
International Standard



393/1

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Asbestos-cement products — Part 1: Corrugated sheets and fittings for roofing and cladding

Produits en amiante-ciment — Partie 1: Plaques ondulées et leurs accessoires pour couvertures et revêtements

First edition — 1983-02-15

UDC 691.328.5-417.2

Ref. No. ISO 393/1-1983 (E)

Descriptors : asbestos-cement products, sheets, asbestos and rubber sheets, fittings, corrugated sheets, classification, specifications, dimensions, dimensional tolerances, mechanical properties, physical properties, tests, dimensional measurement, mechanical tests, acceptance inspection, sampling, marking.



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 393/1 was developed by Technical Committee ISO/TC 77, *Products in fibre reinforced cement*, and was circulated to the member bodies in November 1980.

It has been approved by the member bodies of the following countries:

Australia	India	South Africa, Rep. of
Austria	Iran	Spain
Belgium	Iraq	Switzerland
Brazil	Ireland	Thailand
China	Israel	United Kingdom
Colombia	Italy	USSR
Czechoslovakia	Korea, Rep. of	Venezuela
Egypt, Arab Rep. of	Netherlands	Yugoslavia
France	New Zealand	
Greece	Philippines	

The member bodies of the following countries expressed disapproval of the document on technical grounds:

Denmark
Germany, F.R.
Mexico
Nigeria
Romania

This International Standard cancels and replaces ISO Recommendation R 393-1964, of which it constitutes a technical revision.

Contents

	Page
1 Scope and field of application	1
2 Corrugated sheets	1
3 Fittings	7
4 Sampling, inspection and acceptance	7
Annexes	
A Acceptance tests	9
B Extracts from ISO 390, <i>Asbestos-cement products — Sampling and inspection</i>	10

Asbestos-cement products —

Part 1: Corrugated sheets and fittings for roofing and cladding

1 Scope and field of application

This International Standard specifies the characteristics of straight asbestos-cement corrugated sheets and their asbestos-cement fittings to be used mainly for roofing and cladding. It also specifies tests for checking these characteristics as well as marking and conditions of acceptance.

Some of these requirements can apply, after agreement between manufacturer and purchaser, to curved corrugated sheets.

It is not applicable either to asymmetrical section corrugated sheets which are covered by ISO 394, or to "short" corrugated sheets¹⁾ which are covered by a separate International Standard.

2 Corrugated sheets

2.1 Composition

Corrugated sheets to which this International Standard is applicable consist essentially of an inorganic hydraulic binder²⁾,

(ground silica may be added in order to obtain a calcium-silicate reaction) reinforced with asbestos fibres to which other fibres may be added.

Fillers and pigments may be added.

The sheets may be left in their natural colour or colouring matter may be added in the composition; they may also receive coloured or uncoloured coatings on their surfaces.

2.2 General appearance and finish (see figure 1)

Sheets are components the cross-section of which consists of regular corrugations defined by their pitch a and their height h , where the inner radius R_1 , and the outer radius R_2 do not differ by more than 20 %.

The surface intended to be exposed to the weather shall be of smooth finish. Variations of the surface appearance which do not impair the specified characteristics of the sheets are permitted.

Edges shall be straight, clean and square. Sheets may have one or two mitred corners and may be drilled for fixing.

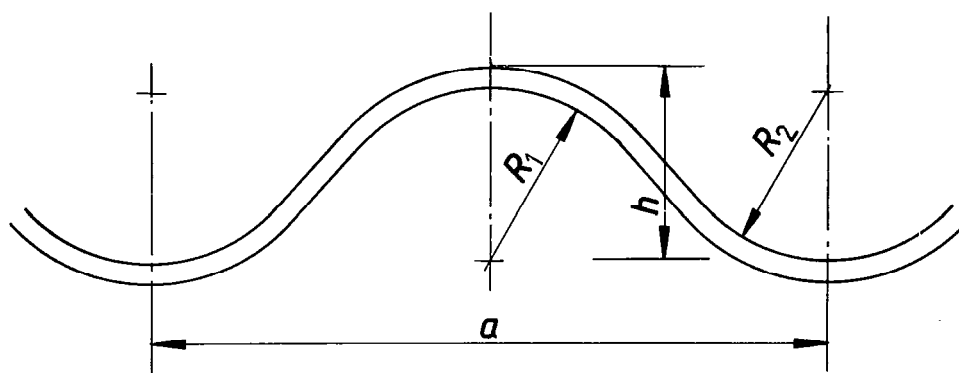


Figure 1

1) These sheets (about 0,6 m long) are small roofing components.

