Secretary: Shri Ashok Saran, Member Secretary CED 38

Members:

1	Shri Animesh Das	Bharat Heavy Electrical Limited, New Delhi
2	Shri K M Mohamed	Bharat Heavy Electrical Limited, New Delhi
3	Shri Amrendra Kumar	Central Public Works Department, New Delhi
4	Shri S. K. Singh	CSIR - Central Building Research Institute, Roorkee
5	Dr Rajeev Goel	CSIR - Central Road Research Institute, New Delhi
6	Dr P Harikrishna	CSIR - Structural Engineering Research Centre, Chennai
7	Dr S. Parivallal	CSIR - Structural Engineering Research Centre, Chennai
8	Shri S.K. Arora	GE Power India Limited, Noida
9	Shri Lalit Kumar Jain	In Personal Capacity
10	Shri V. N. Heggade	In Personal Capacity
11	Dr V. Kalyanaraman	In Personal Capacity, Chennai
12	Shri Manoj K. Mittal	Indian Association of Structural Engineers, New Delhi
13	Shri P. S. Patankar	Indian Concrete Institute, Chennai
14	Dr Ravi Sinha	Indian Institute of Technology Bombay, Mumbai
15	Prof Siddharatha Ghosh	Indian Institute of Technology Bombay, Mumbai
16	Shri S. Arul Jayachandran	Indian Institute of Technology Madras, Chennai
17	Dr M. A. Iqbal	Indian Institute of Technology Roorkee, Roorkee
18	Shri Hemant S. Vadalkar	Indian Society for Structural Engineers, Mumbai
19	Shri A. S. Oundhkar	Invictus Consultancy Services, Mumbai

20	Dr Praveen Khandelwal	NTPC Limited, New Delhi
21	Shri Rajat Bhaumik	Paharpur Cooling Tower Limited, Kolkata
22	Dr Ratnesh Kumar	Visvesvaraya National Institute of Technology, Nagpur

Invitees:

1. Shri S Veeramani L & T Construction, Chennai
2. Shri Parag Patni In Personal Capacity

From BIS:

1. Shri Abhishek Pal, Scientist D (Civil Engg)

ITEM 0 OPENING REMARKS BY THE CHAIRPERSON

Ms Alpa Sheth, Chairperson, CED 38 extended a warm welcome to the members for the seventeenth meeting of the committee. She requested the Committee to also discuss any new possible codes that have come up. she requested support and co-operation from all the members of the committee and the Working panel conveners.

With these introductory remarks, it was decided to take the Agenda item wise.

ITEM 1 CONFIRMATION OF THE MINUTES OF THE LAST MEETING

The Committee confirmed the minutes of the last meeting as circulated.

ITEM 2 COMPOSITION

2.1 The Committee went through the guidelines for the composition of the sectional Committee and appreciated the holistic view for engaging the concerned stakeholder; in view of that Committee reviewed the present composition of CED 38 and took the following decision:

a) Co-option

L & T Construction, Chennai, Represented by Shri S Veeramani
Tata Consulting Engineers, Represented by Shri C.R. Arjun

b) Withdrawal

Assystem STUP Consultants Private

ITEM 3 ROLLING ANNUAL ACTION PLAN

The Committee agreed with the subject identified for the rolling action Plan. Committee decided tentative timeline for the finalization of these drafts as given below:

SI No.	Topic/ Item Title	Remarks
1	Composite Tall Buildings	See Item 5.5
2	Tensile Membrane structures	See Item 5.6
3	Criteria for the design of reinforced concrete arches (IS 4090)	See Item 5.4
4	Criteria for design of reinforced concrete bins for the storage of granular and powdery materials (IS 4995)	See Item 5.1

ITEM 4 PROGRAMME OF WORK

The Committee noted the present programme of work as given in Annex 2 of the Agenda.

ITEM 5 ISSUES ARISING OUT OF THE PREVIOUS MEETING

5.1 Works Related to Bins, Shell Structures and Concrete Cooling Towers Working Panel', CED 38: P-1

Working Panel CED 38: P-1 (Convenor : Shri V. N. Heggade)		
WG-1 Convenor: Shri V. N. Heggade	<i>IS 4995 (Parts 1 & 2) Criteria for Design of Reinforced Concrete Bins for Storage of Granular and Powdery Materials</i>	Shri V. N. Heggade, Convenor informed the Committee that by the end of January 2025 the modified draft would be ready for consideration of the Committee. The committee also considered the composition of CED38:P-1 and No changes suggested in the Composition.

