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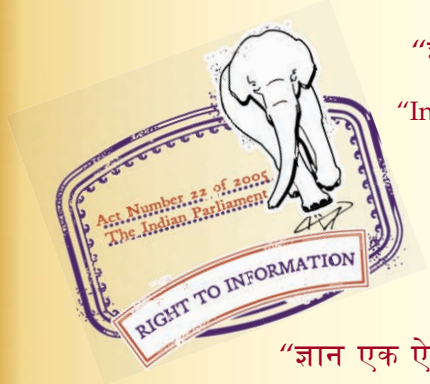

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IS : 4832 (Part III) - 1968
(Reaffirmed 2001)

Indian Standard

SPECIFICATION FOR CHEMICAL RESISTANT MORTARS

PART III SULPHUR TYPE

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

Gr 2 *January* 1969

Indian Standard

SPECIFICATION FOR CHEMICAL RESISTANT MORTARS

PART III SULPHUR TYPE

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SPECIFICATION FOR CHEMICAL RESISTANT MORTARS

PART III SULPHUR TYPE

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 17 November 1968, after the draft finalized by the Flooring and Plastering Sectional Committee had been approved by the Civil Engineering Division Council.

0.2 Sulphur mortars have good resistance against most of the acids except concentrated oxidizing acids, but have very poor resistance to alkalies. Sulphur mortars are used for jointing acid resistant bricks or tiles in floors, in the lining of storage tanks, pickling tanks, sumps, drains, etc. Special care shall be taken that sulphur mortar is not overheated during the heating process. For the actual method of use of sulphur mortars, IS : 4442-1967* may be referred.

0.3 In the formulation of this standard due weightage has been given to international co-ordination among the standards and practices prevailing in different countries in addition to relating it to the practices in the field in this country. This has been met by deriving assistance from C287-1962 'Standard Specifications for sulphur mortars' issued by the American Society for Testing and Materials.

0.4 Investigations carried out by the Central Building Research Institute, Roorkee, has also been of assistance.

0.5 This standard is one of a series of Indian Standards on chemical resistant mortars. Other standards published so far in the series are:

IS : 4441-1967 Code of practice for use of silicate type chemical resistant mortars

IS : 4442-1967 Code of practice for use of sulphur type chemical resistant mortars

IS : 4443-1967 Code of practice for use of resin type chemical resistant mortars

IS : 4456 (Part I)-1967 Methods of test for chemical resistant mortars: Part I Silicate type and resin type

IS : 4456 (Part II)-1967 Methods of test for chemical resistant mortars: Part II Sulphur type

*Code of practice for use of sulphur type chemical resistant mortars.

0.6 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.

1. SCOPE

1.1 This standard covers the requirements of sulphur type chemical resistant mortars for bonding chemical resistant masonry units.

2. TERMINOLOGY

2.0 For the purpose of this standard, the following definition shall apply.

2.1 Sulphur Type Chemical Resistant Mortars — It is an inorganic compound consisting of an intimate mixture of sulphur and inert filler, such as silica. Small amounts of chemically-resistant inert modifying agents may be added.

3. CHEMICAL COMPOSITION

3.1 The sulphur mortar shall conform to the following requirements for chemical composition:

Sulphur	55 to 70 percent
Inert filler	30 to 45 percent

3.1.1 The sulphur content of the sulphur mortar shall be determined according to the procedure laid down in **8** of IS : 4456 (Part II)-1967†.

3.2 On a sieve analysis of the filler the percentage material retained on different sieves shall not exceed the following:

IS Sieve Designation	*Percentage Material Retained*
425-micron IS Sieve	5·0 *Max*
150-micron IS Sieve	10·0 *Min*
75-micron IS Sieve	35·0 *Min*

3.2.1 If required by the user, the manufacturer shall give a certificate that the filler conforms to the grading specified in **3.2.**

4. PHYSICAL REQUIREMENTS

4.1 The sulphur mortars shall satisfy the requirements given in Table 1 when tested in accordance with IS : 4456 (Part II)-1967†.

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

†Methods of test for chemical resistant mortars: Part II Sulphur type.

TABLE 1 PHYSICAL REQUIREMENTS OF SULPHUR TYPE CHEMICAL RESISTANT MORTARS

(*Clauses* 4.1, A-3.2 *and* A-4.1)

Sl No.	Property	Requirement	Method of Test, Ref to Cl No. of IS : 4456 (Part II)-1967*
(1)	(2)	(3)	(4)
i)	Compressive strength at 48 h, *Min*, kg/cm^2	280	2
ii)	Tensile strength at 48 h, *Min*, kg/cm^2	30	3
iii)	Flexural strength at 48 h, *Min*, kg/cm^2	70	4
iv)	Bond strength at 48 h, *Min*, kg/cm^2	10	5
v)	Proportion of original strength retained after thermal shock test, *Min*, percent	20·0	6
vi)	Moisture absorption, *Max*, percent	1·0	7
vii)	Tendency of aggregate to settle, *Max*, variation from unity	0·6	9

*Methods of test for chemical resistant mortars: Part II Sulphur type.

