



Distribution Partner

# StoSilent manual



**Legal notes:**

It should be noted that the details, illustrations, general technical information, and drawings contained in this brochure are only general proposals and details which describe the functions. They are not dimensionally accurate. The applicator/customer is independently responsible for determining their suitability and completeness for the construction project in question. Neighbouring works are only described schematically. All specifications and information must be adjusted or agreed in the light of local conditions and do not constitute work, detail or installation plans. The technical specifications and information on the products contained in the Technical Data Sheets and system descriptions/approvals must be observed.



# Contents



**Striking the right note or tone in conversation, in music, or in a lecture is the sine qua non of good communication. To ensure this note or tone is also perceived clearly, i.e. heard and understood by the listener, interior spaces and rooms must be created with optimum acoustics. Indeed, the desire for peace and quiet is of universal importance. During the design process, planners and architects are faced with the task of ensuring a level of acoustic quality that appropriately matches the room's purpose. The overarching goal is that we feel comfortable in the spaces in which we find ourselves, that we can understand each other without having to make a great effort, and that rooms are neither too loud nor too quiet – that is, the acoustics are perfectly suited to the room's requirements. These planning aids define – clearly, quickly, and comprehensively – how they should go about using StoSilent acoustic systems to create the optimum "ambient interior climate" for a good listening experience.**

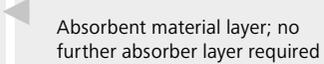
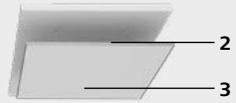
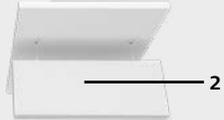
The StoSilent manual contains all relevant information about the Sto acoustic systems. It gives building owners, architects, applicators, and – first and foremost – specialist planners the security and support they need to successfully develop projects, and not just with regard to acoustics. The manual contains comprehensive information on every single system: from system build-up, technical information, and specifications on sound absorption right through to design options and detail drawings. You will find out everything worth knowing about the different room situations and areas of application, ambient interior climate, and about sustainability, as well as obtaining planning-relevant information about materials, surfaces, paints, and so on. Our advisors and project managers will be happy to provide you with information about project-specific solutions and answer any other questions you may have.

It is even more difficult to plan acoustic designs for call centres, as they involve a large number of people working in close proximity to each other and all speaking on the phone at the same time. Call centre employees must be able to concentrate on what customers are saying and also provide them with information – all while disturbing their colleagues as little as possible.

## The many layers of our acoustic systems

Category	System	Carrier layer	Absorber layer	Material layer
Suspended, flat acoustic system sub-construction	StoSilent Distance	 <p>StoSilent Distance C</p>	 <p>StoSilent Distance S</p>	 <p>StoSilent Distance F</p>
		 <p>2 — Acoustic panel 4 — Edge profile</p>		
Directly bonded acoustic system Applied directly to the load-bearing surface	StoSilent Direct Full-surface application	 <p>1 — Priming coat</p>	 <p>2 — Bonding 3 — Acoustic panel 4 — Filler and levelling coat 5 — Edge profile</p>	<p>5 — Intermediate coat 6 — Acoustic plaster finish (tinted available as an option)</p>
	StoSilent Frame Partial application		 <p>2 — Bonding 3 — Acoustic panel made of sintered expanded glass granulate</p>	<p>Acoustic panel, coated at the factory; no further material layer</p>

## The many layers of our acoustic systems

Category	System	Carrier layer	Absorber layer	Material layer
<b>Directly coated acoustic plaster system</b> Applied directly to the load-bearing surface	<b>StoSilent Compact</b>	 <p>1 — System profile 2 — Priming coat</p>	 <p>Absorbent material layer; no further absorber layer required</p>	 <p>3 — Intermediate coat 4 — Finishing coat</p>
<b>Suspended, modular acoustic elements</b> Modular, prefabricated system	<b>StoSilent Modular</b>	 <p>1 — Hangers</p>	 <p>2 — Sub-construction/frame 3 — Horizontally suspended acoustic panel</p>	StoSilent Modular 100: Uncoated non-woven surface StoSilent Modular 230: Fine-textured colour coating applied at the factory  Acoustic panel, coated at the factory; no further material layer
	<b>StoSilent Baffle</b>	 <p>1 — Hangers</p>	 <p>2 — Vertically suspended acoustic panel</p>	



## The right solution for every room

**Rooms vary hugely, both in the ways they can be used and the conditions applicable to their use. For this reason, they require individual room-acoustic concepts. With four tried-and-tested systems, the StoSilent range offers a unique range of solutions to optimise the acoustics in every room according to its purpose. The possible applications range from classrooms and offices to relaxation or wellness areas. Not only will the sound properties lead to functional results, the variety of technical and structural solutions will also guarantee the successful completion of your projects.**

This is where you will find out which aspects are relevant in the different application ranges and which solutions are recommended. Observe the applicable directives and laws and consult with the acoustics advisor if you have any questions.

### Acoustics in the world of work

As the world of work changes, office environments and room structures are subject to an ever growing list of new requirements. Fast-moving information and communication technologies require modern room concepts with a comfortable and efficient work environment. Alongside lighting, climate, and fire protection, acoustics are also a key criterion.

According to surveys and scientific studies, disruptive noise is one of the most frequently criticised factors in office environments. When these environments are designed and coordinated in order to optimise the acoustics, employees and employers benefit in equal measure. An acoustic design which suits the purpose of the room will increase productivity, job satisfaction, and well-being, and is therefore a key

factor in ensuring motivation and success in the world of office work.

The solutions in our StoSilent acoustic range are compatible with the sustainability and healthy living which feature so prominently in the modern world of work, while also meeting the architectural demands of planners and architects.

### Open-plan office

Planners and acousticians face particular acoustic challenges in open-plan offices. Noise prevention is particularly important in this context, as office work involves two key aspects – communication and concentration. In order to avoid problems in either of these areas, it is essential to find a good compromise between background noise and speech. When planning open-plan offices and combined-use areas, several aspects must therefore be considered at the same time:

- Effective space management, as multiple workplaces must be located in the same area
- The peace and quiet required for focused work and telephone calls
- Short communication channels so that information can be exchanged quickly within the team

It is even more difficult to plan acoustic designs for call centres, as they involve a large number of people working in close proximity to each other and all speaking on the phone at the same time. Call centre employees must be able to concentrate on what customers are saying and also provide them with information – all while disturbing their colleagues as little as possible. Confidentiality is particularly important:

customers on the phone must not be able to hear what is being said at the next workstation.

In cases like these, a simple acoustic solution is generally not sufficient. In this situation, a combination of ceiling and wall absorbers, screen walls, or – if applicable – workstation absorbers will provide the best possible room acoustics.

### Individual office

At first glance, you might think that acoustic requirements are not as important in individual offices as they are in open-plan rooms. However, if the acoustics in an individual office are not suited to the purpose of the room, the user may perceive the environment as too loud or echoey. If nothing else, it is very inconvenient when the user is speaking on the telephone and cannot understand the caller due to the long reverberation in the room. This problem also occurs when the user has a face-to-face meeting with another person, and it must be solved with acoustic measures.

### Multi-person office

As well as noise generated by other people, background noise from printers, air conditioning, or from outside can result in significant subjective noise pollution levels in multi-person offices, causing stress among employees. In this case, full-surface acoustic ceilings or ceiling elements can provide a solution.



## The right solution for every room

### Video conference room

Acoustic measures must be taken in video conference rooms to ensure that the transfer of images and sound is not affected by factors such as ventilation noise, traffic noise, airborne noise and impact sound from neighbouring rooms, etc. From experience, damping this noise via the ceiling surface areas only is generally not sufficient. Acoustic panels on the wall opposite the screen can help to prevent disruptive multiple reflections and flutter echoes in order to optimise speech intelligibility.

### Seminar room

Like school classrooms, seminar rooms are arranged for conventional lecture-style teaching. The room-acoustic requirements are therefore the same:

- Very good speech intelligibility
- Relatively short reverberation time
- Low background noise
- No disruptive flutter echoes

Depending on the size, shape, and – in particular – occupancy of the rooms, absorbers may need to be installed and combined with reflectors in the right positions.

### Conference room

Room-acoustic requirements are very high in large conference and meeting rooms, as it is especially important to ensure that speech can be heard clearly. As well as considering the human voice, criteria such as modern multimedia equipment and large projection surfaces also need to be taken into account. The rooms must also be well ventilated and kept at a comfortable temperature, as well as providing sufficient artificial or natural light. Conference rooms are

used to announce important information and make key decisions. Optimised room acoustics with no disruptive noise will help to ensure comprehensibility.

### Reception area

The reception area of a company or a public building serves as its business card and, as such, must meet certain acoustic requirements in addition to its spatial and architectural design.

Intelligent absorber solutions create the right level of acoustic privacy. If the entrance area is quiet and sound is dampened, visitors will automatically be quieter than in echoey rooms. Sound-absorbing surfaces and separating elements in the immediate vicinity of reception staff also help to ensure discretion.

### Acoustics outside of work

Depending on their nature and use, leisure facilities are often characterised by high noise levels. This is particularly the case wherever lots of people congregate – for example, in meeting places, in open atriums, or at large leisure pools. In these places, appropriate measures must be taken to reduce noise levels. Alongside architecture and design, acoustic quality is a top priority for leisure facilities.

### Food and drink

Guests who feel comfortable in a café, restaurant, or bar stay longer – and consume more. Restaurants are awarded Michelin stars for their outstanding cuisine and excellent service. If stars were awarded for atmosphere and ambience, however, acoustic well-being would be one of the key criteria. Good acoustics encourage guests to stay longer and

to come back. That must be worth another star!

### Retail

The same rule applies in shops and boutiques: if you feel comfortable, you will stay longer and come back again. Customers are more likely to stay and browse in shops with an attractive design and pleasant acoustic atmosphere. Environments that are visually and acoustically appealing have a positive impact on customers and help them to make decisions.

Good acoustics are not only important for the purposes of improving customer satisfaction and visitor numbers. Shops also need to make sure that they comply with the relevant standards and directives in order to provide a safe and acoustically optimised workplace environment for their employees.



## The right solution for every room

### Shopping centres

The shopping centres that have been appearing in and on the outskirts of town and city centres for years are not just there for functional shopping – customers visit these centres to have a day out and enjoy a bit of retail therapy. Noise causes disruption and creates stress – and no one wants that in their free time! Customers will stay longer in a quiet environment where sound is dampened than in a noisy atmosphere. And experience has shown that if they stay longer, they spend more.

Sound-absorbing ceiling and wall surface areas – in large atriums, for example – create a comfortable atmosphere and encourage customers to stay. These means they can relax in open-style restaurants in between their purchases and enjoy their shopping trip to the full.

### Swimming pool/spa

Noise levels are always high in swimming baths and leisure pools, and the acoustics play a major role in determining visitors' comfort, along with the air and water temperature. Although people will be expecting a certain level of noise in swimming baths or "fun pools", those visiting the spa areas are looking for rest and relaxation. Sound-absorbent ceiling and wall coverings and elements reduce the reverberation and dampen noise significantly, thus guaranteeing a relaxing atmosphere.

### Theatre/concert

Making sure that a concert hall sounds good is no mean feat. Planning the acoustics of cultural buildings such as concert halls, theatres, and opera houses is an extremely challenging task for planners and acousticians. The requirements – particularly with regard to the room acoustics – are very complex and go beyond considerations such as reverberation time and extraneous noise. In this case, acoustic quality is also a major factor, and is described, planned, and measured using abstract parameters such as early reverberation time, intensity, distinctness, clarity, lateral fraction, diffusion, and so on. The top priority is always to create the perfect listening experience from every part of the hall, whether audience members are sitting in the stalls, circle, or a box. To ensure that this is the case, the acoustic products and systems must be tailored to the specific requirements of the building in question.