2) National Standards may specify the binder to be used.

2.3 Classification

2.3.1 According to the nominal height of the corrugations

The sheets are classified according to the height *h* of their corrugations.

Table 1

Category	Nominal height of corrugations <i>h</i>
Shallow corrugations	15 to 25
Medium corrugations	26 to 45
Deep corrugations	46 à 60
Very deep corrugations	> 60

2.3.2 According to the thickness (see figure 2)

The thickness of the sheets may:

- be approximately constant throughout the width of the profile (sheets type A);
- vary regularly between the crown and the valley of the corrugations on one hand, and the sides of the corrugations on the other hand (sheets type B).

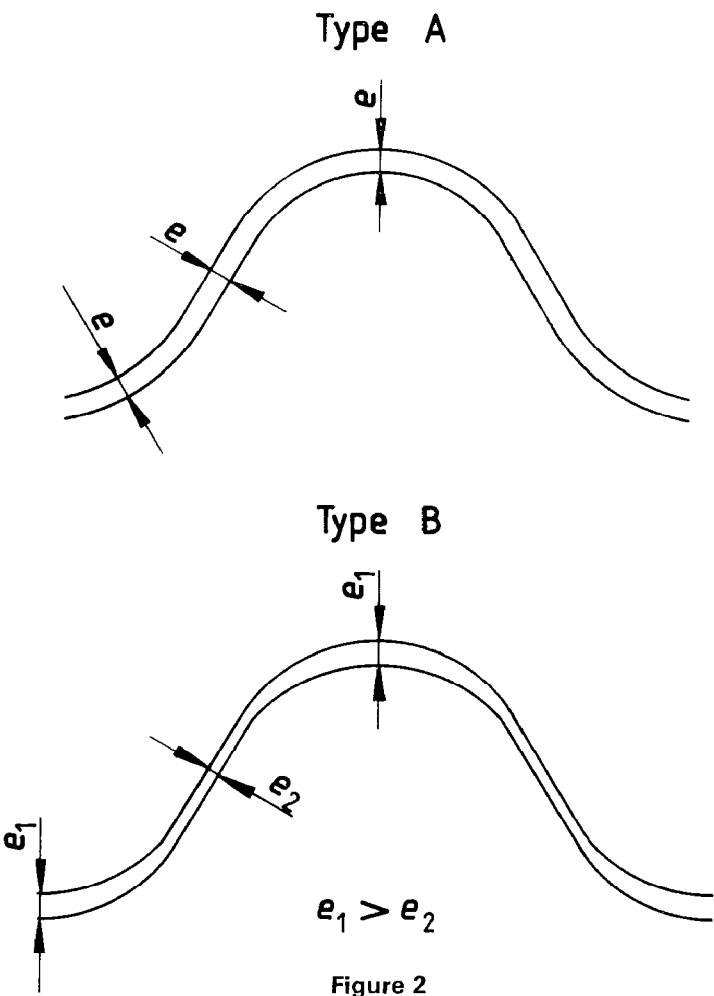


Figure 2

2.4 Characteristics

2.4.1 Geometrical characteristics

The specified dimensions are the nominal dimensions defined by national standards or, failing this, by the manufacturer.

2.4.1.1 Preferential dimensions for the profile

Table 2

Category	Preferential dimensions in the category	
	Pitch <i>a</i> mm	Height <i>h</i> mm
Shallow corrugations	75	21
Medium corrugations	130	30
Deep corrugations	146 177	48 51
Very deep corrugations	1)	

1) This category of sheets is only manufactured in a limited number of countries; therefore no preferred profiles have been included for the moment on an international level. Examples of these profiles manufactured are given below:

Pitch <i>a</i> mm	Height <i>h</i> mm
300	85
342	125

2.4.1.2 Width

The width is defined by

- the pitch of the corrugation *a*;
- the number of complete corrugations;
- the dimension of longitudinal overlapping corrugations.

2.4.1.3 Thickness

The effective thickness measured according to 2.5.3 shall be not less than the values in table 3.

Table 3

Category	Minimum thickness mm
	Types A and B
Shallow corrugations	3,0
Medium and deep corrugations	5,0
Very deep corrugations	6,0

2.4.1.4 Number of corrugations

The number of corrugations to be considered for designation is the number of complete corrugations of the sheet.