


भारतीय मानक ब्यूरो

(उपभोक्ता मामले, खाद्य एवं सार्वजनिक वितरण मंत्रालय, भारत सरकार)

BUREAU OF INDIAN STANDARDS

(Ministry of Consumer Affairs, Food & Public Distribution, Govt. of India)

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व्यापक परिचालन मसौदा

हमारा संदर्भ: सीईडी 44/टी-9
28 मई 2025
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 हैं:

प्रलेख संख्या	शीर्षक
सीईडी 44 (28110)WC	भवन निर्माण और सिविल इंजीनियरिंग कार्यों की मापन पद्धति का भारतीय मानक मसौदा भाग 9 छत कवरिंग (क्लैडिंग सहित) [IS 1200 (भाग 9) 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 : **28/06/2025**

सम्मति यदि कोई हो तो कृपया अधोहस्ताक्षरी को उपरिलिखित पते पर संलग्न फॉर्मेट में भेजें या

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 पर भी उपलब्ध हैं।

धन्यवाद।

भवदीय,

(दिव्या एस.)

सदस्य सचिव सीईडी 44

वैज्ञानिक 'डी'(सिविल इंजीनियरिंग)

 ई-मेल: divya.s@bis.gov.in

संलग्न: उपरिलिखित


भारतीय मानक ब्यूरो

(उपभोक्ता मामले, खाद्य एवं सार्वजनिक वितरण मंत्रालय, भारत सरकार)

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 Website: www.bis.org.in , www.bis.gov.in
WIDE CIRCULATION DRAFT
28 May 2025
Our Ref: CED 44/T-9
TECHNICAL COMMITTEE: Method of Measurement of Works of Civil Engineering

(Excluding Water Resources Development) Sectional Committee, CED 44

ADDRESSED TO:

- All Members of Civil Engineering Division Council, CEDC
- All Members of CED 44 and its Subcommittees
- All others interested

Dear Sir/Madam,

Please find enclosed the following document:

Doc No.	Title
CED 44 (28110)WC	Draft Indian Standard on Method of Measurement of Building and Civil Engineering Works Part 9 Roof Covering (Including Cladding) [(Third Revision) of IS 1200 (Part 9)] 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: **28 June 2025**

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 44

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 44 (28110)WC

Title: Draft Indian Standard Method of Measurement of Building and Civil Engineering Works Part 9 Roof Covering (Including Cladding)
[(Third Revision) of IS 1200 (Part 9)]

ICS 17.020; 91.040.01; 93.010

LAST DATE OF COMMENT: 28 June 2025

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 9 ROOF COVERING (INCLUDING CLADDING)

(Third Revision of IS 1200 part 9)

ICS 17.020; 91.040.01; 93.010

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

Last date of comments
28 June 2025

FORWARD

(Formal Clause will 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 misunderstandings 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 and was revised in 1964 and 1973.

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 roof covering (including cladding) applicable to buildings as well as to civil engineering works.

This revision has been brought out to incorporate the changes found necessary in light of usage of this standard and suggestions made by various implementing bodies. The significant modifications in this revision are:

- a) The provisions for other than asbestos cement roofing have been clubbed together; and
- b) The provision to measure profiled cladding has been incorporated.

This standard contributes to the Sustainable Development Goal 9 'Build resilient infrastructure, promote 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 measurement 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 9 ROOF COVERING (INCLUDING CLADDING)***(Third Revision of IS 1200 part 9)***1 SCOPE**

This standard (Part 9) (*Third Revision*) covers the method of measurement of roof covering (including cladding) for buildings and civil engineering work.

2 REFERENCE

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:

<i>IS no.</i>	<i>Title</i>
IS 1200	Methods of measurement of building and civil engineering works:
(Part 15): 1987	Part 15 Painting, Polishing, Varnishing, etc (Fourth Revision)

3 GENERAL RULES

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

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 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.

3.4 Description of Items — The description of each item shall, unless otherwise stated, be held to include, where necessary, conveyance and delivery, handling, unloading, storing, fabrication, hoisting, all labour for finishing to required shape and size.

3.5 Measurements — Unless otherwise stated hereinafter, all works shall be measured net in decimal system, as fixed in its place, as given in **3.5.1** and **3.5.2**.

3.5.1 Dimension shall be measured to the nearest 0.01 m.

3.5.2 Areas shall be worked out to the nearest 0.01 m².

3.6 Work executed in the snow shall be measured separately.

3.7 The superficial area of roof coverings and cladding as laid shall be measured on the flat in square metres without allowance for laps and corrugations, if any.

