BUREAU OF INDIAN STANDARDS

Minutes for Twenty Fifth Meeting

Soil and Stabilized Soil Products for Construction Sectional Committee, CED 30

Meeting No.	**Twenty Fifth Meeting (25th)**
Date	**Tuesday , 07-November-2024 (from 1100h)**
Venue	**Hybrid Meeting (The National Institute of Engineering, Mysore, Karnataka, India)**

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Chairperson: Prof B. V. V. Reddy **Member Secretary:** Divya S

Members Present

Physically

Indian Institute of Science, Bengaluru	Dr B. V. Venkatarama Reddy (*Chairperson*)
The National Institute of Engineering, Mysore	Dr Gourav K
Wienerberger India Private Limited, Bangalore	Shri Prashanth T V Shri Anil Shetty

Virtually

CSIR - Central Building Research Institute, Roorkee	Shrimati Humaira Athar
CSIR - Structural Engineering Research Centre, Chennai	Dr S. R. Balasubramaniam
Central Soil and Materials Research Station, New Delhi	Shri U. S. Vidyarthi
Indian Institute of Technology Kanpur, Kanpur	Prof. Syam Nair
Indian Institute of Technology Madras, Chennai	Dr Piyush Chaunsali
Ministry of Science and Technology, Department of Science & Technology, New Delhi	Dr R K Joshi
Punjab State Council for Science and Technology, Chandigarh	Shri Pritpal Singh Shri Maganbir Singh
Shriram Institute for Industrial Research, Delhi	Dr Mukesh Garg Shri Amit Kumar Tyagi Shri Rajesh Malhotra (*Representative*)
The Energy and Resources Institute, New Delhi	Shri Yatin Choudhary
Unique Geocivil Services Private Limited,	Shri Hitesh Desai

Surat	
In Personal Capacity	Shri K. Sitaramananjeyulu

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Item 0 OPENING REMARKS BY THE CHAIRMAN

The Chairman briefed the progress of the Committee after the last meeting. He noted that there were 1 drafts currently under finalization and 2 more currently under P draft. He appreciated the progress of the Committee and sought the continued support from the members. He also informed the members about the industry visit to 2 nearby brick factories that has been planned after the meeting and invited the members physically present to join the same.

Item 1 CONFIRMATION OF THE MINUTES OF THE LAST MEETING

The Minutes of the Twenty Fourth Meeting of Clay and Stabilized Soil Products for Construction Sectional Committee, CED 30 held on 06 August 2024 at New Delhi circulated vide BIS DG letter No. CED 30/2.24 dated 19 August 2024 was confirmed.

Item 2 COMPOSITION OF THE SECTIONAL COMMITTEE

2.1 The Committee noted the present composition of the Sectional Committee as reviewed by the Civil Engineering Division Council, CEDC in its last (28th) meeting held on 03 July 2024 as given at **Annex 1** of the Agenda**,** as well as the participation details of the members.

Item 3 DRAFT ISSUED AS PRELIMINARY DRAFT

3.1 Preliminary Draft Indian Standard Heavy Duty Burnt Clay Building Bricks — Specification [*Fourth Revision* of IS 2180] DOC No.: CED 30 (26671) P.

The Committee discussed the working draft as well as the comments received and made the following observations.

Clause No.	**Type of comment**	**commentator**	**Comments/Modified Wordings**	**Justification for the Proposed Change**	**Decision of the Committee**
Clause 9.1	Technical	Shri Maganbir Singh	Original: Each brick shall be marked (in the frog where provided) with the manufacturers identification mark or initials. Bricks of 40 mm height made by extrusion process may not be provided with	In case of press bricks (compressed) frogs can easily be provided, whereas in extrusion process, frogs have to be provided manually, however, initials/ marking of manufacturer can be provided. Generally extruded bricks are	The Committee noted the bond strength and frog are not necessarily related and that it may be mentioned in the standard that wire cut and extrusion bricks need not have frogs. However, in line with

			frogs. *Modified: Each brick shall be marked (in the frog where provided) with the manufacturers identification mark or initials or can be unmarked/ frogged in case of extruded product. Bricks of 40 mm height made by extrusion process is without frogs.*	without marking and there is no frog.	the BIS norms, the manufacturer's mark will have to be provided appropriately.

The Committee also discussed the suggestion from the Chairman that a shape factor may also be introduced in the standard and agreed to the same.

The Committee decided to issue the draft as a **wide circulation** draft for eliciting public comments for 2 months after minor modifications.

Item 4 DRAFT UNDER WIDE CIRCULATION

4.1 Draft Indian Standard Common Burnt Clay Building Bricks – Specification DOC: CED 30 (26161) [IS 1077 Sixth Revision]

The Committee discussed the working draft as well as the comments received and made the following observations.

