European Cooperation in the field of Scientific and Technical Research

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# Action FP0702

2008 - 2012

## Net-Acoustics for timber based lightweight buildings and elements

FPS

Participating countries: AT, AU, BE, CH, DE, DK, ES, FR, GB, IE, LT, NL, NO, NZ, SE, SI, UK
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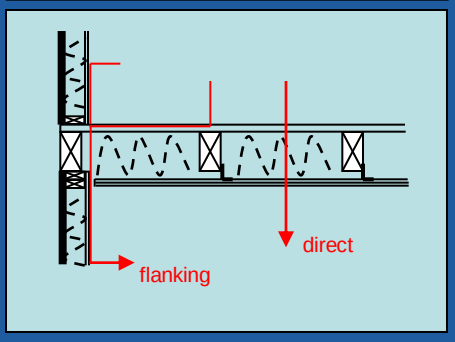
http://extranet.cstb.fr/sites/cost




## Objectives:

**Main areas of concern:**

- Airborne and impact **sound performances** as well as sound from service equipment are considered over a frequency range including **low frequencies** (50 to 100 Hz) where lightweight buildings are likely to have performances lower than in heavy buildings
- **Low frequency vibration** (below 25 Hz) such as floor vibration due to people walking is also considered, particularly its perceptive aspect

**Objectives / method:**

- Effective sharing of research results and transfer of knowledge between research institutions
- Developing an overview of existing knowledge, defining goals and co-ordinating ongoing and new research activities at national and European level
- Identifying research institutions who can/will apply for specific research funding
- Co-operating closely with the Standardization Committees CEN and ISO (several MC members are also members of Standardization WGs)

## WG 1 – Prediction methods

WG leader: E. Gerretsen, NL, eddy.gerretsen@planet.nl

**Topics**: Prediction methods of acoustic and vibration building performances from the performance of elements, including flanking transmissions; the existing methods for heavy weight constructions don't work for timber based lightweight buildings and must be adapted

## WG 2 – Measurement methods

WG leader: D. Bard, SE, delphine.bart@acoustics.lth.se

**Topics**: measurement methods (field and lab) adapted for timber based lightweight buildings and elements, with emphasis on the low frequency range; need for measurement methods for all the input parameters of prediction methods

## WG 3 – Comfort assessment

WG leader: B. Zhang, GB, b.zhang@napier.ac.uk B. Rasmussen, bir@sbi.dk

**Topics**: need for rating the annoyance associated with sound in lightweight buildings, especially at low frequencies (typically 50-100 Hz); need for rating the annoyance associated with vibration in lightweight buildings (typically <25 Hz)

## WG 4 – Acoustic design

WG leaders: Bart Ingelaere, BE, bart.ingelaere@bbri.be

**Topics**: gathering construction data and associated performances from member countries, taking into account the other technical domains (thermal aspects in particular); categorizing building types into families, making sure that all these families are considered by the other WGs

## Main Achievements:

- Three STSMs performed, involving: Lulea University, Technical University of Denmark, Edinburgh Napier University, Danish Building Research Institute, Eindhoven Technical University, Tecnalia and CSTB
- Three successful workshops organized in 2009 in Växjö (SE), in 2010 in Delft (NL) and in 2011 in Zürich (CH)
- Two non COST countries, Australia and New Zealand, active members of the Action
- Main ongoing research studies in Europe on sound and vibration in timber buildings performed by organizations members of COST FP0702
- Close cooperation between COST FP0702 and COST TU0901 (Harmonizing descriptors for sound insulation in buildings) ; common workshop in Zürich in 2011
- Prediction model handed to standardization group CEN/TC126/WG2; catalogue of construction details for main lightweight timber based building types in Europe underway

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