
**Laminate floor coverings —
Determination of impact resistance**

*Revêtements de sol stratifiés — Détermination de la résistance aux
chocs*

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Contents

Page

Foreword.....	iv
1 Scope	1
2 Normative references	1
3 Apparatus	1
4 Test specimens	6
4.1 General	6
4.2 Specimens for the small-diameter ball	6
4.3 Specimens for the large-diameter ball test	6
4.4 Conditioning	6
5 Procedure	6
5.1 Impact by small-diameter ball	6
5.2 Impact by large-diameter ball	8
6 Expression of results	9
6.1 Small-diameter ball	9
6.2 Large-diameter ball	9
7 Test Report	10
Bibliography	11

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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.

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

ISO 24335 was prepared by Technical Committee ISO/TC 219, *Floor coverings*.

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Laminate floor coverings — Determination of impact resistance

1 Scope

This International Standard specifies how to determine the impact resistance of laminate floor covering elements. The test described measures the ability of the surface layer to withstand impact from both small and large objects dropped on the floor covering. The testing is destructive by means of the impact on the surface layer from one small and one larger steel ball simulating different scenarios. The force of the small steel ball and the drop height of the larger steel ball are used to define the ability for a laminate floor covering element to withstand impact.

The precision of the method is not known. When interlaboratory data becomes available, a precision statement will be added in subsequent revisions.

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 291, *Plastics — Standard atmospheres for conditioning and testing*
<https://standards.iteh.ai/catalog/standards/sist/99e289b5-45dc-4ea3-a1f1-cb93b265267f/iso-24335-2006>

3 Apparatus

3.1 Conditioning chamber, in accordance with ISO 291, with a standard atmosphere of (23 ± 2) °C and relative humidity (50 ± 5) %.

3.2 Polyethylene foam, thickness $(2 \pm 0,5)$ mm, density (35 ± 5) kg/m³.

3.3 Small-diameter ball apparatus

3.3.1 Impact tester, consisting of an impact bolt with a 5 mm steel ball mounted at one end, which is projected once against the surface under test by the release of a compression spring.

The spring compression force before release can be adjusted continuously from 0 N to 90 N by means of a force-setting barrel (see Figure 1).

The newton-metre (N·m) scale also provided on the tester is only to be used for orientation, as the introduction of a non-linear scale involves relatively great inaccuracies.

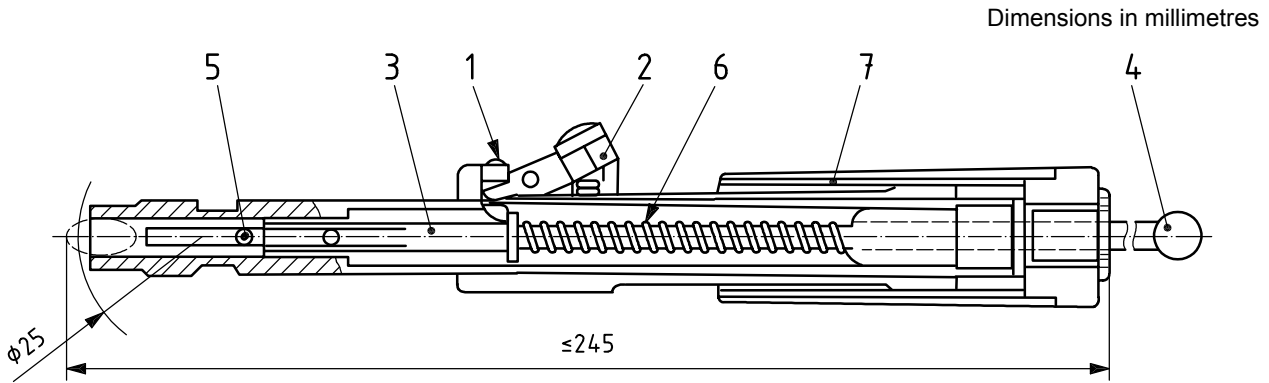
The compression spring is 100 mm long when released and has a constant of $(1\,962 \pm 50)$ N/m. It is compressed by drawing back the impact bolt and is held in the loaded position by a retainer which engages in the bolt. It is released to deliver the impact blow by a release unit that withdraws the retainer.

3.3.2 Force-producing arrangement, (for example, a scale-pan and weights) capable of being suspended from the impact bolt to exert a compressive force on the spring.

