

# Soundproof → State: first of May 2010



<b>Principle</b>	Planet examines all drop-down seals for sound absorbing performance. Two methods are applied.												
<b>Joint sound insulation</b>	The first measures the joint sound insulation. But this method measures and evaluates only the drop-down seal according to DIN EN ISO 10140. This determines a basic value at a floor clearance of 7 mm. Our partner for these measurements is the ift in DE-Rosenheim.												
<b>Element examination</b>	<p>In addition to this we perform diverse sound protection measurements with complete doors according to DIN EN ISO 10140-3. The test stand corresponds to DIN EN ISO 10140-1, partner ift-Rosenheim.</p> <p>The corresponding test reports/approvals can be ordered at our company.</p> <p>In addition we have carried out countless element tests together with our customers around Europe and in overseas.</p>												
<b>Definition of the sound level in dB (decibel)</b>	<p>Corresponds to the acoustic pressure level and represents a logarithmic measure of the power of sound incident. It serves even to determine the sound protection in the field of the architectural acoustics. Examples for the acoustic pressure level adapted to the human ear dB (A).</p> <table><tr><td>– Quiet room in the night</td><td>approx. 15–25 dB (A)</td></tr><tr><td>– Quiet room during the day</td><td>approx. 30–35 dB (A)</td></tr><tr><td>– Normal speech</td><td>approx. 60 dB (A)</td></tr><tr><td>– Traffic noise</td><td>approx. 70–80 dB (A)</td></tr><tr><td>– Workshop noise</td><td>approx. 90–100 dB (A)</td></tr><tr><td>– Threshold of pain</td><td>approx. 120 dB (A)</td></tr></table>	– Quiet room in the night	approx. 15–25 dB (A)	– Quiet room during the day	approx. 30–35 dB (A)	– Normal speech	approx. 60 dB (A)	– Traffic noise	approx. 70–80 dB (A)	– Workshop noise	approx. 90–100 dB (A)	– Threshold of pain	approx. 120 dB (A)
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<b>Evaluated sound insulation measure <math>R_w</math></b>	The measured R-curve ( $R$ = sound insulation measure) is compared with a standard curve which is moved against the measured curve until the deviation is situated in a defined range of tolerance. The value reading at 500 Hz of the standard curve amounts to the $R_w$ -value as an individual indication.												
<b>Transmission by an indirect path</b>	$R_w$ means a laboratory value (without indirect path transmission) opposite to the $R'_w$ (construction value with indirect path transmission).												
<b>Impact noise</b>	<p>The impact noise has to be observed beside the airborne sound. This noise is often ignored at the planning of the noise insulation value. The impact noise is a noise transmission through the solid. One has especially to observe the floor. We recommend a separation of the floor base, a cut in, between the two rooms from <math>R_w \geq 30</math> dB (A) . The room separation by walls is also guaranteed in the floor. This seam can be bridged again by a threshold plate F or a floor separation sill of Planet.</p> <p>→ refer to the chapter Impact noise.</p>												
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## Sound protection requirements in Switzerland

Base SIA 181 (example)		minimum requirement	increased requirement
<b>Multifamily residence</b>	apartment door	42 dB	52 dB (kaum erreichbar)
	room doors	42 dB	37 dB
<b>Hospitals</b>	room doors	32 dB	42 dB
<b>Schools</b>	doors of classrooms	27 dB	–
<b>Doctors / Banks / Lawyers</b>	doors of discussion rooms	–	45 dB

## Sound protection requirements in Europe

Base DIN 4109 Tab 3 (example)	Sound protection grade according to VDI 3828	required $R_w$ on the building	required $R_{w,r,p}$ in laboratory
Doors leading from entrance halls or stairwells in halls of apartments or residence halls or working rooms	SK 1	27 dB	32 dB
Doors leading from entrance halls or stairwells immediately in recreation rooms – except halls – of apartments	SK 3	37 dB	42 dB
Doors between entrance halls and bedrooms	SK 2	32 dB	37 dB
Doors between – examination resp. consultation rooms – entrance halls and examination resp. consultation rooms	SK 3	37 dB	42 dB
Rooms between – entrance halls and patient rooms – operating rooms resp. treatment rooms – entrance halls and operating rooms resp. treatment rooms	SK 2	32 dB	37 dB
Doors between classrooms or similar rooms and entrance halls	SK 2	32 dB	37 dB