

**StoSilent**  
Setting the  
tone in  
acoustics.

Acoustic systems from 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.

#### Four systems to suit every requirement

Our four acoustic systems offer more than just outstanding technical performance and the best sound environment. Combining StoSilent with our range of varied finishes - and up to 800 colours available from our StoColor System - 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.

#### StoSilent Modular

A range of variable ceiling and wall elements which provide the ultimate ease of installation and great flexibility.

#### StoSilent Compact

Acoustic plaster solutions for areas where it is not possible to use suspended systems or where curves in the original ceiling have to be preserved.

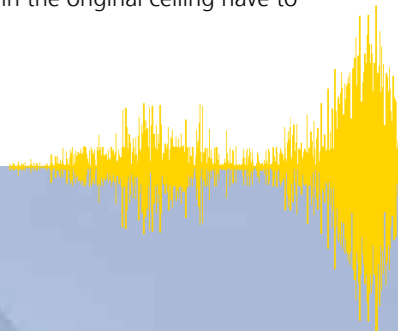
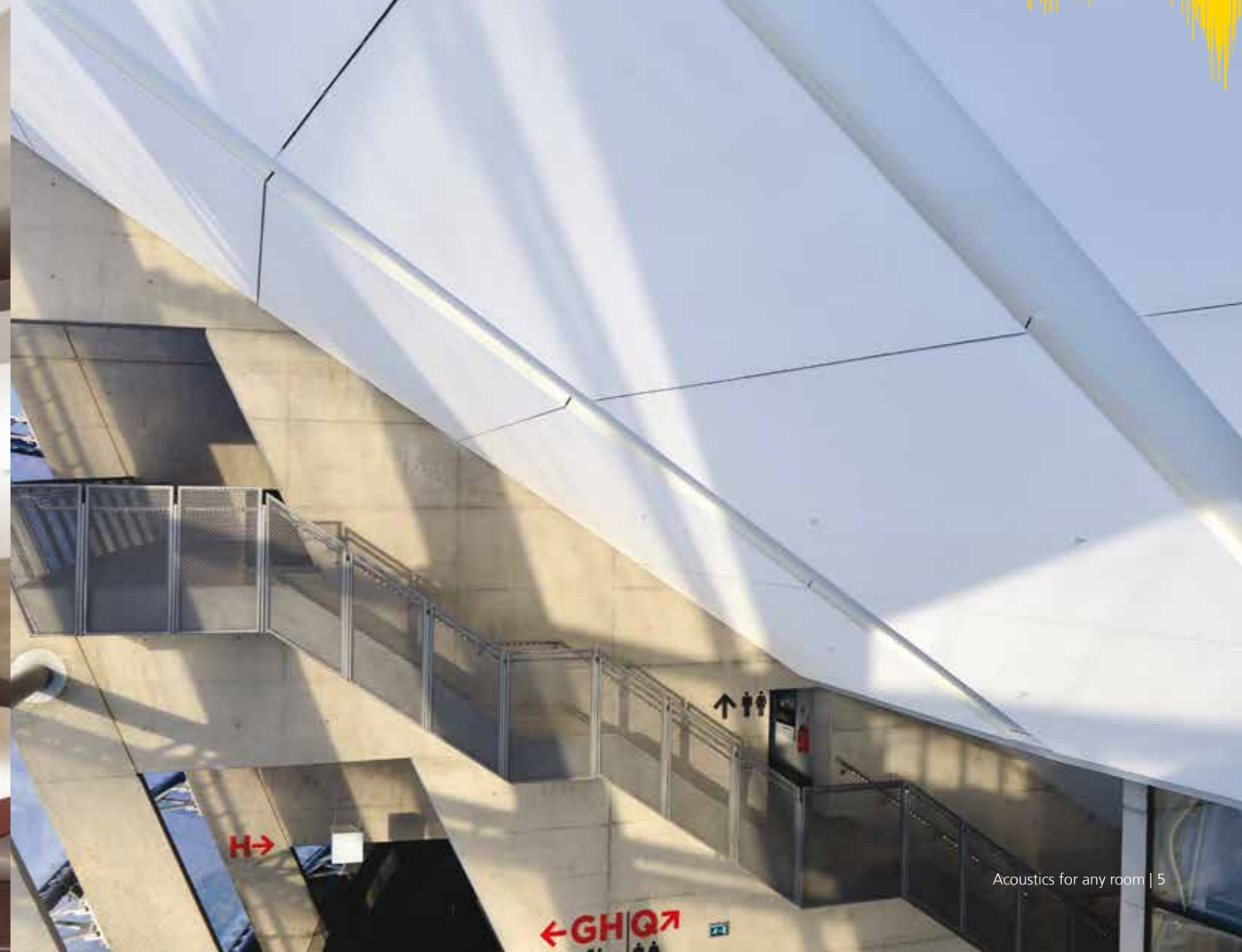