3.7.1 Portions of roof covering overlapped by ridge or hip, etc, shall be included in the measurements of the roof except where otherwise stated.

3.8 Any opening not exceeding 0.4 m² shall not be deducted and forming such openings requiring cutting shall be enumerated.

3.9 Any opening exceeding 0.4 m² shall be deducted and cutting required shall be measured in running metres,

3.10 Cutting across corrugations shall be measured on the flat and not girthed.

3.11 No additions shall be made for laps cut through.

3.12 Sheeting curved or bent to curvature shall be measured separately.

3.13 The woodwork and steelwork shall be measured separately under the relevant part of this standard.

4 ROOFINGS EXCEPT ASBESTOS CEMENT ROOFING

4.1 The type of sheeting shall be described stating the thickness. The side and end laps shall be stated.

4.2 If the side and end laps are bolted or riveted, it shall be so stated specifying the spacing of the bolts or rivets.

4.3 Nainital pattern sheet-roofing shall be fully described and measured separately and shall include all rolls, clips, etc. Measurements shall be taken on the flat and not girthed.

4.4 Ridges, hips and valleys shall be measured along the central line in running metres stating the girth and flashings in square metres. The laps, passings and method of fixing shall be described.

4.4.1 The laps along the length of the ridges, hips, valleys or flashing pieces shall not be measured separately.

5 ASBESTOS CEMENT ROOFING

5.1 The type of sheeting shall be described stating the thickness.

5.1.1 The side and end laps shall be stated and the method of fixing described. If required to be fixed in accordance with the maker's instructions, it shall be so stated.

5.2 Ridges and hips shall be described stating the laps and measured in running metres along the central line; where in two pieces, these shall be measured as one length.

5.3 Ridge finials, cowl type ventilators, curved barge boards for north light curves, roof lights, expansion joints for ridges and expansion joints for north light curves shall be described and enumerated. Ridge finials where in two interlocking pieces, shall be measured as one number.

5.4 Eaves filler pieces, aprons, barge boards, corner pieces, flashings, louvers, north light and ventilator curves, expansion joints for sheets and other similar specials shall be described and measured for the finished work in running metres stating the laps and the method of fixing.

5.5 Ventilator sheets and other sheeting of dissimilar material shall be described and enumerated as 'extra over' on ordinary sheeting.

5.6 Eaves and valley gutters shall be described and measured in running metres along the central line.

5.7 Accessories, such as drop ends, stop ends, nozzles and angles shall be described and enumerated as 'extra over' gutters.

5.8 Union clips (loose sockets) shall not be measured separately.

7 CLADDING (PLAIN, PROFILED, CORRUGATED OR SEMI-CORRUGATED)

The type of sheeting shall be described stating the thickness. The side and end laps shall be stated and method of fixing described. If the side and end laps are bolted or riveted it shall be so stated specifying the spacing of bolts or rivets.

8 ROOF TILING

8.1 The description shall state the kind, pattern, quality and size of the tiles, the gauge to which they are to be laid and the method of laying.

8.2 Single and double tiling shall each be measured separately.

8.3 Ridges, hips and valleys, shall be measured in running metres. If set in mortar, it shall be so stated specifying the mortar.

8.4 Special ridge and hip tiles shall be described stating the kind, pattern, quality and size as also the mortar in which bedded and pointed. Coloured mortar (to match the coloured tiling, if required to be used for pointing) shall be described.

8.5 Hip hooks shall be enumerated stating the size and whether black or galvanized.

8.6 Eaves tiles bedded in mortar on walls shall be measured in running metres as extra for eaves describing the mortar and width of bedding.

8.7 Filling ends and spaces between tiles at eaves with mortar shall be measured in running metres and described stating the depth of filling.

8.8 Filling to single and double tiling shall be measured separately.

8.9 Screwing eaves tiles to battens shall be measured in running metres stating type, size, spacing of screws and washers. Drilling holes in the tiles shall be included in the description.

8.10 Half tiles or one and a half tiles at verges shall not be measured separately, but straight cutting and waste at verges shall be allowed for the full length of the verge and measured in running metres.

8.11 Tiles at verges bedded in mortar on walls shall be measured in running metres as 'extra over' for verges describing the mortar and width of tile bedding.

