





Experimental evaluation of hydric performances of masonry walls made of earth bricks, geopolymer and wooden frame

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Highlights

- Sorption isotherm showed a rapid increase at the beginning of each moisture level.
- Presence of a hysteresis curve between sorption and desorption for both materials.
- Brick is more permeable than wood and geopolymer has an intermediate permeability.
- Permeability is greater in dry conditions than in moist ones.
- Results confirmed the capacity of this constructive system to regulate the humidity.

Abstract

This paper focuses on the characterization of the hydric properties of a new construction system in masonry structures composed of extruded earth bricks, geopolymer binder and wooden frame. The study was based on experimental tests such as the sorption desorption isotherms, the water vapor permeability tests on the different materials and the hydric test on a real size wall. The obtained results show the good properties of several materials, particularly in the storage of humidity. The different solicitations applied on the wall allowed to appreciate the ability of a earth brick wall to regulate humidity inside a house.

Keywords

Masonry wall; earth bricks; geopolymer binder; wood; hydric performances

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