3.3.3 Support fixture, which clamps to the shaft of the impact tester and provides a convenient mounting of sufficient mass for the tester to be held at right angles to the surface of the specimen and to avoid recoil following the release of the impact bolt (see Figure 2).

3.3.4 Steel plate, having dimensions of approximately 300 mm × 300 mm × 50 mm.

3.3.5 Contrast medium, e.g. graphite, talcum, or solution of dye in alcohol, to contrast with the colour of the surface layer of the element under test.



Key

- 1 retainer
- 2 release lever
- 3 impact bolt
- 4 knob
- 5 steel ball
- 6 compression spring
- 7 force-setting barrel (housing)

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Figure 1 — Impact tester (shown with spring compressed)

3.4 Large-diameter ball apparatus

3.4.1 Free-fall test apparatus, of the type shown in Figure 3, or the equivalent.

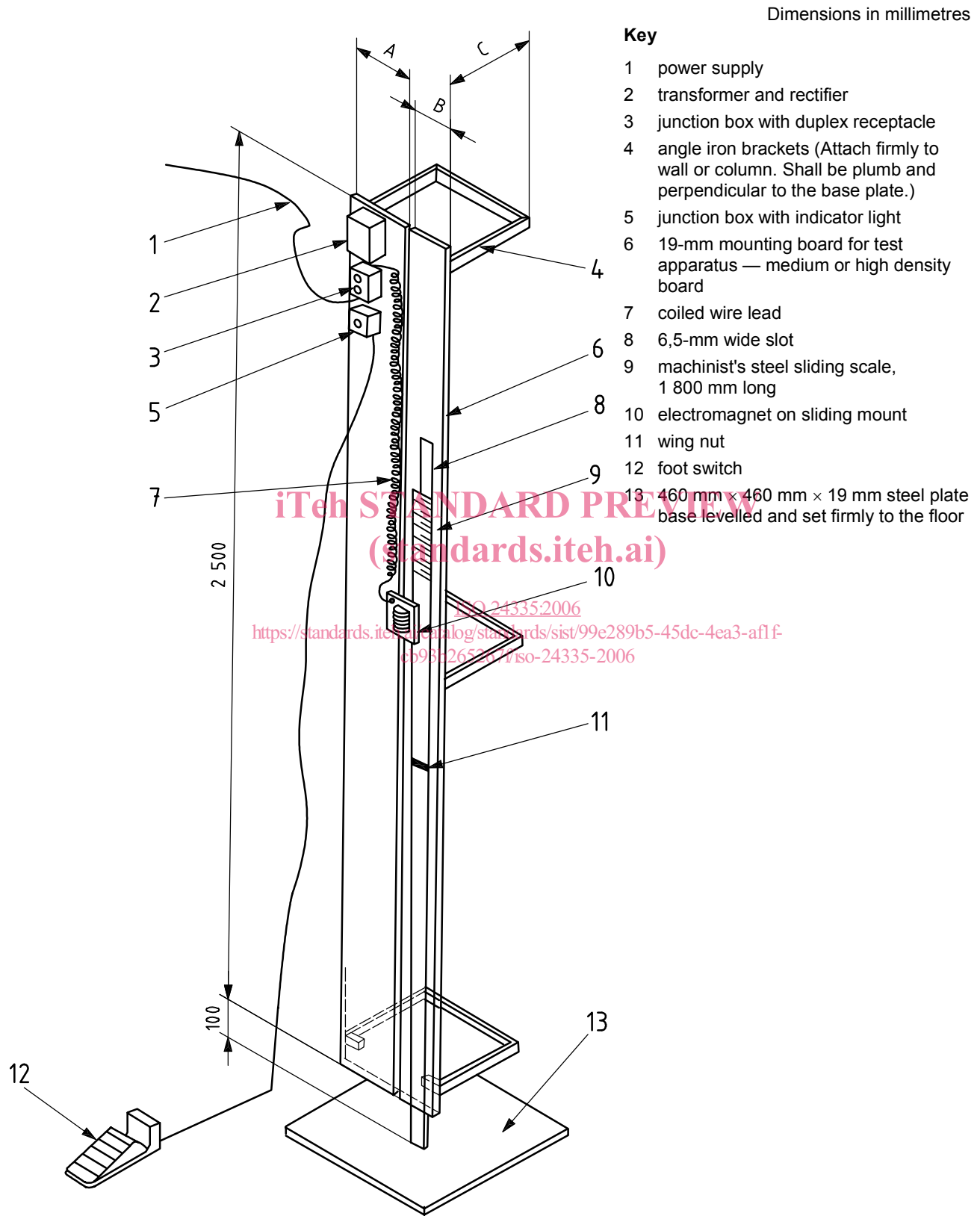


Figure 3 — Free-fall test apparatus

3.4.2 Polished stainless steel ball, with a mass of (224 ± 3) g, a diameter of 38,1 mm and no damaged or flattened surfaces.

