

Consortium

Coordinator and RTD Performer

Tecnologías Avanzadas Inspiralia S.L., Spain

<http://www.inspiralia.com/>

SMEs & SMEs Associations

**Asociación Empresarial de Investigación
Centro Tecnológico del mueble y la Madera
de la region de Murcia, Spain**

<http://www.cetem.es/>

Wood Based Panels Producers, Poland

<http://www.sppd.pl/>

Wood Industry Cluster, Slovenia

<http://cluster.sloles.com/>

**Falegnameria Valsecchi S.A.S.
di Valsecchi Roberto e C., Italy**

<http://www.valsecchisas.com/>

MELU, Mizarstvo d.o.o., Slovenia

<http://www.mizarstvo-selisnik.si/>

Artema Puertas SA, Spain

<http://www.artema.es/>

RTD Performers

SP Sveriges Tekniska Forskningsinstitut AB,

Sweden

<http://www.sp.se/>

**Centro Tecnológico de la Madera de Castilla
la Mancha, Spain**

<http://www.portalmadera.net/>

SILENTWOOD

EU FP7 project for SME
Associations (2010-2013)



Novel Acoustic Performance

**Multilayered wood-based
doors with enhanced acoustic
insulating properties for
dwellings, sanitation and
educative centres**

Visit our website:

<http://www.silentwood.eu/>

For further information on the Silentwood project or how to become a Silentwood technology user please contact:

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Project Co-funded by the European Commission

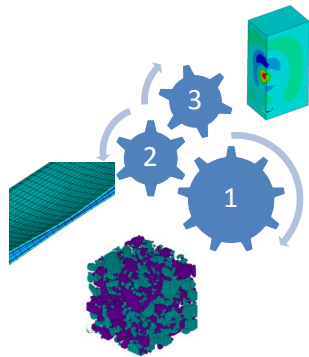
Call: FP7-SME-2008-2, Project No.: 243639

The Background and Purpose

The EU FP7 project Silentwood aims at developing novel doors with high content of wood or other bio-based fibres and with enhanced sound-proofing properties.

Wood-polymer composites, WPCs, are interesting as a part of the assembled door structure. Dynamic material properties are used in computer simulation of acoustic performance. Applied on WPC, the simulation model allows interpolation to any ratios of wood to matrix polymer.

The purpose of Silentwood is to allow the impacted sectors to comply with existing building regulations at European level and, at the same time, opening them the door to new market opportunities to help them face their current critical situation.



Project objectives

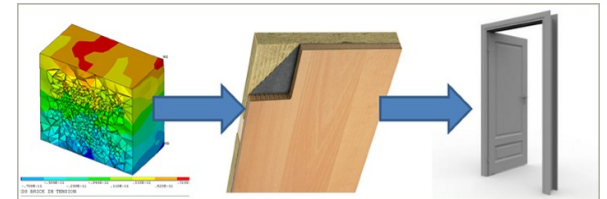
- Develop the sound-insulating sandwich or multilayered structure, containing new noise reduction materials and designing an innovative attenuating internal geometry.
- Design, test, validate and certify the door full system, firstly using computer models for optimization and rapid prototyping purpose and, secondly, carrying out standardized tests.

Dissemination and exploitation activities

- Disseminate generated knowledge and extend industry awareness of the existence of the project
- Get market feeling and feedback about the technology on customers
- Increase awareness of the technology on customers
- Software for rapid prototyping
- Wood-plastic composite material manufacture
- Fiber-porous composite material manufacture
- Panel integration and distribution
- Door and wall panel manufacture

Simulated material properties and panels acoustic performance

A two step simulation process is established. First, a FEM model has been developed for evaluating the material properties for different composite compositions. Second, a simulation tool has been implemented to evaluate the acoustic insulation of panels made of these composites. Both models were validated by experimental data. Predictions made by the simulations are used for the selection of matrix and fibre materials.



Technical Objectives

- Sound Reduction Index (SRI) ≥ 38 dBA, (Goal: above 40dBA for a door thickness below 45mm)
- Thermal insulation U-value ≤ 1.6 W/m² K
- Fire-proofing resistance: IE2 90-C5
- Weight below 90kg
- Price range: € 400-450