

**भारतीय मानक ब्यूरो**  
**BUREAU OF INDIAN STANDARDS**

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

**व्यापक परिचालन मसौदा**

हमारा संदर्भ: सीईडी 44/टी-6

18 मार्च 2024

तकनीकी समिति : सिविल इंजीनियरिंग के कार्यों के मापन की पद्धतियाँ

(जल संसाधन विकास को छोड़कर) विषय समिति, सीईडी - 44

प्राप्तकर्ता :

क) सिविल इंजीनियरी विभाग परिषद्, सीईडीसी के सभी सदस्य

ख) सीईडी 44 व उसकी उपसमितियों, के सभी सदस्य

ग) रूचि रखने वाले अन्य निकाय

प्रिय महोदय/महोदया,

निम्नलिखित भारतीय मानक का मसौदा संलग्न है:

प्रलेख संख्या	शीर्षक
सीईडी 44 (25075)WC	भवन निर्माण की माप की भारतीय मानक पद्धति का मसौदा सिविल इंजीनियरिंग वर्क्स भाग 6 उष्मासह [IS 1200 (भाग 6) का तीसरा पुनरीक्षण] ICS 17.020; 91.040.01; 93.010

कृपया इस मानक के मसौदे का अवलोकन करें और अपनी सम्मतियाँ 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।

सम्मतियाँ भेजने की अंतिम तिथि : 18 अप्रैल 2024

सम्मति यदि कोई हो तो कृपया अधोहस्ताक्षरी को उपरिलिखित पते पर संलग्न फॉर्मेट में भेजें या [divya.s@bis.gov.in](mailto:divya.s@bis.gov.in) पर ईमेल कर दें।

यदि कोई सम्मति प्राप्त नहीं होती है अथवा सम्मति में केवल भाषा सम्बन्धी त्रुटि हुई तो उपरोक्त प्रलेख को यथावत अंतिम रूप दिया जाएगा। यदि सम्मित तकनीकी प्रकृति की हुई विषय समिति के अध्यक्ष के परामर्श से अथवा उनकी इच्छा पर आगे की कार्यवाही के लिए विषय समिति को भेजे जाने के बाद प्रलेख को अंतिम रूप दे दिया जाएगा।

यह प्रलेख भारतीय मानक ब्यूरो की वेबसाइट [www.bis.gov.in](http://www.bis.gov.in) पर भी उपलब्ध है।

धन्यवाद।

भवदीय,

(दिव्या एस.)

सदस्य सचिव सीईडी 44

वैज्ञानिक 'डी'(सिविल इंजीनियरिंग)

ई-मेल: [divya.s@bis.gov.in](mailto:divya.s@bis.gov.in)

संलग्न: उपरिलिखित

March 2024



**भारतीय मानक ब्यूरो**  
**BUREAU OF INDIAN STANDARDS**

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

**WIDE CIRCULATION DRAFT**

18 March 2024

**Our Ref: CED 44/T-6**

**TECHNICAL COMMITTEE:** Method of Measurement of Works of Civil Engineering  
 (Excluding Water Resources Development) Sectional Committee, CED 44

**ADDRESSED TO:**

- a) All Members of Civil Engineering Division Council, CEDC
- b) All Members of CED 44 and its Subcommittees
- c) All others interests

Dear Sir/Madam,

Please find enclosed the following document:

<i>Doc No.</i>	<i>Title</i>
<b>CED 44 (25075)WC</b>	<b>Draft Indian Standard Method of Measurement of            Building and Civil Engineering Works            Part 6 Refractory Work</b> [Third Revision of IS 1200 (Part 6)] ICS 17.020; 91.040.01; 93.010

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: **18 April 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](mailto: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](http://www.bis.gov.in).

Thanking you,

Yours faithfully,

(Divya S.)  
 Member Secretary CED 44  
 Scientist 'D' (Civil Engineering)  
 E-mail: [divya.s@bis.gov.in](mailto: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](mailto:divya.s@bis.gov.in)}

**Doc. No.: CED 44 (25075)WC**

**Title: Draft Indian Standard Method of Measurement of Building and Civil Engineering Works Part 6 Refractory Work**

[Third Revision of IS 1200 (Part 6)]

ICS 17.020; 91.040.01; 93.010

**LAST DATE OF COMMENT: 18 April 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***(Not to be reproduced without the permission of BIS or used as an Indian Standard)*

---

*Draft Indian Standard***METHOD OF MEASUREMENT OF  
BUILDING AND CIVIL ENGINEERING WORKS  
PART 6 REFRACTORY WORK***[Third Revision of IS 1200 (Part 6)]*

ICS 17.020; 91.040.01; 93.010

---

Method of Measurement of Works of Civil Engineering  
Sectional Committee, CED 44

Last date of comments  
**18 April 2024**

---

**FOREWORD**

(Formal clause shall be added later)

Measurement occupies a very important place in the planning and execution of any civil engineering work from the time of first estimates to the final completion and settlement of payments for a project, Methods followed for measurement are not uniform and considerable differences exist among practices followed by different construction agencies and also among various Central and State Government departments. While it is recognized that each system of measurement has to be specifically related to administrative and financial organizations within a department responsible for the work, a unification of various systems at technical level has been accepted as very desirable specially as it permits a wider range of operation for civil engineering contractors and eliminates ambiguities and misunderstanding of various systems followed.

