

Acoustic systems by Sto

# The art of the invisible

## Room acoustics



Effective acoustic solutions are becoming increasingly important in modern architecture. Even during the planning stage, ways to positively influence the sound of a room as inconspicuously as possible is a major consideration. Ultimately, the way a room is perceived depends heavily on how it is heard, and seen, by those who use it.

At Sto, we have been researching this topic for over 25 years. Our aim has always been to provide you with the means and materials you need to design acoustically perfect rooms that look as good as they sound.



# Pure Design Freedom

## StoSilent acoustic solutions

Requirements for reverberation time, sound distribution or speech intelligibility change depending on the way a room is used. Whereas cushioned silence is often valued in offices or lobbies, a concert hall often requires every sound, no matter how soft, to be heard. Acoustics are influenced by various factors, including the composition of floors, walls and ceilings, the ambient interior climate, the type of furniture, and the number of people. Thanks to our extensive research, our experience gained from all types of successful projects, and our co-operation with leading architects, tradesmen and acoustic experts, we are able to take all these factors into account and optimise the acoustics performance of any room.

727 Collins Square, Melbourne, Australia



Sto Logistics Centre, Stühlingen, Germany



## The perfect acoustics for any room

Our acoustic systems offer more than just outstanding technical performance and the best sound environment. Combining StoSilent with our range of varied finishes - and the 800 shades or matched to any colour using the Sto Spectrometer - also gives you the freedom of design that you need.

## StoSilent Distance

A suspended seamless acoustic panel system that offers the ultimate design flexibility.

## StoSilent Direct

An acoustic system that can be applied directly to a wide range of substrates, to create an economical, seamless solution.

Max Planck Institute, Seewiesen, Germany



Supreme Court of New Zealand, Wellington, New Zealand





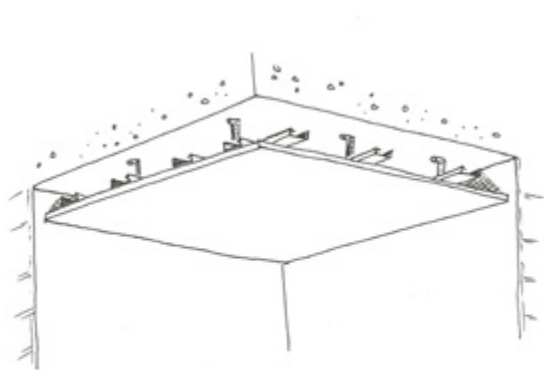




## **StoSilent Distance**

The suspended  
seamless system

It's hard to imagine modern architecture without large, clean, seamless surfaces. The StoSilent Distance board system allows you to create these types of sound-absorbent walls and ceilings, in situations where they must be suspended to reduce room height, accommodate services or to achieve a certain aesthetic.



Schematic diagram of StoSilent Distance

# Seamless acoustics with StoSilent Distant

## Endless design possibilities

The StoSilent Distance system can be installed as a suspended ceiling or as a wall covering with cavity. The sub-construction is made of metal profiles and the acoustic panel consists of expanded glass granulate. The advantages of this material; it is light, absorbs sound, and can be adjusted to any shape of room to form a homogeneous, seamless surface.

### Benefits

- Seamless installation up to 200 m<sup>2</sup>
- Can form sharp joints and creases
- Very high crack resistance
- Can be used to create curved surfaces and vaults
- Different versions available to suit humid and damp conditions - e.g. swimming pools
- Options available to accommodate air movement situations - e.g. ventilation behind the ceiling

### Surface design

- StoSilent Top Basic: finish with a fine grain surface
- StoSilent Top Finish: finish with a fine surface
- StoSilent Decor M: spray plaster with a textured surface

Ernst & Young, Britomart, Auckland, New Zealand





## **StoSilent Distance system variants**

### **StoSilent Distance**

Our standard system with a wide spectrum of applications. Depending on the acoustic board and the suspension height, there are different sound absorption values, from  $NRC = 0.45$  for a board thickness of 15 mm to  $NRC = 0.60$  for a board thickness of 25 mm.

