INTERNATIONAL STANDARD

ISO 1420

Third edition
2001-07-15

Rubber- or plastics-coated fabrics — Determination of resistance to penetration by water

Supports textiles revêtus de caoutchouc ou de plastique — Détermination de la résistance à la pénétration de l'eau

Reference number
ISO 1420:2001(E)

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Printed in Switzerland

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

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.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 1420 was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*, Subcommittee SC 4, *Products (other than hoses)*.

This third edition cancels and replaces the second edition (ISO 1420:1987), which has been technically revised.

Rubber- or plastics-coated fabrics — Determination of resistance to penetration by water

WARNING — Persons using this International Standard should be familiar with normal laboratory practice. This standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to ensure compliance with any national regulatory conditions.

1 Scope

This International Standard specifies a pass/fail method for the determination of the resistance of rubber- or plastics-coated fabrics to water penetration (hydrostatic resistance) when subjected to a specific hydrostatic pressure over a fixed period of time. Two test specimen shapes are given: one is circular, the other square.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 2231:1989, *Rubber- or plastics-coated fabrics — Standard atmospheres for conditioning and testing*

ISO 2286-1:1998, *Rubber- or plastics-coated fabrics — Determination of roll characteristics — Part 1: Methods for determination of length, width and net mass*

3 Principle

A test specimen of coated fabric is subjected to an increasing pressure of water on one face, under standard conditions, until a predetermined pressure specified in the coated-fabric specification is obtained. The required pressure is maintained for a specified time or until penetration occurs, whichever is the sooner.

4 Apparatus

4.1 General

The apparatus shall consist of an open-mouthed vessel fitted with a clamp to fasten the test specimen over the mouth. The lower part of the vessel shall have a nozzle allowing it to be connected to a water inlet pipe to fill it with water at room temperature. A retaining mesh is fitted over the test specimen. This mesh shall comprise wires of 1 mm to 1,2 mm diameter forming squares of side not greater than 30 mm.

4.2 Means of measuring water pressure

Either a manometer, connected to the test head, allowing water pressures up to 19,6 kPa (200 cmH_2O) to be read to an accuracy of ± 1 %, or a pressure gauge, graduated in centimetres head of water or in kilopascals and with a maximum reading of at least 100 kPa (946 cmH_2O), shall be used to measure the water pressure applied to the test specimen.

4.3 Test area

The open mouth of the vessel (see 4.1) over which the test specimen is clamped shall be either a square of side 100 mm or a circle of diameter 113 mm, giving an area of 100 cm^2 in each case. If necessary, soft rubber sealing gaskets can be employed between the coated-fabric test specimen and the surfaces of the clamps in order to reduce the risk of damage to the test specimen by the clamps, and to facilitate the testing of seams. In this respect, rubber having a hardness of approximately 40 IRHD (International Rubber Hardness Degrees) and approximately 0,5 cm thick or 1 cm in diameter has been found useful. Alternatively, a closed-cell, crosslinked-polyethylene foam having a density of 45 kg/m^3 to 55 kg/m^3 and approximately 1 cm thick can also be used.

5 Test specimens

5.1 Taking test specimens

Take test specimens from an area with no functional or visible defects and located in the usable width of the coated fabric as defined in ISO 2286-1.

5.2 Number

Unless otherwise specified in the material specification, test five specimens in each series of tests.

5.3 Shape and dimensions

5.3.1 Square specimens

Each specimen shall be square with sides measuring approximately 200 mm.

5.3.2 Circular specimens

Each specimen shall have a diameter of 130 mm to 200 mm.

5.4 Conditioning

Immediately prior to testing, condition the specimens for at least 16 h in an appropriate atmosphere in accordance with ISO 2231.

6 Procedure

6.1 Test method

With the vessel connected to the water inlet pipe, open the inlet valve and allow the water to run into the vessel until it overflows. Check that the top of the vessel is horizontal by ensuring that the water is uniformly flush with all edges. Ensure that the inlet pipe is totally purged of air, and also that the level of water in the vessel corresponds to the zero on the manometer tube or pressure gauge (see 4.2). Place the test specimen on the vessel with the face to be tested (moistened prior to the test) in contact with the water, without trapping any air under the test specimen.