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AN ACOUSTIC CLASSIFICATION SCHEME FOR HOUSING – POSSIBILITIES OF ADOPTING COST TU0901 CONCLUSIONS IN HUNGARY

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Abstract. The European Cost Action TU0901 "Integrating and Harmonizing Sound Insulation Aspects in Sustainable Urban Housing Constructions" was finished in 2013 [1]. Experts from 29 European and 3 overseers countries participated in the four year long cooperation in which the main objectives were to propose harmonized descriptors for airborne and impact sound insulation (1), and to propose a European acoustic classification scheme for dwellings (2).

In most countries in Europe, building regulations specify minimum requirements about acoustical conditions for new dwellings: airborne and impact sound insulation, protection against outdoor sound [2] and sound due to service equipment. However, complying with regulatory requirements does not guarantee satisfactory conditions for the occupants – a classification scheme is needed where classes reflect levels of acoustical comfort.

The classification scheme specifies criteria for six classes, from A – the highest – to F – the lowest – class. The complex criteria for each class specify minimum values for airborne sound insulation, maximum values for impact sound pressure level and sound pressure levels in the dwellings from service equipment, and maximum indoor sound levels or minimum values for insulation from outdoor noise from traffic, industry or other sources, in order to assure maximum indoor levels of such sources. Furthermore, maximum values for reverberation time classes for stairwells and common access areas are also included as optional parameters. A classification can be made for a dwelling or for a residential building, or even for an individual room.

In this paper first the proposed harmonized sound insulation descriptors are introduced. After that the proposed harmonized classification scheme is presented and compared to the present Hungarian regulations. The applicability of the new system and the translation possibilities between the Hungarian and the new sound insulation descriptors are shown. Finally the guidelines for verifying compliance with an acoustic class are detailed.

Keywords: Sound insulation, impact sound insulation, airborne sound insulation, classification, legislation, harmonization.

References

[1] COST Action TU0901 – Towards a common framework in building acoustics throughout Europe, ISBN: 978-84-616-7124-3.

[2] Jagniatinskis, A.; Mickaitis, M.; Fiks, B. Development classification scheme for evaluation dwellings sound insulation performance in Lithuania// Procedia Engineering. *11th international conference on modern building materials, structures and techniques (MBMST), May 16-17, 2013, Vilnius, Lithuania*. Amsterdam: Elsevier Science Ltd, 2013. ISSN 1877-7058. 2013, Vol. 57, p. 443–449.