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Marie Viel, Florence Collet, Yann Lecieux, Marc François, Valentin Colson, Christophe Lanos, Atif Hussain, Mike Lawrence

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Resistance to mold development assessment of bio-based building materials

Marie Viel[a, *], Florence Collet[a], Yann Lecieux[b], Marc François[b], Valentin Colson[a, c], Christophe Lanos[a], Atif Hussain[d] and Mike Lawrence[d]

[a] *Université de Rennes, Laboratoire Génie Civil et Génie Mécanique, BP 90422, Rennes, France*

[b] *Université de Nantes, Institut de Recherche en Génie Civil et Mécanique, BP 92208, Nantes, France*

[c] *CAVAC Biomatériaux, Le Fief Chapitre, Sainte Gemme la Plaine, France*

[d] *BRE Centre for Innovative Construction Materials, Department of Architecture and Civil Engineering, University of Bath, BA2 7AY, United Kingdom*

* Corresponding author: marie.viel@univ-rennes1.fr

Abstract

Nowadays, insulating building materials are developed from the valorization of agro-resources. They show high ecological and hygrothermal performance. Before making them available on the market, there is a need to classify them according to their decay resistance. This paper aims to propose a test method that qualifies bio-based composites with respect to their performance. An accelerated aging test was carried out on 5 composites made with two different agro-resources (hemp and rape) and with different binders. It consists of exposing the specimens to (30 °C; 90% RH) for three months. During the test, the specimens are regularly weighed and photographed. The sample mass and the percentage of surface contaminated by fungi are measured along the test. Finally, a microscopic view allows identifying the species of the developed molds.

Keywords

A. Biocomposite; B. Environmental degradation; D. Non-destructive testing; D. Optical microscopy; DIC (Digital Image Correlation).