

Australian/New Zealand Standard™

AS/NZS 4266.4

Reconstituted wood-based panels— Methods of test

Method 4: Density

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee TM-005, Reconstituted Timber Panel Products, to supersede AS/NZS 4266.4(Int):2001.

This Standard is equivalent to the industrial Standard harmonized between the wood panel industries in Australia, Japan and New Zealand, known as JANS 13.

METHOD

1 SCOPE

This Standard specifies a method for determining the density of test pieces of reconstituted wood-based panels.

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS/NZS

4266 Reconstituted wood-based panels—Methods of test

4266.1 Method 1: Sampling, cutting, and conditioning of test pieces

4266.35 Method 35: Dimensions of test pieces

4491 Timber—Glossary of terms in timber related Standards

3 DEFINITIONS

For the purpose of this Standard, the definitions in AS/NZS 4491 and AS/NZS 4266.1 apply.

4 PRINCIPLE

Density is determined as the ratio of the mass of each test piece, to its volume, both measured at the same moisture content. These results are used to estimate the density of whole panels.

5 APPARATUS

5.1 Instrument for thickness measurement

Micrometer, or similar measuring instrument, having flat and parallel circular anvils of between 6.0 mm to 16.0 mm diameter and an operating pressure between 0.02 MPa and 0.05 MPa. The graduation of the apparatus shall allow a reading to 0.01 mm.

5.2 Instrument for length and width measurement

Sliding calliper, or any other instrument with measuring surfaces of at least 5 mm width, graduated to allow reading to 0.1 mm.

5.3 Balance

Balance, allowing measurement to 0.01 g.

6 TEST PIECES

6.1 Sampling and cutting

Six test pieces shall be taken from each panel to be tested. Sampling and cutting of the test pieces shall be carried out in accordance with AS/NZS 4266.1.

6.2 Dimensions

The test pieces shall be square in shape, with sides of a nominal length of 50 mm.

NOTE: Test pieces of larger size may be used where there is difficulty in safely cutting small pieces. In such cases, the correlation should be derived with the size specified in this Standard.

In the case of extruded panels, cellular panels, or panels of similar structure with cavities parallel to the length or width of the test piece, the total length or width of the test piece shall be at least twice the length or width of any individual core element (i.e., two tube diameters plus two web thicknesses), and each piece shall have a symmetrical cross-sectional area as shown in Figure 1.

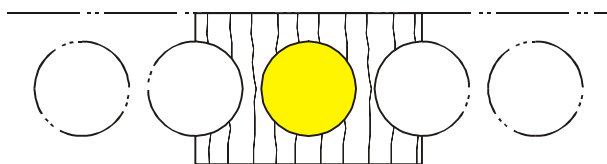


FIGURE 1 CROSS-SECTION OF A TUBULAR PANEL

6.3 Conditioning

The test pieces shall be conditioned in accordance with AS/NZS 4266.1.

7 PROCEDURE

7.1 Weighing

Weigh each test piece to an accuracy of 0.01 g.

7.2 Measurement of dimensions

Measure the dimensions of each test piece, in accordance with AS/NZS 4266.35, as follows:

- Measure the thickness (t) at the point of intersection of the diagonals as shown in Figure 2 (unless this coincides with a surface irregularity, which may influence the measurement) to an accuracy of 0.05 mm.

Apply the measuring instrument slowly to the surfaces of the test pieces.

- (b) Measure b_1 and b_2 , at two points, parallel to the edges of the test piece, along lines which pass through the centres of opposite edges as shown in Figure 2, to an accuracy of 0.1 mm.

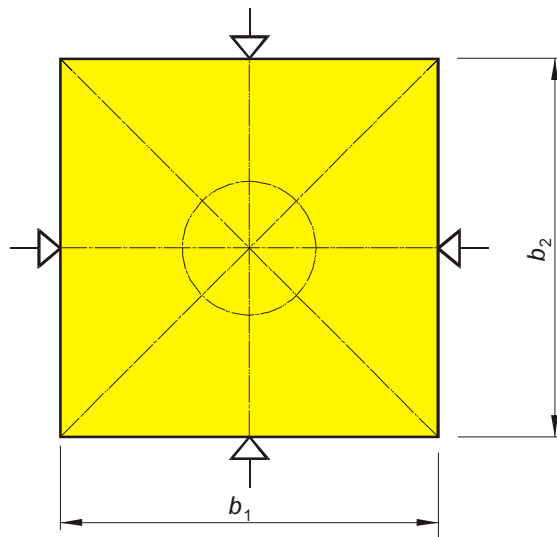


FIGURE 2 POINT OF MEASUREMENT

8 EXPRESSION OF RESULTS

8.1 Density of each test piece

The density (ρ) of each test piece, in kilograms per cubic metre, shall be calculated from the following equation:

$$\rho = \frac{m}{b_1 b_2 t} \times 10^6$$

where

m = mass of the test pieces, in grams

b_1 , b_2 and t , are as defined in Clause 7.2, in millimetres

8.2 Density of panel

The density of a panel shall be obtained by calculating the arithmetic mean of the densities of all the test pieces taken from the same panel and shall be expressed in kilograms per cubic metre to three figures.

9 TEST REPORT

The test report shall contain the following:

- Name and address of testing laboratory.
- Sampling report according to AS/NZS 4266.1.
- Date of the test report.
- Reference to this Standard, i.e., AS/NZS 4266.4.
- Panel type and thickness.
- Relevant product specification.
- Surface treatment, if relevant.