3.4.3 Clamping jig, capable of holding the test specimen flat or the equivalent. See Figure 4.

Dimensions in millimetres

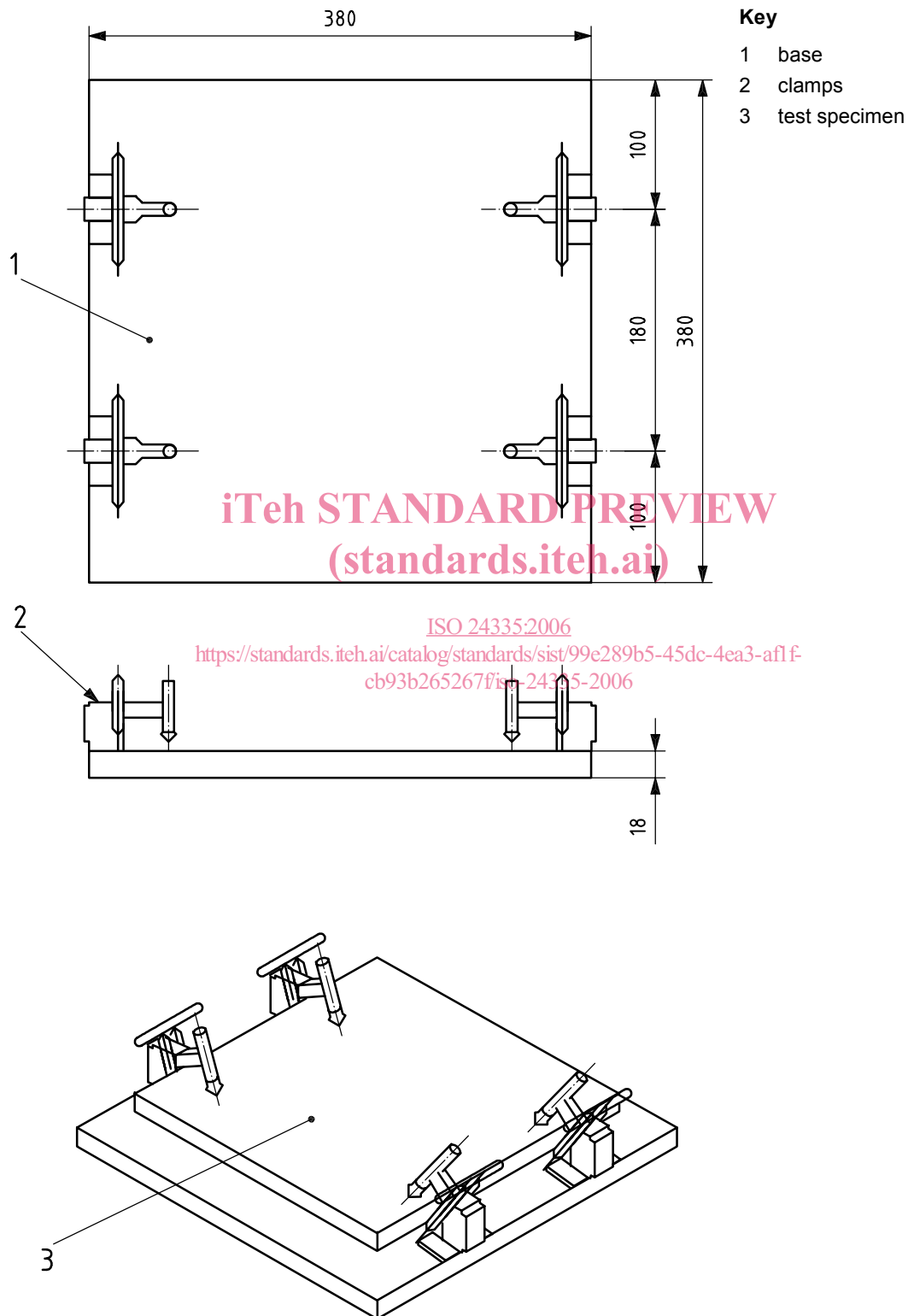


Figure 4 — Example of clamping jig