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ISO 9426

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Wood-based panels — Determination of dimensions of panels

Panneaux à base de bois — Détermination des dimensions des panneaux

Reference number
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Foreword

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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 9426 was prepared by Technical Committee ISO/TC 89, *Wood-based panels*.

Introduction

This edition is based on European Standards EN 324-1 and EN 324-2. It cancels and replaces ISO 9426-1:1989 which applied to the measurement of thickness, width and length. The scope was extended to include the determination of squareness and edge straightness of panels which were formerly included in ISO 9426-2. Furthermore, the determination of flatness of panels was added. Compared to ISO 9426-1:1989, for the thickness measurement, a range has been specified for the anvil diameter and for the distance of measuring points, from the edges.

Wood-based panels — Determination of dimensions of panels

1 Scope

This International Standard specifies methods for measuring the thickness, width and length, as well as the squareness, edge straightness and flatness of wood-based panels.

It applies to full-size flat panels.

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 16979, *Wood-based panels — Determination of moisture content*

ISO 16999, *Wood-based panels — Sampling and cutting of test pieces*

3 Principle

The thickness, length and width of full-size panels are determined by linear measurement.

Squareness and edge straightness of full-size panels are determined by the measurement of deviation from a mechanical square or straight edge.

Flatness is determined by measuring the deviation of the panel surface from a taut string line placed across the whole surface and against the edge of the panel.

4 Sampling

Sampling of panels shall be in accordance with ISO 16999.

5 Moisture content at time of measurement

Normally the dimensions of panels are measured in the as-received state.

If necessary, the moisture content of the panels shall be determined in accordance with ISO 16979.

6 Conditioning

If necessary, the panels shall be conditioned to constant mass in an atmosphere with a relative humidity of (65 ± 5) % and a temperature of (20 ± 2) °C. Constant mass is considered as having been reached when the results of two successive weighing operations, carried out at an interval of 24 h, do not differ by more than 0,1 % of the mass of the panel.

For flatness measurement, allow newly made panels to reach room temperature and condition them for a minimum of 48 h in a well ventilated room at that temperature prior to testing.

7 Apparatus

7.1 Micrometer or **similar measuring instrument**, for thickness measurement, having flat and parallel circular anvils of diameter between 6,0 mm and 20,0 mm diameter and an operating pressure between 0,02 MPa and 0,05 MPa. The graduation of the apparatus shall allow a reading to 0,05 mm.

The anvil diameter selected will depend on the panel type. In principle, panels of low density and/or uneven surface should be measured using the larger anvil diameter.

7.2 Steel measuring tape, of scale interval 1 mm.

7.3 Mechanical square, having two arms of (1 000 ± 1) mm for measuring the deviation of the angles of adjacent sides of a panel from a right angle. It shall be accurate to 0,2 mm in 1 000 mm (see Figure 1).

Dimensions in millimetres

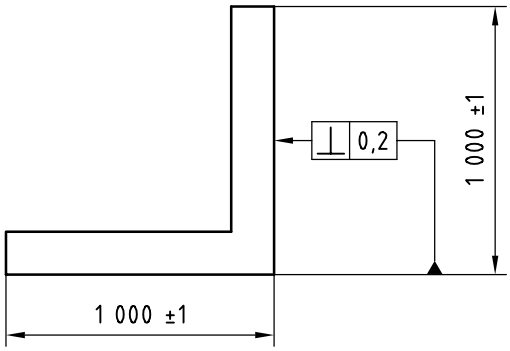


Figure 1 — Accuracy requirements of mechanical square

7.4 Straightedge, of length at least equal to the length of the board, or wire of constant cross-section and flexible enough to be stretched to assure linearity.