Discover StoSilent references at [www.stosilent.com](http://www.stosilent.com)

London School of Economics



The SSE Hydro, Glasgow



# StoSilent Design Freedom

## Colours and Textures

StoSilent acoustic systems allow you to experiment with colour and texture to achieve your preferred aesthetic. With three types of finish at your disposal, and a palette of up to 800 colours and beyond, the world really is your oyster.

StoSilent Décor M

\*Spray-applied to create a fine stipple surface

StoSilent Top Finish

\*Trowel-applied to create an ultrafine surface with slight crystal shimmer - recommended for small areas only

### StoSilent Décor M

The classic fine-stipple finish, StoSilent Décor M is spray-applied and can be tinted to match a wide range of shades from the StoColor system. This is the most popular finish in our range.

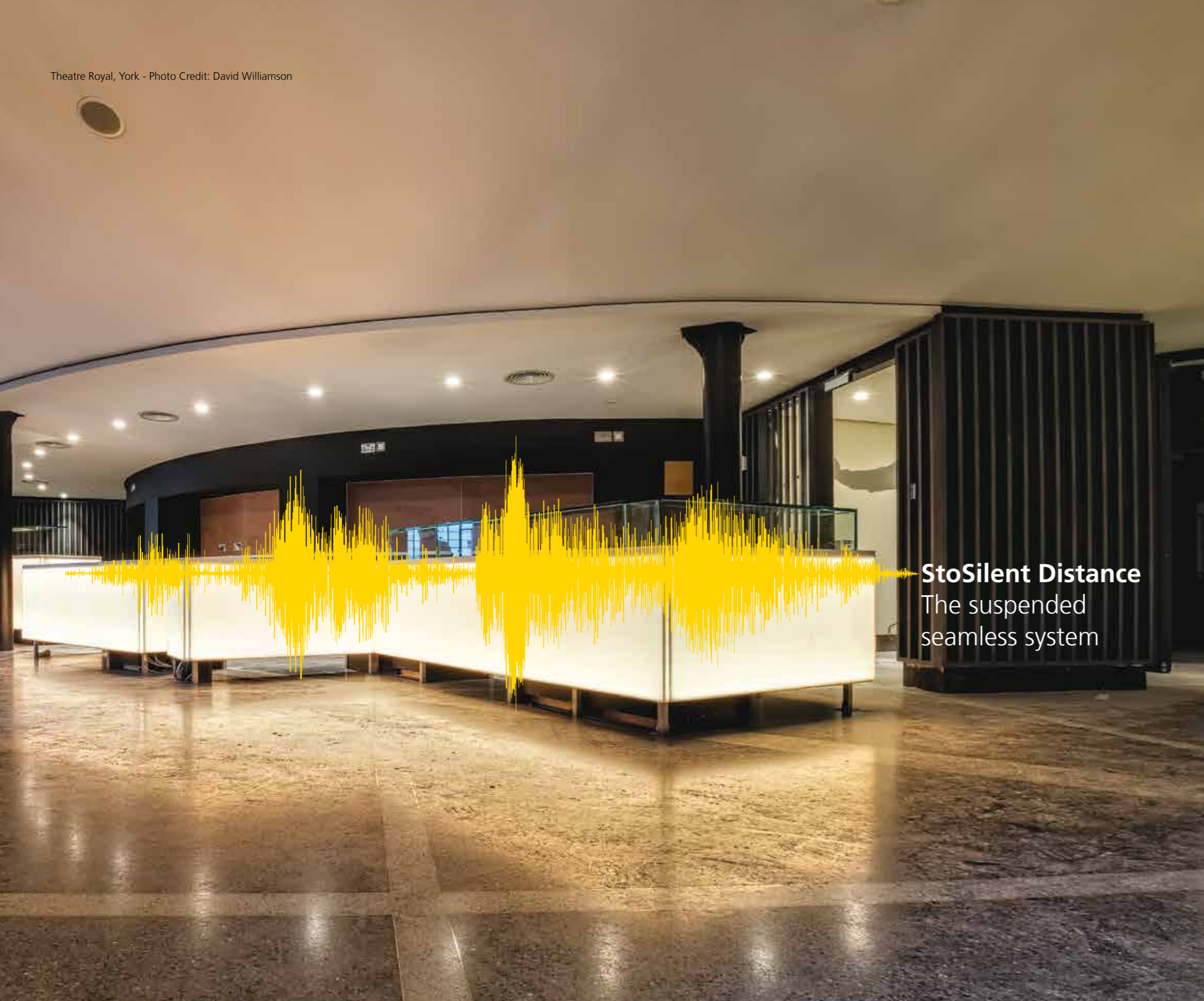
StoSilent Décor M is easy to refurbish, environmentally friendly, inert and natureplus approved. Particularly intense colour shades can be achieved with a final coat of StoSilent Décor MF.

