

Kaindl Laminate and Real Wood Floor coverings in Silent quality are noted for their outstanding room acoustic properties. Through the incorporation of a specially developed acoustic film – which comes ready-fitted on the panels – both impact sound and airborne are considerably reduced. This beneficial effect is achieved through the ability to muffle solid-borne sound whereby the sound conducting properties of the Kaindl flooring are attenuated by the heavy and soft bending underlay which at the same time permits a really good bonding with the much heavier under floor. Despite floating installation the Kaindl floor covering in this respect achieves an effect comparable with that of parquet flooring fitted with total surface gluing.

Sound Propagation

Noise is an ever present and undesirable accompanying background to our environment. Noise manifests itself in the form of sound.

Essentially a distinction is drawn here between solid-borne sound and airborne sound.

Solid-borne Sound

Solid-borne sound is sound propagated in or on the surface of a solid medium.

Airborne Sound

Airborne sound is sound propagated in the form of sound waves in the air.

When assessing the acoustic properties of floor coverings a distinction is to be drawn between two criteria.

Impact Sound

In this case the loudness in the underlying space is the criterion to be assessed. It is measured in accordance with the international standard ISO EN 140-8. The Result ΔL_w is expressed in decibels (dB).

The better the degree of impact sound attenuation the less noise there will be in the underlying space.

However:

A high degree of impact sound attenuation itself is no guarantee of a quiet and pleasant atmosphere in the room.

Airborne Sound

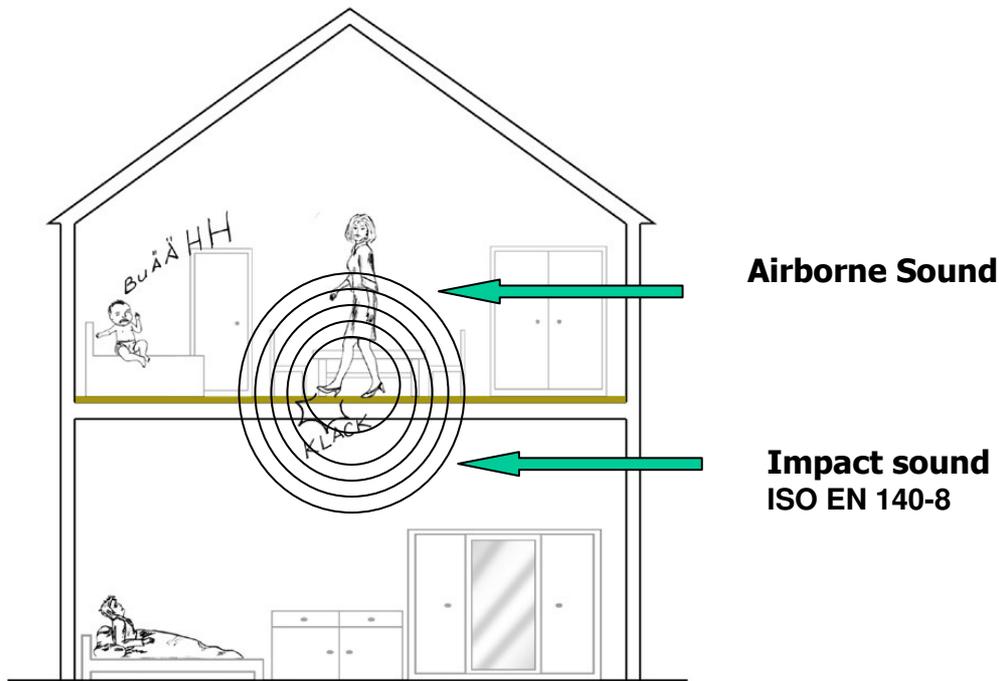
In this case sound emission in the room is assessed. Unfortunately there is still no generally accepted test method for this purpose. A draft for a standard has been drawn up by EPLF. As a member of this organisation KAINDL FLOORING actively contributed in the drawing up of this standard.

KAINDL Silent quality floor coverings have the following sound-absorbing properties:

Degree of Impact sound Attenuation ΔL_w =18 [dB]

Airborne Sound Attenuation =74 [GF]

(Reference sample laminate flooring installed floating on 2.5 mm PE foamed film 87 GF)



Measurement of Sound

Sound is usually measured in terms of sound pressure Pascal (Pa). However, if we were to work sound pressure as a measuring unit this would entail the use of unwieldy numbers with 6 or and more powers of ten in. Such is the greatness of the human hearing range. It begins at a hearing threshold ($p = 20$ micro Pa) and extends to a pain threshold (20,000,000 micro Pa).

For this reason the sound pressure p is expressed in the logarithmic relationship to the hearing threshold. This is what is known as the sound pressure level measured in decibels (dB).

The characteristic quantity **loudness** indicates how loudly a sound is perceived. The unit of measurement in this case is **SONE**.

One sone corresponds to the loudness with which a tone of 40 dB at 1000 Hz is perceived.

The company **KAINDL FLOORING** commission the Wilhelm Kluditz Institut to determine the total loudness. In order that a meaningful value could be here it was decided to compare 15 competitive products in this study. At present this is the only method by which a meaningful evaluation and comparison can be made.

You can now read the detailed report of the study findings on our home page www.kaindl.com.

This said report describes the test method and the results obtained compared with those of competitive products. The test samples 9a and 9b are the samples from the Kaindl Silent product range.