

RiceHUSK+ – Cementitious Composites with Rice Husk for Prefabricated Solutions of Multilayer Panels and Acoustic Barriers

Summary

The objective of this project was centered on the development of pre-fabricated elements for the construction industry produced from innovative cement-based composite materials (Figure 1) and of high functional value, integrating agro-industrial by-products, such as rice husk, in its composition.

The project intended to deliver solutions: i) with suitable performance but more sustainable, when compared to the competitive solutions, with benefits in terms of thermal and acoustic

requirements; ii) easy production and application; and iii) durability over time.

CERIS participation included the development of rice husk-based cementitious for the applications with different incorporations rates to achieve sustainable solutions, with the participation in the several tasks of the project: preliminary studies; design of cementitious composites and constructive solutions (Figure 2); prototypes (Figure 3) and experimental validation; and dissemination of the results.



Figure 1. On the left: rice husk; on the centre; mixture at fresh state; on the right: the compactness of the mixture in the mould.



Figure 2. Rice-husk specimens for testing.



Figure 3. Acoustic barrier.

Project Reference

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Leading Institution

FARCIMAR – Concrete Pre-fabricated Solutions, S. A. (Portugal)

Partners

IST – Instituto Superior Técnico (Portugal), Itecons – Instituto de Investigação e Desenvolvimento Tecnológico para a Construção, Energia, Ambiente e Sustentabilidade (Portugal)

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CERIS

IST: 76 897.97€

Coimbra Hub: 248 037.00€

Project Website

www.itecons.uc.pt/projectos/rice-husk/index.php?module=sec&id=875&f=1