WG-2 Convenor: Shri A. S. Oundhakar	<i>IS 9178 (Part 1,2 &3) Criteria for design of steel bins for storage of bulk materials</i>	In the meeting, Shri A. S. Oundhakar, the Convenor WG-2 , informed the Committee that the Working Group will expedite the revision of IS 9178 Parts 1 to 3. Shri V. N. Heggade also stated that he would provide his inputs. Shri A. S. Oundhakar was requested to send the list of the members of Working group-2 .
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5.2 Works Related to 'Steel Concrete Composites Construction Working Panel', CED 38: P-2

5.2.1 Composite Working Panel, CED 38:P-2 was requested to seek the possibility of handbook on above subjects in future for better clarity and for educational purpose. The Committee also agreed to conduct workshop/Seminar on the above.

5.2.2 In the meeting, Dr S. Arul Jayachandran (Convenor), suggested the change the title of the Working Panel on Composites Construction to "**Steel Concrete Composites Construction**" Working Panel. The committee agreed to the same.

The Chairperson also suggested the Working Panel to participate in the meetings of the expert group relating to tall composite building. This could enhance the exchange of ideas, streamline discussions, and foster a more cohesive approach to the topics at hand.

The committee also considered the composition of CED38:P-2 and No changes suggested in the Composition.

5.3 Works Related to 'Chimney and Staging Working panel', CED 38:P-3

5.3.1 IS 4998:2015 Criteria for Design for Reinforced Concrete Chimneys

In the meeting, the Committee considered the comments presented by Dr P Harikrishna received on IS 4998 for preparing the draft amendment. He also informed the Committee that it by the end of November the draft amendment would be ready for consideration of the Committee.

The committee considered and approve the Composition of the Working panel:

- 1) Dr Amlan Kumar Sengupta, IIT Madras, Chennai *convenor*
- 2) Shri G. Ramesh Babu, CSIR Chennai
 Dr P Harikrishna, CSIR Chennai
 Dr M. Keerthana, CSIR Chennai
- 3) Shri S.K. Arora, GE Power India Limited, Noida
- 4) Shri A. S. Oundhakar, Invictus Consultancy Services, Mumbai
- 5) Dr Praveen Khandelwal, NTPC Limited, Noida

- 6) Shri R. N. Sarangi, NPCIL, Mumbai
Shri G. Prabhakar, NPCIL, Mumbai
- 7) Dr O. R. Jaiswal, Visvesvaraya National Institute of Technology, Nagpur
- 8) Dr S. Arunachalam, In Personal Capacity, Guna
- 9) Shri Lalit Kumar Jain, In Personal Capacity, Nagpur
- 10) Shri Parag Patni, In Personal Capacity
- 11) Tata Consulting Engineers Limited, Represented by Shri C.R. Arjun

Working Panel CED 38: P-3 (Convenor : Dr Amlan Kumar Sengupta, IIT Madras, Chennai)		
WG-1 Convenor: Dr Amlan Kumar Sengupta	<i>IS 4998:2015 Criteria for Design for Reinforced Concrete Chimneys</i>	In the meeting, the Committee considered the comments presented by Dr P Harikrishna received on IS 4998 for preparing the draft amendment. He also informed the Committee that by the end of November the draft amendment would be ready for consideration of the Committee.
WG-2 Convenor: Shri C. R. Arjun	<i>IS 6533 (Part 1 & 2) Design and construction of steel chimney — Code of practice</i>	Shri C. R. Arjun was requested to provide the draft for revision of IS 6533 Parts 1 and 2. Shri A. S. Oundhakar had agreed to provide the inputs. Shri C.R. Arjun was requested to send the list of the members of Working group-2.

5.3.2 Revision of IS 11682 ‘Criteria for design of Reinforced concrete tower for liquid storage tank’ Doc no CED38(21308)

Committee consider the comment of CEDC chairman on the Doc no CED38(21308), which was provided by the CEDC chairman during process of adoption. The comment is enclosed as Annex A. Committee discussed the comments and found that the observation of CEDC chairman are valid and need to incorporate in the draft. During the discussion some more observation are pointed out by the chairperson and members and committee took discussion on that, which is enclosed as Annex-A.

Committee observed that the most of the comments are technical in nature so committee decided that after incorporating all the comments in the draft, it would be wide circulated once again with new document number for public comment.