### Acoustics in educational institutions

It is impossible to learn and teach in a noisy environment. Noise is one of the main causes of disturbance in schools and nurseries in particular. Implementing effective room-acoustic measures is the only way to ensure successful learning and teaching in these institutions. Due to the multi-functionality of the rooms, the construction materials used in the education sector need to meet high standards with regard to comfort, durability, aesthetic appeal, and sustainability – as demonstrated by the products in the StoSilent portfolio.

### Schools

It has been proven that the acoustic conditions in the classroom affect the ability to concentrate, social behaviour, sick leave among teachers, and pupils' performance. Although acoustic comfort is crucial for successful learning and well-being, acoustics are rarely prioritised when it comes to building schools. Unfortunately, classrooms often have considerable shortcomings with regard to room acoustics: they are echoey, with poor speech intelligibility and too much background noise. In many cases, the noise level exceeds the permitted value for industrial workplaces. National standards and directives set clear requirements and limits to ensure that projects proceed successfully.

High levels of noise make it extremely difficult to learn, teach, and communicate in a relaxed manner – and mental capacities are impaired as a result. In such cases, the building must be refurbished with room-acoustic elements such as sound-absorbing wall and/or ceiling coverings. These coverings reduce the reverberation time and make the rooms quiet. Speech intelligibility is improved and background noise reduced as a direct result of these measures, creating a pleasant working atmosphere in the classroom.

### Nursery schools

Room-acoustic planning always has the same objectives: directing sound reflections and stopping, restricting, or improving the propagation of sound. Suitable constructions



## The right solution for every room

must be selected in order to achieve the goals of promoting communication, improving speech intelligibility and concentration, and creating private areas. Poor acoustics in nursery schools make linguistic communication more difficult. Excessive reverberation leads to more noise and the more people are in a room, the further volume levels will increase. Highly absorbent systems and elements on walls and ceilings reduce noise and protect staff and children in particular from noise, stress, and – in the worst-case scenario – illness.

### Acoustics in living spaces, corridors, and canteens

#### Living spaces

The primary focus in private homes is often on achieving an appealing appearance, while acoustic considerations are neglected. Standards and directives do not apply in this case. But a living space is characterised as much by its acoustics as by its visual properties. Clear, modern architecture and acoustically effective room dampening using efficient absorbers do not need to be mutually exclusive. Large-area absorbers provide a solution for current trends in home design which favour large, open-plan living/kitchen/stair-case areas. These elements reduce the long reverberation times created by the relatively large volume of the room.

#### Benefits and advantages:

- Quiet rooms create a relaxed atmosphere for conversations.
- Improvement in the quality of the sound produced via multimedia hi-fi systems
- Positive influence on the behaviour of residents: communication is quieter and calmer.

#### Corridors

Corridors, whether in office buildings, schools, administrative buildings, hotels, or banks, often require an atmosphere of peace, quiet, and discretion. People tend to be quieter in peaceful areas with dampened sound than in loud, echoey environments. Reduced noise on the corridor also has a positive effect for the rooms off the corridor because there will be less disruption.

#### Canteens

A canteen is much more than just a place to grab some food. It gives colleagues, pupils, or students somewhere to chat and exchange ideas – preferably, in a pleasant, peaceful atmosphere. Communication is just as important as good, healthy food. This requires healthy acoustics characterised by a quiet environment.

#### Tip:

Create a balanced ratio between background noise and speech so that people can have conversations without being disturbed, but also without being overhead by the entire dining hall.



## Application fields arranged by ambient interior climate

Our StoSilent acoustic systems are suitable for a wide range of acoustic applications and virtually all usage areas – primarily in interiors under normal climate conditions.

The prerequisite for this is that thermal and moisture protection must always be professionally planned from a structural perspective and in terms of building physics. It is essential to observe the specifications of EN 13964 “Suspended ceilings – Requirements and test methods”.

### StoSilent – application fields

Key: ✓ approved x not possible		Application			
		Interior			
Use		Interiors		Climate-controlled swimming bath, no rooms exposed to moisture	
<b>Building element</b>	<b>Requirements:</b> Sufficient structural thermal and moisture protection for the relevant building elements	• Interior wall • Intermediate floor	• External wall • Ceiling towards the exterior	• Interior wall and intermediate floor • Not over ice-cold pools • Not suitable for brine baths • Not suitable for sauna exit areas	• External wall • Ceiling towards the exterior • All other applications • Not over ice-cold pools • Not suitable for brine baths • Not suitable for sauna exit areas
<b>Stress during use</b>	Air temperature <sup>1)</sup>	≤30 °C	≤30 °C	≤30 °C <sup>3)</sup>	≤30 °C <sup>3)</sup>
	Humidity <sup>2)</sup>	≤90 %	≤90 %	≤70 %	≤70 %
	Stress class according to Table 8 from EN 13964	<b>B<sup>5)</sup></b>	<b>B<sup>5)</sup></b>	<b>A<sup>4)</sup></b>	<b>A<sup>4)</sup></b>
	Condensation/precipitation/splash water	No	No	No	No
	Wind load	None	None	None	None
<b>System</b>	StoSilent Distance	✓	✓	✓	on request
				With load-bearing construction protected from corrosion and with vernier hangers in accordance with EN 13964	
	StoSilent Direct	✓	Calculations required as proof	• Only on solid and concrete covers • Only on gypsum plasterboard suspended ceilings • Not with StoSilent Coll MW-G gypsum adhesive	
	StoSilent Frame	✓	Calculations required as proof	• Only on solid and concrete covers • Only on gypsum plasterboard suspended ceilings	
	StoSilent Modular 100	✓	✓	x	
	StoSilent Modular 230	✓	✓	on request	
	StoSilent Baffle	✓	✓	As a custom variant with load-bearing construction protected from corrosion	
	StoSilent Sil AP	✓	✓	✓	
	StoSilent Miral AP	✓	✓	Only on solid and concrete covers	
<b>Coating</b>	StoSilent Top Basic	✓	✓	✓	on request
	StoSilent Top Finish	✓	✓	✓	
	StoSilent Decor	✓	✓	✓	
	StoColor Silent	✓	✓	✓	
	StoColor Climasan	✓	✓	✓	

<sup>1)</sup> Fluctuating air temperature as defined by EN 13964. <sup>2)</sup> Fluctuating relative humidity as defined by EN 13964 4.8.2. <sup>3)</sup> Higher temperatures on request. <sup>4)</sup> Limited to 30 °C and 70 % relative humidity for air-conditioned indoor swimming pools.

<sup>5)</sup> Class B includes class A if class A is not listed separately.

## Application fields arranged by ambient interior climate

In interiors, StoSilent systems are primarily used to regulate the room acoustics. Meanwhile, in areas such as shopping arcades and entrances to multi-storey and underground car parks, they dampen noise to create a more peaceful, comfortable environment. The following overview shows which of the systems can be used for the different application fields in exterior and interior areas. StoSilent systems must never be used in ice rinks.

### StoSilent – application fields

Key: ✓ approved x not possible		Application			
Use		Exterior Only on request and with project-related risk assessment			
Use		General building engineering			
Building element	Requirements: Sufficient structural thermal and moisture protection for the relevant building elements	Ceilings of: • Open arcades at ground level • Open shopping arcades  With connection to external air, protected from precipitation and direct weathering	Ceilings of: • Balcony • Access balconies • Loggias • Facades/external walls	Ceilings in underground car parks	Ceilings of: • Entrances to underground car parks • Multi-storey car park • Underground stations
Stress during use	External air conditions	–20 °C to +40 °C and 20 % to 90 % All other conditions: approval on request			
	Condensation/precipitation/splash water	No	No	No	No
	Wind suction load	max. 1.0 kN/m <sup>2</sup>	max. 1.0 kN/m <sup>2</sup>	max. 1.0 kN/m <sup>2</sup>	max. 1.0 kN/m <sup>2</sup>
System	StoSilent Distance	✓ Adjust sub-construction to climatic stress and wind load.	x	✓	✓ Adjust sub-construction to climatic stress and wind load.
	StoSilent Direct	✓ • Only on solid and concrete covers • Only on gypsum plasterboard suspended ceilings • Not with StoSilent Coll MW-G gypsum adhesive	x	✓	✓ • Only on solid and concrete covers • Only on gypsum plasterboard suspended ceilings • Not with StoSilent Coll MW-G gypsum adhesive
	StoSilent Frame	x	x	x	x
	StoSilent Modular 100	✓ Without wind load only	x	x	x
	StoSilent Modular 230	✓ Without wind load only	x	x	x
	StoSilent Baffle	✓ Without wind load only	x	x	x
	StoSilent Sil AP	x	x	x	x
	StoSilent Miral AP	✓	x	✓	✓
	StoSilent Top Basic	✓	✓	✓	✓
	StoSilent Top Finish	x	x	x	x
Coating	StoSilent Decor	✓	x	✓	✓
	StoColor Silent	✓	x	✓	✓
	StoColor Climasan	✓	x	✓	✓



## Technical characteristics

System	StoSilent Distance				
StoSilent carrier board	StoSilent Board 105 C	StoSilent Board 205 C	StoSilent Board 100 S	StoSilent Board 110 S	StoSilent Board 310 F
Degree of absorption <sup>1)</sup>	a <sub>w</sub> up to 0.95	a <sub>w</sub> up to 0.70 (L)	a <sub>w</sub> up to 0.80	a <sub>w</sub> up to 0.80	a <sub>w</sub> up to 0.45 (H)
EN 13501 building material classification	A2-s1, d0	A2-s1, d0	A2-s1, d0	A2-s1, d0	B-s1, d0
Coating Surface	StoSilent Top StoSilent Decor	StoSilent Top StoSilent Decor	StoSilent Top	StoSilent Decor	StoSilent Decor
Coating colour shade	StoSilent Top, limited tintability in accordance with the StoColor System, pastel colour shades StoSilent Decor, tintable in accordance with the StoColor System	StoSilent Top, limited tintability in accordance with the StoColor System, pastel colour shades StoSilent Decor, tintable in accordance with the StoColor System	Limited tintability in accordance with the StoColor System, pastel colour shades	Tintable in accordance with the StoColor System	Tintable in accordance with the StoColor System
Coating texture	StoSilent Top, smooth coating (with ultrafine graining) StoSilent Decor, spray plaster (fine texture)	StoSilent Top, smooth coating (with ultrafine graining) StoSilent Decor, spray plaster (fine texture)	Smooth coating (with ultrafine graining)	Spray plaster (fine texture)	Spray plaster (fine texture)
Coating LRV	StoSilent Top 77 % StoSilent Decor 83 %	StoSilent Top 77 % StoSilent Decor 83 %	77 %	83 %	83 %
Whiteness of coating	StoSilent Top 69 % StoSilent Decor 66 %	StoSilent Top 69 % StoSilent Decor 66 %	69 %	66 %	66 %
Thermal conductivity	0.08 W/(mK)	0.09 W/(mK)	0.09 W/(mK)	0.09 W/(mK)	0.08 W/(mK)
sd value	0.13 m	0.13 m	0.12 m	0.13 m	0.10 m
Minimum bending radius	–	–	–	–	5 m
System thickness***	Approx. 28 mm	Approx. 22 mm	Approx. 28 mm	Approx. 27 mm	Approx. 17 mm
kg/m <sup>2</sup> board	6.7	6.6	6.8	6.9	5.8
kg/m <sup>2</sup> coating (wet)	5.5	5.5	5.5	2.7–3.2	2.7
kg/m <sup>2</sup> coating (dry)	4.1	4.1	4.1	1.8–2.1	1.8
kg/m <sup>2</sup> system board with coating (dry)	10.8	10.7	10.9	8.7–9.0	7.6
Board/formats/weight	1200x625x25 mm	1200x800x19 mm	1200x625x25 mm	1200x625x25 mm	2400x1200x15 mm

<sup>1)</sup> Weighted sound absorption coefficient in accordance with EN ISO 11654.



