

International Standard



881

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Asbestos-cement pipes, joints and fittings for sewerage and drainage

Tuyaux, joints et accessoires en amiante-ciment pour canalisations d'assainissement

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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 881 was developed by Technical Committee ISO/TC 77, *Products in fibre reinforced cement*, and was circulated to the member bodies in March 1979.

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

Australia	Israel	Romania
Austria	Italy	South Africa, Rep. of
Brazil	Korea, Rep. of	Spain
Colombia	Libyan Arab Jamahiriya	Switzerland
Czechoslovakia	Mexico	Thailand
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France	Netherlands	United Kingdom
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The member body of the following country expressed disapproval of the document on technical grounds :

Belgium

This International Standard cancels and replaces ISO Recommendation R 881-1968, of which it constitutes a technical revision.

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Asbestos-cement pipes, joints and fittings for sewerage and drainage

1 Scope and field of application

This International Standard gives specifications relating to asbestos-cement pipes, joints and fittings suitable for use with gravity flow at atmospheric pressure¹⁾, intended for sewerage and drainage applications; it defines certain conditions of manufacture, classification, characteristics and acceptance tests applicable to these products.

NOTE — Asbestos-cement pressure pipes and joints are covered by ISO 160²⁾. Building and sanitary pipes in asbestos-cement are covered by ISO 391²⁾. Asbestos-cement pipe fittings for building and sanitary purposes are covered by ISO 392²⁾.

2 References

ISO 390, *Asbestos-cement products — Sampling and inspection*.

ISO 2785, *Guide to the selection of asbestos-cement pipes subject to external loads with or without internal pressure*.

ISO 4482, *Asbestos-cement pipelines — Guide for laying*.

3 Pipes

3.1 Composition

The pipes shall be made from a close and homogeneous mixture essentially consisting of a suitable inorganic hydraulic binder³⁾, asbestos fibre and water, excluding any materials liable to cause ultimate deterioration in the quality of the pipes.⁴⁾

3.2 Classification

The pipes are classified according to their crushing strength. The ultimate loads (see table 4) of the four⁵⁾ following series are based on a load per unit area⁶⁾ of

- 40 kN/m² for series 1
- 60 kN/m² for series 2
- 90 kN/m² for series 3
- 120 kN/m² for series 4

provided that no crushing load at rupture (see 3.6.1) is less than 15 kN/m.

The choice of the class of the pipes is determined by the purchaser's engineer, who is qualified to judge the conditions of laying and using the pipes. However, it is recommended that a class be selected such that, taking into account all the loads and the method of laying adopted, the pipes used give a safety factor against crushing of at least 1,3 for diameters up to 1 000 and of 1,5 for diameters above 1 000 (see also ISO 2785).

3.3 Types

The pipes may be either of the type with both ends plain or of the type with socket at one end.

3.4 General appearance and finish

The internal surface shall be regular and smooth. If necessary, the pipes may be coated internally and/or externally, but their internal surface shall remain regular and smooth (see 6.4).

1) Accidental overpressures are admitted provided that a safety factor of 2,0 be maintained in relation to the hydraulic test pressure provided for in 3.6.2.

2) At present at the stage of draft. (Revisions of ISO/R 160, ISO/R 391 and ISO/R 392.)

3) National standards may specify the binder to be used.

4) This International Standard applies both to water-cured pipes and to autoclaved pipes in which the binder is partially replaced by ground silica.

5) National standards may include different series than the four mentioned above, but not lower than series 1.

6) The load per unit area is the crushing load per metre length of pipe divided by the nominal diameter of the pipe in metres.