

International Standard 4483

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

Asbestos-cement pipelines — Field pressure testing

Canalisations en amiante-ciment — Essais de pression en œuvre

First edition — 1979-07-01

UDC 691.328.5-462 : 628.24 : 620.165

Ref. No. ISO 4483-1979 (E)

Descriptors : asbestos-cement products, pipelines, tests, field tests, pressure tests.

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ISO 4483-1979 (E)

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 4483 was developed by Technical Committee ISO/TC 77, *Products in fibre reinforced cement*, and was circulated to the member bodies in September 1977.

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

Australia	Germany, F.R.	Romania
Austria	Greece	South Africa, Rep. of
Belgium	India	Spain
Brazil	Ireland	Sweden
Bulgaria	Israel	Switzerland
Canada	Italy	United Kingdom
Colombia	Korea, Rep. of	USSR
Czechoslovakia	Mexico	Venezuela
Denmark	Netherlands	Yugoslavia
Egypt, Arab Rep. of	New Zealand	
France	Portugal	

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

Norway
Turkey

Asbestos-cement pipelines — Field pressure testing

1 Scope and field of application

This International Standard applies to the field pressure testing of asbestos-cement pipelines, above or below ground, conveying fluids, with or without internal hydraulic pressure and consisting of pipes referred to in ISO 160¹⁾ and ISO 881¹⁾.

It outlines the basic methods of pressure testing these types of asbestos-cement pipelines.

2 References

ISO 160, *Asbestos-cement pressure pipes and joints*.¹⁾

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 General

For pressure pipelines, two main types of tests are specified :

- **Type 1** : Pressure testing carried out as a single operation on individual test sections.
- **Type 2** : Testing of each coupling carried out progressively with pipe laying, followed by pressure testing of the completed pipeline as a whole (applicable only to diameters 900 mm and above).

4 Type 1 method for testing pressure pipelines in trench

4.1 Length of test section

The length of the section shall be indicated by the pipeline designer, taking into account local factors such as contour of the pipeline, weather conditions, traffic, time available before completion of the trench backfill, location of permanent concrete anchorage, availability of test water and of suitable anchorage for temporary end-closures, etc.

The length of the test section should normally be from 500 to 1 000 m. Longer sections may be permitted, always provided that, during the test, the pressure at the highest point of the section is not less than 0,8 times the pressure at the lowest point.

4.2 Preparation of the section to be tested

4.2.1 Backfilling before the test

4.2.1.1 Partial backfill

The pipes comprising the test section shall be anchored by partially backfilling the trench, according to the procedure of ISO 4482, to at least 300 mm above the crown of pipes not exceeding 200 mm diameter, and to about 500 mm for pipes of larger diameter.

The backfill shall be placed and compacted so that the internal pressure will not give rise to any transverse or vertical displacement of the pipes. The joints should remain uncovered for visual inspection during the test.

4.2.1.2 Complete backfill

As an alternative to partial backfill before testing, the pipeline installer, in agreement with the pipeline designer, may backfill the pipeline completely before pressure testing, provided that the pipeline installer undertakes to locate and uncover leakage indicated by testing.

4.2.2 Anchorage

The pressure test shall be carried out after all permanent anchor blocks have been placed (as required by ISO 4482 or specified by the pipeline designer) and, if of concrete, have developed adequate strength. Temporary anchorage for closure caps on test sections shall be designed to suit the magnitude of the test pressure and the load-bearing capacity of the supporting soil, as in the case of permanent anchorage.

1) At present at the stage of draft.