Layered dry envelope insulated with sheep wool-lime mix.

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Abstract

In the present study, the experimental results of a prototype building in design and access energy envelope in a prototype house component that might be implemented on buildings of the Mediterranean area, in order to improve the energy efficiency and to increase its environmental sustainability. The prototype has been realized using both the use of sheep wool-lime building materials in a non-urban renewable source, like sheep wool. Sheep wool with lime mixture have been used to improve the indoor air pollution and the energy efficiency of the building. The prototype house has been realized with a sheep wool-lime mix, with different granulometry and volume thickness. In order to compare the environmental impact of the designed system with a similar commercial product, a life cycle assessment (LCA) has been carried out. Finally, thermal performance and the energy efficiency of the building were evaluated for the whole designed system according to the Italian standards. In order to compare the environmental impact of the designed system with a similar commercial product, a life cycle assessment (LCA) has been carried out. Finally, thermal performance and the energy efficiency of the building were evaluated for the whole designed system according to the Italian standards.

Key words

- Sheep wool-lime mix
- Environmental impact
- Life cycle assessment (LCA)
- Energy efficiency
- Thermal performance

Introduction

The amount of heterogeneous data that exist clearly impact the use of these data. Many of these data are related to the use as raw material for the production of different materials and sources are essential. The energy demand for heating and cooling is a major issue in buildings, especially in the Mediterranean area. The energy consumption for heating and cooling in buildings can account for up to 40% of the total energy consumption in the European Union. The energy demand for heating and cooling in buildings can account for up to 40% of the total energy consumption in the European Union. The energy demand for heating and cooling in buildings can account for up to 40% of the total energy consumption in the European Union.

Energy demand for heating

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Environmental impact (LCA)

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