भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG, NEW DELHI 110002

व्यापक परिचालन मसौदा

हमारा संदर्भः सीईडी 30/टी-2 **12 जुलाई 2024**

तकनीकी समिति : निर्माण अनुभागीय समिति के लिए मिट्टी और स्थिर मिट्टी उत्पाद, सीईडी 30

प्राप्तकर्ता :

क) सिविल इंजीनियरी विभाग परिषद्, सीईडीसी के सभी सदस्य
ख) सीईडी 30 व उसकी उपसमितियों, के सभी सदस्य
ग) रूचि रखने वाले अन्य निकाय

प्रिय महोदय/महोदया,

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प्रलेख संख्या	शीर्षक
सीईडी 30 (26161)WC	**ड्राफ्ट भारतीय मानक** **सामान्य जली हुई मिट्टी की इमारत** **ईंटें - विशिष्टता** (छठा संशोधन) ICS No. 91.100.25

कृपया इस मानक के मसौदे का अवलोकन करें और अपनी सम्मतियॉ यह बताते हुए भेजे कि यदि यह मानक के रूप में प्रकाशित हो तो इस पर अमल करने में आपके व्यवसाय अथवा कारोबार में क्या कठिनाइयाँ आ सकती हैं ।

सम्मतियॉ भेजने की अंतिम तिथि : **12 सितम्बर 2024**

सम्मति यदि कोई हो तो कृपया अधोहस्ताक्षरी को उपरिलिखित पते पर संलग्न फोर्मेट में भेजें या divya.s@bis.gov.in पर ईमेल कर दें ।

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धन्यवाद ।

भवदीय,

(दिव्या एस.)
सदस्य सचिव सीईडी 30
वैज्ञानिक 'डी'(सिविल इंजीनियरिंग)
ई-मेल: divya.s@bis.gov.in

संलग्न: उपरिलखित

भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG, NEW DELHI 110002

WIDE CIRCULATION DRAFT

12 July 2024

Our Ref: CED 30/T-2

TECHNICAL COMMITTEE: Clay and Stabilized Soil Products for Construction Sectional Committee, CED 30

ADDRESSED TO:

a) All Members of Civil Engineering Division Council, CEDC
b) All Members of CED 30
c) All others interested

Dear Sir/Madam,

Please find enclosed the following document:

Doc No.	*Title*
CED 30 (26161)WC	**Draft Indian Standard** **Common Burnt Clay Building Bricks - Specification** (*Sixth Revision)* ICS No. 91.100.25

Kindly examine the draft standard and forward your views stating any difficulties which you are likely to experience in your business or profession, if this is finally adopted as National Standard.

Last Date for comments: **12 September 2024**

Comments if any, may please be made in the enclosed format and mailed to the undersigned at the above address or preferably through e-mail to **divya.s@bis.gov.in**.

In case no comments are received or comments received are of editorial nature, you will kindly permit us to presume your approval for the above document as finalized. However, in case of comments of technical in nature are received then it may be finalized either in consultation with the Chairman, Sectional Committee or referred to the Sectional Committee for further necessary action if so desired by the Chairman, Sectional Committee.

The document is also hosted on BIS website www.bis.gov.in.

Thanking you,

Yours faithfully,

(**Divya S.**)
Member Secretary CED 30
Scientist 'D' (Civil Engineering)
E-mail: **divya.s@bis.gov.in**

Encl: As above

FORMAT FOR SENDING COMMENTS ON BIS DOCUMENTS

(Please use A-4 size sheet of paper only and type within fields indicated. Comments on each clause/sub-clause/table/fig etc. be started on a fresh box. Information in column 3 should include reasons for the comments and suggestions for modified working of the clauses when the existing text is found not acceptable. Adherence to this format facilitates Secretariat's work) {Please e-mail your comments to **divya.s@bis.gov.in**

Doc. No.: **CED 30 (26161)WC**

Title: Draft Indian Standard Common Burnt Clay Building Bricks – Specification (*Sixth Revision)*