## Technical characteristics

System	StoSilent Direct			StoSilent Frame
StoSilent carrier board	StoSilent Board MW 100–36 mm	StoSilent Board MW 100–46 mm	StoSilent Board MW 100–66 mm	StoSilent Board R 400
Degree of absorption <sup>1)</sup>	a <sub>w</sub> up to 0.85	a <sub>w</sub> up to 1.00	a <sub>w</sub> up to 1.00	Depending on quantity and arrangement
EN 13501 building material classification	A2-s1, d0	A2-s1, d0	A2-s1, d0	on request
Coating Surface	Seamless: • StoSilent Top • StoSilent Decor Visible joints: • StoSilent Decor • StoColor Climasan • Without coating	Seamless: • StoSilent Top • StoSilent Decor Visible joints: • StoSilent Decor • StoColor Climasan • Without coating	Seamless: • StoSilent Top • StoSilent Decor Visible joints: • StoSilent Decor • StoColor Climasan • Without coating	• Coated at the factory, visible joints
Coating colour shade	Various	Various	Various	Various
Coating texture	Various	Various	Various	–
Coating LRV	Various	Various	Various	Various
Whiteness of coating	Various	Various	Various	–
Thermal conductivity	0.040 W/(mK)	0.040 W/(mK)	0.040 W/(mK)	0.080 W/(mK)
sd value	<0.2 m	<0.2 m	<0.2 m	–
Minimum bending radius	3.0 m, convex 2.5 m, concave	4.0 m, convex 3.0 m, concave	5.0 m, convex 4.0 m, concave	–
System thickness***	Approx. 40 mm	Approx. 50 mm	Approx. 70 mm	Approx. 50 mm
kg/m <sup>2</sup> board	4.7	6.0	7.9	2.6 kg/piece
kg/m <sup>2</sup> coating (wet)	5.2 (Decor), 5.0–5.5 (Top)	5.2 (Decor), 5.0–5.5 (Top)	5.2 (Decor), 5.0–5.5 (Top)	–
kg/m <sup>2</sup> coating (dry)	4.0 (Decor), 3.7–4.1 (Top)	4.0 (Decor), 3.7–4.1 (Top)	4.0 (Decor), 3.7–4.1 (Top)	–
kg/m <sup>2</sup> system without sub-construction (dry)	12.0 (Decor M), 12.0–12.4 (Top)	13.3 (Decor M), 13.3–13.7 (Top)	15.2 (Decor M), 15.2–15.6 (Top)	–
Board/formats/weight	800x600x36 mm	800x600x46 mm	800x600x66 mm	625x310x50

<sup>1)</sup> Weighted sound absorption coefficient in accordance with EN ISO 11654.



## Technical characteristics

System	StoSilent Compact	
StoSilent carrier board	StoSilent Sil AP	StoSilent Miral AP
Degree of absorption <sup>1)</sup>	a <sub>w</sub> up to 0.45 (MH)	a <sub>w</sub> up to 0.50 (MH)
EN 13501 building material classification	C-s1, d0	A2-s1, d0
Surface coating	StoSilent Decor	–
Coating colour shade	Tintable in accordance with the StoColor System	Limited tintability in accordance with the StoColor System
Coating texture	Spray plaster (fine texture)	Heavily textured
Coating LRV	82	80
Whiteness of coating	62 %	44 %
Thermal conductivity	0.048 W/(mK)	0.10 W/(mK)
sd value	0.05–0.06 m	0.01–0.03 m
Minimum bending radius	Depending on substrate	Depending on substrate
System thickness***	Approx. 25 mm	Approx. 15 mm
kg/m <sup>2</sup> coating (wet)	10.0	7.5
kg/m <sup>2</sup> coating (dry)	3.75	4.0

<sup>1)</sup> Weighted sound absorption coefficient in accordance with EN ISO 11654.



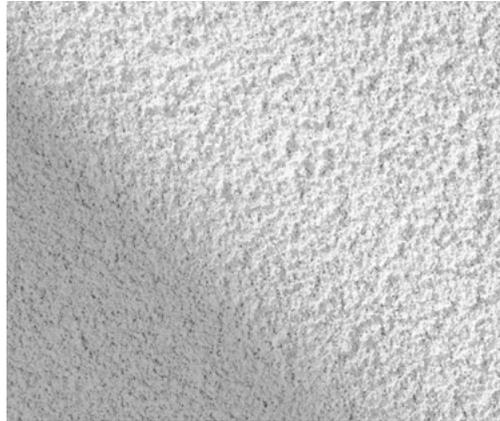
## Technical characteristics

System	Acoustic elements		
	StoSilent Modular 100	StoSilent Modular 230	StoSilent Baffle R 100
<b>Absorption area</b>	Depending on format, suspension height, and arrangement	Depending on format, suspension height, and arrangement	**
<b>EN 13501 building material classification</b>	B-s1, d0 (PET board)	A2-s1, d0 (carrier board), C-s3, d0 (PET nonwoven fibre)	B-s2, d0 up to D-s3, d0 (carrier board, depending on colour shade)
<b>Surface coating</b>	PET nonwoven fibre	Fine-textured paint coat	Colour coating applied at the factory
<b>Coating colour shade</b>	White	Tintable in accordance with the StoColor System	In accordance with the RAL colour chart
<b>Coating texture</b>	Fine, unidirectional fibre structure	Finely textured	
<b>Coating LRV</b>	85	83	Depending on colour
<b>Whiteness of coating</b>	–	–	–
<b>Thermal conductivity</b>	–	–	0.080 W/(mK)
<b>Minimum bending radius</b>	Not possible	Not possible	Not possible
<b>System thickness***</b>	26 mm	Approx. 19 mm	50 mm
<b>Board/formats/weight</b>	1150x750 mm/3.2 kg 1150x1150 mm/4.2 kg 1250x1250 mm/4.6 kg 2350x1150 mm/6.4 kg 3000x1250 mm/8.2 kg	Radius 575 mm/10.0 kg 1150x1150 mm/11.0 kg 2350x750 mm/16.0 kg 2350x1150/23.0 kg	1150mmx310mmx50mm/5.1 kg

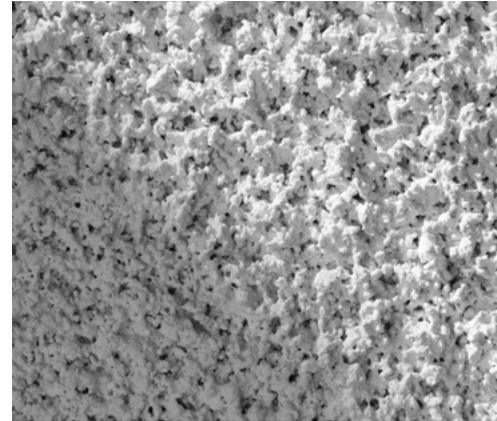


## Surface design

Our StoSilent acoustic systems can be completed with various surface finishes available in the wide colour range in the StoColor System. Nonwoven surfaces or uncoated solutions are available on request.



Silicate acoustic plaster



Mineral acoustic plaster



Organic acoustic plaster



Colour coating



Nonwoven surface



Reapor, coated



## StoSilent colour shades

The StoSilent acoustic systems are supplemented by extensive options for surface design and the wide colour range of the StoColor System.

	White	Limited tintability in accordance with the StoColor System	Tintable in accordance with the StoColor System	RAL colour system
StoSilent Distance with StoSilent Top Basic coating	√	√	√	
StoSilent Distance with StoSilent Top Finish coating	√	√		
StoSilent Distance with StoSilent Decor M coating	√	√		
StoSilent Distance with StoSilent Decor MF coating	√		√	
StoSilent Direct with StoSilent Top Basic coating	√	√		
StoSilent Direct with StoSilent Top Finish coating	√	√		
StoSilent Direct with StoSilent Decor M coating	√	√		
StoSilent Direct with StoSilent Decor MF coating	√		√	
StoSilent Direct with StoColor Silent coating	√			
StoSilent Direct with StoColor Climasan coating	√	√		
StoSilent Direct without coating	√			
StoSilent Frame				√
StoSilent Compact with StoSilent Miral AP coating	√	√		
StoSilent Compact with StoColor Silent coating	√		√	
StoSilent Compact with StoSilent Decor M coating	√	√		
StoSilent Compact with StoSilent Decor MF coating	√		√	
StoSilent Modular 100 (PET nonwoven fibre)	√			
StoSilent Modular 230 (fine-textured colour coating)	√		√	
StoSilent Modular 400 with StoSilent Top Basic coating	√	√		
StoSilent Modular 400 with StoSilent Top Finish coating	√	√		
StoSilent Modular 400 with StoSilent Decor M coating	√	√		
StoSilent Modular 400 with StoSilent Decor MF coating	√		√	
StoSilent Baffle	√			√



## Seals of approval and quality

Alongside recognised building certifications, many architects, investors, and public procurement bodies expect today's building products, particularly for interiors, to achieve high environmental and health standards. Sto therefore provides specific information in order to enable clear, transparent product evaluation. In addition to safety data sheets, Environmental Product Declarations (EPD) and our sustainability data sheets contain all of the relevant facts and figures on the subjects of health and the environment. This makes it easy to see, for example, whether the systems comply with the criteria of key environmental labels such as "natureplus®" or "Oeko-Tex®".

Products and systems	Seals of approval and test procedures							Fire classification in accordance with EN 13501	CE
									
<b>StoSilent Coll MW</b>	A+	–	–	–	–	–	–	Fire classification dependent on use within system	EN 12004
<b>StoSilent Coll MW-G</b>	A+	–	–	–	–	–	–	–	–
<b>StoSilent Decor M</b>	A+	Test standard TM-10 Emulsion-based plasters 06/09	Preservative-free (untinted versions: white and Sto white shades)	Test standard TM-10 Emulsion-based plasters 06/09	–	–	–	–	–
<b>StoSilent Decor MF</b>	A+	–	–	–	–	–	–	Fire classification dependent on use within system	–
<b>StoSilent Filler</b>	A+	–	–	–	–	–	–	–	–
<b>StoSilent Fix</b>	A+	–	–	–	–	–	–	–	EN 13963
<b>StoSilent Plan</b>	A+	–	–	–	–	–	–	–	EN 15824
<b>StoSilent Prep Quarz</b>	A+	–	–	–	–	–	–	–	–
<b>StoSilent Top Basic</b>	A+	–	–	–	–	–	–	–	EN 15824
<b>StoSilent Top Finish</b>	A+	–	–	–	–	–	–	–	EN 15824
<b>StoSilent Board 105 C</b>	A+	–	–	–	–	–	–	A2-s1, d0	EN 13964
<b>StoSilent Board 100 S</b>	A+	–	–	–	–	–	–	A2-s1, d0	EN 13964
<b>StoSilent Board 110 S</b>	A+	–	–	–	–	–	–	A2-s1, d0	EN 13964
<b>StoSilent Board 205 C</b>	A+	–	–	–	–	–	–	A2-s1, d0	EN 13964
<b>StoSilent Board 310 F</b>	A+	–	–	–	–	–	–	B-s1, d0	EN 13964
<b>StoSilent Board MW 100</b>	A+	–	–	–	–	–	–	A2-s1, d0	–
<b>StoSilent Board R 400</b>	A+	–	–	Preservative-free	–	–	–	Fire classification on request	–
<b>StoColl HT</b>	–	–	–	–	EC1 Plus	EC1 Plus	E	–	–





## Seals of approval and test procedures

### Explanations of the seals of approval and test procedures

#### French regulations on the labelling of VOC emissions from building products

LOI n° 2009-967 du 3 août 2009 de programmation relative à la mise en œuvre du Grenelle de l'environnement (1)  
NOR: DEVX0811607L Version consolidée au 17 octobre 2012

All building products as well as decorative and furnishing products to be traded in France must be labelled with an emission classification (A+, A, B, C) on the basis of VOC emission tests in accordance with ISO 16000.