5.4 Works related to ‘Shell, Plates and Arches Working panel’, CED 38: P-4

5.4.1 Revision of IS 4090 ‘Criteria for Design of Reinforced Concrete Arches’

In the meeting, the Committee decided to circulate the preliminary draft to the Committee members for one week for their inputs. The Committee authorized the Convener and Chairperson to finalize the draft for sending it for wide circulation for the period of 30 days.

The committee considered and approve the Composition of the Working panel:

- 1) Shri G. Prabhakar, NPCIL Mumbai
- 2) Dr A. Mehar Prasad, IIT Madras, Chennai
- 3) Dr. Saptarshi Sasmal, Chief Scientist, CSIR-SERC
Dr. (Ms.). Kanchanadevi A., Principal Scientist, CSIR-SERC
Mr. Kanishka Bhattacharya, Scientist, CSIR-SERC
- 3) Shri C. Y. Shivaji, L&T Construction, Chennai
- 4) Dr B. R. Jayalekshmi, National Institute of Technology Karnataka, Surathkal
- 5) Prof Umamaheshwari, SRM University, Chennai
Dr. K.S. Satyanarayanan, SRM University, Chennai

Withdrawal

- (1) Dr K. Ramanjaneyulu, CSIR, Chennai

5.5 Works related to 'Tall Building Sub-Committee', CED 38:P-5

5.5.1 New Standard Criteria for Structural Safety of Tall Steel/Composite Buildings

In the meeting, Table of content presented by Ms. Alpa R. Sheth. She also stated that this P-draft will be ready for circulation within committee by the end of January 2025.

The committee also considered the composition of CED38:P-5 and suggested some changes in the same. The composition of the above working panel is given below:

- 1) Ms. Alpa R. Sheth, VMS Consulting Engineers, Mumbai (*Convenor*)
- 2) Shri Anil Hira, Buro Happold, Mumbai
- 3) Dr. Achal Kumar Mittal, CSIR, Roorkee
Shri Siddharth Behera, CSIR, Roorkee
- 4) Shri G. Ramesh Babu, CSIR, Chennai
Dr P Harikrishna, CSIR, Chennai
Dr M. Keerthana, CSIR, Chennai
- 5) Shri A. K. Rajdev, CPWD, New Delhi
- 6) Shri Alok Goyal, IIT Bombay, Mumbai
Dr Ravi Sinha, IIT Bombay, Mumbai
- 7) Dr Dipti Ranjan Sahoo, IIT, New Delhi
- 8) Dr S. Arul Jayachandran, IIT Madras, Chennai
Dr A. Mehar Prasad, IIT Madras, Chennai
Prof C. V. R. Murty, IIT Madras, Chennai
Dr S. T. G. Raghukanth, IIT Madras, Chennai
- 9) Dr Prem Krishna, Indian Society of Wind Engineering, New Delhi
- 10) Shri Arijit Guha, Institute for Steel Development and Growth, Kolkata
Shri P. L. Rao, Institute for Steel Development and Growth, Kolkata
- 11) Mr. S. Veeramani, L&T Construction, Chennai
Shri C. K. Somaraju, L&T Construction, Chennai
- 12) Shri G. Prabhakar, NPCIL, Mumbai

- 13) Shri Ranjith Chandunni, RECI Engineering, Mumbai
- 14) Dr K. Suresh Kumar, RWDI Consulting Engineers (India) Private Limited, Trivandrum
- 15) Prof. Shailesh Gandhi, Sardar Vallabhbhai National Institute of Technology, Surat
- 16) Shri Ejaz Khan, VMS Consulting Engineers, Mumbai
- 17) Prof V. S. Raju, In Personal Capacity
- 18) Shri Jaydeep Wagh, In Personal Capacity
- 19) Dr V. Kalyanaraman, In Personal Capacity

Withdrawal

- 1) Shri C. N. Srinivasan, CR Narayana Rao Architects, Chennai
- 2) Shri Neville Mathias, Skidmore, Owings & Merrill, Mumbai
- 3) Shri Bharat Thej Dogga, Urban Shaastra Smart Build Private Limited, Chennai
- 4) Shri S. C. Mehrotra, Mehroo Consultants, New Delhi

5.6 Works related to ‘Working Group on Tensile Membrane Structures, CED 38/WG2

Shri Siddhartha Ghosh, Convener of CED 38/WG2, informed the Committee that the table of contents would be ready for their consideration within two weeks.

The Committee requested Dr Siddhartha Ghosh Convener to expedite the preparation of the draft Indian Standard for the consideration of the Committee.