7.5 Steel rule, **wedge** or **caliper**, for deviation measurements graduated to allow reading to 0,5 mm.

7.6 String line, fine builders' string line for flatness measurement.

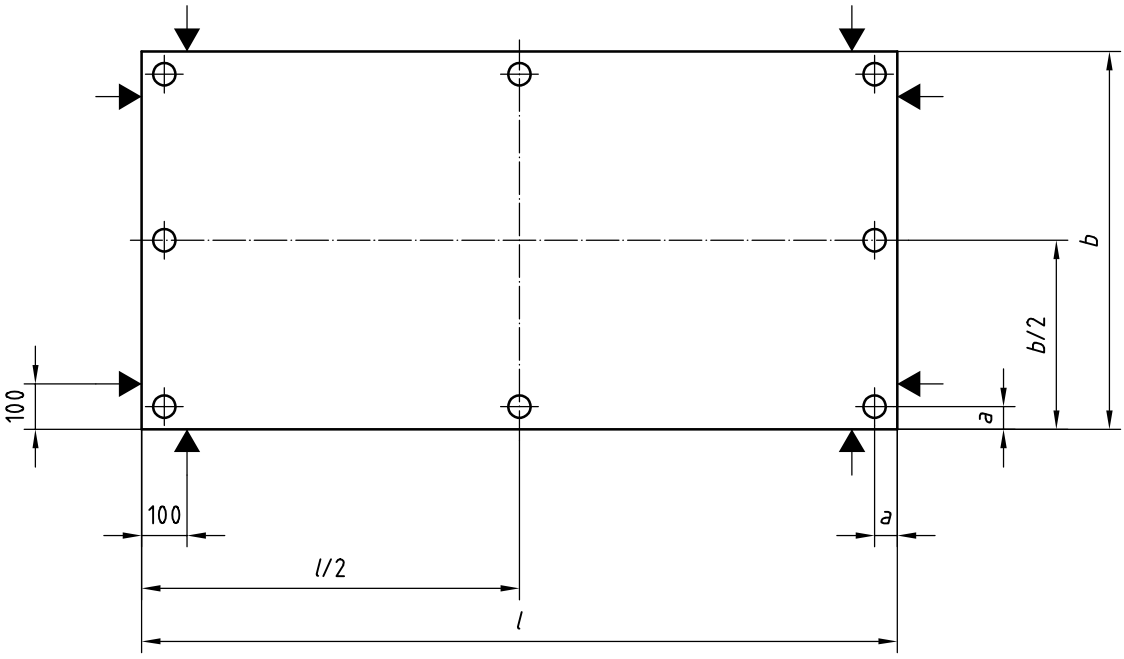
8 Procedure

8.1 Determination of thickness of panels

Measure the thickness between 24 mm and 50 mm from the edges, at points located in each corner and in the middle of each side, i.e. at eight points in all (see Figure 2), to an accuracy of 1 % of the thickness but to not less than 0,1 mm.

For measuring the thickness, apply the measuring surfaces of the instrument slowly to the panel surface.

Dimensions in millimetres



Key

a = 24 to 50
b Width
l Length

Figure 2 — Points of measurement of thickness ⊕, length and width → of a board

8.2 Determination of length and width of panels

Measure both the length and width of each panel along two lines parallel to and at a distance of 100 mm from the edges (see Figure 1), to an accuracy of 0,1 % but not less than 1 mm.

8.3 Determination of squareness of panels

Place one side of the square (7.3) against one side of the panel, the squareness of which is to be measured (see Figure 3).

At a distance of (1 000 ± 1) mm from the corner of the panel, measure the distance δ_1 between the panel edge and the side of the other arm of the square, by means of one of the measuring devices specified in 7.5 (see Figure 3).

Follow the same procedure for each of the other corners.

NOTE For factory-production control, the squareness may also be determined as the difference of the two diagonal lengths of the panel measured using the steel measuring tape if a valid correlation can be proven.

Dimensions in millimetres

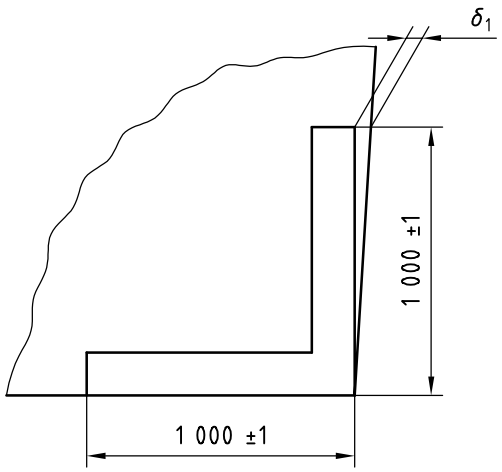


Figure 3 — Use of mechanical square to measure panel squareness

8.4 Determination of edge straightness of panels

Place the straightedge (7.4) against a panel edge, or locate the wire at the corners of the panel and stretch it.

Measure the largest deviation between the straight edge (or string line) and the edge of the panel using one of the measuring devices specified in 7.5 and read the result to 0,5 mm.

Follow the same procedure for each of the other edges.

8.5 Determination of flatness of panels

Place the panel without restraint on a flat horizontal surface. Span the whole surface to be tested with the string line (7.6) stretched taut. Measure the distance between the string line and surface at the point of greatest deformity in the panels, to the nearest 0,5 mm, using the steel rule (7.5).

9 Expression of results

9.1 Thickness

For each panel tested, the arithmetic mean of the measurements shall be calculated and expressed to the nearest 0,1 mm.

9.2 Length and width

For each panel tested, the arithmetic mean of the measurements shall be calculated and expressed, for the length and the width, to the nearest 1 mm.

9.3 Squareness of panels

The result is the largest measured value of the deviation of the side of square and the panel edge. It is expressed in millimetres per metre of board-edge length, to the nearest 0,5 mm/m.

9.4 Straightness of panel edges

The result, expressed separately for width and length, in millimetres per metre (mm/m), is the larger value of the measured deviations divided by the length, of the appropriate edge.

9.5 Flatness

Record the value measured in 8.5 to the nearest 0,5 mm and whether the bow is measured in width or length. Note whether it is concave or convex, if relevant.

10 Test report

The test report shall contain the following information:

— name and address of the test laboratory;

— sampling report according to ISO 16999;

— date of the test report;

— reference to this International Standard;

— type, size and thickness of the panel;

— relevant product specification;

— surface treatment, if relevant;

— specific apparatus used, in case of different possibilities allowed in this International Standard;

— test results, expressed as stated in Clause 9;

— all deviations from this International Standard.

ICS 79.060.01

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