#### Evaluation of emission behaviour and its toxic and environmentally relevant ingredients

TÜV SÜD – “low-emission, tested for harmful substances, and production monitored”  
The product meets the stringent criteria of the TÜV SÜD test standard TM-10 on emulsion-based plasters, edition 06/09. Under normal application conditions, no impairments are to be expected for applicators and users.



#### Sto seal of approval, preservative-free

Tested for harmful substances, resource-friendly, low-emission, and free from preservatives, solvents, and plasticisers. The credentials of the eco-friendly Sto range for use in interiors are confirmed at regular intervals through tests carried out by accredited institutes.



#### Seal of quality for environmentally friendly, healthy, and functional building products and furnishings in Europe

natureplus® is only awarded to construction and accommodation products which contain at least 85 % renewable and/or mineral raw materials. This highlights the sustainable availability and, therefore, future viability of these products. A declaration must also be issued regarding the materials used so that users are better able to classify the product beyond the natureplus® seal of quality.



#### Textiles that have been tested for harmful substances

The Oeko-Tex® standard 100 is an independent testing and certification system for textile raw materials, intermediate products, and end products at all stages of processing. It regulates the analysis of harmful substances which are suspect in the context of human ecology, stipulating scientifically verified limits for the respective substances concerned. Product class I: textiles and textile toys for babies and small children up to the age of three, e.g. underwear, romper suits, bed linen, bedding, stuffed animals.



#### EMICODE® – GEV classification criteria

The EMICODE® seal is awarded to modern, solvent-free, and emission building products. The emissions are subject to extremely strict limits. Emitted VOCs are identified individually and a total figure is calculated. The total amount of emission concentrations determines the TVOC value (= Total volatile organic compounds) or TSVOC value (= Total semivolatiles organic compounds). This value is mandatory for the EMICODE® classification.



#### Fire classification

EN 13501: Fire classification of building products and building elements  
ASTM E84: Standard Test Method for Surface Burning Characteristics of Building Materials

EN 13501

ASTM E84

The building material classes and associated designations are subject to national norms and laws.

#### Compliance with the EU Construction Products Regulation No 305/2011

As a suspended ceiling membrane, the product is covered by EN 13964. Conformity to this standard has been demonstrated in the following respects:

- Reaction to fire in accordance with EN 13501
- Release of asbestos (content)
- Release of formaldehyde
- Sound absorption



## StoSilent overview

System		1 — Carrier layer	2 — Absorber layer	3 — Material layer		System properties		
Category	System name	sub-construction	Acoustically effective layer	Finish	Colour range	Maximum sound absorption $\alpha_w$	Reaction to fire (class)	
Suspended acoustic systems	StoSilent Distance C	Sub-construction at the same level	StoSilent Board 205 C	StoSilent Decor	■ ■	0.70 (L) <sup>1)</sup>	A2-s1, d0	
			Absorber made of expanded glass granulate	StoSilent Top Basic white		0.55		
				StoSilent Top Finish	■	0.65 (L) <sup>1)</sup>		
	StoSilent Distance S	Height offset sub-construction	Absorber made of expanded glass granulate	StoSilent Board 100 S	StoSilent Top Basic white			0.65
				StoSilent Board 110 S	StoSilent Top Finish	■		0.80
	StoSilent Distance F	Curved, height-offset sub-construction	Absorber made of expanded glass granulate	StoSilent Board 310 F	StoSilent Decor	■ ■		0.45 (H)
Bonded acoustic systems	StoSilent Direct	Load-bearing ceiling construction with priming coat	Sandwich panel made of expanded glass granulate and stone wool	Visible joints uncoated		1.00	A2-s1, d0x	
				Visible joints StoColor Climasan	■	0.95		
				Visible joints StoSilent Decor	■ ■	1.00		
				Seamless StoMiral AP	■ ■	0.85		
				Seamless StoSilent Decor	■ ■	0.80		
	Seamless StoSilent Top Basic white		0.75 (single-layer) 0.65 (L) (with intermediate coat)					
StoSilent Frame	Load-bearing ceiling construction with priming coat	Absorber made of sintered expanded glass granulate	StoSilent Board R 400	Colour coating applied at the factory	■ ■	Depending on quantity and arrangement	on request	
Acoustic plaster systems	StoSilent Compact	Load-bearing ceiling construction with priming coat		StoSilent Sil AP with StoSilent Decor	■ ■	0.45 (MH)	C-s1, d0	
				StoSilent Miral AP, StoColor Silent optional	■ ■	0.30 (H) 15 mm 0.50 (MH) 25 mm	A2-s1, d0	
Acoustic elements	StoSilent Modular	Horizontal suspension	StoSilent Modular 100	Uncoated non-woven surface		Depending on format, suspension height, and arrangement	B-s1, d0	
			Absorber element					
	StoSilent Modular 230	Absorber element	Fine-textured colour coating applied at the factory	■ ■	Depending on format, suspension height, and arrangement	A2-s1, d0 (panel) C-s3, d0 (nonwoven fabric)		
	StoSilent Baffle	Vertical suspension	StoSilent R 100	Colour coating applied at the factory	■ ■	Depending on suspension height, quantity, and arrangement	on request	
			Absorber made of sintered expanded glass granulate					

■ ■ excellent ■ good

<sup>1)</sup> With 30 mm insulant layer in accordance with EN 13162 AF<sub>3</sub>

# StoSilent Distance

## Suspended acoustic system for precise, seamless surfaces

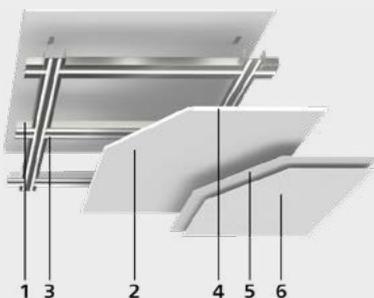
The StoSilent Distance system can be installed either as a suspended ceiling or as a wall covering with a cavity behind it. The sub-construction is made of metal profiles and the acoustic panel consists of expanded glass granulate.

### System advantages

- Low weight
- Also suitable for curved surfaces and vaults
- Conceals the mains utilities
- Available in three versions to suit various requirements

## The system

### Build-up: StoSilent Distance C with StoSilent Decor M



#### Carrier layer

- 1 — Sub-construction
- 3 — Bonding

#### Absorber layer

- 2 — Acoustic panel
- 4 — Edge finish

#### Material layer

- 5 — Intermediate coat
- 6 — Finishing coat

### Material layer options



#### Silicate acoustic plaster

- StoSilent Decor
- Textured surface
- Tintable in accordance with the StoColor System



#### Organic acoustic plaster

- StoSilent Top
- Smooth surface
- Limited tintability in accordance with the StoColor System

### System properties

#### Application

- Interior
- As cavity construction for level wall and ceiling areas
- Not suitable for wall areas which can be reached by hand or which are exposed to other types of mechanical stress
- StoSilent Distance S system version for ventilated wall and ceiling areas
- StoSilent Distance F system version for curved wall and ceiling areas

#### Fixing

- Metal sub-construction in accordance with EN 13964 with vernier hangers

#### Reaction to fire

StoSilent Distance C  
StoSilent Distance S

- Class A2-s1, d0 in accordance with EN 13501-1, non-combustible

StoSilent Distance F

- Class B-s1, d0 in accordance with EN 13501-1, limited combustibility

#### Application

- Complete selection of detail solutions
- Quick and easy installation thanks to light panel weight

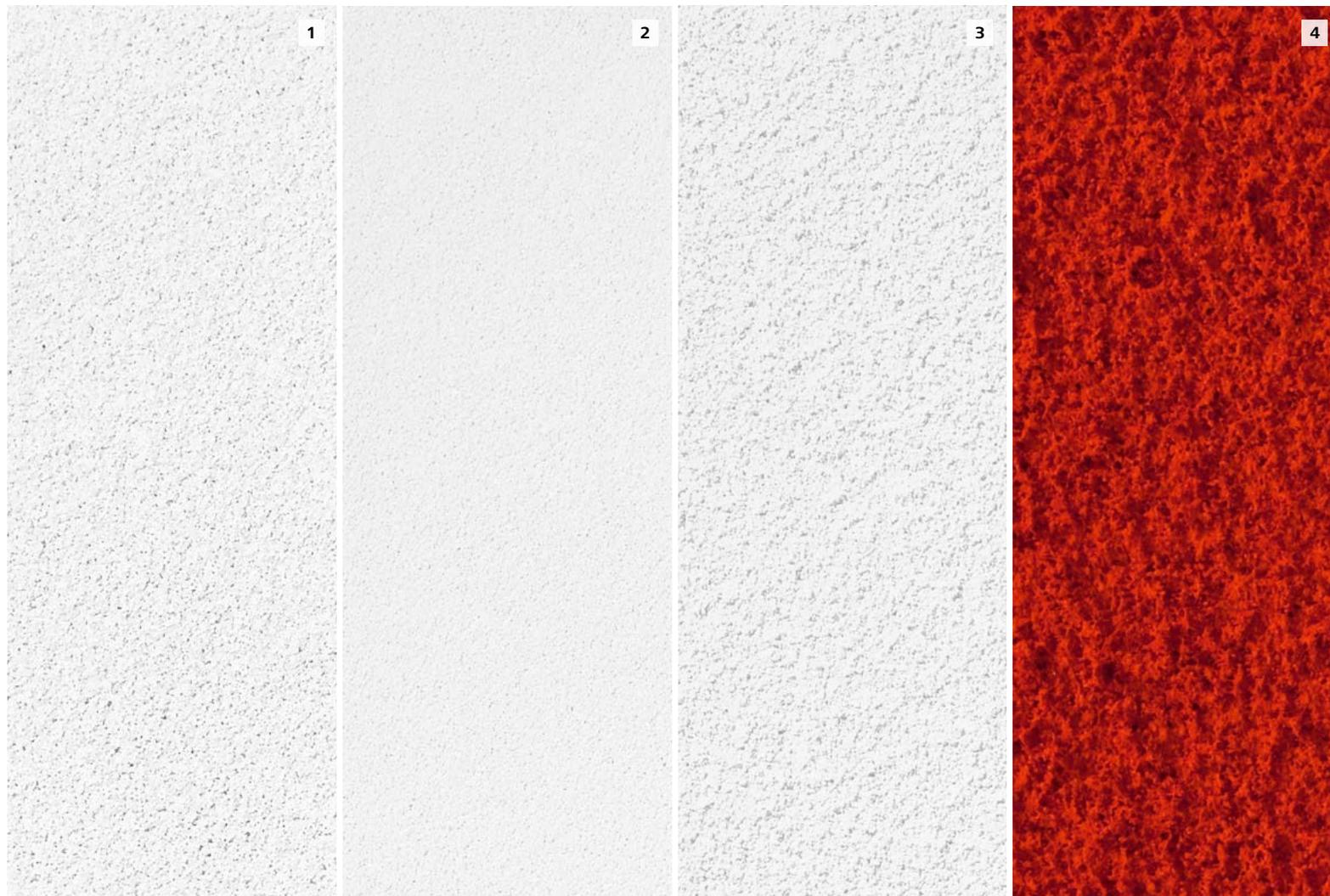


## System versions

System version	StoSilent Distance C	StoSilent Distance S	StoSilent Distance F
sub-construction	Metal sub-construction in accordance with EN 13964 with compression-proof vernier hangers		
	Carrier and transverse profiles at the same level, made from CD profiles and level connectors	Carrier and installation profiles with a height offset, made from CD profiles and cross-connectors	
Sealing	StoSilent Profile Tape		
Fixing	Drywall screw type TMN in accordance with EN 14566		
Adhesive	StoColl HT	Bond board edges and seal cut edges with StoSilent Fix	
Acoustic panel	StoSilent Board 205 C or StoSilent Board 105 C	StoSilent Board 100 S	StoSilent Board 110 S or StoSilent Board 310 F
Filler and levelling coat			Fill joints and screw holes with StoSilent Plan
Intermediate coat	StoSilent Top Basic natural		StoSilent Decor M
Finish	StoSilent Top Basic or StoSilent Top Finish		StoSilent Decor M or StoSilent Decor MF

