Constructions complying with tightened Danish sound insulation requirements for new housing

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New sound insulation requirements in Denmark in 2008

New Danish Building Regulations with tightened sound insulation requirements were introduced in 2008. Compared to the Building Regulations from 1995, the airborne sound insulation requirements were 2 - 3 dB stricter and the impact sound insulation requirements 5 dB stricter. The limit values are given using the descriptors $R'_{w}$ and $L'_{n,w}$ as before.

For the first time, acoustic requirements for dwellings are not found as figures in the Building Regulations. Instead, it is stated that the requirements are considered to be met, if the acoustic indoor climate in housing complies with sound class C in the Danish classification scheme DS 490:2007. The Danish Building Research Institute is preparing a guideline with examples of construction solutions to meet the tightened requirements. The examples on this poster are a foretaste of this guideline involving more building types with heavy and light-weight constructions. The solutions are mainly based on calculations in accordance with EN ISO 12354.

The construction examples are from a draft SBi-guideline "Lydisolering mellem boliger – Nybyggeri" (Sound insulation between dwellings – New build). Publication expected in April 2011. The guideline is a part of a series of seven new SBi acoustic guidelines. The series shall replace the existing guidelines 1984-1992. Publication 2011ff.

Calculations are made by Dan Brøsted Pedersen, DB Akustik, using Building Acoustics software BASTIAN and detailed models in EN 12354-1 (airborne) and EN 12354-2 (impact).