



Acoustics

Programme overview



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Acoustics you can feel

Visual and acoustic impressions induce moods and feelings and have a special influence on the way we experience our surroundings. Our senses determine whether or not we feel at home in a room.

Hearing involves interpreting sound waves, and our ears are often simultaneously exposed to a broad array of different sound waves at the most diverse frequencies. As sound acts directly on our central nervous system, factors such as volume, frequency and the number of sound sources influence our sense of well-being and our powers of concentration. In the long term, poor room acoustics can be harmful to health. A room's acoustic properties – the audibility of the spoken word or the purity of a sound – are dependent on the reflection or absorption characteristics of the flooring, the walls, the ceiling and the fixtures and fittings in the room.

Excessively long reverberation times result in unpleasant room acoustics – sounds become unclear and the spoken word becomes incomprehensible.

The Sto acoustic systems have a positive influence on room acoustics and a room's acoustic properties, at the same time offering much more than premium acoustics: they are multi-functional sound optimisation and interior design solutions, ranging from panel systems to acoustic plasters and coverings. Growing numbers of our products – like the Sto Silent Superfein coating, for example – bear the international natureplus® quality mark. This is a seal of approval for health, environmental and functional aspects.



Functionality and technology combined to perfection

Superlative acoustic panel systems

The Sto acoustic panel systems offer the ideal solution for all needs – as the elegant finishing touch to a room featuring an ultra-fine surface texture, in tinted or curved form or as acoustic cooling/heating systems.

In flow-proof design, the systems are even perfectly suited to use in rooms of high humidity or areas in which increased air circulation prevails.

Overview of Sto acoustic panel systems

- **StoSilent Panel:** For improved acoustics in reverberant rooms, from function rooms through lecture theatres to swimming baths
- **StoSilent Panel Robust:** A mesh-reinforced panel used for curved and arched surfaces
- **StoSilent A-Tec:** The acoustic system, suitable for use wherever non-combustible wall and ceiling linings are required
- **StoSilent Top:** The acoustic system with the ultra-fine surface finish
- **StoSilent Top A-Tec:** Acoustic system with ultra-fine coating, suitable for use wherever non-combustible wall and ceiling linings are required
- **StoSilent Cool:** Combines perfect room acoustics with an optimum ambient interior climate on walls and ceilings
- **StoSilent Top Cool:** Additionally features an ultra-fine surface texture to add an elegant finishing touch to the room



Aqua Dome spa, Längenfeld in Tyrol, A
Architects: Schnögass + Partner, R. Fischer



Left and below:
Bodensee-Therme spa complex, D-Constance
Architekturbüro 4a



Innovative materials for superior room acoustics

Hi-tech for the indoor environment



Innovative materials

The core of our acoustic panel systems is the carrier board, made from an extremely robust and highly absorbent high-tech material based on expanded glass granulate.

High absorption level

The open-pored design of this material results in a high absorption level of up to 85 % and a low system weight.

Perfect ambient interior climate

In addition to perfect room acoustics, the panel systems such as StoSilent Cool also enable perfect indoor temperature control. Our cooling and heating ceilings meet the very highest acoustic and air-conditioning requirements.

Built-in sound

Loudspeakers can be integrated invisibly into the acoustic panel systems as a special option.

AstraZeneca – Cancer Research Centre, Cheshire, UK;
Stephenson Bell Architects

Overview of acoustic panel systems

	System name	System properties				Solution		
		Max. absorption α_w	Combustibility	Mechanical resistance	Max. panel size	Area of application	Cooling/heating	Available as flow-proof variant
						Ceiling	Wall	
Panels	StoSilent Panel	0.80	limited combustibility	●	1200 x 2400	●●	●	✓
	StoSilent Panel Robust	0.75	limited combustibility	●●	1200 x 2400	●	●●	✓
	StoSilent A-Tec	0.85	non-combustible	●	625 x 1200	●●	●	✓
	StoSilent Top	0.65	limited combustibility	●●	1200 x 2400	●●	●●	✓
	StoSilent Top A-Tec	0.80	non-combustible	●	625 x 1200	●●	●	✓
Cooling/heating ceiling panels	StoSilent Cool	0.60		●	800 x 1200	●●	●	✓
	StoSilent Top Cool	0.50		●	800 x 1200	●●	●●	✓

●● excellent ● good ● limited ✓ yes

Also ideal for areas of high humidity

Sound-reflecting and smooth surfaces such as glass and steel are particularly prevalent in the modern architecture of swimming baths. And the surface of the water represents an additional sound-reflecting body which compounds the situation.

The flow-proof StoSilent Panel Alu copes supremely with these acoustic challenges and the requirements resulting from the high humidity. All Sto acoustic panels are available in flow-proof design, making them ideal for use in areas of high humidity, such as swimming baths or areas with increased air circulation.

