

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION R 391

BUILDING AND SANITARY PIPES IN ASBESTOS-CEMENT

1st EDITION

November 1964

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Printed in Switzerland

Also issued in French and Russian. Copies to be obtained through the national standards organizations.

BRIEF HISTORY

The ISO Recommendation R 391, *Building and sanitary pipes in asbestos-cement*, was drawn up by Technical Committee ISO/TC 77, *Products in asbestos-cement*, the Secretariat of which is held by the Association Suisse de Normalisation (SNV).

Work on this question by the Technical Committee began in 1956 and led, in 1963, to the adoption of a Draft ISO Recommendation.

In December 1963, this Draft ISO Recommendation (No. 689) was circulated to all the ISO Member Bodies for enquiry. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies:

Australia	Israel	Republic of South Africa
Austria	Italy	Romania
Belgium	Japan	Spain
Colombia	Lebanon	Sweden
Denmark	Morocco	Switzerland
Finland	Netherlands	Turkey
France	New Zealand	U.A.R.
Germany	Norway	United Kingdom
Greece	Poland	U.S.A.
Hungary	Portugal	U.S.S.R.
Ireland	Republic of Korea	Venezuela
		Yugoslavia.

Three Member Bodies opposed the approval of Draft:

Brazil, Mexico, Peru.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in November 1964, to accept it as an ISO RECOMMENDATION.

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ASBESTOS-CEMENT BUILDING AND SANITARY PIPES ¹

1. SCOPE

This Recommendation applies to asbestos-cement pipes and jointing pieces used in building, such as rainwater, sanitary and sewer connections.

It defines certain conditions of manufacture, dimensions and acceptance tests for these products.

2. PIPES

2.1 Composition

The pipes should be seamless and made by the application of a close and homogeneous mixture essentially consisting of a suitable inorganic hydraulic binder, asbestos fibre and water, excluding any materials liable to cause ultimate deterioration in the quality of the pipes. ²

2.2 Types

The pipes may be of two types:

- A — light — for pipes not used under pressure,
- B — heavy — for pipes which may be subject to accidental pressure in service.

The types A and B may be of two kinds:

- pipes with socket,
- pipes with plain ends.

2.3 General appearance and finish

The interior surface of the pipes should be regular and smooth. If required, they may be coated internally and externally with a suitable coating which should comply with the requirements of the national standards of the producing country.

2.4 Characteristics

2.4.1 Geometrical characteristics

2.4.1.1 NOMINAL DIAMETER

The nominal diameter of the pipes corresponds to the internal diameter (bore), tolerances not being taken into account.

¹ Pressure pipes are covered by ISO Recommendation R 160, sewerage and drainage pipes by ISO Recommendation (at present Draft ISO Recommendation No. 786).

² This Recommendation also applies to autoclaved pipes, when the binder is partially replaced by ground silica.

The series of the nominal diameters is as follows:

Millimetres	Inches (approximately)
50	2
60	2½
80	3
100	4
125	5
150	6
200	8
250	10
300	12
400	16
500	20 or 21

When national standards provide for other diameters, these should be chosen from preferred numbers of the R 10 series. ³

2.4.1.2 THICKNESSES

The nominal thicknesses of the pipes should conform to those in the national standards of the producing country or, failing this, should be as specified in the manufacturers' catalogues.

The actual thicknesses should however be not less than the following: ⁴

DIMENSIONS IN MILLIMETRES

Nominal diameter	Thickness
50	6
60	6
80	7
100	7
125	7
150	8
200	8
250	10
300	10
400	11
500	12

2.4.1.3 LENGTH

The nominal length of the pipes corresponds to the length measured between the extremities for pipes with plain ends and to the useful length for socketed pipes, not taking the tolerances into account.

³ The manufacturers' catalogues should state the dimensions which they normally keep in stock.

⁴ For special orders, the thicknesses of the pipes may be less than those indicated in the above table provided that the internal hydraulic pressure bursting strength (2.5.2), the crushing strength (2.5.3) and the bending strength (2.5.4) be increased in proportion so that the test or breaking loads be at least as high as the loads calculated for the minimum thicknesses indicated in the table.