### StoSilent Top

A trowel-applied ultrafine finish with slight metallic shimmer. Most suitable for smaller areas, it is environmentally friendly and offers a large range of colours.

Royal Theatre, Amsterdam, Netherlands

Vienna University of Economics and Business



**StoSilent Distance**  
The suspended  
seamless system

It's hard to imagine modern architecture without large, clean, seamless surfaces. The StoSilent Distance 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.

As well as being an excellent solution for those wishing to obtain a clean, flat ceiling, the system can also be used to achieve sharp and consistent joints at upstands. You can even maximize your creativity by including seamless, inclined planes or curves, all without any worry about cracks appearing in the years to come.

# Seamless acoustics with StoSilent Distance

## Endless design possibilities

The StoSilent Distance system can be installed as a suspended ceiling or as a wall covering with a cavity. The sub-construction is made of metal profiles and the acoustic panel consists of expanded glass granulate. The advantages of this system are manifold - light, sound absorbent, high recycled content, easy to cut and work, and it can be adjusted to any shape of room to form a homogeneous, seamless surface. StoSilent Distance comprises a rigid suspension system with a range of boards, finishes and colours.

### 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
- Options available to accommodate air movement situations - e.g. plenums behind the ceiling

### StoSilent Distance

#### StoSilent Distance

Our standard boards for seamless acoustic solutions. The boards in this range offer varying acoustic properties, and different options such as sealed rear faces to ensure stain resistance.

#### StoSilent Distance A2

As above, but with increased fire resistance performance. Incombustible in accordance with EN13501-1.

#### StoSilent Distance Flex

These flexible boards are designed for forming curves and vaults down to a 5m radius.

StoSilent Distance boards are compatible with any StoSilent finish.

Westfield London Shopping Centre





**StoSilent Direct**  
The economical  
seamless system

Although StoSilent Direct completes our range of seamless ceiling and wall solutions, it also offers a particularly economical option for the creation of visible joints. It requires no sub-construction, and can be applied directly to walls and ceilings. It also represents a highly sound absorbent solution that is especially suited where room height is restricted.

StoSilent Direct can be used with the full range of StoSilent surface finishes, and unjointed boards can be coated directly with StoColor Climasan for a dual-purpose ceiling - acoustic and odour-reducing.

## Economically 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.

StoSilent Direct has particularly impressive sound absorbing qualities, and is best suited for continuous ceilings or walls without upstands. 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
- A wide range of textures and colours available
- An economical solution, especially when joints are left exposed
- Dual function when sprayed with StoColor Climasan - acoustic performance and eliminates odour

#### StoSilent Direct system variants

##### 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.

##### Seamless systems

- StoSilent Top Finish: The joints are filled and StoSilent Top Basic is trowel-applied. A finishing coat of StoSilent Top is then trowel-applied to create an ultrafine surface with slight crystal shimmer. Recommended for small areas only. Available in selected colours from the StoColor system.
- StoSilent Décor M finish: 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. StoSilent Décor M is suitable for all sizes of ceiling or wall, and available in a wide range of colours from the StoColor system. All 800+ colours of the StoColor system can be achieved using additional coats of StoSilent Décor MF.