5. CHEMICAL RESISTANCE REQUIREMENTS

5.1 The limits of chemical resistance may be mutually agreed to by the purchaser and the supplier when tested in accordance with **10** of IS : 4456 (Part II)-1967*.

6. STORAGE

6.1 The storage life of sulphur type chemical resistant mortars shall be not less than 2 years. It shall be placed in a dry place away from fire.

7. SAMPLING

7.1 The method of drawing representative samples of the material and the criteria for conformity shall be as given in Appendix A.

8. PACKING AND MARKING

8.1 The sulphur mortars shall be suitably packed in wooden carton.

*Methods of test for chemical resistant mortars: Part II Sulphur type.

8.2 The following information shall be marked legibly on each package:

a) Name of the manufacturer or his trade-mark,

b) Date of manufacture/batch No.

c) Net weight, and

d) Storage requirements.

8.2.1 Each package 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 producers may be obtained from the Bureau of Indian Standards.

APPENDIX A

(*Clause* 7.1)

SAMPLING PROCEDURE FOR ACCEPTANCE TEST

A-1. LOT

A-1.1 The quantity of sulphur mortar of the same type, from the same manufacturing unit shall be offered for inspection at one time. Every batch of sulphur mortar manufactured shall be offered for inspection. The maximum quantity of sulphur mortar in a lot shall not be more than 2 500 kg.

A-1.2 Samples shall be selected and tested for each lot separately for ascertaining its conformity to the requirements of the specification.

A-2. SELECTION

A-2.1 In case the sulphur mortar in a lot is packed in a number of containers; as a first step suitable number of containers shall be selected from the lot. However, the number of containers thus selected shall not be less than 5 percent of the total number of containers in the lot. Equal quantities of material shall be taken from each container selected and mixed together to give a sample for the lot.

A-3. CRITERIA FOR CONFORMITY

A-3.1 The samples shall be placed in moistureproof air-tight containers. They shall be labelled with full identification, such as the supplier's name, the lot number, the date of sampling, etc.

A-3.2 The samples shall be tested for all the requirements given in Table 1 of this standard.

A-3.3 A lot shall be considered as having satisfied the requirements of the specification if the results for all the tests satisfy the relevant requirements of the specification.

A-4. RE-TEST

A-4.1 If the samples, when tested, do not comply with the requirements given in Table 1, a further similar set of samples shall be taken at random from the same batch and subjected to the tests. If any of the samples of the second test fails to comply with the requirements of Table 1, then the entire sulphur mortar in the batch represented by the samples shall be rejected.

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Savitri Complex, 116 G.T. Road, GHAZIABAD 201001	8-71 19 96
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5-8-56C, L.N. Gupta Marg, Nampally Station Road, HYDERABAD 500001	20 10 83
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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
NIT BUilding, Second Floor, Gokulpat Market, NAGPUR 440010	52 51 71
Patliputra Industrial Estate, PATNA 800013	26 23 05
Institution of Engineers (India) Building 1332 Shivaji Nagar, PUNE 411005	32 36 35
T.C. No. 14/1421, University P. O. Palayam, THIRUVANANTHAPURAM 695034	6 21 17

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*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, Narashimaraja Square, BANGALORE 560002	222 39 71

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AMENDMENT NO. 1 APRIL 1981

TO

IS:4832(Part III)-1968 SPECIFICATION FOR CHEMICAL RESISTANT MORTARS

PART III SULPHUR TYPE

Alterations

(*Page 4, clause 2.1*) - Substitute the following for the existing clause:

'2.1 Sulphur Type Chemical Resistant Mortar - It is an inorganic compound consisting of an intimate mixture of sulphur and inert filler, such as silica or carbon. Small amounts of chemically resistant inert modifying agents may be added.'

(*Page 4, clause 3.2*) - Substitute the following for the existing clause:

'3.2 On a sieve analysis of the silica filler the percentage material retained on different sieves shall not exceed the following:

IS Sieve Designation [*See* IS:460(Part I)-1978*]	*Percentage Retained by Mass*
(1)	(2)
425 micron	5 *Max*
150 micron	10 *Min*
75 micron	35 *Min*

NOTE - For other fillers the requirements given at Sl No. (vii) of Table 1 shall apply.'

(*Page 6, clause A-1.1, last line*) - Substitute '5 000 kg' *for* '2 500 kg'.

Addenda

(*Page 4, foot-note with '+' mark*) - Add the following new foot-note after '+' mark:

'+Specification for test sieves:Part I Wire cloth test sieves (*second revision*).'

(*Page 5, clause 5.1*) - Add the following new matter at the end of the clause:

'A general guide for chemical resistance of sulphur type mortars to various substances is given in Table 1 of IS:4442-1980+.'

(*Page 5, foot-note with '*' mark*) - Add the following new foot-note after '*' mark:

'+Code of practice for use of sulphur type chemical resistant mortars (*first revision*).'

(BDC 5)

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