

इंटरनेट

मानक

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IS 13008 (1990): Shallow corrugated asbestos cement sheets
- [CED 53: Cement Matrix Products]



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“Knowledge is such a treasure which cannot be stolen”

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भारतीय मानक
उपली ऐस्बेस्टास सीमेंट की सपाट चददरें—विशिष्टि
Indian Standard
SHALLOW CORRUGATED ASBESTOS CEMENT
SHEETS — SPECIFICATION

UDC 691.328.5 - 417.2

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

February 1991

Price Group 2

**AMENDMENT NO. 1 SEPTEMBER 1997
TO
IS 13008 : 1990 SHALLOW CORRUGATED ASBESTOS
CEMENT SHEETS — SPECIFICATION**

(Page 1, clause 3.1, line 5) — Insert the following matter after 'IS 269 : 1989':

'or 43 grade ordinary Portland cement conforming to IS 8112 : 1989 or 53 grade ordinary Portland cement conforming to IS 12269 : 1987'.

(Page 1, clause 3.1, line 8) — Substitute 'IS 1489 (Part 1) : 1991 or IS 1489 (Part 2) : 1991' for 'IS 1489 : 1976'.

(Page 1, Table 1) — Insert the following Note at the end of the table:

'NOTE — By mutual agreement between the purchaser and the manufacturer, the sheets may be supplied in lengths and widths other than those specified in the table '

(Page 3, Annex A):

a) Substitute the following for '1489 : 1976 Specification for Portland-pozzolana cement (second revision)':

'1489 (Part 1) : 1991 Specification for Portland-pozzolana cement : Part 1 Flyash based (third revision)

1489 (Part 2) : 1991 Specification for Portland-pozzolana cement : Part 2 Calcined clay based (third revision)'.

b) Insert the following after '7639 : 1975 Methods of sampling of asbestos cement products':

'8112 : 1989 Specification for 43 grade ordinary Portland cement (first revision)'

c) Insert the following at the end:

'12269 : 1987 Specification for 53 grade ordinary Portland cement'

(CED 53)

Cement and Concrete Sectional Committee, CED 2

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Cement and Concrete Sectional Committee had been approved by the Civil Engineering Division Council

The Bureau of Indian Standards has formulated a number of Indian standards on asbestos cement products. Of late asbestos cement corrugated sheets with shallow corrugation are also finding their use in this country. Therefore, it is felt necessary to bring out a specification for this product. This specification covers the dimensional requirements, physical and mechanical characteristics of asbestos cement corrugated sheets with shallow corrugations. Requirements for standard corrugated and semi-corrugated sheets are covered in IS 459:1970 'Unreinforced corrugated and semi-corrugated asbestos cement sheets (*second revision*)'. Guidance regarding laying and fixing of such sheets is given in IS 3007 (Part 1) 1964 'Code of practice for laying of asbestos cement sheets : Part 1 Corrugated sheets'

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. In the formulation of this standard, assistance has been derived from ISO 393/1-1983 Asbestos cement products Part 1 Corrugated sheets and fittings for roofing and cladding.

The composition of the technical committee responsible for formulation of this standard is given in Annex B

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

SHALLOW CORRUGATED ASBESTOS CEMENT SHEETS — SPECIFICATION

1 SCOPE

1.1 This standard covers the requirements for materials, dimensions and tests for shallow corrugated asbestos cement sheets

2 REFERENCES

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

3 COMPOSITION

3.1 The products shall be composed of an inert aggregate consisting of clean asbestos fibre including suitable other fibres, cemented together either by 33 grade ordinary Portland cement conforming to IS 269 : 1989 or Portland slag cement conforming to IS 455 : 1989 or Portland pozzolana cement conforming to IS 1489 : 1976. Pozzolanic materials, pigments and fillers which are compatible with asbestos cement may be added.

NOTE — In case of Portland pozzolana cement, further addition of pozzolanic materials shall not be permitted

4 COLOURING MATTER

4.1 The sheets may be left in their natural colour or colouring matter may be added in the composition. Pigments which are embodied in asbestos cement for colouring purposes shall be of permanent colour and shall conform to the relevant Indian Standards. For guidance in ascertaining the colour and staining power of the pigment, IS 5913 : 1989 may be referred to

5 DIMENSIONS AND TOLERANCES

5.1 The sheets shall conform to the dimensions and tolerances given in Table 1 and Fig. 1

5.1.1 For the purpose of measuring the thickness, a dial thickness gauge having an anvil shown in Fig. 2 shall be used. Thickness measurement shall be made along the width at each end of the sheet. Measure at least three corrugation at each end of the sheet excluding side laps. Thickness shall be measured at a distance not less than 20 mm from the edge. Each individual measurement shall be not less than the minimum value specified in Table 1

5.1.2 The depth of corrugation shall be measured with the help of a depth gauge as

follows

Select three complete corrugations on a sheet. On each of them take three measurements regularly spaced over the length of the sheet with a micrometer.

