

Australian/New Zealand Standard™

AS/NZS 4266.13

Reconstituted wood-based panels— Methods of test

Method 13: Resistance to axial withdrawal of screws

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee TM-005, Reconstituted Timber Panel Products, to supersede AS/NZS 4266.13(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 10.

METHOD

1 SCOPE

This Standard specifies a method for determining the resistance of particleboards and fibreboards, of thickness 15 mm and greater, to axial withdrawal of screws.

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

4491 Timber—Glossary of terms in timber related Standards

ISO

1478 Tapping screw thread

3 DEFINITIONS

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

4 PRINCIPLE

Resistance to face and edge withdrawal of screws is determined by measuring the force required to withdraw a defined screw from the test piece.

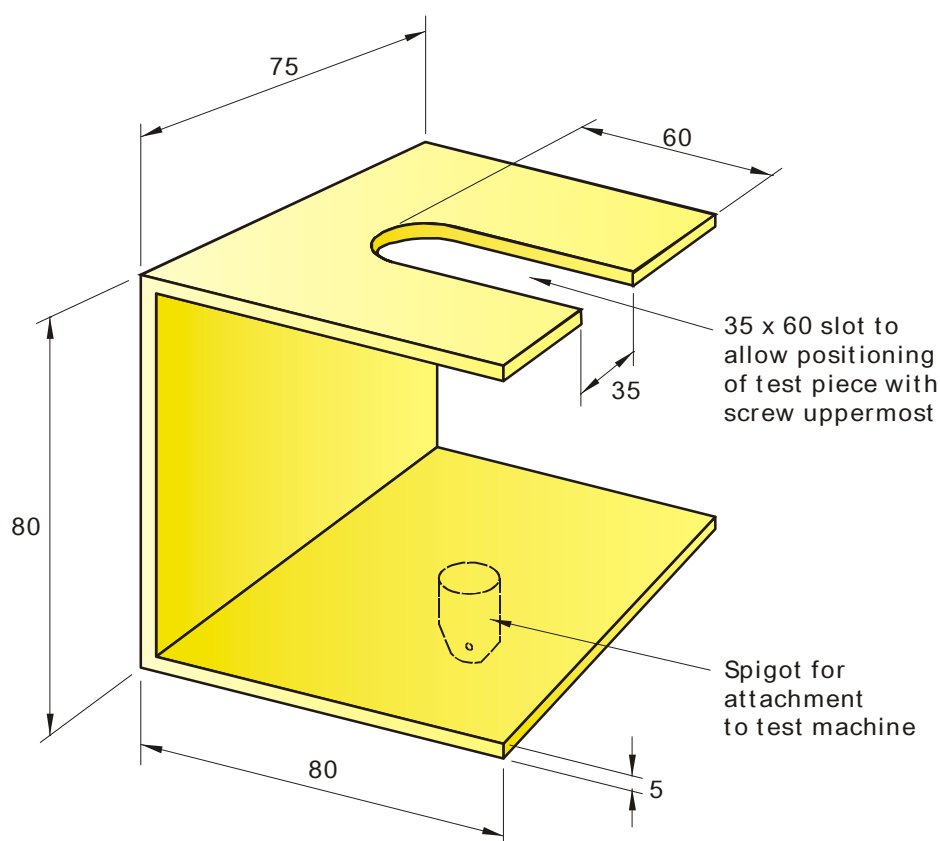
5 APPARATUS

5.1 Testing machine

Testing machine, capable of applying an increasing axial load to the underside of the screw head through a suitable stirrup, whilst adequately restraining the test piece at the same time and measuring the maximum load to an accuracy of 1%.

5.2 Metal jig

For testing both face and edge withdrawal of screws the use of a rigid metal jig with a central slot, which restrains the test piece (see Figure 1).



DIMENSIONS IN MILLIMETRES

FIGURE 1 METAL JIG FOR HOLDING FACE AND EDGE TEST PIECES

6 TEST PIECE

6.1 Sampling

Sampling and cutting of the test pieces shall be carried out in accordance with AS/NZS 4266.1.

6.2 Dimensions of test pieces

Five test pieces shall be taken from each sample board. The test pieces shall be square with a side length of 75 ± 1 mm.

6.3 Conditioning

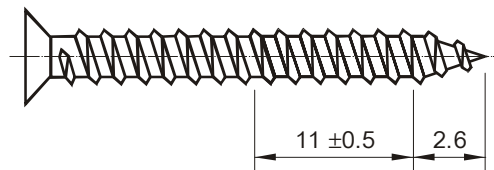
The test pieces shall be conditioned in accordance with AS/NZS 4266.1.

6.4 Preparation of test pieces

6.4.1 Face withdrawal of screws

After the test pieces have been conditioned, the screws shall be inserted into pre-bored pilot holes. Holes shall have a diameter of 2.0 ± 0.1 mm and a depth of 13.0 ± 0.5 mm. They shall be drilled perpendicular to the surface of the test piece, located at the midpoint of one face.

For face withdrawal test, a steel screw, of nominal diameter 2.9 mm with a thread No. ST 2.9 in accordance with ISO 1478, and a thread pitch of 1.1 mm (see Figure 2) shall be used. The screws shall be inserted into the test pieces in such a way that 11 ± 0.5 mm of complete thread is embedded in the test piece.



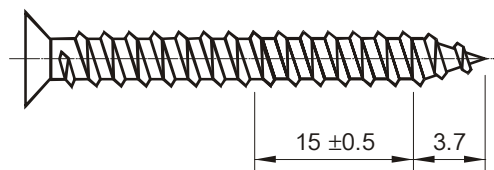
DIMENSIONS IN MILLIMETRES

FIGURE 2 SCREW FOR FACE WITHDRAWAL TEST

6.4.2 Edge withdrawal of screws

After the test pieces have been conditioned, the screws shall be inserted into pre-bored pilot holes. Holes shall have a diameter of 2.7 ± 0.1 mm and a depth of 19 ± 1 mm. They shall be drilled perpendicular to the surface of the test piece, located at the midpoints of two adjacent edges.

For edge withdrawal test, a steel screw, nominal diameter 4.2 mm with a thread No. ST 4.2, in accordance with ISO 1478, and a thread pitch of 1.4 mm (see Figure 3) shall be used. The screws shall be inserted into the test pieces in such a way that 15 ± 0.5 mm of complete thread is embedded in the test piece.



DIMENSIONS IN MILLIMETRES

FIGURE 3 SCREW FOR EDGE WITHDRAWAL TEST

7 PROCEDURE

7.1 Positioning of test pieces

Mount the test pieces in the testing machine so that the surface under test—

- is not supported at any point closer than 15 mm to the periphery of the embedded part of the screw; and
- is held perpendicular to the direction of the force applied to the screws.