

Laboratory Evaluation of the Airborne Sound Insulation of Plasterboard Sandwich Panels Filled with Recycled Textile Material

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Abstract : Small size acoustic chamber test method has been applied to experimentally evaluate and compare the airborne sound insulation provided by plasterboard sandwich panels filled with mineral wool and with its alternative from recycled textile material (produced by two different technologies). A sound source room is used as an original small-size acoustic chamber, specially built in a real-size room, utilized as a sound receiving room. The experimental results of one of the recycled textile material specimens have demonstrated sound insulation properties similar to those of the mineral wool specimen and even superior in the 1600-3150 Hz frequency range. This study contributes to the improvement of recycled textile material production, as well as to the synergy of heat insulation and sound insulation performances of building materials.

Keywords : airborne sound insulation, heat insulation products, mineral wool, recycled textile material

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