



**"Gh. Asachi" Technical University of Iasi, Romania**

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## **THE EUROPEAN APPROACH FOR AN EFFICIENT AND ENVIRONMENTALLY FRIENDLY WOOD PRESERVATION**

**Maria Cristina Timar<sup>\*</sup>, Mariana Stanciu, Florina Frangu**

*"Transilvania" University of Braşov, Department of Wood Technology, 29 Eroilor Street, RO 500  
036 Braşov 1- Romania*

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### **Abstract**

Due to its qualities wood has been for centuries a valuable construction material. However, the limited natural durability of most wood species determines the necessity of wood preservation for certain end-uses in specific service conditions. This is in accordance to the EC Directive for Construction Products. The treating technologies and wood preservatives have to be both highly efficient and environmentally sound.

The paper is organized in two parts. The first one presents an overview of the European Norms in the field of wood preservation adopted in Romania, highlighting the basic concepts and their correlation in the elaboration of adequate treating technologies.

The second part deals with a fitotoxicity laboratory test based on the examination of seeds' germination in different aqueous mediums. This method was applied to evaluate the ecological impact of some copper and chromium-based preservatives. The tests involved solutions of copper sulphate and potassium dichromate in a range of concentrations from 0.15 to 150 ppm and seeds of green salad and radish. The results showed that concentrations of copper sulphate and potassium dichromate up to 1.5 ppm favoured germination, whilst concentrations above 1.5 ppm were toxic to these plants. Leachability of copper and chromium based preservatives may accordingly have a negative ecological impact on the soil and water, as concentrations of Cu and Cr up to 5-15 ppm were determined in cold water extracts of wood treated with such products.

*Keywords:* natural durability, wood preservation, fitotoxicity test

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<sup>\*</sup> Author to whom all correspondence should be addressed: Phone/Fax: + 40 268 415315,  
e-mail: [timar@artimar.ro](mailto:timar@artimar.ro)