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Rubber- or plastics-coated fabrics — Physical and mechanical tests — Determination of flex resistance by the flexometer method

Supports textiles revêtus de caoutchouc ou de plastique — Essais physiques et mécaniques — Détermination de la résistance à la flexion à l'aide d'un flexomètre

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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 2.

The main task of technical committees is to prepare International Standards. 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.

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ISO 32100 was prepared by the European Committee for Standardization (CEN) in collaboration with ISO Technical Committee ISO/TC 45, *Rubber and rubber products*, Subcommittee SC 4, *Products (other than hoses)*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Rubber- or plastics-coated fabrics — Physical and mechanical tests — Determination of flex resistance by the flexometer method

1 Scope

This International Standard specifies a test method for determining the flex resistance of rubber- or plastics-coated fabrics in the folded condition. The test method is applicable only to products which can be clamped in the test apparatus used and to products with which the fold made in the test specimen can be caused to move back and forth along the specimen during the test.

The appearance of the test specimen, after completion of either the flex number (see 3.1) or a specified number of flex cycles, is taken as a measure of the flex resistance in the folded condition.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3, *Preferred numbers — Series of preferred numbers*

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

ISO 2768-1, *General tolerances — Part 1: Tolerances for linear and angular dimensions without individual tolerance indications*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
flex number
number (agreed between the interested parties) of flex cycles to which the test specimen is subjected, the specimen being subsequently examined using a magnifying lens with ×6 magnification to determine whether any damage or other visible change is observable

3.2
flex cycle
cycle comprising one forward and one backward (i.e. a complete to-and-fro) movement of the moveable clamp of the test apparatus

4 Principle

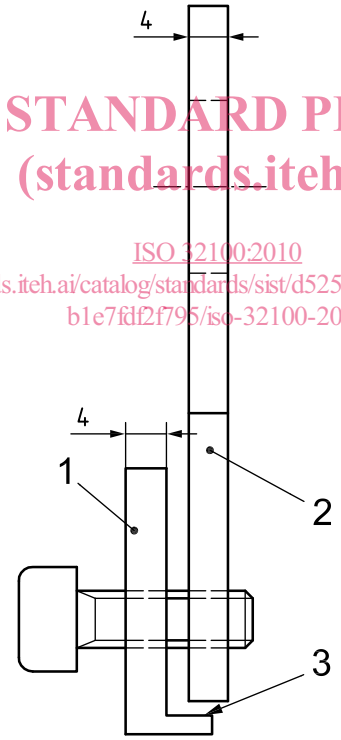
One end of a test piece is folded with the surface to be tested facing inwards and clamped in an upper (moveable) clamp and the other end of the test piece is folded with the surface to be tested facing outwards and clamped in a lower (fixed) clamp. The upper clamp is then moved in such a way that the fold is caused to run along the test piece. The test piece is examined periodically for damage or any other visible change.

5 Apparatus

The test rig consists of a moveable upper clamp as shown in Figure 1 to Figure 3 and a fixed lower clamp as shown in Figure 4.

Both clamps shall lie in the same plane. The moveable clamp shall be pivoted so that it can be driven to swivel through 22,5° about pivot point A. During the test, the moveable clamp shall be swivelled at a frequency of (100 ± 5) swivels per minute using a motor drive. It shall also be possible to swivel the clamp by hand. With the two clamps aligned in the same plane, the distance between the upper edge of the lower clamp and the flange (3) on the front plate of the upper clamp shall be 25 mm (see Figure 1 and Figure 8).

Dimensions in millimetres
General tolerances in accordance with ISO 2768-1, tolerance class m

