

Further information (as of February 2026) on IBP-Report No. 586 (2026)

A new test method for the decay resistance of natural fiber insulation materials and wood-based panels

The new test method offers a modular approach. In each module, the specimens inoculated with test fungi are exposed to the defined relative humidity levels relevant for classification. The material is assigned to the assessment level at which no further material degradation occurs.

The following modules are available and can be combined with one another:

Basic module

Specimens made of natural fiber insulation materials or wood-based panels are inoculated with the brown rot fungus (*Coniophora puteana*) and inoculated for 24 weeks at 23 °C / 100 % RH. At defined intervals, specimens are removed and determined the mass loss. The **decay rate** can be derived from these results.

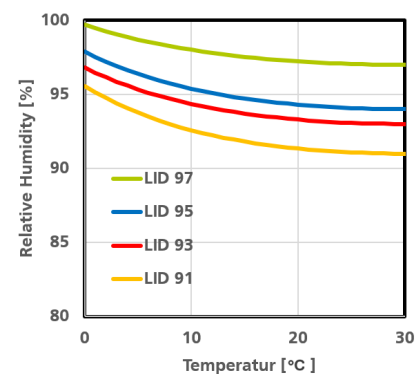
To determine the **resistance class**, i.e. relative humidities that remain uncritical for the material, the specimens are exposed for 24 weeks to one of the optional climate conditions listed below. Mass loss is determined at the end of the test period. If no significant mass loss is found, the material is classified as resistant under these test conditions.

Specimens of Scots pine sapwood are tested in parallel and serve as a reference. Uninoculated blank specimens of the test material and of pine wood are stored for the same period at 23 °C and 50 % RH, providing the reference values for the mass loss calculation.

The test procedure and results are documented in a final report.

Optional climatic conditions (each with a 24-week test period):

- 23 °C / 91 % RH (LID 91, recommended for wood-based materials)
- 23 °C / 93 % RH (LID 93, recommended for natural fiber insulation materials and presumably more durable wood-based materials)
- 23 °C / 94 % RH (LID 94, for presumably particularly durable materials)
- 23 °C / 97 % RH (LID 97, for presumably particularly durable materials)



Decay-limit curve (Lowest Isopleth for Decay: LID) for four resistance class

Integration into WUFI® Decay:

WUFI® Decay is a post-processor designed to predict the risk of decay based on hygrothermal simulation results. By integrating the results of the test method – including the **resistance class** and **decay rate** – WUFI® Decay can provide a product-specific assessment.

Table 1 provides an overview of the costs involved.

The specimens of the materials to be tested are provided by the client. The minimum number of specimens required for each option is given in Table 1. We recommend supplying an additional reserve of approximately 25 %.

Table 1: Overview of costs and specimen requirements for assessing the decay risk of natural fiber insulation materials and wood-based panels.

Module	Cost for one material variant	Cost for each additional material variant in the same test series	Minimum number of specimens required (dimensions 5 cm x 5 cm x 1 cm)
Basic module incl. one climate condition	11.200 €	3.180 €	35
Each additional optional climate condition	1.250 €	430 €	5
Product-specific integration in WUFI® Decay	500 €	500 €	--

Due to the modular design of the test method, customized adaptations can be arranged on request.

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