IS 1542 (1992): sand for plaster [CED 5: Flooring, Wall Finishing and Roofing]

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(Reaffirmed 2003)

भारतीय मानक

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(दूसरा पुनरीक्षण)

Indian Standard

SAND FOR PLASTER — SECIFICATION

(Second Revision)

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BUREAU OF INDIAN STANDARDS
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Price Group 1

Flooring, Wall Finishing and Roofing Sectional Committee, CED 5

FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Flooring, Wall Finishing and Roofing Sectional Committee had been approved by the Civil Engineering Division Council.

This standard was first published in 1960 and subsequently revised in 1977. In this second revision following major modifications are made :

a) Crushed gravel sand and ALPM have been added in the scope and pit sand has been included under naturally occurring sands;

b) As per the grading given in Table 1, the fineness modulus of sand could vary from 1·2 to 2·2. However, it is preferable to have minimum fineness modulus of 1·4 in case of crushed stone sands and crushed gravel sands and a F. M of 1 5 in case of naturally occurring sands. Hence, this new clause, namely **5.2** has been added;

c) Amendment No. 1 giving 0-15 percent passing for 150 micron IS Sieve in Table 1 has been incorporated;

d) A new clause, namely **7.1** (a) has been added so that when requested by the purchaser, the supplier shall supply particle size grading of sand.

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

SAND FOR PLASTER — SPECIFICATION

(Second Revision)

1 SCOPE

1.1 This standard covers the requirements of naturally occurring sands, crushed stone sands and crushed gravel sands used in mortars for internal wall and ceiling plastering, and external plastering using mixes of lime, cement, composite lime-cement, activated lime pozzolana mixture (ALMP) or gypsum with or without admixtures and sand.

2 REFERENCES

2.1 The following Indian Standards are necessary adjuncts to this standard.

IS No.	*Title*
383 : 1970	Specification for coarse and fine aggregates from natural sources for concrete (*second revision*)
1727 : 1967	Method of test for pozzolanic materials (*first revision*)
2250 : 1981	Code of practice for preparation and use of masonry mortars (*first revision*)
2386	Methods of test for aggregates for concrete :
(Part 1) : 1963	Part 1 Particle size and shape
(Part 2) : 1963	Part 2 Estimation of deleterious materials and organic impurities
(Part 3) : 1963	Part 3 Specific gravity, density, voids, absorption and bulking
2430 : 1986	Methods for sampling of aggregates for concrete

3 TERMINOLOGY

3.1 For the purpose of this standard, the following definitions shall apply.

3.2 Sand

A fine aggregate which is either a natural sand, crushed stone sand or crushed gravel sand.

3.3 Natural Sand

A fine aggregate produced by the natural disintegration of rock which has been deposited by streams or glacial agencies or obtained from pits.

3.4 Crushed Stone Sand and Crushed Gravel Sand

A fine aggregate produced by crushing hard stone or natural gravel.

4 QUALITY OF SAND

4.1 General

The sand shall consist of natural sand, crushed stone sand or crushed gravel sand or a combination of any of these. The sand shall be hard, durable, clean and free from adherent coatings and organic matter and shall not contain clay, silt and dust more than specified under **4.3** (a).

4.2 Deterious Materials

The sand shall not contain any harmful impurities, such as, iron pyrites, alkalis, salts, coal, mica, shale or similar laminated materials, soft fragments, sea shells and organic impurities in such quantities as to affect adversely the hardening, the strength, the durability of the appearance of the plaster or applies decoration, or to cause corrosion of metal lathing or other metal in contact with the plaster.

4.3 Limits of Deleterious Materials

Unless found satisfactory as a result of further tests as may be specified by the engineer or architect, or unless evidence of such performance is offered which is satisfactory to him, the maximum quantities of clay, fine silt, fine dust and organic impurities in the sand shall not exceed the following limits:

a) Clay, silt and dust [determined in accordance with IS 2386 (Part 2) : 1963]	Not more than 5 percent by weight
b) Organic impuriries [determined in accordance with IS 2386 (Part 2) : 1963]	Colour of liquid below that indicated by comparison with the standard solution specified in **6.2.2** of IS 2336 (Part 2) : 1963

NOTE — In particular cases crushed stone sand with even higher proportions of fine dust than specified above, may be satisfactory and the limit so permitted may be subject to the agreement between the supplier and the purchaser.

4.4 The average compressive strength, determined by the standard procedure detailed in Appendix A of IS 2250 : 1981, of mortar cubes composed of one part of cement and six parts of sand conforming to gradation in Table 1 shall be not less than 3 N/mm² at 28 days.

4.4.1 The amount of water for gauging shall be that required to give a flow between 110 to 115 with 25 drops in 15 seconds, as determined in **9.5.3** of IS 1727 : 1967.

5 GRADING OF SAND

5.1 The particle size grading of sand for plaster work for internal as well as external walls and ceiling as analyzed by the method described in IS 2386 (Part 1) : 1973 shall be as specified in Table 1. Where the grading falls outside the limits of the grading zones of sieves other than 150, 300 and 600 micron IS Sieve by a total amount not exceeding 5 percent, it shall be regarded as falling within the grading.

Table 1 Grading of Sand for Internal Wall or External Wall or Ceiling Plaster

(*Clause* 5.1)

IS Sieve Designation (*See* IS 460 : 1985)	Percentage Passing
10 mm	100
4·75 mm	95-100
2·36 mm	95-100
1·18 mm	90-100
600 micron	80-100
300 micron	20-65
150 micron	0-15

NOTE — For crushed stone sands and crushed gravel sands, the permissible limit on 150 micron IS Sieve is increased to 20 percent. This does not affect the 5 percent allowance permitted in **5.1**.

5.2 The fineness modulus of sand shall be not less than 1·4 in case of crushed stone sands and crushed gravel sands and not less than 1·5 in case of naturally occurring sands.

5.3 The various sizes of particles of which the sand is composed shall be uniformly distributed throughout the mass.

5.4 The required grading may often be obtained by screening and/or by blending together either natutal sands or crushed stone screenings, which are by themselves of unsuitable grading.

6 SAMPLING AND TESTING

6.1 Sampling

The method of sampling shall be in accordance with IS 2430 : 1986. The amount of material required for each test shall be as specified in relevant parts of IS 2386 and as per the requirements of **4.4**.

6.2 Testing

Any test which the purchaser or his representative may require in connection with this standard shall be carried out in accordance with the provisions of various clauses in the standard. Unless otherwise stated in the enquiry or order, duplicate tests shall be made to all cases and the results of both tests reported.

7 ADDITIONAL INFORMATION TO BE FURNISHED BY THE SUPPLIER

7.1 When requested by the purchaser or his representative, the supplier shall provide the following additional particulars:

a) *Source of supply* — Precise locality from where the materials were obtained, with the name of the quarry or pit;

b) Trade group of principal rock type in case of manufactured sand (*see* Appendix C of IS 383 : 1970); and

c) Particle size of grading when determined in accordance with IS 2386 (Part 1) : 1963.

7.2 Subject to prior agreement, the supplier shall furnish the following additional information, when required by the purchaser or his representative:

a) Specific gravity of sand [determined with IS 2386 (Part 3) : 1963]; and

b) Bulk density [determined in accordance with IS 2386 (Part 3) : 1963].

7.3 If possible, information on the bulking of the sand with varying moisture content may be furnished in the form of a graph.

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