Clause/ Para/ Table/ Figure No. commented	Type of comment	commentator	Comments/Modified Wordings	Justification of Proposed Change	Decision of the Committee
Foreword	Editorial	Dr BVV Reddy	ii) Increased floor space iv) Reduction in construction labour cost v) Reduction in losses during handling vi) Reduction in mortar consumption	Using 200 mm wall instead of 230 mm thick wall results in increasing the floor area for a given plinth area	The Committee agreed to the suggestion
Foreword	Technical	Dr BVV Reddy	Under significant modifications d) Modulus rupture values for bricks added e) IRA values for bricks	New information added in the code	The Committee agreed to the suggestion

			added		
1	General	Shri Balaji e mail ID: balajinc@nie.ac.in	It can be change to "Higher strength & higher classes brick"	In note mentioned higher strength bricks, but in the Section 7.2 it mentioned higher classes.	As per the standard, higher strength denotes higher class. No change was decided.
4	Technical		Provide allowable standard deviation values for each classes of common burnt brick.	If provide / suggest the deviation value of the compressive strength will be better. for example: for very low strength of the brick having 3.5 & 5 MPa bricks, the available strength will not be good, and the deviation will be more. for 3.5MPa brick if ±1.5 is Standard Deviation, Higher the deviation (i.e., 3.5 +1.5 = 5.0 MPa, then the class of brick will be changes.	The Committee felt that the suggestion, though logical, was not practical, as only a small number of bricks will be tested at one go and it will not be possible to deduce the standard deviation from such a small sample set.
5.1	General		Brick shall be freed from Organic matter also	"They shall be free from cracks and flaws and nodules of free lime." Add it shall be free from organic matter also	The Committee explained that the presence of organic matter is not of importance as the bricks will be burnt at the next stage.
6.1.2	Technical	Dr BVV Reddy	Non-modular size 110 x 70 x 37 – should be changed to one or two sizes of conventional sizes: 230 x 105 x 75 mm	Such non-modular sizes are used in the construction sector.	The Committee agreed to the suggestion. The Committee also suggested that more modular sizes as per different regions of India may be added.

6.2.1	Technical	Shri Hitesh Desai & Shri Nehal Desai	Tolerance in height for 40 mm thick modular brick and 30 mm thick non-modular brick need not be ± 40 mm.		The Committee suggested that the values may be modified as a table for better clarity.
7.2 Line 3	Technical		20 percent by dry weight up to class 12.5 and 15 percent by dry weight for higher classes.		The Committee agreed to the suggestion.
7.4	Technical		Warpage (Edge curvature)		The Committee agreed to the suggestion.
7.5	Technical	Dr BVV Reddy	Modulus of rupture The brick when tested as per the procedure laid down in IS 3495 (Part 5) the mean value of the modulus of rupture to its compressive strength shall be more than 0.07.	This is a new procedure and clause added in IS 3495 (Part 5)	The Committee agreed to the suggestion; and further added that the given values are indicative and may be further refined after R&D.
7.6	Technical	Dr BVV Reddy	Initial Rate of Absorption (IRA) The brick when tested as per the procedure laid down in IS 3495 (Part 6) the mean value of IRA shall be less than 40 N/m2/Minute.	Adopt SI unit.	The Committee agreed to the suggestion; and further added that the given values are indicative and may be further refined after R&D.

The Committee decided to issue the draft for **ADOPTION** and **PUBLICATION** after minor modifications.

Item 5 TERMS OF REFERENCE FOR R&D WORK

5.1 The committee discussed the terms of reference for the revision of IS 1077, IS 3952 and IS 1725 and approved the same with minor modifications. However, the Committee also placed on record, that it was difficult to conduct these studies within a restricted frame of 6 months and 10 lakhs and requested that other alternative ways to conduct this research may also be considered.

The following TORs have been approved.

IS No	Title	Approved TOR
IS 1077:1992	Common burnt clay building bricks — Specification (fifth revision)	**Annex A**
IS 3952:2013	Burnt clay hollow bricks and blocks for walls and partitions — Specification (third revision)	**Annex B**
IS 1725: 2023	Stabilized soil blocks used in general construction — Specification (third revision)	**Annex C**

Item 6 COMMENTS ON PRINTED STANDARDS

6.1 IS 3952: 2013 Burnt clay hollow bricks for walls and partitions - Specification (*Third Revision*)

The Committee considered and discussed the comments on IS 3952 and decided that the capping method in the standard may be revised to include more capping materials. The Chairman offered to provide a write up on the same. The Committee noted that the standard was due for review in Dec 2024 and decided to reaffirm the same for the time being while simultaneously taking up the revision based on the inputs received.

Item 7 ISSUES CARRIED OVER FROM PREVIOUS MEETINGS

7.1 IS 2117 : 1991 GUIDE FOR MANUFACTURE OF HAND – MADE COMMON BURNT - CLAY BUILDING BRICKS (Third Revision)

Shri Maganbir Singh was reminded to provide a sketch/photo of the pugmill.

