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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

METHODS OF TESTING RIGID CELLULAR PLASTICS

AS 2498.6
DETERMINATION OF DIMENSIONAL STABILITY*

1 SCOPE. This standard sets out a method for determining the dimensional stability of rigid cellular plastics when subjected to specific conditions of temperature and relative humidity.

The method suggests a range of conditions from which one or more of the desired test conditions can be selected.

NOTES:

1. Additional conditions may be used as agreed upon by the purchaser and supplier.
2. The term 'dimensional stability of a rigid cellular plastic' implies the absence of irreversible change in dimensions in each of three directions perpendicular to each other when a test specimen of specified size is exposed to stated conditions for a specified period. In practice such irreversible changes do occur and are measured by the method described in this standard.

2 PRINCIPLE. The changes of linear dimensions which occur when the test specimens have been subjected to specified environments for a definite period of time and reconditioned are determined.

3 APPARATUS.

3.1 Temperature controlled or temperature and humidity controlled chamber capable of maintaining the test specimens within the specified conditions and within the limits specified in the procedure (6(b)).

3.2 Measuring instruments capable of measuring linear dimensions in accordance with AS 2498.2.

4 TEST SPECIMENS.

4.1 General. Test specimens shall be machined or sawn from the sample so as to have a smooth surface free of cracks. Foam skins shall be removed, unless otherwise specified.

4.2 Dimensions. Test specimens shall have the following dimensions:

Length: 100 ± 1 mm

Width: 100 ± 1 mm

Thickness: 25 ± 0.5 mm

4.3 Number. A minimum of three test specimens for each sample shall be used under each set of chosen conditions.

5 CONDITIONING. The test specimens shall be conditioned in accordance with Clause 3 of AS 2498.1.

6 PROCEDURE. The procedure shall be as follows:

(a) Measure the length and width of each test specimen at the three positions shown in Fig. 1, and the thickness at the five positions shown, using the appropriate methods described in AS 2498.2.

(b) Expose the set of test specimens to each set of conditions, specified in the relevant specification. Alternatively test conditions may be chosen among the following:

For use at dry conditions—

− 55 ± 3°C	+ 70 ± 2°C
− 25 ± 3°C	+ 85 ± 2°C
− 10 ± 3°C	+ 100 ± 3°C
0 ± 3°C	+ 110 ± 3°C
+ 23 ± 2°C	+ 125 ± 3°C
+ 40 ± 2°C	+ 150 ± 3°C

For use at 90% to 100% r.h.—

+ 40 ± 2°C

+ 70 ± 2°C

*This method is derived from and is technically identical with ISO 2796.