Calculate for each corrugation, the arithmetic mean of the three measurements which shall be in accordance with Table 1

Table 1 Dimensions and Tolerances of Shallow Corrugated Sheets
(Clauses 5.1, 5.1.2 and 5.1.3)

All dimensions in millimetres

Sl No.	Characteristic	Nominal Dimension	Tolerance
i)	Depth of corrugation, D	20	± 2.0
ii)	Pitch of corrugation, P	75	± 1.5
iii)	Overall width, B	1 015	+ 10 - 5
iv)	Nominal thickness, T	4.2	+ Free - 0.2
v)	Length of sheet, A	1 500	± 10
		1 750	
		2 000	
		2 250	

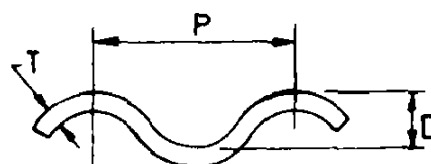
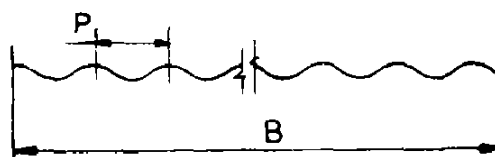
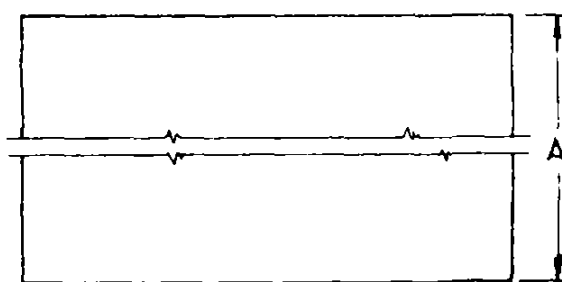


FIG. 1 SHALLOW CORRUGATED SHEETS

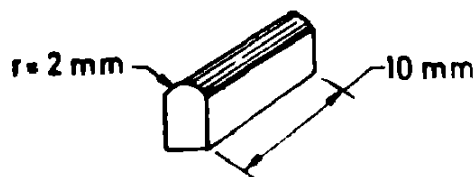


FIG. 2 ANVIL FOR MEASURING THICKNESS

5.1.3 The pitch of corrugation shall be measured as follows:

The total length over any six consecutive pitches shall be measured and the length measured over these six pitches shall not vary from six times the pitch specified in Table 1 by the tolerance given.

6 PHYSICAL AND MECHANICAL PROPERTIES

6.1 Load Bearing Capacity

The load bearing capacity of shallow corrugated sheets shall be not less than 18 Newton per millimeter width of the specimen when tested according to the method described in IS 5913 : 1989

6.2 Impermeability

The specimen shall not show during 24 hours of test any formation of drops of water except traces of moisture on the lower surface when tested according to the method described in IS 5913 : 1989

7 FINISH

7.1 The finished product, when delivered, shall have a rectangular shape, smooth surface on the weathering side, a good appearance and shall be free from visible defects. The corrugations shall be true and regular. The edges of the sheets shall be straight and clean.

8 SAMPLING

8.1 The sampling, inspection and acceptance shall be in accordance with IS 7639 : 1975. Unless otherwise agreed to between the manufacturer and the purchaser, the maximum

and minimum inspection lots shall be as follows:

- a) 8 000 and 400 sheets respectively, for lengths less than or equal to 1 500 mm; and
- b) 3 000 and 200 sheets respectively, for lengths exceeding 1 500 mm

9 INSPECTION AND MANUFACTURER'S CERTIFICATE

9.1 The purchaser or his representative shall have access at all reasonable times to the manufacturer's stock area for the purpose of inspecting the materials and products, and selecting and testing the sheets, which shall be so conducted as not to interfere unnecessarily with the loading in the carriers

9.2 The manufacturer shall, upon request, furnish the purchaser or his representative with a certificate that the finished products comply with this specification in all respects

10 TESTING FACILITIES

10.1 The manufacturer shall, in all cases and at his own expense, supply labour and appliances for such tests as may be carried out in his premises in accordance with this specification.

11 MARKING

11.1 Each sheet shall be legibly and indelibly stamped or marked by any suitable method with the following information:

- a) Manufacturer's name or trade-mark,
- b) Year and date of manufacture, and
- c) Pictorial warning sign as given in IS 12081 (Part 2) : 1987.

11.2 Each sheet may also be marked with the Standard Mark

12 SAFETY RULES SHEET

12.1 All delivery of shallow corrugated asbestos cement sheets by the manufacturer shall be accompanied by safety rules sheets as given in IS 11769 (Part 1) : 1987

ANNEX A

(Clause 2.1)

LIST OF INDIAN STANDARDS

<i>IS No.</i>	<i>Title</i>	<i>IS No.</i>	<i>Title</i>
269 : 1989	33 Grade Ordinary Portland cement (<i>fourth revision</i>)	7639 : 1975	Methods of sampling of asbestos cement products
455 : 1989	Specification for Portland slag cement (<i>fourth revision</i>)	11769 (Part 1) : 1987	Guideline for safe use of products containing asbestos : Part 1 Asbestos cement products
1489 : 1976	Specification for Portland-pozzolana cement (<i>second revision</i>)	12081 (Part 2) : 1987	Recommendations for pictorial warning signs and precautionary notices for asbestos and products containing asbestos . Part 2 Asbestos and its products
5913 : 1989	Methods of test for asbestos cement products (<i>first revision</i>)		

ANNEX B

(Foreword)

COMPOSITION OF THE TECHNICAL COMMITTEE

Cement and Concrete Sectional Committee, CED 2

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SHRI P. D. KELKAR (<i>Alternate</i>)	
SHRI D. K. KANUNGO	National Test House, Calcutta
SHRI B. R. MEENA (<i>Alternate</i>)	
SHRI R. L. KAPOOR	Ministry of Transport, Department of Surface Transport (Roads Wing), New Delhi
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IS 13008 : 1990

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Cement Corporation of India, New Delhi

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Gammon India Limited, Bombay

Public Works Department, Government of Tamil Nadu

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