Sto Logistics Centre







**StoSilent Modular**  
Flexible, Fast, Easy

Starting with just hangers to fix, StoSilent Modular is a simple and fast way to add acoustic attenuation to any room, large or small. It is ideal where chilled beams or thermal mass are used to cool or heat, and has a minimal impact on air movement. With a range for any budget or design, StoSilent Modular can be installed at a moment's notice.

## A good option for any location

### StoSilent Modular

StoSilent Modular is available in three ranges with differing acoustic properties, design possibilities and to suit different budgets. All StoSilent Modular ranges benefit from increased acoustic absorption, as the rear face also absorbs sound reflected from the ceiling above.

- Fast and easy installation - four holes in the ceiling, install suspension wires, adjust for level, and the job is complete
- Can accommodate existing elements such as lighting and air conditioning
- Allows chilled beams or thermal mass heating to function as intended
- Easily adjustable sound absorption levels - simply add or remove elements from the design

#### StoSilent Modular 100

These absorbing panels are made from non-woven recycled polyester fibre, with an anodized aluminium frame. They are grey in colour and available in a variety of formats. StoSilent Modular 100 panels pass the Oeko-Tex 100 standard for harmful substance content, and are extremely inert and safe.

#### StoSilent Modular 200

Absorbing panel made from 96% recycled glass, and used with a StoSilent Décor M or StoSilent Top finish. Rear faces are recycled polyester fibre.

#### StoSilent Modular 400

Individually designed elements to your specification. They are manufactured from StoSilent Board, and used with a StoSilent Décor M or Top Finish. Colours are available from the StoColor system.

## To preserve original ceiling shapes

### StoSilent Compact Plaster Solutions

Sometimes suspended or mounted acoustic systems do not suit the interior space - for example, in historical or listed buildings. Our StoSilent Compact plaster systems are as easy to apply as classical plasters, but in addition, they positively influence room acoustics and provide a special textured appearance.

StoSilent Compact Miral is a spray-applied, acoustically absorbent finish with a rough texture.

- Sound absorption up to  $\alpha_w$  0.30
- Non-combustible
- White finish as standard, can be over painted with StoColor Silent in any colour of the StoColor System