## Surfaces

- 1 StoSilent Top Basic
- 2 StoSilent Top Finish
- 3 StoSilent Decor M
- 4 StoSilent Decor MF

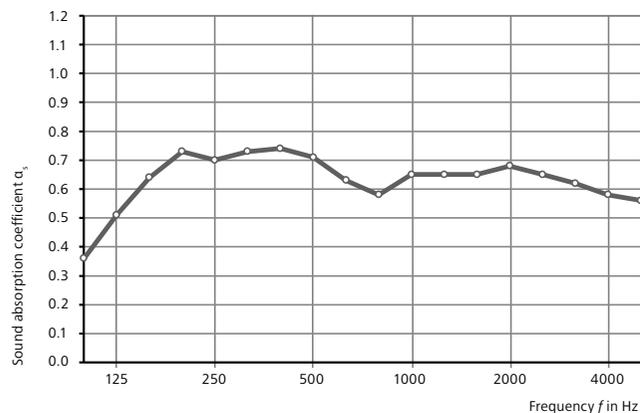




## Seals of approval and quality

Products and systems		Seals of approval and test procedures					
						Fire classification in accordance with EN 13501	
Systems	StoSilent Distance C	–	–	–	–	B-s1, d0	EN 13964
	StoSilent Distance S	–	–	–	–	A2-s1, d0	EN 13964
	StoSilent Distance F	–	–	–	–	B-s1, d0	EN 13964
Products	StoSilent Decor M	A+	Test standard TM-10 Emulsion-based plasters 06/09	Preservative-free (untinted versions: white and Sto white shades)	Test standard TM-10 Emulsion-based plasters 06/09	–	–
	StoSilent Decor MF	A+	–	–	–	Fire classification dependent on use within system	–
	StoSilent Top Basic	A+	–	–	–	–	EN 15824
	StoSilent Top Finish	A+	–	–	–	–	EN 15824
	StoSilent Board 105 C	A+	–	–	–	A2-s1, d0	EN 13964
	StoSilent Board 100 S	A+	–	–	–	A2-s1, d0	EN 13964
	StoSilent Board 110 S	A+	–	–	–	A2-s1, d0	EN 13964
	StoSilent Board 205 C	A+	–	–	–	B-s1, d0	EN 13964
StoSilent Board F	A+	–	–	–	B-s1, d0	EN 13964	

## StoSilent Distance C sound characteristics

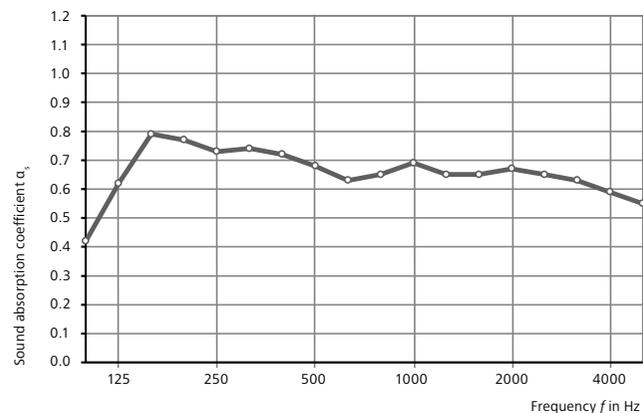


**System:** StoSilent Distance C  
**Build-up:** StoSilent Board 105 C  
**Coating:** StoSilent Top Basic, sprayed & Decor M  
**Thickness:** 25 mm

**Structural**  
**height:** 200 mm  
 $\alpha_w$ : 0.70  
 $\alpha_{p, 125^*}$ : 0.50  
**NRC:** 0.70

Frequency f in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
<b>Third-octave band</b>	0.36	0.73	0.74	0.58	0.65	0.62
<b>Octave band</b>	<b>0.51</b>	<b>0.70</b>	<b>0.71</b>	<b>0.65</b>	<b>0.68</b>	<b>0.58</b>
<b>Third-octave band</b>	0.64	0.73	0.63	0.65	0.65	0.56
$\alpha_p$	0.50	0.70	0.70	0.65	0.65	0.60

Test certificate: 100960\_2020-11-25 HR\_10



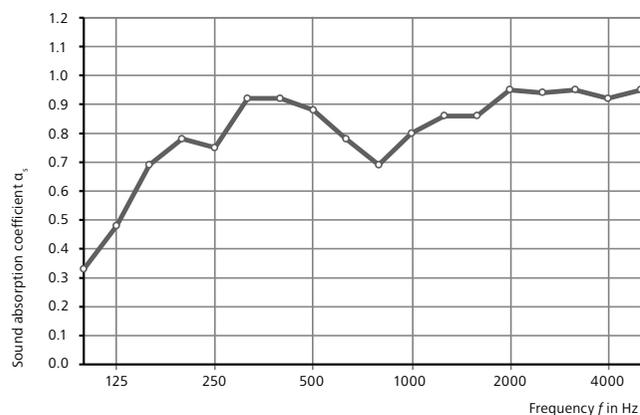
**System:** StoSilent Distance C  
**Build-up:** StoSilent Board 105 C + mineral wool  
**Coating:** StoSilent Top Basic, sprayed & Decor M  
**Thickness:** 25 mm

**Structural**  
**height:** 200 mm  
 $\alpha_w$ : 0.70 (L)  
 $\alpha_{p, 125^*}$ : 0.60  
**NRC:** 0.70

Frequency f in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
<b>Third-octave band</b>	0.42	0.77	0.72	0.65	0.65	0.63
<b>Octave band</b>	<b>0.62</b>	<b>0.73</b>	<b>0.68</b>	<b>0.69</b>	<b>0.67</b>	<b>0.59</b>
<b>Third-octave band</b>	0.79	0.74	0.63	0.65	0.65	0.55
$\alpha_p$	0.60	0.75	0.70	0.65	0.65	0.60

Test certificate: 100960\_2020-11-25 HR\_9

## StoSilent Distance C sound characteristics

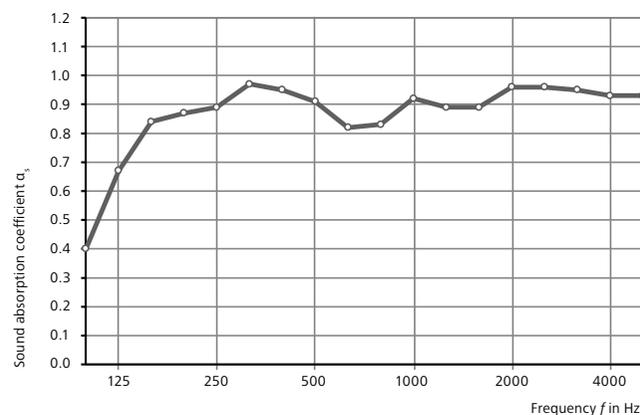


**System:** StoSilent Distance C  
**Build-up:** StoSilent Board 105 C  
**Coating:** StoSilent Top Basic, trowel application & Decor M  
**Thickness:** 25 mm

**Structural height:** 200 mm  
 $\alpha_w$ : 0.85  
 $\alpha_{p, 125}$ : 0.50  
**NRC:** 0.85

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.33	0.78	0.92	0.69	0.86	0.95
Octave band	0.48	0.75	0.88	0.80	0.95	0.92
Third-octave band	0.69	0.92	0.78	0.86	0.94	0.95
$\alpha_p$	0.50	0.80	0.85	0.80	0.90	0.95

Test certificate: 100960\_2021-02-18\_8

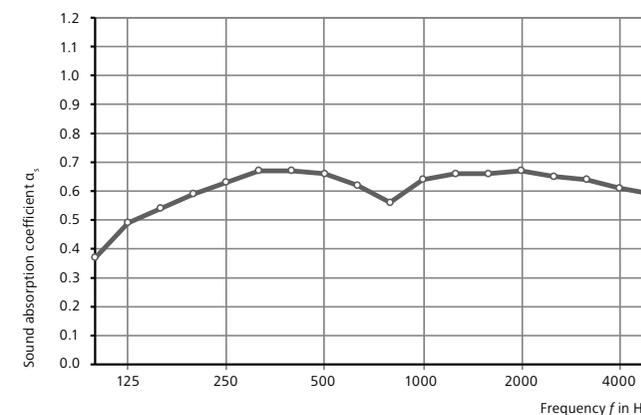


**System:** StoSilent Distance C  
**Build-up:** StoSilent Board 105 C + mineral wool  
**Coating:** StoSilent Top Basic, trowel application & Decor M  
**Thickness:** 25 mm

**Structural height:** 200 mm  
 $\alpha_w$ : 0.95  
 $\alpha_{p, 125}$ : 0.65  
**NRC:** 0.90

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.40	0.87	0.95	0.83	0.89	0.95
Octave band	0.67	0.89	0.91	0.92	0.96	0.93
Third-octave band	0.84	0.97	0.82	0.89	0.96	0.93
$\alpha_p$	0.65	0.90	0.90	0.90	0.95	0.95

Test certificate: 100960\_2021-02-18\_11



**System:** StoSilent Distance C  
**Build-up:** StoSilent Board 105 C  
**Coating:** StoSilent Top Basic, trowel application & Top Basic white  
**Thickness:** 25 mm

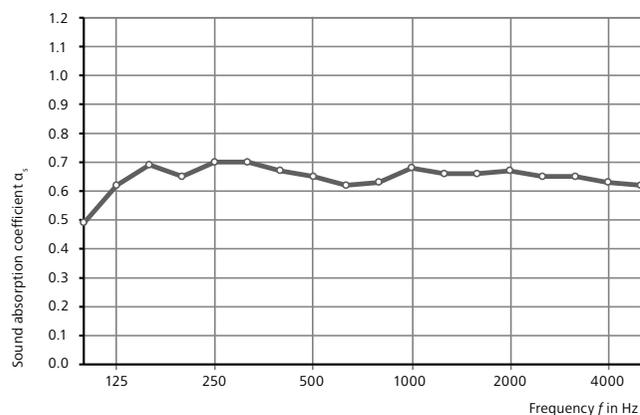
**Structural height:** 200 mm  
 $\alpha_w$ : 0.65  
 $\alpha_{p, 125}$ : 0.45  
**NRC:** 0.65