Limited combustibility in accordance with DIN EN 13501-1 and ISO 5660, AS/NZS 3837.

### **StoSilent Distance A2**

The level up from StoSilent Distance. Reaches sound absorption values up to a maximum of  $NRC = 0.80$ . Non-combustible in accordance with DIN EN 13501-1.

### **StoSilent Distance Flex**

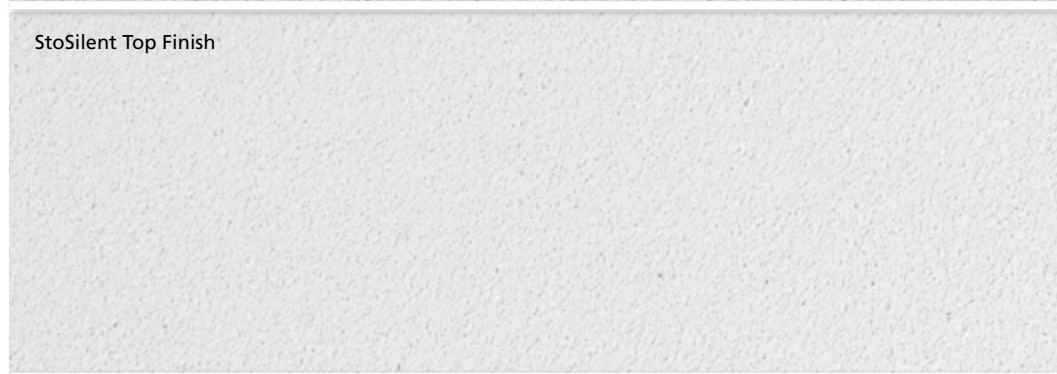
These flexible boards are designed for forming curves and vaults down to a 5m radius. Sound absorption values up to  $NRC = 0.50$ . Limited combustibility in accordance with DIN EN 13501-1.



StoSilent Top Basic



StoSilent Top Finish



StoSilent Decor M





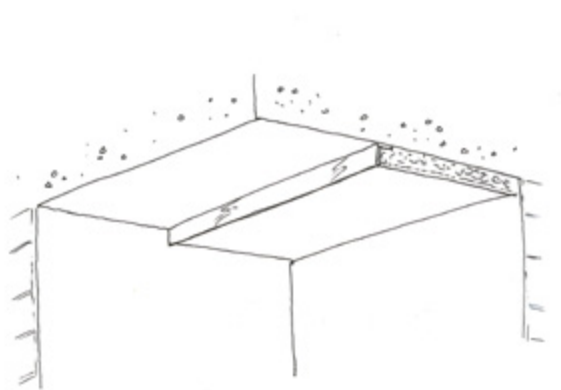




## **StoSilent Direct**

The economical  
seamless system

The direct system StoSilent Direct, a mineral fibre board system which also offers seamless ceiling and wall solutions, yet provides a particularly economical option especially for the creation of visible joints. It requires no sub-construction, and can be applied directly to walls and ceilings. It represents a highly sound absorbent solution that is especially suited where room height is restricted, with a full range of StoSilent surface finishes.



Schematic diagram of StoSilent Direct



# Economical seamless or visible joints

## StoSilent Direct

The StoSilent Direct system consists of composite mineral fibre boards with a pre-applied, textured surface. The boards are bonded directly to the substrate, and their pre-chamfered joints can be left as is, or filled prior to applying one of the StoSilent textured finishes. Seamless surfaces up to 700 m<sup>2</sup> can be created without the need for a break in the system, as well as curves down to a radius of 5m.

