
**Adhesives — Test methods for the
evaluation and selection of adhesives
for indoor wood products —**

**Part 2:
Resistance to delamination in severe
environments**

*Adhésifs — Méthodes d'essai pour la sélection et l'évaluation des
adhésifs destinés aux produits en bois utilisés à l'intérieur —*

Partie 2: Résistance à la délamination dans des environnements sévères

ISO 26842-2:2020

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 11, *Products*.

This third edition cancels and replaces the second edition (ISO 26842-2:2013), which has been technically revised. The main changes compared to the previous edition are as follows:

— in [Clause 5](#), the first paragraph has been clarified.

A list of all parts in the ISO 26842 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Adhesives — Test methods for the evaluation and selection of adhesives for indoor wood products —

Part 2:

Resistance to delamination in severe environments

SAFETY STATEMENT — Persons using this document should be familiar with normal laboratory practice, if applicable. This document does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices.

It is recognized that some of the materials permitted in this document might have a negative environmental impact. As technological advances lead to more acceptable alternatives for such materials, they will be eliminated to the greatest extent possible.

At the end of the test, care should be taken to dispose of all waste in an appropriate manner.

1 Scope

This document gives guidelines to select, by means of delamination-resistance tests, adhesive/wood combinations for use in wood products placed in severe environments, in which the products are exposed to extreme change of temperature and humidity. A series of exposure cycles at various temperature and humidity values is provided to verify that the adhesive selected, or a product bonded with the adhesive, meets the necessary requirements for resistance to delamination.

This document is intended to help the user not only to select a suitable adhesive, but also to evaluate adhesives and adhesively bonded wood products.

NOTE When actual wood products are tested using this method, the test results might not be comparable because the test laboratory do not normally have had adequate control over the way the product was assembled.

This document is not intended for use in the qualification of structural components.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 6238, *Adhesives — Wood-to-wood adhesive bonds — Determination of shear strength by compressive loading*

ISO 9424, *Wood-based panels — Determination of dimensions of test pieces*

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

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at <https://www.iso.org/obp>

— IEC Electropedia: available at <http://www.electropedia.org/>

4 Principle

Test specimens or actual products that have been bonded with the test adhesive are placed in chambers at a specified temperature and humidity for a length of time and/or number of cycles depending on the grade of resistance to delamination under consideration. On completion of this exposure, the length of any delamination at the bond line is determined as a percentage of the overall length. If the length of delamination does not exceed 10 %, the adhesive can be certified as complying, under the test conditions used, with the requirements of the grade of resistance to delamination under consideration.

5 Apparatus

Apparatus that includes the features of all the chambers specified in 5.1 to 5.4 might be available. Not all the types of chambers are needed. Air should circulate at a velocity of $(2,25 \pm 0,25)$ m/s.

5.1 Conditioning chamber, capable of being maintained either at a temperature of (23 ± 2) °C and a relative humidity of (50 ± 5) % or at a temperature of (20 ± 2) °C and a relative humidity of (65 ± 5) %.

5.2 Dry-heat chamber, capable of being maintained at temperatures of (50 ± 2) °C and (80 ± 2) °C, with no provision for humidity control.

NOTE These temperatures can be experienced in the bottom of ships sailing in tropical seas or on heated floors.

5.3 Cold chamber, capable of being maintained at temperatures of (-20 ± 3) °C and (-30 ± 3) °C, with no provision for humidity control.

NOTE These temperatures can be experienced inside warehouses in cold latitudes.

5.4 Humidity chambers, capable of being maintained at relative humidity of 20 % and 90 %, and fitted with the following:

- a) equipment capable of maintaining the temperature at (50 ± 2) °C and measuring it to within ± 2 °C;
- b) equipment capable of measuring the relative humidity to within ± 3 %.

6 Specimens

6.1 Preparation and number

Test specimens shall be parallel two-ply laminates of dimensions 300 mm (width) \times 300 mm (length) \times 7,5 mm (thickness), prepared in accordance with ISO 6238 and measured in accordance with ISO 9424. The wood shall be cut to size in accordance with ISO 16999 and then adhesively bonded. Other test specimen dimensions may be agreed upon between the wood product manufacturer and the supplier of the adhesive, depending on the purpose of the test.

For each grade of resistance to delamination and specific set of test conditions within the grade, a minimum of 10 specimens is required.

NOTE If appropriate, actual adhesively bonded products can be tested using the test requirements and conditions specified in this document.

These specimens shall be prepared in accordance with ISO 16999.