ICS No. 91.100.25

LAST DATE OF COMMENT: **12 September 2024**

NAME OF THE COMMENTATOR/ ORGANIZATION:_____

Clause/ Para/ Table/ Figure No. commented	Comments/Modified Wordings	Justification of Proposed Change

NOTE - Kindly insert more rows as necessary for each clause/table, etc

BUREAU OF INDIAN STANDARDS

DRAFT FOR COMMENTS ONLY
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COMMON BURNT CLAY BUILDING BRICKS - SPECIFICATION

(*Sixth Revision)*
ICS No. 91.100.25

Clay Products for Buildings Sectional Committee, CED 30

Last date of comments **12 September 2024**

FOREWORD

(*Formal clauses will be added later.*)

The common building bricks is not only one of the oldest but also the most extensively used building material in construction work. It is essentially a local building material and consequently there exist considerable variations in the quality of raw material. The process of manufacture and the quality of the finished product. Rapid building activity, to be on rational lines, needs a certain degree of uniformity in the construction materials. Standardization of the common building brick with regard to its quality and dimensions would substantially help in raising the quality of construction work and its speed. This standard was first published in 1957 and subsequently revised in 1966, 1970, 1976, 1986 and 1992.

Keeping in view the advantages of modular co-ordination. Indian standards specify the dimensions of standard bricks in 100 mm module as the basis of all dimensional standardization in regard to building components. This is also in conformity with the decision of Government of India to adopt metric system in the country. Considering the various issues regarding the manufacturing and other practices followed in the country, the Sectional Committee responsible for the preparation of this standard had specified modular size of the brick. Advantages that a modular brick has over traditional brick are many, such as:

i) requires less drying area;
ii) saving in space of floor area;
iii) economy in cost of brick masonry;
iv) saving in labour cost;
v) less losses during handling, etc; and
vi) less consumption of mortar.

The significant modifications in this revision are:

a) The units have been modified to IS units
b) The size of modular bricks has been updated
c) The condition for warpage has been included.

In the formulation of this standard, due weightage has been given to international co-ordination among the standards and practices prevailing in different countries in addition to relating it to the construction practices in India.

This standard contributes to the United Nations Sustainable Development Goal 11 'Sustainable cities and communities' towards strengthen efforts to protect and safeguard the world's cultural and natural heritage and Goal 12 'Ensure sustainable consumption and production patterns' towards substantially reduce waste generation through prevention, reduction, recycling and reuse.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 'Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

COMMON BURNT CLAY BUILDING BRICKS - SPECIFICATION

(*Sixth Revision)*

1 SCOPE

This standard lays down requirements for classification, general quality, dimensions and physical requirements of common burnt clay building bricks used in buildings.

NOTE — Only burnt clay bricks having compressive strength less than 40 N/mm^2 are covered in this standard; for higher strength bricks, *see* IS 2180 : 2024 Specification for heavy duty burnt clay building bricks (*Fourth Revision*).

2 REFERENCES

The standards given below contain provisions which through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent edition of these standards:

IS no.	*Title*
IS 2248 : 2024	Glossary of terms relating to clay products for buildings (*third revision*)
IS 3495	Burnt clay building bricks — Methods of tests
Part 1: 2019	Part 1 determination of compressive strength (*fourth revision*)
Part 2 : 2019	Part 2 determination of water absorption (*fourth revision*)
Part 3 : 2019	Part 3 determination of efflorescence (*fourth revision*)
Part 4 : 2019	Part 4 Determination of warpage (*fourth revision*)
IS 5454 :2024	Methods for sampling of clay building bricks (*second revision*)

3 TERMINOLOGY

For the purpose of this standard, the definitions as given in IS 2248 shall apply.

4 CLASSIFICATION

The common burnt clay bricks shall be classified on the basis of average compressive strength as given in Table 1.