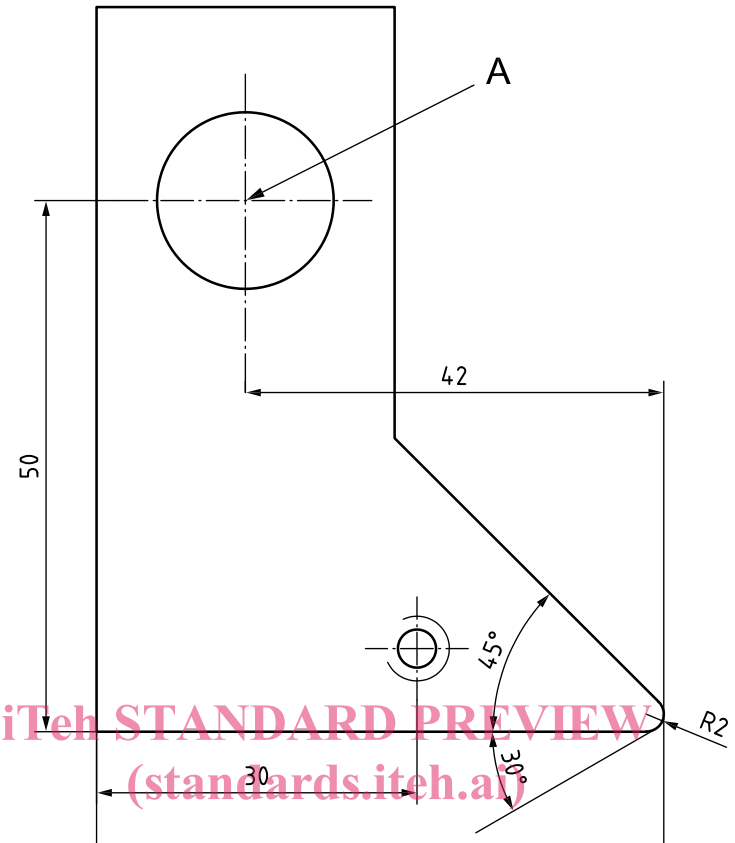


Key

1 front plate
2 back plate
3 flange on front plate

Figure 1 — Upper (moveable) clamp

Dimensions in millimetres
General tolerances in accordance with ISO 2768-1, tolerance class m



Key

A pivot point

Figure 2 — Back plate (Ref. No. 2 in Figure 1) of upper clamp

Dimensions in millimetres
General tolerances in accordance with ISO 2768-1, tolerance class m

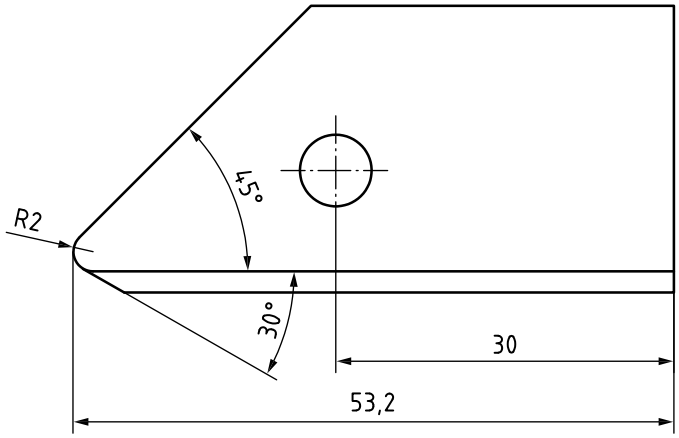


Figure 3 — Front plate (Ref. No. 1 in Figure 1) of upper clamp

Dimensions in millimetres
General tolerances in accordance with ISO 2768-1, tolerance class m