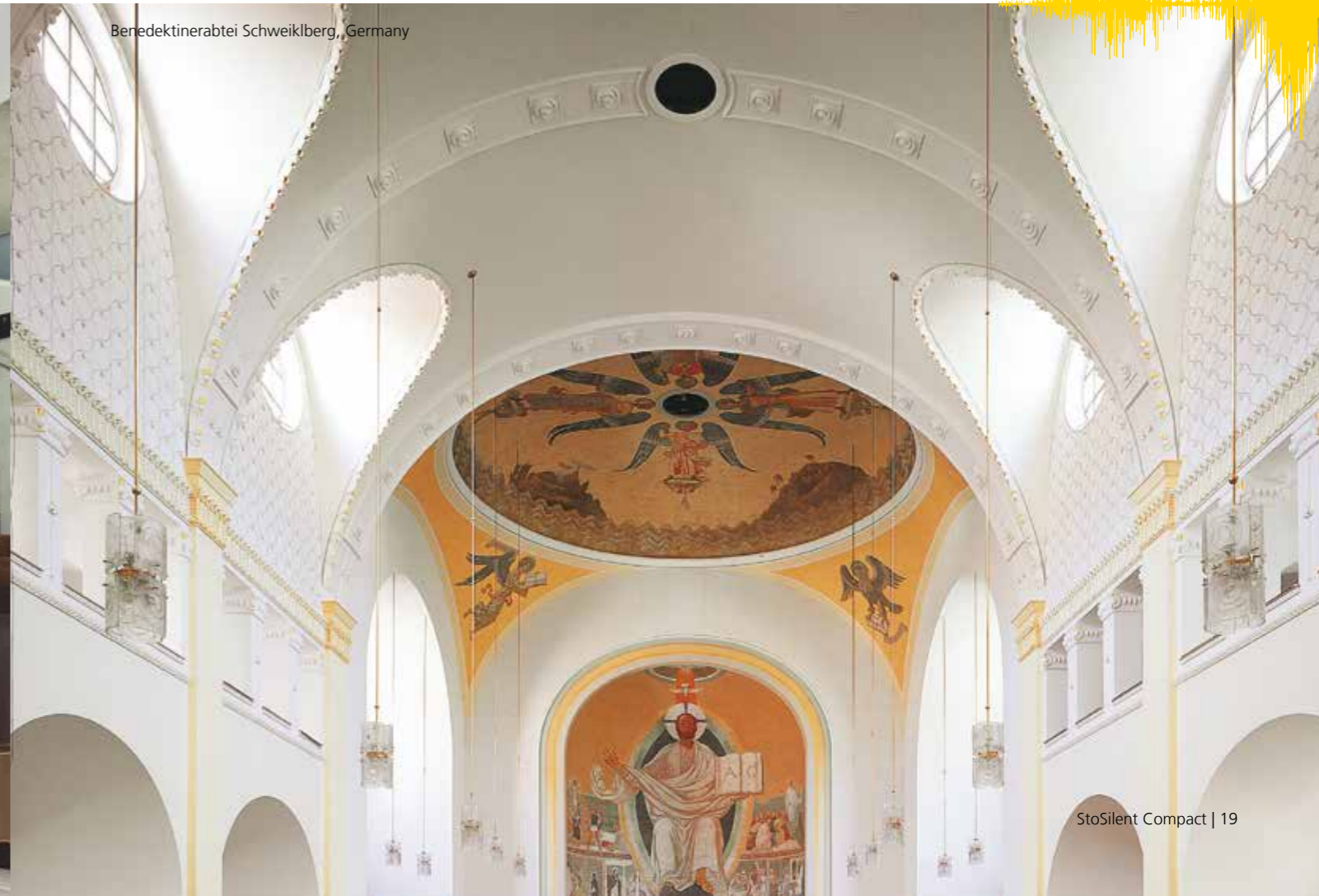
StoSilent Compact Sil is a trowel-applied system with a finely textured surface.

- Sound absorption up to  $\alpha_w$  0.45
- Limited combustibility
- Tintable in any colour of the StoColor System

Schöpf residential building, Miering, Austria



Benediktinerabtei Schweiklberg, Germany



# 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.

### Plenums 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 plenums behind them. This can cause the porous acoustic solution to act as a giant air filter and quickly become marked or dirty.

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.

### 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.

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.

The Leadenhall Building, London



Aberdeen Aquatics Centre



Private Pool, Buckinghamshire



# Ecology & Environment

All StoSilent materials conform to Sto's Building with Conscience mission, which influences everything we do at Sto.

## StoSilent and Sustainability

All StoSilent components and materials are either low in, or free from VOC, as well as being formaldehyde and carcinogen free. This means they can help to gain BREEAM credits, and you can build safely in the knowledge that they have virtually no emissions, harmful or otherwise over their lifetime.

Décor M is particularly environmentally friendly. It is emissions-free, and it carries the Natureplus quality seal in respect of the raw materials used and energy consumed in its manufacture. It has also passed stringent TÜV standards for emissions, harmful substance content and pollutants from production.

The majority of our StoSilent Boards are made from 97% recycled glass, and are similarly low in terms of any harmful substances they contain or emit.

Recycled materials - in this case non-woven polyester - are also a feature of StoSilent Modular 100. This product has an Oeko-Tex 100 certificate, which indicates that independent testing has shown it not to contain any known harmful substances.

Sto SE & Co., the head office and main production facility in Stühlingen holds the DIN EN ISO 14001 environmental certification and the ISO 9001:2008 quality management system certification.



# Maintenance and Refurbishment

Over time, all ceilings and walls can show signs of wear and tear. A combination of inert boards, a rigid sub-construction and resilient adhesive mean that StoSilent ceilings are designed to last.