### Benefits

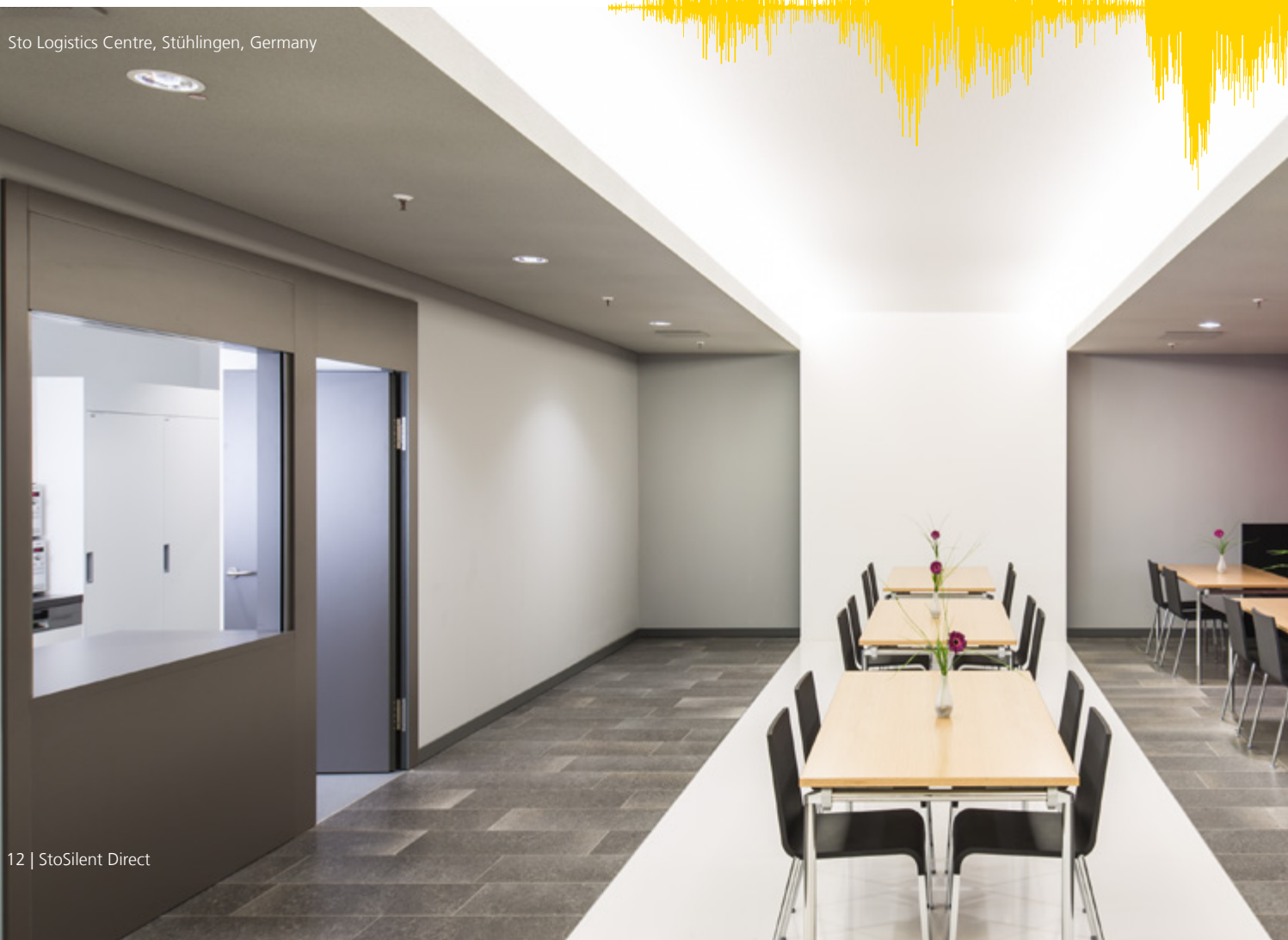
- Direct bonding on to walls or ceilings - ideal for restricted ceiling heights
- High sound absorption due to a porous texture and sandwich structure
- An economical solution, especially when joints are left exposed
- Wide range of possible coatings

### Surface design

- StoSilent Top Basic: finish with a fine grain surface
- StoSilent Decor M: spray plaster with a textured surface
- StoColor Climasan: interior paint for surfaces with visible joints.  
Breaks down odours and harmful substances



Sto Logistics Centre, Stühlingen, Germany



## StoSilent Direct system variants

### Seamless systems

- StoSilent Top Basic: The joints are filled and StoSilent Top Basic is trowel-applied. A finishing coat of StoSilent Top Basic is then trowel-applied to create a fine grain surface. Sound absorption values up to a maximum of  $NRC = 0.85$ . Non-combustible in accordance with DIN EN 13501-1 and ISO 5660, AS/NZS 3837.
- StoSilent Decor M: The joints are filled, and StoSilent Top Basic is trowel-applied. Finishing coats of StoSilent Décor M are spray-applied to create a fine stipple surface. Sound absorption values up to a maximum of  $NRC = 0.90$ . Non-combustible in accordance with DIN EN 13501-1 and ISO 5660, AS/NZS 3837.