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.37	0.59	0.67	0.56	0.66	0.64
Octave band	0.49	0.63	0.66	0.64	0.67	0.61
Third-octave band	0.54	0.67	0.62	0.66	0.65	0.59
$\alpha_p$	0.45	0.65	0.65	0.60	0.65	0.60

Test certificate: 100960\_2021-02-18\_9



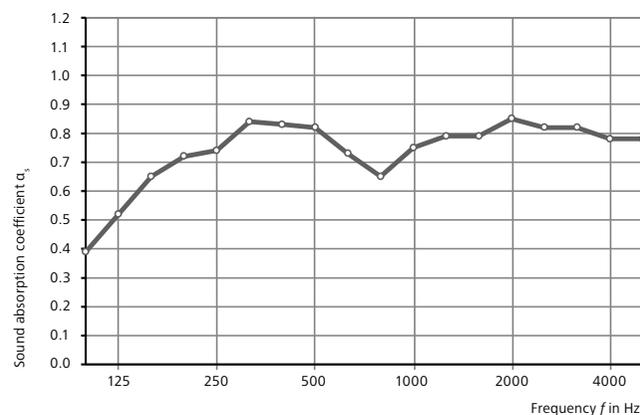
## StoSilent Distance C sound characteristics



**System:** StoSilent Distance C  
**Build-up:** StoSilent Board 105 C + mineral wool  
**Coating:** StoSilent Top Basic, trowel application & Top Basic white  
**Thickness:** 25 mm  
**Structural height:** 200 mm  
 $\alpha_w$ : 0.65 (L)  
 $\alpha_{p, 125}$ : 0.60  
**NRC:** 0.70

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.49	0.65	0.67	0.63	0.66	0.65
Octave band	0.62	0.70	0.65	0.68	0.67	0.63
Third-octave band	0.69	0.70	0.62	0.66	0.65	0.62
$\alpha_p$	0.60	0.70	0.65	0.65	0.65	0.65

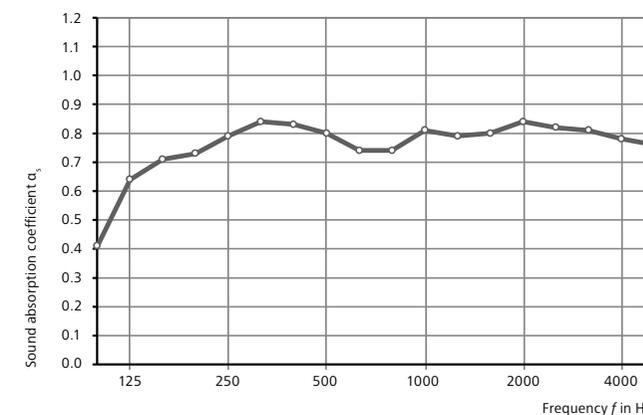
Test certificate: 100960\_2021-02-18\_10



**System:** StoSilent Distance C  
**Build-up:** StoSilent Board 105 C  
**Coating:** StoSilent Top Basic, trowel application & Top Finish  
**Thickness:** 25 mm  
**Structural height:** 200 mm  
 $\alpha_w$ : 0.80  
 $\alpha_{p, 125}$ : 0.50  
**NRC:** 0.80

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.39	0.72	0.83	0.65	0.79	0.82
Octave band	0.52	0.74	0.82	0.75	0.85	0.78
Third-octave band	0.65	0.84	0.73	0.79	0.82	0.78
$\alpha_p$	0.50	0.75	0.80	0.75	0.80	0.80

Test certificate: 100960\_2021-02-18\_7

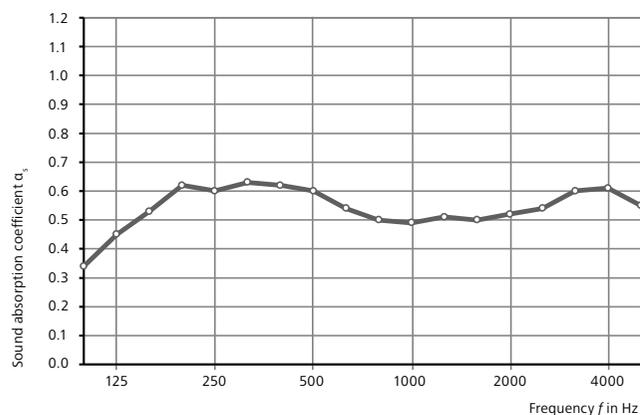


**System:** StoSilent Distance C  
**Build-up:** StoSilent Board 105 C + mineral wool  
**Coating:** StoSilent Top Basic, trowel application & Top Finish  
**Thickness:** 25 mm  
**Structural height:** 200 mm  
 $\alpha_w$ : 0.80  
 $\alpha_{p, 125}$ : 0.60  
**NRC:** 0.80

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.41	0.73	0.83	0.74	0.80	0.81
Octave band	0.64	0.79	0.80	0.81	0.84	0.78
Third-octave band	0.71	0.84	0.74	0.79	0.82	0.76
$\alpha_p$	0.60	0.80	0.80	0.80	0.80	0.80

Test certificate: 100960\_2021-02-18\_12

## StoSilent Distance C sound characteristics

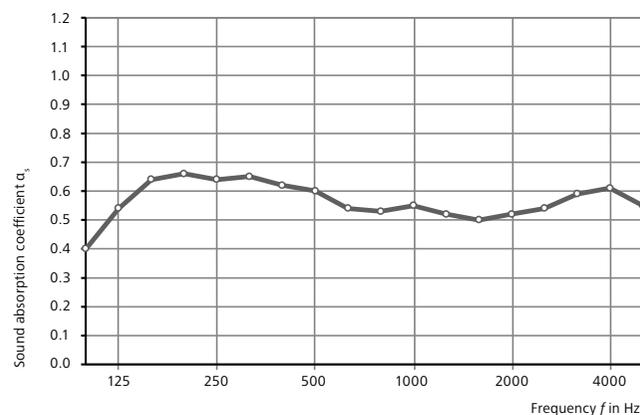


**System:** StoSilent Distance C  
**Build-up:** StoSilent Board 205 C  
**Coating:** StoSilent Top Basic, sprayed & Decor M  
**Thickness:** 19 mm

**Structural height:** 200 mm  
 **$\alpha_w$ :** 0.55 (L)  
 **$\alpha_{p, 125}$ :** 0.45  
**NRC:** 0.55

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.34	0.62	0.62	0.50	0.50	0.60
Octave band	<b>0.45</b>	<b>0.60</b>	<b>0.60</b>	<b>0.49</b>	<b>0.52</b>	<b>0.61</b>
Third-octave band	0.53	0.63	0.54	0.51	0.54	0.55
$\alpha_p$	0.45	0.60	0.60	0.50	0.50	0.60

Test certificate: 100960\_2020-11-25 HR\_3

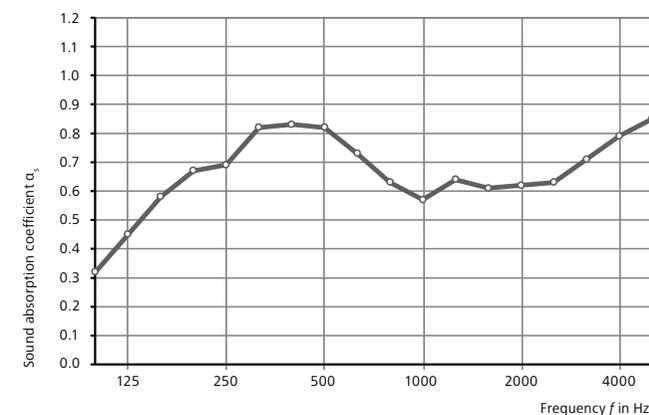


**System:** StoSilent Distance C  
**Build-up:** StoSilent Board 205 C + mineral wool  
**Coating:** StoSilent Top Basic, sprayed & Decor M

**Thickness:** 19 mm  
**Structural height:** 200 mm  
 **$\alpha_w$ :** 0.55 (L)  
 **$\alpha_{p, 125}$ :** 0.55  
**NRC:** 0.60

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.40	0.66	0.62	0.53	0.50	0.59
Octave band	<b>0.54</b>	<b>0.64</b>	<b>0.60</b>	<b>0.55</b>	<b>0.52</b>	<b>0.61</b>
Third-octave band	0.64	0.65	0.54	0.52	0.54	0.55
$\alpha_p$	0.55	0.65	0.60	0.55	0.50	0.60

Test certificate: 100960\_2020-11-25 HR\_6



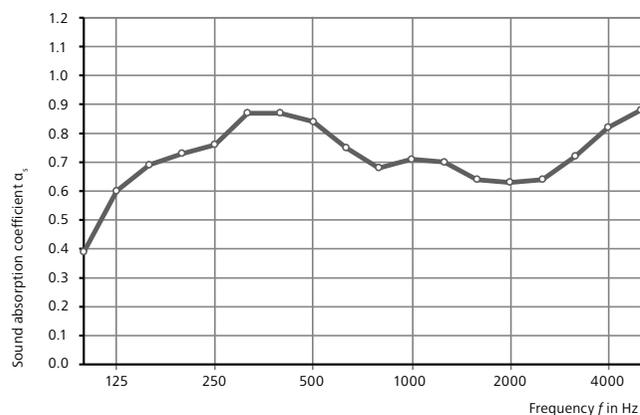
**System:** StoSilent Distance C  
**Build-up:** StoSilent Board 205 C  
**Coating:** StoSilent Top Basic, trowel application & Decor M

**Thickness:** 19 mm  
**Structural height:** 200 mm  
 **$\alpha_w$ :** 0.65 (LH)  
 **$\alpha_{p, 125}$ :** 0.45  
**NRC:** 0.65

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.32	0.67	0.83	0.63	0.61	0.71
Octave band	<b>0.45</b>	<b>0.69</b>	<b>0.82</b>	<b>0.57</b>	<b>0.62</b>	<b>0.79</b>
Third-octave band	0.58	0.82	0.73	0.64	0.63	0.85
$\alpha_p$	0.45	0.75	0.80	0.60	0.60	0.80

Test certificate: 100960\_2021-02-18\_5

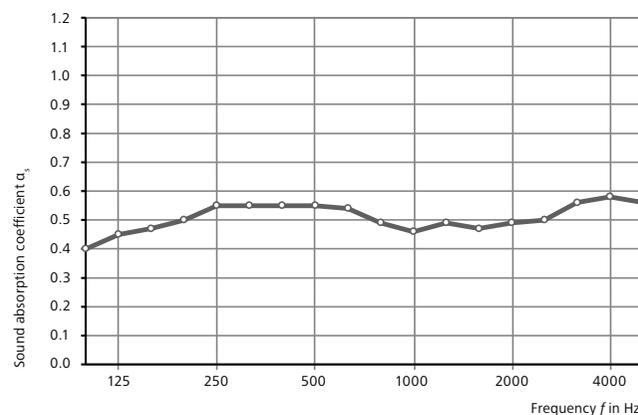
## StoSilent Distance C sound characteristics



**System:** StoSilent Distance C  
**Build-up:** StoSilent Board 205 C + mineral wool  
**Coating:** StoSilent Top Basic, trowel application & Decor M  
**Thickness:** 19 mm  
**Structural height:** 200 mm  
 $\alpha_w$ : 0.70 (L)  
 $\alpha_{p, 125}$ : 0.55  
**NRC:** 0.75

