

इंटरनेट

मानक

Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 1200-6 (1974): Method of measurement of building and civil engineering works, Part 6: refractory work [CED 44: Methods of Measurement of Works of Civil Engineering]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

BLANK PAGE



IS : 1200 (Part 6) -1974
(Reaffirmed 2007)

Indian Standard

METHOD OF MEASUREMENT OF
BUILDING AND CIVIL ENGINEERING WORKS

PART 6 REFRACTORY WORK

(*Second Revision*)

Fifth Reprint JANUARY 2000
(Incorporating Amendment No. I)

UDC 69.003.12 : 666.76

© *Copyright* 1980

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

Indian Standard
METHOD OF MEASUREMENT OF
BUILDING AND CIVIL ENGINEERING WORKS
PART VI REFRACTORY WORK
(Second Revision)

Civil Works Measurement Sectional Committee, BDC 44

Chairman

SHRI V. R. VAISH

Representing

Bureau of Public Enterprises, Ministry of Finance

Members

SHRI N. P. ACHARYYA

ASSISTANT ADVISER (PHE)

SHRI B. G. BALJEKAR

SHRI P. L. BHASIN

CHIEF ENGINEER, HEADQUARTERS

CHIEF ENGINEER (R & B)

The Commissioner for the Port of Calcutta

Ministry of Health & Family Planning

Vijaynagar Steel Project

Institute of Surveyors, New Delhi

Heavy Engineering Corporation Ltd, Ranchi

Public Works Department, Government of Andhra Pradesh

SUPERINTENDING ENGINEER
(R & D) (*Alternate*)

SHRI R. K. CHOUDHRY

SHRI I. P. PURI (*Alternate*)

SHRI W. J. DAGAMA

SHRI V. B. DESAI

DIRECTOR, IRI

Bhakra Management Board, Nangal Township

Bombay Port Trust

Hindustan Construction Co Ltd, Bombay

Irrigation Department, Government of Uttar Pradesh

Central Water & Power Commission, New Delhi

DIRECTOR (RATES & COSTS)

DEPUTY DIRECTOR (RATES &
COSTS) (*Alternate*)

SHRI P. K. DOCTOR

SHRI D. S. VIJAYENDRA (*Alternate*)

SHRI J. DURAI RAJ

EXECUTIVE ENGINEER (PLANNING
& DESIGNS), NORTHERN

RAILWAY

SHRI P. N. GADI

SHRI V. G. HEODE

SHRI J. P. SHARMA (*Alternate*)

SHRI G. V. HINGORANI

Concrete Association of India, Bombay

Hindustan Steelworks Construction Limited, Calcutta

Ministry of Railways

Institution of Engineers (India), Calcutta

National Buildings Organization, New Delhi

Gammon India Ltd, Bombay

(Continued on page 2)

© Copyright 1980

BUREAU OF INDIAN STANDARDS

This publication is protected under the *Indian Copyright Act* (XIV of 1957) and reproduction in whole or in part by any means except with written permission of the publisher shall be deemed to be an infringement of copyright under the said Act.

IS : 1200 (Part VI) - 1974

(Continued from page 1)


<i>Members</i>	<i>Representing</i>
SHRI H. K. KHOSLA	Irrigation Department, Government of Haryana
SHRI KRISHAN KUMAR	Ministry of Shipping & Transport (Roads Wing)
SHRI K. K. MADHOK	Builders Association of India, Bombay
SHRI MUNISH GUPTA (<i>Alternate</i>)	
SHRI DATTA S. MALIK	Indian Institute of Architects, Bombay
PROF M. K. GODBOLE (<i>Alternate</i>)	
SHRI R. S. MURTHY	Engineer-in-Chief's Branch, Army Headquarters, New Delhi
SHRI V. V. SASIDARAN (<i>Alternate</i>)	
SHRI T. S. MURTHY	National Project Construction Corporation, New Delhi
SHRI K. N. TANEJA (<i>Alternate</i>)	
SHRI C. B. PATEL	M. N. Dastur & Co Pvt Ltd, Calcutta
SHRI B. C. PATEL (<i>Alternate</i>)	
SHRI A. A. RAJU	Metallurgical & Engineering Consultants (India) Limited, New Delhi
SHRI K. G. SALVI	Hindustan Housing Factory Ltd, New Delhi
SHRI G. B. SINGH (<i>Alternate</i>)	
SECRETARY	Central Board of Irrigation and Power, New Delhi
DEPUTY SECRETARY (I) (<i>Alternate</i>)	
DR R. B. SINGH	Banaras Hindu University, Varanasi
SHRI S. SRINIVASAN	Hindustan Steel Ltd, Ranchi
SUPERINTENDING SURVEYOR OF WORKS (AVIATION)	Central Public Works Department (Aviation), New Delhi
SURVEYOR OF WORKS (I) ATT- ACHED TO SSW (AVIATION) (<i>Alternate</i>)	
SUPERINTENDING SURVEYOR OF WORKS (I)	Central Public Works Department, New Delhi
SURVEYOR OF WORKS (I) ATTACHED TO SSW (I) (<i>Alternate</i>)	
TECHNICAL EXAMINER	Buildings and Communication Department, Government of Maharashtra
SHRI D. AJITHA SIMHA, Director (Civ Engg)	Director General, ISI (<i>Ex-officio Member</i>)

Secretary

SHRI K. M. MATHUR
Deputy Director (Civ Engg), ISI

AMENDMENT NO. 2 MAY 1986
TO
IS:1200(Part 6)-1974 METHOD OF MEASUREMENT OF
BUILDING AND CIVIL ENGINEERING WORKS
PART 6 REFRACTORY WORK
(*Second Revision*)

[Page 5, clause 3.1(d)] - Add the following at the end:

'for up to 0.1 m^2 each (see 3.3)'.