The Committee decided that after receiving the draft from Dr Siddhartha Ghosh Convener, CED 38/WG2, the same will be circulated as P-draft for comments within committee.

ITEM 6 Transfer of Standards/Subjects

6.1 The Committee has noted the item under the Agenda.

ITEM 7 WORK PROGRAMME OF THE COMMITTEE

7.1 The Committee noted the draft Amendment No. 1 to IS 16700:2023 prepared by the BIS secretariat and deciding to send the Amendment No. 1 to IS 16700:2023 (see Annex B) for sending it directly to the Publication as the corrections are editorial in nature.

ITEM 8 ANY OTHER BUSINESS

9.1 The Committee decided to have the Seminar/workshop on structural design and thermo-hydraulic design of both the NDCT and IDCT after its publication.

9.2 The members joined the member secretary in expressing their heartfelt thanks to the Chairperson for her leadership and successful conduct of the meeting. The Chairperson too reciprocated and wished for continued participation and contribution by the members. BIS Secretariat then thanked all the members for their valuable time and technical contribution in this national standardization activity.

ANNEX A
(Clause 5.3.2)

Comments on the draft standard IS 11682 : 2024

1. The **title** says 'Criteria for Design of Reinforced Concrete Towers for Liquid Storage Tanks'. However, Cl. 3.9 defines; 'Liquid Tower — The structure consisting of tank (that is, container) together with the staging and foundation is termed as liquid tower. In this document we are dealing with only the staging part and the title should be modified accordingly. Cl. 1.1 & 1.2 also makes the same clear.
2. **CI 3.2** defines Cementitious materials. confuses Cement and Cementitious materials. a proper definition from 456 should be given. Or just refer to 456 for materials.
3. **CI 3.3** Force Actions. We are not using this term in any other codes. 456 has given a list of various types of loads. Please clarify.
4. Why is **CI 3.5** provided in this code?
5. **CI. 3.9** may be reviewed.
6. Check the validity of **7.1.2**
7. What does **7.1.3** mean?
8. What does **7.2.1** mean?
9. This document is for RCC. Why bring **7.2.2**? Is intermixing permitted?
10. **7.3.2** Why?
11. What is the difference between **7.3.2 & 7.3.5**?
12. **7.4** is a string recommendation for use of fibres. Are there any studies done on the statements?
13. **CI 7.5.1** requires review.

14. **7.5.2** why only for rings? SS rings cannot be used with MS main bars as it will lead to galvanic corrosion.
15. **7.5.4** The 456 revision is against use of fusion bonded steel.
16. **7.6.** Please delete the sentence starting with " As per the international practice at present....."
17. **8.1** relates to the container, shall be shifted to the relevant document.
18. **8.6** ' Design should be such that construction is traditional and easy," , What is traditional construction?
19. **8.6.1** Concept of integrity is quite different. From where did we get the value of 1.1 and 1.2. As in staging we generally design the members at the junction only this approach will lead to overdesigning of the whole structure.
20. **10.4.4** second para, please check whether this kind of a statement can be provided in a code.
21. **13.4** PI check.
22. **13.6.1** Check the shear stirrup spacing provision.
23. It is seen that, even though the container design is in another document. reinforcement detailing of tanks are also appearing **See Fig 23. PI see cl 1.3.**

ANNEX B
(Clause 7.1)

AMENDMENT NO.1 OCTOBER 2024
TO
IS 16700 : 2023 CRITERIA FOR STRUCTURAL SAFETY OF
TALL CONCRETE BUILDING – CODE OF PRACTICE

(First Revision)

(Page 16, clause 10.2) – Substitute the following for the existing:

'Z = Seismic zone factor [as defined in IS 1893 (Part 1)];
 I_p = importance factor of the NSE (see Table 9);
 R_p = component response modification factor (see Table 10);
 a_p = component amplification factor (see Table 10);
 W_p = weight of the NSE;
 x = height of point of attachment of the NSE above top; and
 h = overall height of the building.'

(Page 16, Table 10, Col 3, Heading) – Insert a_p instead of p

(Page 16, Table 10, Col 4, Heading) – Insert R_p instead of p

[Page 18, Table 10, SI No. (ii) (h) (1)] – Substitute the following for the existing table:

SI No.	NSE	a_p	R_p
(1)	(2)	(3)	(4)
h)	General electrical:	2.5	5.0
	1) Distributed systems (bus ducts, conduit, cable tray)		

(CED 38)