### Exposed joint system

- StoColor Climasan: The chamfered board joints are left unfilled, and the boards are sprayed with StoColor Climasan paint, which breaks down any odours and harmful substances in the air. Recommended in StoColor Climasan white only. Sound absorption values up to a maximum of  $NRC = 1.00$ . Non-combustible in accordance with DIN EN 130501-1 and ISO 5660, AS/NZS 3837 With Climasan effect.



StoSilent Top Basic



StoSilent Decor M



StoColor Climasan



# Acoustics for challenging conditions

In addition to acoustic treatments for everyday interior spaces, when required, StoSilent goes above and beyond by offering acoustic solutions for more demanding scenarios.

## Ventilation and air movement

Virtually all acoustic attenuation solutions work by trapping sound energy in tiny cavities, just below the outer surface and dissipating the noise energy. They must therefore be porous by nature.

Many suspended ceilings hide air conditioning plant or have air vents and plenums behind them. This can cause the porous acoustic solution to act as a giant air filter and quickly become marked or dirty.

## Swimming Pools

With the pool itself providing a large sound-reflective surface, swimming pools can be particularly noisy and acoustically poor environments. They are usually also aggressive environments, with the pool chemicals and high humidity combining to form a 'C4 environment', with a high risk of corrosion under ISO EN 12944.

Ceilings for swimming pools therefore need special care during the specification, design and construction processes. StoSilent Distance solutions have provided effective acoustic solutions in many such applications right round the world.

This is addressed with certain StoSilent solutions by including an impermeable foil on the rear face of the board, allowing it to still perform its sound attenuation function, but preventing airflow through it. The result is a ceiling that stays cleaner for longer.

With a specially protected sub-construction, they provide relief from the typically unpleasant and echo-laden swimming pool environment.

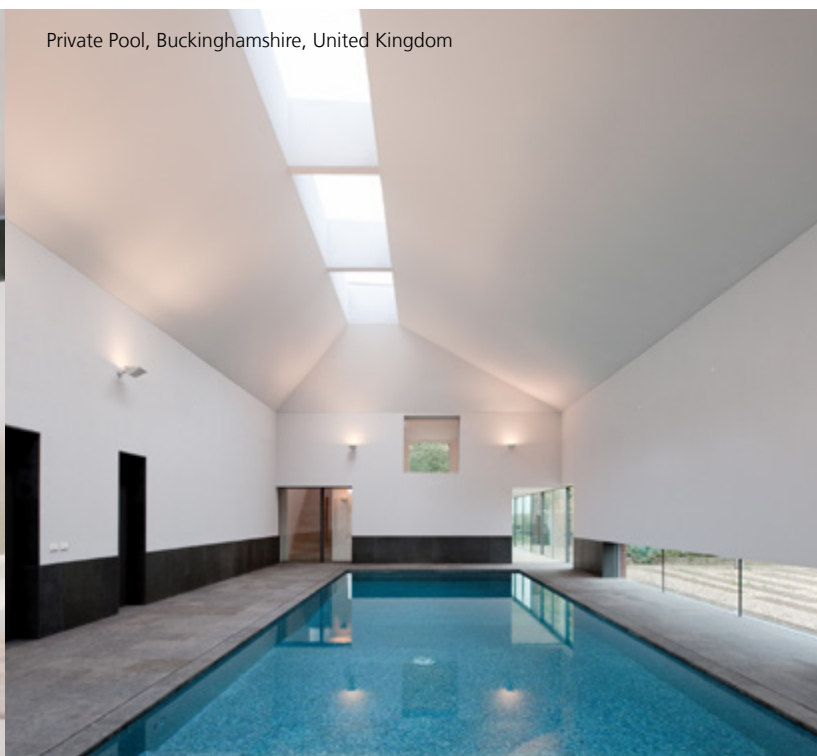
## Semi-exposed Areas

With proven resistance to wind loads, StoSilent Distance can also be used in most semi-exposed situations where it will not come into direct contact with water. Numerous successful projects confirm its versatility in contributing to a more relaxed acoustic environment, even outdoors.

