IS 7556 (1988): burnt clay jallies [CED 30: Clay and Stabilized Soil Products for Construction]

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Indian Standard

SPECIFICATION FOR BURNT CLAY JALLIES

(First Revision)

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

Gr 2

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Indian Standard

SPECIFICATION FOR BURNT CLAY JALLIES

(First Revision)

0. FOREWORD

0.1 This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards on 26 February 1988, after the draft finalized by the Clay Products for Building Sectional Committee had been approved by the Civil Engineering Division Council.

0.2 Burnt clay jallies (perforated screen blocks) are gaining popularity as a convenient and aesthetically appealing building material suitable for providing a screen on verandah construction of parapet or boundary walls, etc. They are often hand-moulded but superior quality of jallies are machine-made by the wire-cut process. With the introduction of mechanized methods of production of jallies in small scale sector of the industry, it is expected that the production and use of jallies is likely to increase considerably in the near future. This standard has, therefore, been formulated so as to give guidance in the manufacturing of such jallies. This standard was first published in 1975. In this revision, dimensions of jallies have been specified in millimetres and the permissible tolerances on dimensions have been modified. The method of determination of dimensions and tolerances has been specified on the basis of measurement of dimensions of a minimum of 20 jallies. The average breaking load of the jallies has been indicated in N/mm.

0.3 In the formulation of this standard, due weightage has been given to international coordination amongst the standards and practices prevailing in different countries in addition to relating it to the practices in the field in this country.

0.4 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*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

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

1. SCOPE

1.1 This standard covers dimensions, quality and strength requirement of burnt clay jallies having perforations of ornamental designs.

2. TERMINOLOGY

2.0 For the purpose of this standard, the definitions given in IS : 2248 - 1981* shall apply.

3. DIMENSIONS AND TOLERANCES

3.1 Dimensions — The standard sizes of burnt clay jallies shall be as follows:

Dimensions in mm

190 × 190 × 100
190 × 190 × 50
190 × 140 × 100
190 × 140 × 50
140 × 140 × 100
140 × 140 × 50
140 × 90 × 50
90 × 90 × 50

3.2 Tolerances — The permissible tolerances on dimensions specified in **3.1** shall be as follows:

Dimensions	*Total Tolerance for 20 Jallies*
190 mm, 140 mm	±80 mm
100 mm, 90 mm, 50 mm	±40 mm

3.2.1 Twenty (or more according to the size of the stack) jallies shall be selected at random from the sample selected under **6.** All blisters, loose particles of clay and small projections shall be removed. They shall then be arranged upon a level surface successively in contact with each other and in a straight line. The overall length of the assembled jallies 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 jallies in one row, the sample may be divided into rows of 10 jallies each which shall be measured separately to the nearest millimetre. All these dimensions shall be added together.

3.3 Thickness of Shells and Webs, and Void Area

*Glossary of terms relating to clay products for building (*first revision*).

3.3.1 The thickness of any shell shall not be less than 10 mm and that of the web not less than 8 mm.

3.3.2 The total void area of the jallies shall not exceed 40 percent.

3.4 Keys — Keys provided for bonding with mortar shall be 10 mm wide and 3 mm deep.

4. GENERAL QUALITY

4.1 The jallies shall be made from suitable clay.

4.2 The jallies shall be free from web or shell cracks, flaws or nodules of free lime. They shall be uniform in colour and texture. In the case of wire-cut jallies, the cut faces shall be at right angles and parallel to each other and the edges of shell and webs shall be trimmed to a smooth finish. The jallies shall not exhibit excessive warpage when placed between two parallel straight-edges. The maximum warpage permissible shall be 3 percent in any direction.

5. PHYSICAL REQUIREMENTS

5.1 The average breaking load of the burnt clay jallies shall not be less than 12 N per mm width when tested in accordance with the procedure given in Appendix A.

5.2 The average water absorption of the jallies shall not be more than 15 percent when tested in accordance with the procedure specified in Appendix B.

5.3 When tested in accordance with the procedure given in Appendix C, the efflorescence rating of jallies shall not be more than 'slight', meaning thereby that not more than 10 percent of the total surface area (internal and external surfaces taken together) is covered with a thin deposit of salt.

6. SAMPLING

6.1 Sampling of jallies shall be carried out in accordance with the procedure specified in IS : 5454-1978*.

7. MARKING

7.1 Each clay jalli shall be legibly and indelibly marked with the name of the manufacturer and type of the jalli.

7.1.1 The Jallies may also be marked with the Standard Mark.

NOTE — 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 processors may be obtained from the Bureau of Indian Standards.

*Method of sampling of clay building bricks (*first revision*).

APPENDIX A

(*Clause* 5.1)

METHOD FOR DETERMINATION OF BREAKING LOAD

A-1. TEST SPECIMEN

A-1.1 Five to fifteen jallies shall be used for this test depending on the lot size.

A-2. APPARATUS

A-2.1 An apparatus similar to the one used for determining flexural strength of clay flooring tiles (IS : 1478-1969*) shall be used for the purpose.

A-3. PREPARATION OF THE SAMPLES

A-3.1 The samples under test shall be soaked in Water for 24 h, at 24 to 30°C. If the jalli has groove or serrations on the bearing surfaces, these shall be filled with gypsum plaster and allowed to set. The surplus plaster shall be trimmed off flush with surface of the jalli.

*Specification for clay flooring tiles (*first revision*).

A-4. PROCEDURE

A-4.1 Support the jalli vertically on the cylindrical steel beams set with a span equal to three-fourth of the length of the jalli. To ensure uniform distribution of load at supports, provide suitable packing between the jalli and the beams. Apply the load with the direction of the load perpendicular to the span at a uniform rate of 300 to 400 N/min.

A-5. REPORT OF TEST RESULTS

A-5.1 Average breaking load of all the samples tested shall be reported.

APPENDIX B

(*Clause* 5.2)

WATER ABSORPTION TEST

B-1. TEST SPECIMEN

B-1.1 Five to fifteen jallies, depending on the lot size, shall be tested.

B-2. PROCEDURE

B-2.1 Dry the specimens in an oven at a temperature of 100 to 110°C till they attain a constant weight; weigh when cool and immerse the dry specimens completely in potable water at 24 to 30°C for 24 h. Remove the specimen and wipe off surface water with a damp cloth and weigh correct to a gram, within three minutes after removing the specimen from water.

B-3. CALCULATIONS AND REPORT

B-3.1 The percentage water absorption shall be calculated as follows:

$$\text{Water absorption, percent} = \frac{B - A}{A} \times 100$$

where

B = weight of specimen in g after 24 h immersion in cold water, and

A = weight of dry specimen in g.

B-3.2 The average absorption percentage of all the specimens shall be calculated and reported.

APPENDIX C

(*Clause* 5.3)

METHOD OF TESTING EFFLORESCENCE

C-1. TEST SPECIMEN

C-1.1 Five to fifteen jallies shall be tested depending on the lot size.

C-2. APPARATUS

C-2.1 A shallow flat bottom dish containing distilled water in sufficient quantity to completely saturate all the specimens and leave a small surplus.

C-3. PROCEDURE

C-3.1 Place the jalli on end in upright position in the dish, the depth of immersion in water being 25 mm. Place the whole arrangement in a warm well-ventilated room (20 to 30°C) until the water in the dish evaporates. When the water has been absorbed and the jalli appears dry, pour same quantity of water in the dish and allow it to be absorbed by the jalli. Examine the jalli for efflorescence after the second drying and report the results.

C-4. TEST REPORT

C-4.1 The efflorescence rating shall be reported.

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