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.39	0.73	0.87	0.68	0.64	0.72
Octave band	<b>0.60</b>	<b>0.76</b>	<b>0.84</b>	<b>0.71</b>	<b>0.63</b>	<b>0.82</b>
Third-octave band	0.69	0.87	0.75	0.70	0.64	0.88
$\alpha_p$	0.55	0.80	0.80	0.70	0.65	0.80

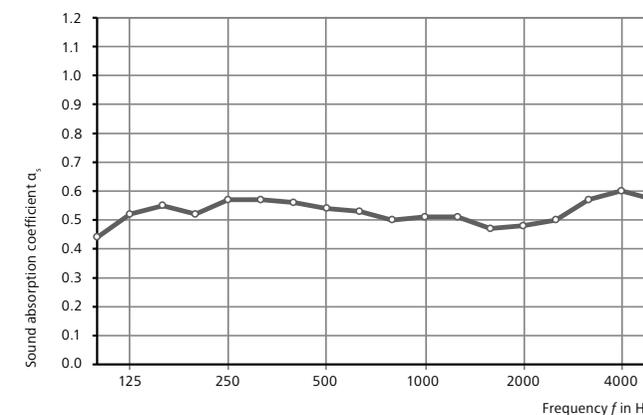
Test certificate: 100960\_2021-02-18\_2



**System:** StoSilent Distance C  
**Build-up:** StoSilent Board 205 C  
**Coating:** StoSilent Top Basic, trowel application & Top Basic white  
**Thickness:** 19 mm  
**Structural height:** 200 mm  
 $\alpha_w$ : 0.55  
 $\alpha_{p, 125}$ : 0.45  
**NRC:** 0.50

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.40	0.50	0.55	0.49	0.47	0.56
Octave band	<b>0.45</b>	<b>0.55</b>	<b>0.55</b>	<b>0.46</b>	<b>0.49</b>	<b>0.58</b>
Third-octave band	0.47	0.55	0.54	0.49	0.50	0.56
$\alpha_p$	0.45	0.55	0.55	0.50	0.50	0.55

Test certificate: 100960\_2021-02-18\_4

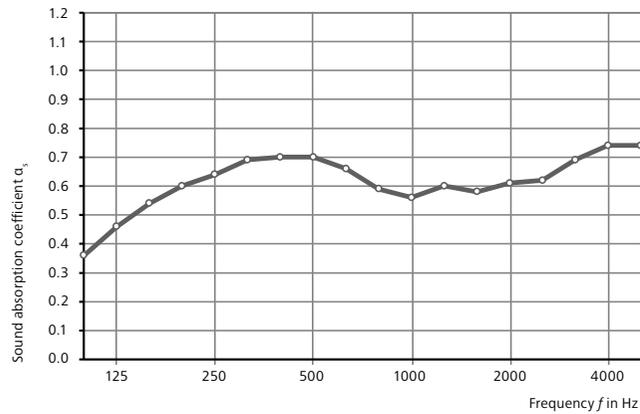


**System:** StoSilent Distance C  
**Build-up:** StoSilent Board 205 C + mineral wool  
**Coating:** StoSilent Top Basic, trowel application & Top Basic white  
**Thickness:** 19 mm  
**Structural height:** 200 mm  
 $\alpha_w$ : 0.55  
 $\alpha_{p, 125}$ : 0.50  
**NRC:** 0.55

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.44	0.52	0.56	0.50	0.47	0.57
Octave band	<b>0.52</b>	<b>0.57</b>	<b>0.54</b>	<b>0.51</b>	<b>0.48</b>	<b>0.60</b>
Third-octave band	0.55	0.57	0.53	0.51	0.50	0.57
$\alpha_p$	0.50	0.55	0.55	0.50	0.50	0.60

Test certificate: 100960\_2021-02-18\_3

## StoSilent Distance C sound characteristics

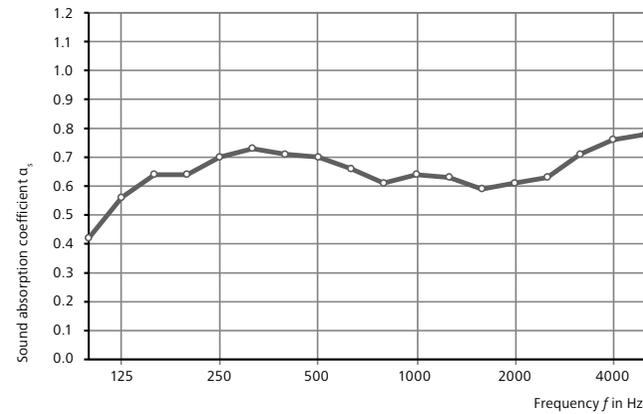


**System:** StoSilent Distance C  
**Build-up:** StoSilent Board 205 C  
**Coating:** StoSilent Top Basic, trowel application & Top Finish

**Thickness:** 19 mm  
**Structural height:** 200 mm  
 $\alpha_w$ : 0.65  
 $\alpha_{p,125}$ : 0.45  
**NRC:** 0.65

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
<b>Third-octave band</b>	0.36	0.60	0.70	0.59	0.58	0.69
<b>Octave band</b>	<b>0.46</b>	<b>0.64</b>	<b>0.70</b>	<b>0.56</b>	<b>0.61</b>	<b>0.74</b>
<b>Third-octave band</b>	0.54	0.69	0.66	0.60	0.62	0.74
$\alpha_p$	0.45	0.65	0.70	0.60	0.60	0.70

Test certificate: 100960\_2021-02-18\_6



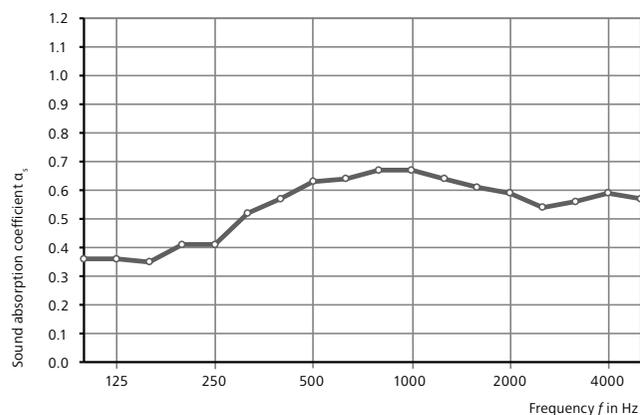
**System:** StoSilent Distance C  
**Build-up:** StoSilent Board 205 C + mineral wool  
**Coating:** StoSilent Top Basic, trowel application & Top Finish

**Thickness:** 19 mm  
**Structural height:** 200 mm  
 $\alpha_w$ : 0.65 (L)  
 $\alpha_{p,125}$ : 0.55  
**NRC:** 0.65

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
<b>Third-octave band</b>	0.42	0.64	0.71	0.61	0.59	0.71
<b>Octave band</b>	<b>0.56</b>	<b>0.70</b>	<b>0.70</b>	<b>0.64</b>	<b>0.61</b>	<b>0.76</b>
<b>Third-octave band</b>	0.64	0.73	0.66	0.63	0.63	0.78
$\alpha_p$	0.55	0.70	0.70	0.65	0.60	0.75

Test certificate: 100960\_2021-02-18\_1

## StoSilent Distance S sound characteristics

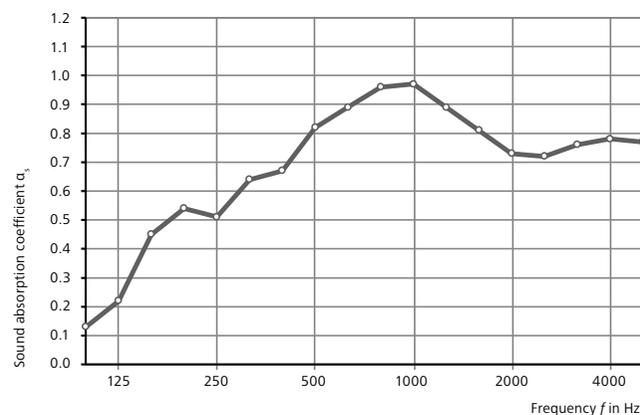


**System:** StoSilent Distance S  
**Build-up:** StoSilent Board 100 S  
**Coating:** StoSilent Top Basic & Top Basic white  
**Thickness:** 25 mm

**Structural height:** 200 mm  
 **$\alpha_w$ :** 0.65  
 **$\alpha_{p, 125}$ :** 0.35  
**NRC:** 0.60

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.36	0.41	0.57	0.67	0.61	0.56
Octave band	<b>0.36</b>	<b>0.41</b>	<b>0.63</b>	<b>0.67</b>	<b>0.59</b>	<b>0.59</b>
Third-octave band	0.35	0.52	0.64	0.64	0.54	0.57
$\alpha_p$	0.35	0.45	0.60	0.65	0.60	0.55

Test certificate: 100960\_2017-03-20\_9

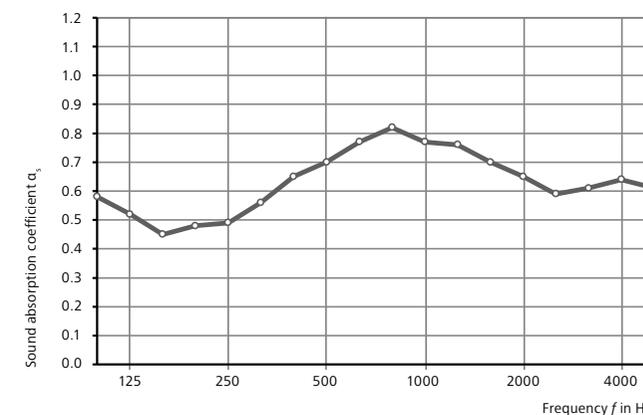


**System:** StoSilent Distance S  
**Build-up:** StoSilent Board 100 S  
**Coating:** StoSilent Top Basic & Finish  
**Thickness:** 25 mm

**Structural height:** 55 mm  
 **$\alpha_w$ :** 0.80  
 **$\alpha_{p, 125}$ :** 0.25  
**NRC:** 0.75

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.13	0.54	0.67	0.96	0.81	0.76
Octave band	<b>0.22</b>	<b>0.51</b>	<b>0.82</b>	<b>0.97</b>	<b>0.73</b>	<b>0.78</b>
Third-octave band	0.45	0.64	0.89	0.89	0.72	0.77
$\alpha_p$	0.25	0.55	0.80	0.95	0.75	0.75

Test certificate: 129900\_35120\_73-VersionNEW-2014\_8

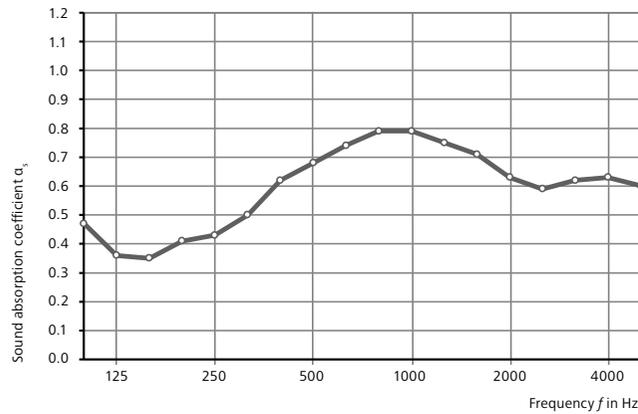


**System:** StoSilent Distance S  
**Build-up:** StoSilent Board 100 S + mineral wool  
**Coating:** StoSilent Top Basic & Finish  
**Thickness:** 25 mm  
**Structural height:** 55 mm  
 **$\alpha_w$ :** 0.70  
 **$\alpha_{p, 125}$ :** 0.50  
**NRC:** 0.65