7.2 IS 2222 : 1991 SPECIFICATION FOR BURNT CLAY PERFORATED BUILDING BRICK.

The Committee approved the following photo received from Shri Hitesh and noted that the draft had already been approved as a **Working Draft** with this modification. The Committee recommended that the same may be issued.

Item 8 PROGRESS OF WORK

8.1 Programme of Work

The Committee noted the Programme of work of the Sectional Committee given in **Annex 8** of the agenda.

8.2 Standards Due for Review

The Committee examined the standards due for review and made the following recommendations:

1) **IS 3495 (Part 1): 2019** Burnt Clay Building Bricks — Methods of Tests Part 1 Determination of Compressive Strength (Fourth Revision)

The committee discussed the following comment received from Shri Hitesh Desai on the standard:

IS NO.	Clause/ Para/ Table/ Figure No. commented	Type of comment	Comments/Modified Wordings	Justification of Proposed Change	Decision of the Committee

IS 3495 (Part 1)	4.1.2	Technical	As an alternative capping material, capping a gypsum compound of required strength can be used. The advantage of this capping material is that the curing period required is less than 60 minutes.	Need to add as alternative capping for sample preparation.	The Committee noted that it has already been decided that the similar clause in IS 3952 may be revised and decided that a similar modification may be made in this standard also.

The Committee decided that the standard may be amended/revised as soon as the write up from the Chairman (as per item 6.1) was received.

In the meantime, it was decided that the standard may be '*reaffirmed*'.

2) IS 3495 (Part 2): 2019 Burnt Clay Building Bricks — Methods of Tests Part 2 Determination of Water Absorption (Fourth Revision)

The members raised a query about the 5 hr boiling test mentioned in the standard; and pointed out that there was no technical reason given for choosing the time period as 5 hrs. The Chairman volunteered to cross check with other national and international standards and to provide a write up on the test in question.

In the meantime, it was decided that the standard may be '*reaffirmed*'.

3) IS 3495 (Part 3): 2019 Burnt Clay Building Bricks — Methods of Tests Part 3 Determination of Efflorescence (Fourth Revision)

The members did not raise any query on the standard and decided that the standard may be *reaffirmed*.

4) IS 3495 (Part 4): 2019 Burnt Clay Building Bricks — Methods of Tests Part 4 Determination of Warpage (Fourth Revision)

The committee discussed the following comment received from Shri Hitesh Desai on the standard:

IS NO.	**Clause/ Para/ Table/ Figure No. commented**	**Type of comment**	**Comments/Modified Wordings**	**Justification of Proposed Change**	**Decision of the Committee**
IS 3495 : Part 4	1	Technical	This standard (Part 4) covers the method of determination of warpage of burnt clay building brick **related to edge curvature**.	Warpage covered in this code is related to edge curvature only which need to clarify.	The Chairman clarified that edge curvature and surface flatness are all subsets of distortion and that they can all be classified as warpage. He further suggested that we may clarify it as 'warpage(edge curvature)' in all

					the brick standards which refer IS 3495(Part 4).

It was decided that the standard may be '*reaffirmed'*.

5) IS 17057: 2019 Construction of Bull's Trench Brick Kiln — Guidelines

The members raised the issue that as per the MoEFCC gazette notification GSR 143 dated 22 February 2022 (attached as **Annex D**), it has been instructed that all new brick kilns shall be allowed only with zig zag technology or vertical shaft or using PNG as fuel. The existing brick kilns have been given one year time to switch over to the new technology. Accordingly, a suggestion was raised that the standard may be withdrawn.

However, considering that the bull's trench brick kilns may still be used provided they have vertical shaft as per the requirements or if they are using PNG, it was decided that the standard may be revised accordingly. In the meantime, it was decided that the standard may be *archived.*

6) IS 17058: 2019 Glossary of Terms Relating to Brick Kilns
7) IS 17059: 2019 Construction of Zig Zag Brick Kiln — Guidelines.

The Committee discussed the above 2 standards and decided that cleaner technology was now available and these may be revised in due course. However, for the time being, these may be '*reaffirmed*'.

Item 9 ANY OTHER BUSINESS

9.1 The Committee suggested that a TOR may be developed to understand the kind of bricks prevalent in the market and their usage. It was decided that the same may be presented in the next meeting

9.2 It was suggested that the requirement of 5% water absorption in paving bricks may not be practical. Shri Hitesh offered to contact a few manufacturing units to assess the actual value available in the market.

9.3 Wienerberger suggested that a new standard on Façade bricks may be developed. They were requested to prepare a draft and present the same to the Committee in the next meeting.

9.2 The Committee thanked all the members for their active participation and decided to have the next meeting in Jan 2025. It was suggested that the meeting may be hosted at NIT Agartala.

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