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मानक

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IS 2222 (1991): Specification for burnt clay perforated building bricks [CED 30: Clay and Stabilized Soil Products for Construction]



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“Knowledge is such a treasure which cannot be stolen”

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भारतीय मानक

निर्माण के लिए पकी मिट्टी की छिद्रित ईंटों की विशिष्ट

(तीसरा पुनरीक्षण)

Indian Standard

**SPECIFICATION FOR BURNT CLAY
PERFORATED BUILDING BRICKS**

(Third Revision)

UDC 666.762.712

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

FOREWORD

This Indian Standard (Third Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Clay Products for Buildings Sectional Committee had been approved by the Civil Engineering Division Council.

Perforated bricks are light in weight and provide better thermal insulation as compared to common bricks. Further, with the setting up of a number of mechanized and semi-mechanized plants for the manufacture of clay building products in different parts of the country, and since all the plants are using extrusion process, these bricks and other special varieties of clay building materials will be produced in larger quantities and will find greater application in general building construction. This standard has been formulated, therefore, to provide a guide for the manufacture and use of perforated bricks.

This standard was first published in 1962 and subsequently revised in 1969 and 1979. In this revision, non-modular size of brick in addition to modular size has been included.

The Sectional Committee responsible for the preparation of this standard has taken into consideration the views of producers, consumers and technologists and has related the standard to the manufacturing and trade practices followed in the country in this field. Due weightage has also been given to the need for international co-ordination among standards prevailing in different countries of the world.

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 : 1960 'Rules for rounding off numerical values (revised)'. 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

SPECIFICATION FOR BURNT CLAY PERFORATED BUILDING BRICKS

(*Third Revision*)

1 SCOPE

1.1 This standard covers the dimensions, quality and physical requirements of perforated burnt clay bricks for use in walls and partitions.

2 REFERENCES

2.1 The Indian Standards listed in Annex A are necessary adjuncts to this standard.

3 TERMINOLOGY

3.1 For the purpose of this standard, the definitions of terms given in IS 2248 : 1991 shall apply.

4 GENERAL QUALITY

4.1 The bricks shall be made of suitable clay and shall be thoroughly burnt at the maturing temperature of clay. They shall be free from cracks, flaws and nodules of free lime. They shall have rectangular face with sharp straight edge at right angle. They shall be of uniform colour and texture.

5 DIMENSIONS AND TOLERANCES

5.1 The standard size of burnt clay perforated bricks shall be as follows :

	<i>Length</i> (<i>L</i>)	<i>Width</i> (<i>W</i>)	<i>Height</i> (<i>H</i>)
	mm	mm	mm
Modular	190	90	90
Non-modular	230	110	70

5.2 The permissible tolerances on the dimensions specified in 5.1 shall be as follows :

<i>Dimension</i>	<i>Tolerance</i>
mm	mm
70, 90	± 4
110, 190	± 7
230	± 10

NOTE — The tolerances specified above shall apply to measurements on individual bricks.

6 PERFORATIONS

6.1 The area of perforation shall be between 30 percent and 45 percent of the total area of the corresponding face of the bricks.

6.2 The perforation shall be uniformly distributed over the surface. In the case of rectangular perforations, the larger dimension shall be parallel to the longer side of the brick. The shorter side of the perforation shall be less than 20 mm in case of rectangular perforations and less than 25 mm diameter in case of circular perforations.

6.3 The area of each perforation shall not exceed 500 mm².

6.4 The thickness of any shell shall not be less than 15 mm and that of any web not less than 10 mm.

7 PHYSICAL REQUIREMENT

7.1 Compressive Strength

The bricks when tested in accordance with the procedure laid down in IS 3495 (Parts 1 to 4) : 1991 shall have a minimum average compressive strength of 7 N/mm² on net area.

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. The lot shall then be checked for next lower class of brick.

7.2 Water Absorption

The bricks when tested in accordance with the procedure laid down in IS 3495 (Parts 1 to 4) : 1991 after immersion in cold water for 24 hours water absorption shall not be more than 20 percent by weight.

7.3 Efflorescence

The bricks when tested in accordance with the procedure laid down in IS 3495 (Parts 1 to 4) : 1991 shall have a rating of efflorescence not more than 'slight'.

7.4 Warpage

The bricks when tested in accordance with the procedure laid down in IS 3495 (Parts 1 to 4) : 1991 the average warpage shall not exceed 3 percent.

IS 2222 : 1991

8 SAMPLING AND CRITERION OF CONFORMITY

8.1 Sampling and criteria of conformity shall be done in accordance with the procedure laid down in IS 5454 : 1978.

9 MARKING

9.1 Each brick shall be marked in a suitable manner with the manufacturer's identification mark or initials.

9.1.1 Each brick may also be marked with the Standard Mark.

ANNEX A
(*Clause 2.1*)

LIST OF REFERRED INDIAN STANDARDS

<i>IS No.</i>	<i>Title</i>	<i>IS No.</i>	<i>Title</i>
2248 : 1991	Glossary of terms relating to clay products for buildings (<i>second revision</i>)	(Parts 1 to 4) : 1991	building bricks, Parts 1 to 4 (<i>third revision</i>)
3495	Methods of test of burnt clay	5454 : 1978	Method of sampling of clay building bricks

Standard Mark

The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made thereunder. The Standard Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well defined system of inspection, testing and quality control which is devised and supervised by BIS and operated by the producer. Standard marked products are also continuously checked by BIS for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

Bureau of Indian Standards

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Indian Standards are reviewed periodically and revised, when necessary and amendments, if any, are issued from time to time. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition. Comments on this Indian Standard may be sent to BIS giving the following reference :

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**AMENDMENT NO. 1 MARCH 1992
TO
IS 2222 : 1991 SPECIFICATION FOR BURNT CLAY
PERFORATED BUILDING BRICKS**

(Third Revision)

(First cover page, foreword) — Substitute '*Fourth Revision*' for '*Third Revision*' wherever appears.

(Foreword, para 3, line 1) — Substitute '1969, 1979 and 1989' for '1969 and 1979'.

(CED 30)