Among various civil engineering items, measurement of buildings was the first to be taken up for standardization and this standard having provisions relating to building work was first published in 1958, revised in 1964 and in 1974. In the course of usage of this standard by various construction agencies in the country, several clarifications and suggestions for modifications were received and as a result of study, the technical committee responsible for this standard decided that its scope besides being applicable to buildings should be expanded to cover method of measurement of civil engineering works like industrial and river valley projects.

Since different trades are not related to one another, the Sectional Committee decided that each trade as given in IS 1200 : 1964 shall be issued separately as a different

part. This will also be helpful to users in using the specific standard. This part covers method of measurement of refractory work.

In this revision of the standard, the existing amendment has been included and the provisions have been spelt in the format as per latest and best practices. Also, the references to cross referred standards have been made up-to-date.

This standard contributes to the Sustainable Development Goal 9 'Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation'.

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.

*Draft Indian Standard*

**METHOD OF MEASUREMENT OF  
BUILDING AND CIVIL ENGINEERING WORKS  
PART 6 REFRACTORY WORK  
(Third Revision)**

**1 SCOPE**

This standard (Part 6) covers the method of measurement of refractory work.

**2 REFERENCES**

The standards listed 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 the standards listed below.

<i>IS no.</i>	<i>Title</i>
IS 1200 (Part 8) : 1993	Methods of measurement of building and civil engineering works: steelwork and ironwork ( <i>fourth revision</i> )
(Part 13) : xxxx	Painting of Building Surfaces (Doc: CED 44(25075)WC)

**3 TERMS AND DEFINITIONS**

**3.1 Clubbing of Items** — Items may be clubbed together provided that the break up of the clubbed items is agreed to be on the basis of the detailed description of the items stated in this standard.

**3.2 Booking of Dimensions** — In booking dimensions, the order shall be consistent and generally in the sequence of length, breadth or width and height or depth or thickness.

**3.3 Measurement** — Unless otherwise stated hereinafter all work, shall be measured net in the decimal system, as fixed in place, as given in **3.3.1** to **3.3.4**

**3.3.1** Dimensions shall be measured to the nearest 0.01 m.

**3.3.2** Areal shall be worked out to the nearest 0.01 m<sup>2</sup>.

**3.3.3** Cubic contents shall be worked out to the nearest 0.01 m<sup>3</sup>.

**3.3.4** Weight shall be worked out to the nearest 0.001 tonne.

**3.4 Description of items** — The description of each item shall, unless otherwise stated be deemed to include, where necessary, conveyance, delivery, handling, unloading, storing waste, return of packing, necessary scaffoldings, platforms, walkways, tools and tackles, stacking item wise, opening of packages and disposal of

wood, straw etc. This shall also include use of necessary equipment, safety appliances, lighting at place of work, ventilation facilities, where necessary.

**3.5 Wastage** — All measurement of cutting shall, unless otherwise stated, be deemed to include consequent wastage.

**3.6 Deduction** — Where a minimum area is defined for the deduction of opening, voids or both, such area shall refer only to openings or voids within the space measured.

**3.7 Work to be Measured Separately** — The refractory work to be carried out in hot conditions shall be so specified indicating range of temperature and work shall be measured separately.

**3.8 Bills of Quantities** — The bills of quantities shall fully describe the materials and workmanship and accurately represent the work to be executed.

## 4 METHOD OF MEASUREMENTS

**4.1** The items of work wherever necessary and unless otherwise stated shall be deemed to include the following:

- a) Dressing of the bricks/blocks including cutting, grinding and chipping to achieve proper thickness of joint and alignment as required in the drawings for all classes of work.
- b) Dressing of bricks/blocks including cutting, grinding and chipping wherever necessary for expansion joints, sliding joints, binding joints, etc, to ensure proper curvature and keying in arches, curved surface, etc.
- c) Forming of expansion joints, sliding joints, etc, excluding filling (for filling see **4.8**).
- d) Finishing, pointing, clearing and cleaning of masonry joints, gaps, hollows, cavities, opening passages, ducts etc for up to 0.1 m<sup>2</sup> each (see **4.3**).

**4.2** The refractory and insulation bricks and blocks, types of mortars and powders to be used shall be fully described. Other auxiliary and filling materials, such as paper, cardboard, asbestos materials, mineral wool, water glass, coke pitch, carbon mass, special sands, crumbs, powders, admixtures and plasticizers required to be incorporated in the works shall also be described.

**4.3** All refractory work unless otherwise specified shall be measured in cubic metres. The measurement shall be inclusive of mortar joints, expansion joints and sliding joints. Deductions for voids, openings, etc, shall be made only when the area of each such opening and void exceeds 0.01 square metre.

**4.4** The method of measurement on volumetric basis as specified in **4.3** shall also apply for castable refractory work or refractory concreting, rammed, mass filling, filling of loose insulation materials, such as mica crumbs, slag wools, asbestos powders, fireclay mass and carbon mass.

**4.5** Where the brick/block lining is separated from the shell or wall surface by the use of asbestos, cardboard, etc, such insulating material shall be fully described and measured separately in square metres.

**4.6** Where insulation plaster is applied over the refractory surface, the same shall be fully described and measured separately in square metres.

**4.7** Refractory grout work shall be fully described and measured in cubic metres on the basis of theoretical volume to be grouted.

**4.8** Fillings of expansion joints, sliding joint with paper, cardboard, etc, shall be fully described and measured separately in running metres.

**4.9** Unless otherwise stated fixing of anchors, hangers and supporting steel members for the refractory brickwork shall be separately measured [see IS 1200 (part 8)]

**4.10** Unless otherwise stated painting of finished masonry with cement or fireclay mortars, water glass, etc shall be separately measured [see IS 1200 (part 13)]