Table 1 Classes of Common Burnt Clay Bricks
(*Clause* 4. 1)

SL NO.	CLASS DESIGNATION	Minimum average Compressive Strength in N/mm^2

(1)	(2)	(3)
i.	35	35.0
ii.	30	30.0
iii.	25	25.0
iv.	20	20.0
v.	17.5	17.5
vi.	15	15.0
vii.	12.5	12.5
viii.	10	10.0
ix.	7.5	7.5
x.	5	5.0
xi.	3.5	3.5

5 GENERAL QUALITY

5.1 Bricks shall be hand-moulded or machine-moulded and shall be made from suitable soils. They shall be free from cracks and flaws and nodules of free lime.

5.2 Hand-moulded bricks of 90 mm or 70 mm height shall be moulded with a frog 10 to 20 mm deep on one of its flat sides; the shape and size of the frog shall conform to either Fig. 1A or Fig. 1B (*see* **6.1.1** for *L*, W and *H*). Bricks of 40 mm height as well as those made by extrusion process may not be provided with frogs.

5.3 The bricks shall have plain rectangular faces with sharp corners and shall be uniform in colour.

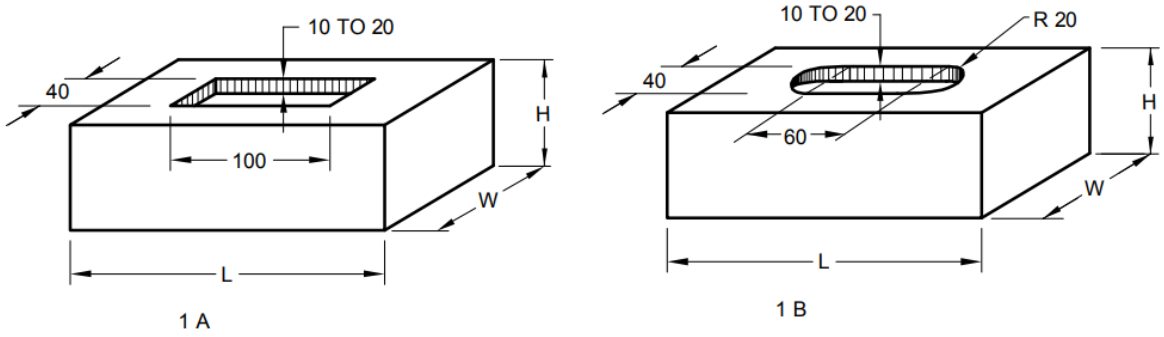


FIG. 1 SHAPE AND SIZE OF FROGS IN BRICKS

6 DIMENSIONS AND TOLERANCES

6.1 Dimensions

6.1.1 The standard modular size of common building bricks shall be as follows (Fig. 1A and 1B):

Length (*L*)	Width (*W*)	Height (*H*)
mm	*mm*	*mm*
190	90	90

190	90	40

6.1.2 The following non-modular sizes of the bricks may also be used (Fig. IA and IB):

Length (*L*)	Width (*W*)	Height (*H*)
mm	*mm*	*mm*
110	70	37

6.2 Tolerances

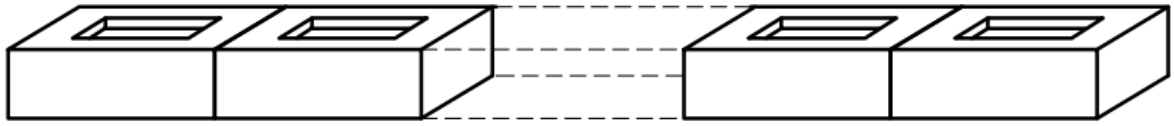
6.2.1 The dimensions of bricks when tested in accordance with **6.2.2** shall be within the following limits per 20 bricks:

For modular size

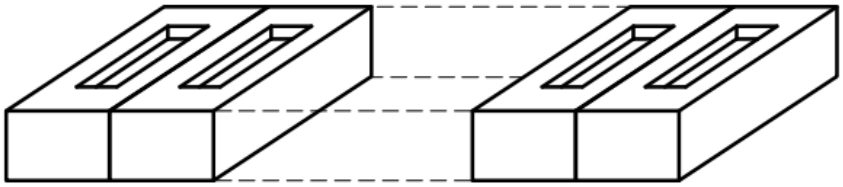
a) Length 3 720 to 3 880 mm (3 800 ± 80 mm)
   Width 1 760 to 1 840 mm (1 800 ± 40 mm)
   Height 1 760 to 1 840 mm (1 800 ± 40 mm)
   (For 90 mm high bricks)
   760 to 840 mm (800 ± 40 mm)
   (For 40 mm high bricks)

b) For non - modular size
   Length 4 520 to 4 680 mm (4 600 ± 80 mm)
   Width 2 240 to 2 160 mm (2 200 ± 40 mm)
   Height 1 440 to 1 360 mm (1 400 ± 40 mm)
   (For 70 mm high bricks)
   640 to 560 mm (600 ± 40 mm)
   (For 30 mm high bricks)

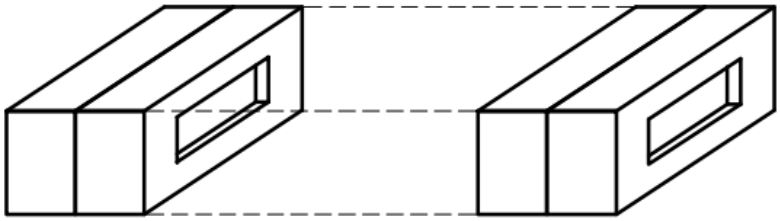
6.2.2 Twenty (or more according to the size of stack) whole bricks shall be selected at random from the sample selected under **8**. All blisters, loose particles of clay and small projections shall be removed. They shall then be arranged upon a level surface successively as indicated in Fig. 2A, 2B and 2C in contact with each other and in a straight line. The overall length of the assembled bricks shall be measured with a steel tape or other suitable inextensible measure sufficiently long to measure the whole row at one stretch. Measurement by repeated application of short rule or measure shall not be permitted. If for any reason it is found impracticable to measure bricks in one row, the sample may be divided into rows of 10 bricks each which shall be measured separately to the nearest millimetre. All these dimensions shall be added together.



2 A MEASUREMENT OF LENGTH



2 B MEASUREMENT OF WIDTH



2 C MEASUREMENT OF HEIGHT

FIG. 2 MEASUREMENT OF TOLERANCES OF COMMON BUILDING BRICKS

7 PHYSICAL REQUIREMENTS

7.1 Compressive Strength

The bricks, when tested in accordance with the procedure laid down in IS 3495 (Part 1) shall have a minimum average compressive strength for various classes as given in **4**.

7.1.1 The compressive strength of any individual brick tested shall not fall below the minimum compressive strength specified for the corresponding class of brick by more than 15 percent. The lot shall be then checked for next lower class of brick

7.2 Water Absorption

The bricks, when tested in accordance with the procedure laid down in **4.1** of IS 3495 (Part 2) after immersion in water for 24 hours, water absorption shall not be more than 20 percent by weight up to class 12.5 and 15 percent by weight for higher classes.

7.3 Efflorescence

The bricks when tested in accordance with the procedure laid down in IS 3495 (Part 3) the rating of efflorescence shall not be more than 'moderate' up to class 12.5 and 'slight' for higher classes.

7.4 Warpage

The bricks when tested in accordance with the procedure laid down in IS 3495 (Part 4) the average warpage shall not exceed 3 mm or 5 percent of the brick height, whichever is lower.

8 SAMPLING AND CRITERION FOR CONFORMITY

8.1 Sampling and criterion for conformity of common bricks shall be done in accordance with the procedure laid down in IS 5454.

9 MARKING

9.1 Each brick shall be marked (in the frog if provided) with an indication of source of manufacture.

9.1.1 BIS certification marking

The product(s) may be marked with Standard Mark as per the conformity assessment schemes governed by the provisions of the Bureau of Indian Standards Act, 2016 and the Rules and Regulations made there under. The details of conditions for the licence may be obtained from the Bureau of Indian Standards.