Indian Standard
**METHOD OF MEASUREMENT OF
BUILDING AND CIVIL ENGINEERING WORKS**
PART VI REFRACTORY WORK
(Second Revision)

0. FOREWORD

0.1 This Indian Standard (Part VI) (Second Revision) was adopted by the Indian Standards Institution on 8 February 1974, after the draft finalized by the Civil Works Measurement Sectional Committee had been approved by the Civil Engineering Division Council.

0.2 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.

0.3 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. 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.

0.4 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.

*Method of measurement of building works (revised).

IS: 1200 (Part VI)- 1974

0.5 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 : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

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

2. GENERAL RULES

2.1 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.

2.2 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.

2.3 Measurement — Unless otherwise stated hereinafter all work shall be measured net in the decimal system, as fixed in place, as given in 2.3.1 to 2.3.4.

2.3.1 Dimensions shall be measured to the nearest 0.01 m.

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

2.3.3 Cubic contents shall be worked out to the nearest 0.01 m³.

2.3.4 Weight shall be worked out to the nearest 0.001 tonne.

2.4 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 equipments, safety appliances, lighting at place of work, ventilation facilities, where necessary.

2.5 Waste — All measurement of cutting shall, unless otherwise stated, be deemed to include consequent wastage.

2.6 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.

*Rules for rounding off numerical values (*revised*).

2.7 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.

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

3. METHOD OF MEASUREMENT

3.1 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* 3.8).
- d) Finishing, pointing, clearing and cleaning of masonry joints, gaps, hollows, cavities, opening passages, ducts etc.

3.2 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.

3.3 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 voids exceeds 0.01 square metre.

3.4 The method of measurement on volumetric basis as specified in 3.3 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.

3.5 Where the brick/blocks 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.

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

IS : 1200 (Part VI) - 1974

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

3.8 Filling of expansion joints, sliding joints with paper, cardboard, etc, shall be fully described and measured separately in running square metres.

3.9 Unless otherwise stated fixing of anchors, hangers and supporting steel members for the refractory brickwork shall be separately measured [*see* IS : 1200 (Part VIII) - 1974*].

3.10 Unless otherwise stated painting of finished masonry with cement or fireclay mortars, water glass, etc, shall be measured separately [*see* IS : 1200 (Part XIII) - 1976†].

*Method of measurement of building and civil engineering works : Part VIII Steel work and iron work (*third revision*) .

†Method of measurement of building and civil engineering works : Part XIII Plastering and pointing (*third revision*) .

BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, NEW DELHI 110002

Telephones: 323 0131, 323 3375, 323 9402

Fax : 91 11 3234062, 91 11 3239399, 91 11 3239382

Telegrams : Manaksanstha
(Common to all Offices)

Central Laboratory:

Plot No. 20/9, Site IV, Sahibabad Industrial Area, SAHIBABAD 201010

Telephone
8-77 00 32

Regional Offices:

Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg, NEW DELHI 110002	323 76 17
*Eastern : 1/14 CIT Scheme VII M, V.I.P. Road, Manikola, CALCUTTA 700054	337 86 62
Northern : SCO 335-336, Sector 34-A, CHANDIGARH 160022	60 38 43
Southern : C.I.T. Campus, IV Cross Road, CHENNAI 600113	236 23 15
†Western : Manakalaya, E9 Behind Marol Telephone Exchange, Andheri (East), MUMBAI 400093	832 92 95

Branch Offices:

'Pushpak', Nurmohamed Shaikh Marg, Khanpur, AHMEDABAD 380001	550 13 48
‡Peenya Industrial Area, 1st Stage, Bangalore - Tumkur Road, BANGALORE 560058	839 49 55
Gangotri Complex, 5th Floor, Bhadbhada Road, T. T. Nagar, BHOPAL 462003	55 40 21
Plot No. 62-63, Unit VI, Ganga Nagar, BHUBANESHWAR 751001	40 36 27
Kalaikathir Buildings, 670 Avinashi Road, COIMBATORE 641037	21 01 41
Plot No. 43, Sector 16 A, Mathura Road, FARIDABAD 121001	8-28 88 01
Savitri Complex, 116 G. T. Road, GHAZIABAD 201001	8-71 19 96
53/5 Ward No. 29, R. G. Barua Road, 5th By-lane, GUWAHATI 781003	54 11 37
5-8-58C, L. N. Gupta Marg, Nampally Station Road, HYDERABAD 500001	20 10 83
E-52, Chitaranjan Marg, C-Scheme, JAIPUR 302001	37 29 25
117/418 B, Sarvodaya Nagar, KANPUR 208005	21 68 76
Seth Bhawan, 2nd Floor, Behind Leela Cinema, Naval Kishore Road, LUCKNOW 226001	23 89 23
Patliputra Industrial Estate, PATNA 800013	26 23 05
T. C. No. 14/1421, University P. O. Palayam, THIRUVANANTHAPURAM 695034	6 21 17
NIT Building, Second Floor, Gokulpal Market, NAGPUR 440010	52 51 71
Institution of Engineers (India) Building, 1332 Shivaji Nagar, PUNE 411005	32 36 35

*Sales Office is at 5 Chowringhee Approach, P. O. Princep Street,
CALCUTTA 700072

27 10 85

†Sales Office is at Novelty Chambers, Grant Road, MUMBAI 400007

309 65 28

‡Sales Office is at 'F' Block, Unity Building, Narashimara Square,
BANGALORE 560002

222 39 71