STANDARDS AUSTRALIA

RECONFIRMATION

OF
AS 2498.8—1991
Methods of testing rigid cellular plastics
Method 8: Determination of water absorption

RECONFIRMATION NOTICE

Major stakeholders of this publication have reviewed the content of this publication and in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

Certain documents referenced in the publication may have been amended since the original date of publication. Users are advised to ensure that they are using the latest versions of such documents as appropriate, unless advised otherwise in this Reconfirmation Notice.

Approved for reconfirmation in accordance with Standards Australia procedures for reconfirmation on 03 August 2020.

NOTES

Reconfirmed 2020

Australian Standard®

Methods of testing rigid cellular plastics

Method 8: Determination of water absorption

PREFACE

This Method was prepared by the Standards Australia Committee on Rigid Cellular Plastics for Thermal Insulation under the direction of the Plastics Standards Board.

FOREWORD

The buoyant force of an object less dense than water is equal to the weight of the volume of water it displaces when submerged, less the dry weight of the object. Water absorbed into the object lowers the buoyant force by reducing the volume of water actually displaced. With a known volume and initial dry weight of the object, the initial buoyant force at the end of the immersion period is measured with an underwater weighing assembly. The difference between the initial and final buoyant force is the weight of water absorbed, which can be expressed in terms of water absorbed per unit of specimen volume. An error may be encountered if there is a rapid absorption of water before an accurate initial wet weight or initial zero volume can be obtained. This variable is eliminated when the only submerged measurement required is a final weighing taken after 96 h immersion period.

METHOD

1 SCOPE This Method sets out a method for determining the water absorption of rigid cellular plastics by measuring the change in buoyant force resulting from immersion in distilled water.

NOTES:

1 Some materials may absorb significant additional amounts of water when immersed for longer than 96 h, or under a greater hydrostatic head.

2 If a full assessment of the water absorption characteristics of a rigid cellular plastics is required, it is essential to make measurements over a range of immersion periods and plot a graph of water absorption against time.

2 APPLICATION This method is intended for use in quality control and for product specifications. It is not applicable for end-use design requirements unless end-use conditions are similar to those for the test method in both duration and head.

Results by this method can not be used to compare the resistance of rigid cellular plastics to water vapour transmission with subsequent condensation within the cells.

3 REFERENCED DOCUMENT The following document is referred to in this Standard:

AS
2498 Methods of testing rigid cellular plastics
2498.2 Method 2: Determination of linear dimensions

4 PRINCIPLE The change in buoyant force is measured when a test specimen is immersed under a 50 mm head of distilled water for a period of 96 h. Water absorption is expressed as a percentage increase in volume of the original volume of the test specimen. Corrections are made for volume changes caused by immersion in water and for the volume of water contained in cut surface cells of the test specimen.