

# Technical Note

Brussels, 23 September 2011



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## Technical note on the revision of the Acoustic Standard ISO-717

### Scope of the ISO 717

The purpose of ISO 717 is to standardize a method whereby the frequency-dependence of airborne sound insulation (717-1) or impact sound insulation (717-2) can be converted into a single number characterizing the acoustical performance of buildings or building elements. The objectives are to simplify the labelling of products, the comparison between products and the formulation of requirements regarding sound insulation in buildings.

### Revision of the ISO 717

The revision of ISO 717 has been decided by the ISO TC 43 SC2 on April 2011.

The main objectives of this revision are:

- Simplify the current system of single-number quantities in acoustics by reducing the number of ratings and simplifying the calculation methods.
- Improve the consideration of the human perception of noise, in particular by taking into account the low frequencies (from 50Hz to 100Hz).

To take into account the different noise types, three new quantities would replace the current indexes for airborne sound insulation:

- "Living" evaluated from 50Hz to 5000Hz
- "Traffic" evaluated from 50Hz to 5000Hz
- "Speech" evaluated from 315Hz to 3150Hz.

Regarding impact sound insulation, a new impact sound reduction index, evaluated from 50Hz to 2500Hz is proposed to replace the current weighted impact sound pressure level.

### Consequences and open questions

- The values of the acoustical performance of building elements expressed with new indexes will generally be lower than with the current ones. The impact of the new methods proposed depends on the acoustical behaviour of each system. The range of performance seems to be reduced if we compare products with each other. In some cases, the hierarchy between systems could be slightly changed.
- The measuring methods remain the same but we will have to measure the acoustical performances in the low frequency domain (between 50Hz and 100Hz): the control of uncertainties in this frequency range is an issue for in-situ measurements and laboratory measurements.
- Up to now, all systems have generally been optimized to have better acoustical performances between 100Hz and 5000Hz: the current and possible weaknesses (depending on the system) below 100Hz should be reduced by developing new systems and/or products.
- The current acoustic regulations should be modified in each country to take into account the new acoustic indexes and the performances of buildings in low frequencies.

### Deadline and Next steps

Four years have been planned by ISO/TC43/SC2 to revise the system of single number values.

If the draft is approved:

- The replacement of current ratings will not come earlier than in 2015.
- After 2015, a coexistence of existing system with new one for a limited period of time (4 or 5 years) is also planned in order to allow smooth transition.

### References

- ISO 717: Acoustics - Rating of sound insulation in buildings and of building elements - Part 1: Airborne sound insulation and Part 2: Impact sound insulation.
- W. Scholl, J. Lang and V. Wittstock: Rating of Sound Insulation at Present and in Future. The revision of ISO 717. Acta Acustica, Vol. 97 686-698, 2011.