Augsburger Aktienbank AG joint stock bank, Augsburg, Germany



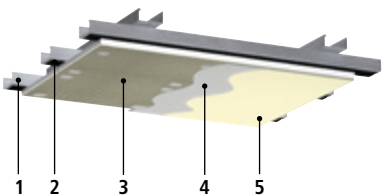
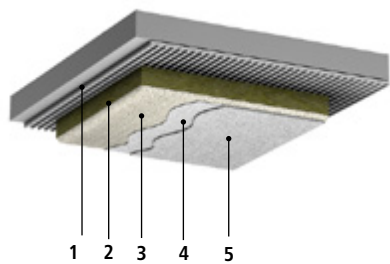
Private Pool, Buckinghamshire, United Kingdom





Seamless or variable, fine or rough, coloured or brilliant white: with StoSilent you can give colour and shape to room acoustics. Below you can see in a glance which system is the right for your project.

For more information and system variants visit [www.stoaustralia.com.au](http://www.stoaustralia.com.au)

System	Version	Acoustic Board	Finish	NRC - Noise Reduction Coefficient	Board thickness	System weight*
<b>StoSilent Distance</b>    <b>System build-up (example)</b> 1 Sub-construction - made of metal profiles 2 Self-adhesive - StoSilent Profile Tape 3 Acoustic Board - StoSilent Distance 4 Intermediate Coat - StoSilent Top Basic 5 Finish - StoSilent Top Basic / Top Finish / Decor M	StoSilent Distance	StoSilent Board 300	StoSilent Top	0.45	15mm	9.8 kg/m <sup>2</sup>
		StoSilent Board 310	StoSilent Decor M	0.50	15mm	7.2 kg/m <sup>2</sup>
	StoSilent Distance A2	StoSilent Board 100	StoSilent Top	0.75	25mm	11.1 kg/m <sup>2</sup>
		StoSilent Board 110	StoSilent Decor M	0.75	25mm	9.0 kg/m <sup>2</sup>
		StoSilent Board 200	StoSilent Top	0.55	25mm	13.3 kg/m <sup>2</sup>
		StoSilent Board 210	StoSilent Decor M	0.55	25mm	10.8 kg/m <sup>2</sup>
	StoSilent Distance Flex	StoSilent Board 310 F	StoSilent Decor M	0.50	15mm	8 kg/m <sup>2</sup>
<b>StoSilent Direct</b>    <b>System build-up (example)</b> 1 Adhesive - Sto Adhesive Render 2 Joint Filler - StoSilent Filler 3 Acoustic Board - StoSilent Board MW 4 Intermediate coat - StoSilent Top Basic 5 Finish - StoSilent Top Basic / Decor M / Climasan	StoSilent Direct	StoSilent Board MW 100	StoSilent Top Basic	0.65	36mm	-
		StoSilent Board MW 100	StoSilent Decor M (visible joints)	0.85	36mm	-
		StoSilent Board MW 100	StoSilent Top Basic	0.80	46mm	9.7 kg/m <sup>2</sup>
		StoSilent Board MW 100	StoSilent Decor M	0.85	46mm	10 kg/m <sup>2</sup>
		StoSilent Board MW 100	StoColor Climasan (visible joints)	0.95	46mm	6.1 kg/m <sup>2</sup>
		StoSilent Board MW 100	StoSilent Top Basic	0.85	66mm	11.6 kg/m <sup>2</sup>
		StoSilent Board MW 100	StoSilent Top Basic	0.85	66mm	11.6 kg/m <sup>2</sup>

\*Board and finishes not including sub-construction or adhesive (MW adhesive - 4.0kg m2).

\*StoSilent Systems are indent stock

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