WALL COVERING POZZOLANIC AUTOCLAVED FOR PASSIVE CONTROL OF ENVIRONMENTS

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Preliminary studies for the processing of autoclaved ceramic tiles from distinct raw materials and industrial wastes are described.

The hardening of cements and other ceramic based on calcium silicates and calcium aluminates may be accelerated by curing under high pressure steam. This way, hydraulic materials achieve in hours, the resistance that would be achieved after days by curing under ambient temperature and pressure.

The complete characterization of raw materials is reported. Then several compositions were prepared involving mixtures of metakaolin and industrial wastes (marble sawing sludge and foundry sand). After autoclaving at 200ºC and at 16, bodies showed 40% porosity and 15 MPa compressive strength. Thermal conductivity is similar to the aerated concrete used in civil construction.

The control of the room relative moisture content is another relevant functionality of the prepared ceramic bodies. As a consequence, an effective inhibition of odour and microorganisms proliferation is achieved, showing that autoclaved ceramic coatings might be used for passive control of indoor environments.