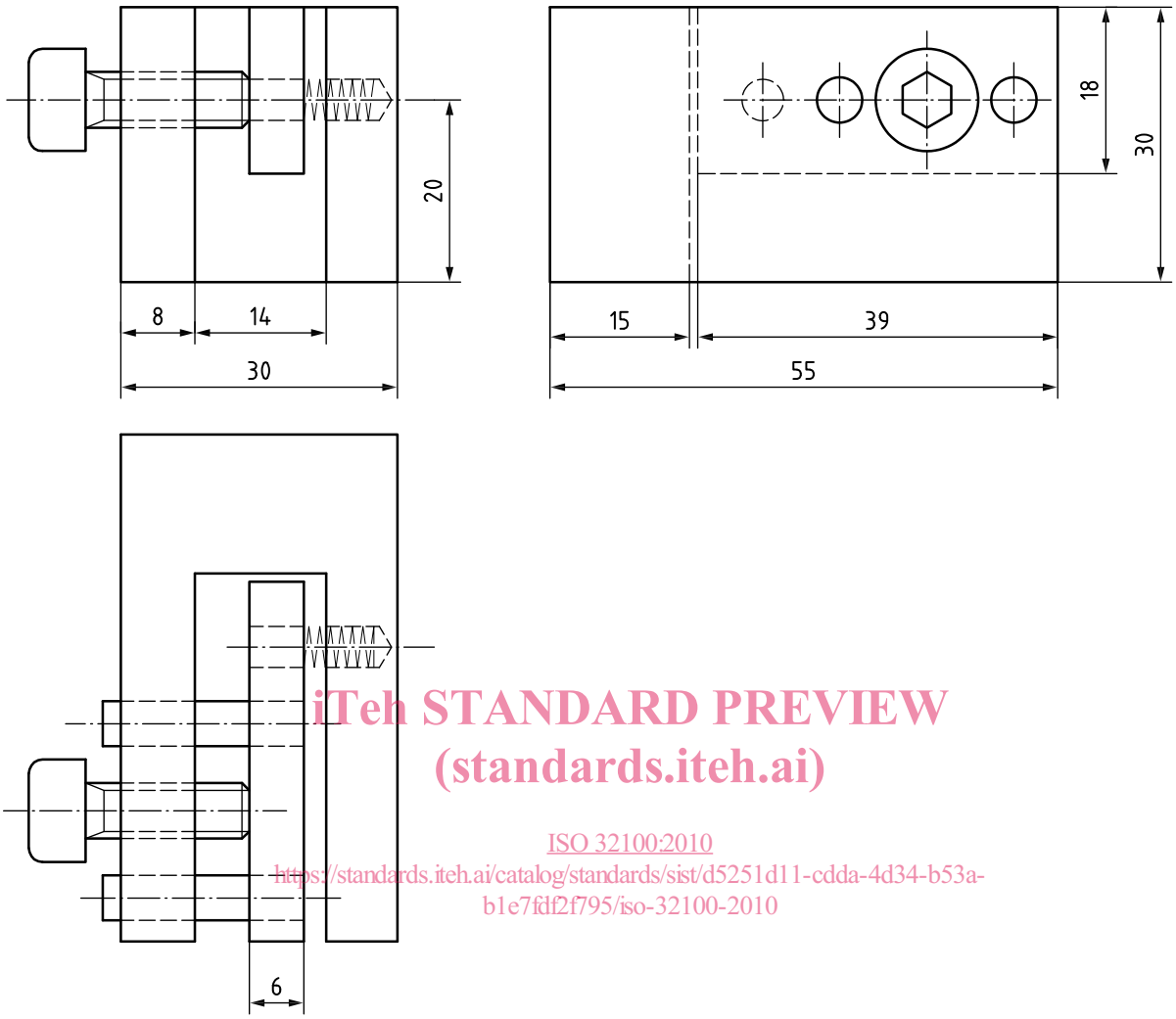


Figure 4 — Lower (fixed) clamp

6 Test specimens

6.1 Sampling

From the product to be tested, take test specimens either of dimensions 70 mm × 45 mm or, in certain cases as described in 7.3, in accordance with Figure 5.

Dimensions in millimetres
General tolerances in accordance with ISO 2768-1, tolerance class m

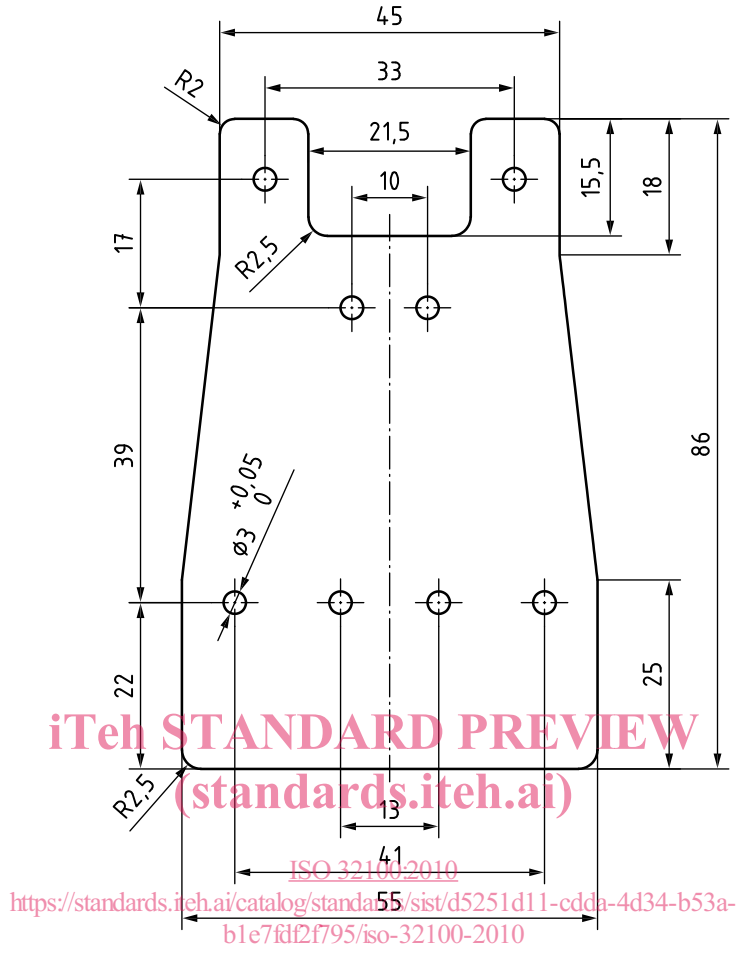


Figure 5 — Test specimen for special cases (see 7.3)

6.2 Number of test specimens

Cut at least three test specimens from the sheet longitudinal to the direction of manufacture and at least another three test specimens perpendicular to the direction of manufacture.

6.3 Conditioning of the test specimens

Prior to testing, condition the test specimens in standard atmosphere B as defined in ISO 2231:1989 (23 °C and 50 % r.h.) for the length of time specified in ISO 2231:1989.

7 Procedure

7.1 Unless otherwise specified, carry out the test in standard atmosphere B as defined in ISO 2231:1989. Fold a conditioned test specimen (see 6.3) along its longitudinal axis with the surface to be evaluated facing inwards and the longer edges flush with each other. Then, clamp the folded test specimen horizontally in the upper (moveable) clamp, which shall be in the same plane as the lower (fixed) clamp, so that the specimen is adjacent to the clamp bolt and supported on the flange on the front plate (see Figure 6). Fold the free end of the test specimen outwards over the inclined edges of the moveable clamp so that the specimen surface to be evaluated is now facing outwards (see Figure 7). Hold the corners together and clamp them in the lower (fixed) clamp with the fold vertical and without producing any tensile strain in the specimen (see Figure 8).