InterActiveCorp., USA - New York
Architects: Frank Gehry & Assoc.



Radonbad swimming baths, D-Menzenschwand; Sacker Architekten

Uncompromising interior design

Acoustics and aesthetics in perfect combination

In fine form

The acoustic systems from Sto AG are not only extremely flexible in use – the acoustic panel itself can also be installed in curved form. This means

that flowing transitions can be created between surfaces of different heights or sweeping three-centre arches and circular segments can be produced.

Seamless installation over extensive areas

Extensive ceiling and wall areas of up to 200 m² and 20 m in length can be produced in seamless design with the acoustic panel systems – for uncompromising aesthetic room concepts.



Blue Heaven Radisson SAS Hotel, D-Frankfurt a. M.; Architects: Schindler und Werb

Ultra-fine coating

The ultra-fine surface finish of the StoSilent Top acoustic panel system provides for a sleek, purist, ultra-modern look.

This ensures that the system meets the highest design requirements, in addition to its outstanding acoustics-enhancing properties.

Apart from brilliant white, which creates a shimmering effect in various light situations, a broad choice of pastel tones is also available for the finishing coat. This means maximum scope for creative colour design.



Münchner Tor, D-Munich; Architekturbüro Brandt

The design options with acoustic panel systems

	System name	Design						
		Seamless	Surface texture in mm	Colour choice	Formability	Max. luminous reflectance	Max. lightness value	Max. whiteness
Panels	StoSilent Panel	●●	0.5–0.8 fine	●●	●	90 %	83 %	66 %
	StoSilent Panel Robust	●●	0.5–0.8 fine	●●	●●	90 %	83 %	66 %
	StoSilent A-Tec	●●	0.5–0.8 fine	●●		90 %	83 %	66 %
	StoSilent Top	●●	0.3–0.5 finest	●	●●	75.4 %	77 %	69 %
	StoSilent Top A-Tec	●●	0.3–0.5 finest	●		75.4 %	77 %	69 %
Cooling/heating ceiling panels	StoSilent Cool	●●	0.5–0.8 fine	●●		90 %	83 %	66 %
	StoSilent Top Cool	●●	0.3–0.5 finest	●		75.4 %	77 %	69 %

●● excellent ● good ● limited

The acoustic retrofit for every scenario

The versatile ceiling element

The versatile ceiling element combines aesthetics and technology. It can be integrated into any existing room concept to provide for a marked improvement in acoustics, its attractive design at the same time making it an architectural eye-catcher. The surface area of StoSilent Modular can be altered at any time. Alternatively, its simple method of installation on hangers allows it to be removed and installed elsewhere.

Improved acoustics despite activation of structural components

The variability of the distance from the ceiling and the minimal contact area of the mounting points mean that the ceiling element is also an ideal means of improving acoustics in buildings in which parts of the building structure or the concrete core are activated.



Type 100



Type 200



Type 400

The ceiling canopies are available in three variants which can be intercombined and expanded.



Casino Milupa, D-Fulda



Office building of AS-Fassaden GmbH,
D-Gars/Inn



Perfect solutions for special requirements

Acoustic plasters for individual solutions

Acoustic plasters

The given building scenario sometimes means that it is not possible to use suspended acoustic systems. Cross vaults in listed historical buildings require direct coating, for example. For these specific cases, Sto has developed acoustics-enhancing plaster systems for direct application to ceilings and walls. These plasters enable curves in two directions and minimal radii. Sto Acoustic Spray Plaster is also suitable for use as an anti-condensation plaster in areas of high humidity.



Catholic parish church
Maria Hilf, D-Stadtbergen

Overview of acoustic plaster and acoustic covering systems

	System name	System properties			Solution		Design		
		Max. absorption α_w	Combustibility	Load-bearing capacity	Retrofitting	Area of application	Surface texture	Colour choice	
						Ceiling	Wall		
Plaster systems	Sto Acoustic Plaster	0.45	limited combustibility	●		●●	●	fine	●●
	Sto Acoustic Spray Plaster	0.50	non-combustible	●		●●	●	coarse	●
Acoustic wallpaper	Sto-Silentyl	0.40	limited combustibility	●●	●●	●●	●●		●

●● excellent ● good ● limited

For better communication

Acoustic wallpapers – fast and simple

Acoustic covering system

Acoustic wallpaper is the perfect choice wherever communication between people needs to be enhanced – in open-plan offices, doctors' surgeries, kindergartens, restaurants or sales rooms, for example. The covering system is particularly effective in the high-frequency range, making it ideal at kindergartens. Swift and simple application and the attractive finish make this system component a tried and tested acoustic solution which is particularly suited to fast renovation projects.



Above and right: Sto-Silentyl in a private home



	Formability	Max. lightness value	Max. whiteness
	●●	82 %	62 %
	●●	71 %	61 %
	●●	80 %	64 %

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