Surfaces finished with Décor M offer particularly impressive performance in terms of maintenance and refurbishment. They can be vacuumed to remove any surface debris or marking, and their appearance can be quickly refreshed with a simple respray. This can also be done if a change of décor is required to reflect any change made to the room itself.

## Detailing in abundance

To enhance any particular environment, the specifier can choose many different ways to detail the perimeter of the StoSilent ceiling.

In such cases, it is important that the StoSilent ceiling is not mechanically fixed to the wall, so that cracking in the acoustic lining will not occur, as a result of any substrate movement.

Including a slight perimeter gap between the ceiling and the wall also allows for pressure equalisation. This prevents unsightly surface marks appearing due to dirt particles being forced through the boards by differences in air pressure.



Sto strip hangers fixed to substrate using suitable fixings.



Sto Nonius hangers installed using a laser levelling device.



Sto primary & secondary channels installed.



StoSilent Distance boards fixed to SC400 grid & AP profiles using suitable dry wall screws.

Detail design guidance is included as part of the technical support service which Sto offers.

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

Find out more about StoSilent at [www.stosilent.com](http://www.stosilent.com)

System	Acoustic panel	Finish	Maximum sound absorption (αW)	Reaction to fire, EN13501	Board thickness	System weight *	No. of colours available
StoSilent Distance	StoSilent Board 300	StoSilent Top	0.55	B-s1,d0	15mm	10.5 kg/m <sup>2</sup>	328
	StoSilent Board 305	StoSilent Top	0.60	B-s1,d0	15mm	10.5 kg/m <sup>2</sup>	328
	StoSilent Board 310	StoSilent Décor M	0.55	B-s1,d0	15mm	8 kg/m <sup>2</sup>	589
	StoSilent Board 315	StoSilent Décor M	0.80	B-s1,d0	15mm	8 kg/m <sup>2</sup>	589
StoSilent Distance Flex	StoSilent Board 310 F	StoSilent Décor M	0.45	B-s1,d0	15mm	8 kg/m <sup>2</sup>	589
	StoSilent Board 315 F	StoSilent Décor M	0.70	B-s1,d0	15mm	8 kg/m <sup>2</sup>	589
StoSilent Distance A2	StoSilent Board 100	StoSilent Top	0.80	A2-s1,d0	25mm	12.3 kg/m <sup>2</sup>	328
	StoSilent Board 105	StoSilent Top	0.80	A2-s1,d0	25mm	12.3 kg/m <sup>2</sup>	328
	StoSilent Board 110	StoSilent Décor M	0.80	A2-s1,d0	25mm	9.9 kg/m <sup>2</sup>	589
	StoSilent Board 115	StoSilent Décor M	0.85	A2-s1,d0	25mm	9.9 kg/m <sup>2</sup>	589
	StoSilent Board 200	StoSilent Top	0.50	A2-s1,d0	25mm	14.7 kg/m <sup>2</sup>	328
	StoSilent Board 210	StoSilent Décor M	0.55	A2-s1,d0	25mm	12.2 kg/m <sup>2</sup>	589
StoSilent Direct	StoSilent Board MW 100	StoSilent Décor M	0.80	A2-s1,d0	66mm	11.4 kg/m <sup>2</sup>	589
	StoSilent Board MW 100	StoSilent Climasan	0.95	A2-s1,d0	66mm	8 kg/m <sup>2</sup>	183
StoSilent Modular 100	Non-woven panel	Non-woven surface		B-s1,d0	26.5mm		1
StoSilent Modular 200	Expanded glass granulate	StoSilent Top	Absorption area (Aobj) varies with size selected	B-s1,d0	17mm	Weight varies with size selected	328
		StoSilent Décor M		B-s1,d0			589
StoSilent Modular 210	Expanded glass granulate	StoSilent Décor M		B-s1,d0	17mm		
StoSilent Modular 400	Expanded glass granulate	StoSilent Top or Décor M		B-s1,d0	17mm		328 or 589 depending on finish selected
StoSilent Compact Miral			0.30	A2-s1,d0		10 kg/m <sup>2</sup>	800 (with StoColor Silent)
StoSilent Compact Sil			0.45	C-s1,d0			800

\*Board and finishes not including sub-construction

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