

INTERNATIONAL STANDARD

ISO
7233

Second edition
1991-12-01

Rubber and plastics hoses and hose assemblies — Determination of suction resistance

iTeh STANDARD PREVIEW

*(Tuyaux et flexibles en caoutchouc et en plastique — Détermination de la
résistance à l'aspiration)*

ISO 7233:1991

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Reference number
ISO 7233:1991(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 7233 was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*, Sub-Committee SC 1, *Hoses (rubber and plastics)*.

This second edition cancels and replaces the first edition (ISO 7233:1983), of which it constitutes a technical revision.

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International Organization for Standardization
Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

Introduction

Suction testing is applied to hoses to determine that they will withstand the differential pressure encountered in service resulting from a reduced pressure within the hose. The degree of suction for the test will be specified in the relevant product standard.

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Rubber and plastics hoses and hose assemblies — Determination of suction resistance

1 Scope

This International Standard specifies two methods for determining the suction resistance of hoses, depending on bore diameter, as follows:

method A — for hoses of nominal bore diameter up to and including 80 mm;

method B — for hoses of nominal bore diameter greater than 80 mm.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 471:1983, *Rubber — Standard temperatures, humidities and times for the conditioning and testing of test pieces.*

ISO 1826:1981, *Rubber, vulcanized — Time-interval between vulcanization and testing — Specification.*

3 Test pieces

A minimum test length, clear of the end fittings, of five times the nominal bore or 1 m, whichever is the greater, shall be used, or the complete hose or hose assembly if less than 1 m long.

4 Conditioning of test pieces

No tests shall be carried out within 24 h of manufacture (see ISO 1826). Test pieces shall be con-

ditioned at standard temperature (see ISO 471) for at least 3 h before testing; this may be part of the 24 h after manufacture, unless otherwise agreed between the purchaser and manufacturer.

5 Procedure (method A)

Lay out the hose as straight as possible on a flat surface and blank off one end to form an airtight seal. Insert into the hose a smooth solid ball having a diameter equal to the nearest whole millimetre below $0,9 \times$ the bore diameter and then connect the open end of the hose to a suction pump and gauge. Reduce the internal pressure in the hose within 60 s to the specified test pressure and maintain this pressure for the required period, which shall not be less than 10 min.

Whilst the specified pressure is being maintained, examine the hose externally for any signs of indentation or collapse and then tilt the hose to permit the solid ball to traverse the full length of the hose to check for any obstructions caused by internal deformation.

6 Procedure (method B)

Fit transparent airtight plates to both ends of the hose, one of which is connected to a suction pump and gauge. Reduce the internal pressure in the hose within 60 s to the specified test pressure and maintain this pressure for the required period, which shall not be less than 10 min.

Whilst the reduced pressure is being maintained, examine the interior of the hose through one of the transparent plates by illumination applied through the other plate, and also examine the exterior of the hose, for signs of delamination, indentation or collapse.

7 Test report

The test report shall contain the following information:

- a) a reference to this International Standard;
- b) a full description of the hose tested;
- c) the method used;
- d) the suction applied, in kilopascals below atmospheric pressure;
- e) the period for which the suction was applied;
- f) observations on the behaviour of the hose during the test including, if appropriate, whether or not the solid ball traversed the full length of the test piece;
- g) the date of test.

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UDC 621.643.33:620.162

Descriptors: rubber products, plastics products, hoses, rubber hoses, tests, pressure tests, determination, pressure resistance.

Price based on 2 pages