8.12 Country tiling shall be described as including all cutting and waste.

8.13 Special ventilating tiles and glass tiles shall be enumerated as 'extra over' only over roof tiling.

9 ROOF SHINGLES

Wood shingles to roof shall be measured in the same way as in the case of roof tiling (see 8).

10 ROOF SLATING

Slate roofs shall be measured in the same way as in the case of roof tiling (see 8).

11 TERRACED ROOFING

The size and quality of burnt bricks, brick tiles, stone slabs and similar materials for terraced roofing, method of laying, jointing, pointing and mix and type of mortar shall be described, stating the number of layers of bricks, tiles, etc.

11.1 Madras Terrace Roofing — It shall be fully described and plaster finish on the top and underside included in the item.

11.2 Flat brick tile roofing shall be fully described stating the thickness and number of layers.

11.3 Hollow roof with brick on edge bridging courses in between two layers of tiles shall be fully described and measured separately.

11.4 Flush pointing to tiles on top and underside of roof shall be described and included in the item of roofing.

11.5 Tiles laid in *chajjas* and sunshades shall be measured separately.

11.6 The type of stone quality and its dressing for stone slab roofing shall be described stating the thickness of slabs and spacing of battens or joists. If the size of slabs is required to be uniform, it shall be so stated.

11.7 Jack arch roofing including provision of centering shall be measured flat overall in square metres. The clear span, rise and thickness of arch, method of laying, jointing and pointing shall be described. The finish to top and underside shall also be stated and included in the description.

12 ROOF TREATMENT

12.1 Lime concrete in terracing shall be described and measured in square metres stating consolidated average thickness.

12.2 Mud terraced roof shall be described stating average consolidated thickness.

12.3 Each type of waterproofing treatment shall be fully described (including type, quality and quantity of materials, side and end laps, where necessary). The measurement shall be done as per the exposed roof area without any deductions for opening/obstruction having area up to 0.5 m² and for opening/obstruction of area over 0.5 m²; all cutting, waste, forming of openings and wedging and pointing edges in masonry work shall be included in the description. Turn-ups and turn-downs at eaves, verges, abutments, etc, over 300 mm shall be measured along with waterproofing treatment. No separate measurement shall be taken for rounding and turn-ups at the vertical surface up to a height of 300 mm.

12.4 The primer where provided shall also be measured separately as in **12.3**.

12.5 The waterproofing treatment in flashings, aprons, gutters, hips, ridges) valleys, etc, shall be fully described (see **12.3**), and measured net separately in square metres.

12.6 The waterproofing treatment between laps of corrugated sheeting shall be fully described including the method of securing and measured in running metres stating the width. In case of corrugated sheet, measurement of the roof area shall be increased in accordance with IS 1200 (Part 15).

13 THATCHING, MATTING AND BAMBOO WORK

13.1 The materials shall be described stating the kind or fibre or straw and the finished thickness. The description shall include bamboo or wood securing fillers, tying string and trimming to eaves and verges.

13.2 Thatched capping to ridges and hips shall be described and measured along central line in running metres stating the girth. Matting, material, number of layers, laps and the method of fixing shall be described and all cutting and waste shall be included.

13.3 Cover strips and cross bracings of split bamboos or wooden laths shall be measured in square metres as 'extra over' matting and the method of fixing shall be described.

13.4 Bamboos laid one-way or two-way *jaffri* work shall each be measured separately in square metres stating the size of bamboos and their spacing. Framing shall be included with the item.

13.5 Split bamboo work and whole bamboo work shall be measured separately.

13.6 Whole bamboos fixed independently as support to matting shall be measured in running metres stating the mean girth. The description shall state the method of fixing and application of preservatives, if required.

14 RAIN WATER GOODS

14.1 Gutters and pipes shall be described and measured in running meters including all short lengths, cutting and waste. The material, protective coating if any, the pattern, the method of jointing and fixing, shall be described. The length shall be measured along the central line. The length of all fittings, such as bends, junctions, angles and the like, shall be included.

14.2 Brackets for gutters shall be measured separately under the relevant part of this standard.

14.3 Angles (internal or external), drop ends and stopped ends shall be enumerated as 'extra over' the length of gutters and shall include extra joints, cutting and waste.

14.4 Pipe rails, distance pieces and holder bats shall be described and included with the fixing of the pipes.

14.5 Bends, elbows, offsets, shoes, branches, swan necks and heads shall be enumerated as 'extra over' the length of pipe and shall include for extra joints, cutting and waste.