# Additive manufacturing of eco-efficient modular systems for indoor coating

**Summary**

The purpose of this study is to create eco-efficient modular panels and systems for interior coating through 3D printing technology. The aim will be to developed mortars with reduced CO2 emissions that are capable of being extruded by 3D printers producing modular panels or tiles, and that guarantee the necessary conditions to be applied to interior walls of new or existent buildings.

The additive manufacturing poses new challenges, that differ from the ones encountered by traditional construction. The mortar must meet certain conditions in the fresh state that allow the success of printing (pumpability, flowability and buildability). The panels' application should be easy.

In addition to the common physical and chemical characteristics of the panels, the possibility to capture polluting gases and the contribution to indoor air quality through the hygroscopic characteristics of the panels will be also studied.

**Keywords**

3D printed mortar, low embodied energy binders, indoor comfort.

*Printed sample of natural hydraulic lime mortar.*

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