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.58	0.48	0.65	0.82	0.70	0.61
Octave band	<b>0.52</b>	<b>0.49</b>	<b>0.70</b>	<b>0.77</b>	<b>0.65</b>	<b>0.64</b>
Third-octave band	0.45	0.56	0.77	0.76	0.59	0.61
$\alpha_p$	0.50	0.50	0.70	0.80	0.65	0.60

Test certificate: 129900\_35120-96\_1

## StoSilent Distance S sound characteristics

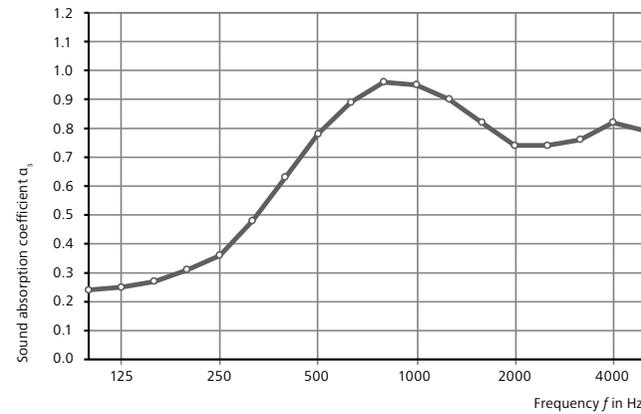


**System:** StoSilent Distance S  
**Build-up:** StoSilent Board 100 S  
**Coating:** StoSilent Top Basic & Finish  
**Thickness:** 25 mm

**Structural**  
**height:** 125 mm  
 $\alpha_w$ : 0.70  
 $\alpha_{p, 125^2}$ : 0.40  
**NRC:** 0.65

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.47	0.41	0.62	0.79	0.71	0.62
Octave band	0.36	0.43	0.68	0.79	0.63	0.63
Third-octave band	0.35	0.50	0.74	0.75	0.59	0.60
$\alpha_p$	0.40	0.45	0.70	0.80	0.65	0.60

Test certificate: 129900\_35120-96\_10

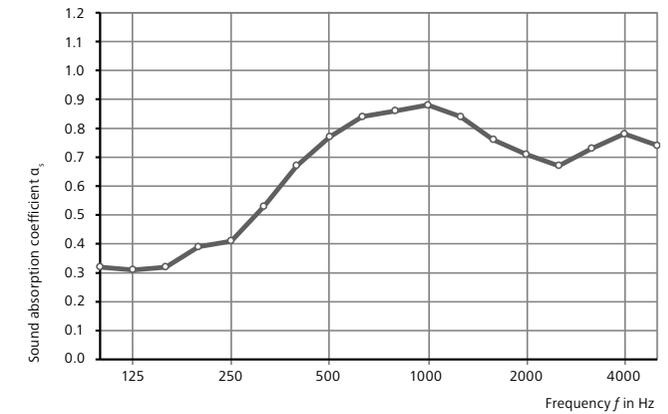


**System:** StoSilent Distance S  
**Build-up:** StoSilent Board 100 S  
**Coating:** StoSilent Top Basic & Finish  
**Thickness:** 25 mm

**Structural**  
**height:** 270 mm  
 $\alpha_w$ : 0.70 (M)  
 $\alpha_{p, 125^2}$ : 0.25  
**NRC:** 0.70

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.24	0.31	0.63	0.96	0.82	0.76
Octave band	0.25	0.36	0.78	0.95	0.74	0.82
Third-octave band	0.27	0.48	0.89	0.90	0.74	0.79
$\alpha_p$	0.25	0.40	0.75	0.95	0.75	0.80

Test certificate: 129900\_35120\_73-VersionNEW-2014\_5



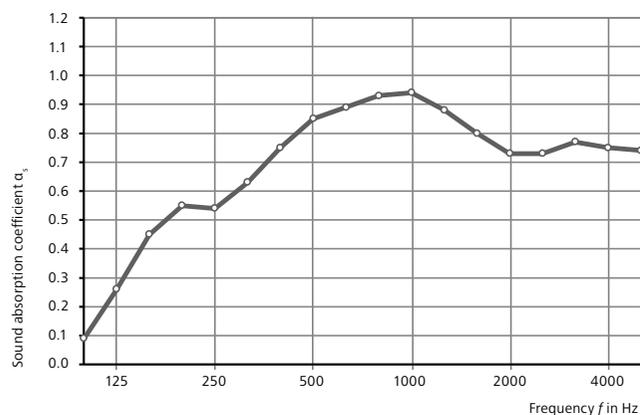
**System:** StoSilent Distance S  
**Build-up:** StoSilent Board 100 S  
**Coating:** StoSilent Top Basic & Finish, tinted black  
**Thickness:** 25 mm

**Structural**  
**height:** 200 mm  
 $\alpha_w$ : 0.70  
 $\alpha_{p, 125^2}$ : 0.30  
**NRC:** 0.70

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.32	0.39	0.67	0.86	0.76	0.73
Octave band	0.31	0.41	0.77	0.88	0.71	0.78
Third-octave band	0.32	0.53	0.84	0.84	0.67	0.74
$\alpha_p$	0.30	0.45	0.75	0.85	0.70	0.75

Test certificate: 100960\_2017-03-20\_10

## StoSilent Distance S sound characteristics

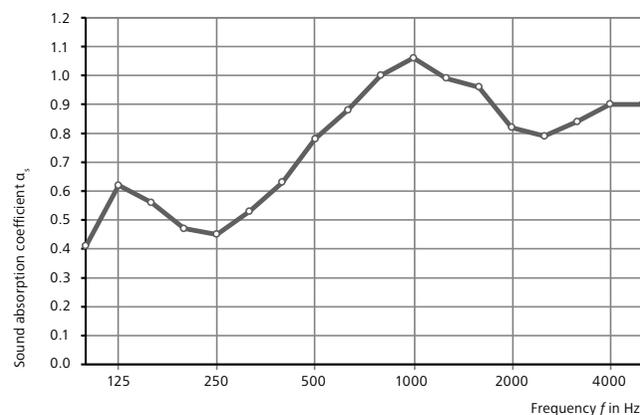


**System:** StoSilent Distance S  
**Build-up:** StoSilent Board 110 S  
**Coating:** StoSilent Decor M  
**Thickness:** 25 mm

**Structural height:** 55 mm  
 **$\alpha_w$ :** 0.80  
 **$\alpha_{p, 125^2}$ :** 0.25  
**NRC:** 0.75

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.09	0.55	0.75	0.93	0.80	0.77
Octave band	0.26	0.54	0.85	0.94	0.73	0.75
Third-octave band	0.45	0.63	0.89	0.88	0.73	0.74
$\alpha_p$	0.25	0.55	0.85	0.90	0.75	0.75

Test certificate: 129900\_35120\_81-VersionNEW-2014\_1

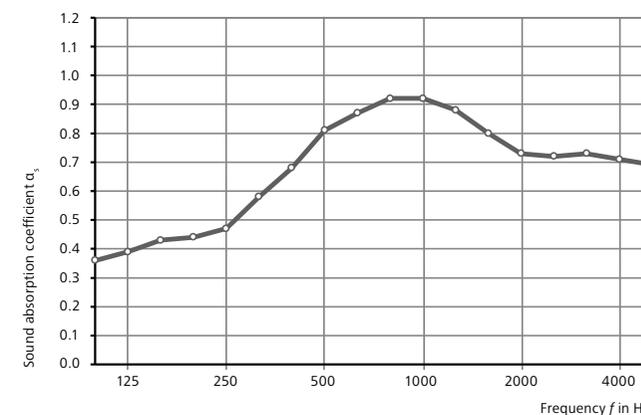


**System:** StoSilent Distance S  
**Build-up:** StoSilent Board 110 S  
+ mineral wool  
**Coating:** StoSilent Decor M  
**Thickness:** 25 mm

**Structural height:** 55 mm  
 **$\alpha_w$ :** 0.75 (MH)  
 **$\alpha_{p, 125^2}$ :** 0.55  
**NRC:** 0.80

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.41	0.47	0.63	1.00	0.96	0.84
Octave band	0.62	0.45	0.78	1.06	0.82	0.90
Third-octave band	0.56	0.53	0.88	0.99	0.79	0.90
$\alpha_p$	0.55	0.50	0.75	1.00	0.85	0.90

Test certificate: 129900\_35120-93\_2



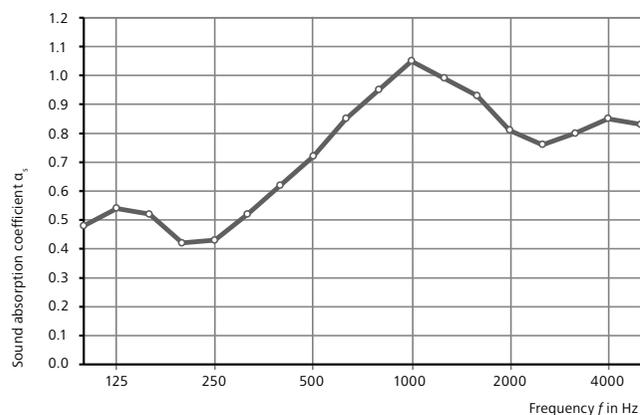
**System:** StoSilent Distance S  
**Build-up:** StoSilent Board 110 S  
**Coating:** StoSilent Decor M  
**Thickness:** 25 mm

**Structural height:** 125 mm  
 **$\alpha_w$ :** 0.75  
 **$\alpha_{p, 125^2}$ :** 0.40  
**NRC:** 0.75

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.36	0.44	0.68	0.92	0.80	0.73
Octave band	0.39	0.47	0.81	0.92	0.73	0.71
Third-octave band	0.43	0.58	0.87	0.88	0.72	0.69
$\alpha_p$	0.40	0.50	0.80	0.90	0.75	0.70

Test certificate: 129900\_35120\_81-VersionNEW-2014\_2

## StoSilent Distance S sound characteristics

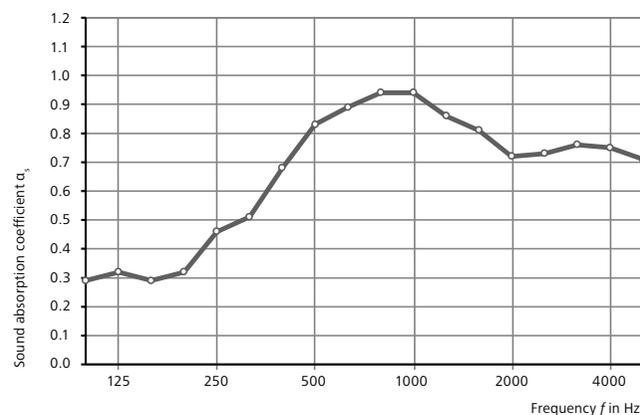


**System:** StoSilent Distance S  
**Build-up:** StoSilent Board 110 S + mineral wool  
**Coating:** StoSilent Decor M  
**Thickness:** 25 mm

**Structural**  
**height:** 125 mm  
 $\alpha_w$ : 0.75 (M)  
 $\alpha_{p, 125^2}$ : 0.50  
**NRC:** 0.75

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.48	0.42	0.62	0.95	0.93	0.80
Octave band	0.54	0.43	0.72	1.05	0.81	0.85
Third-octave band	0.52	0.52	0.85	0.99	0.76	0.83
$\alpha_p$	0.50	0.45	0.75	1.00	0.85	0.85

Test certificate: 129900\_35120-93\_6

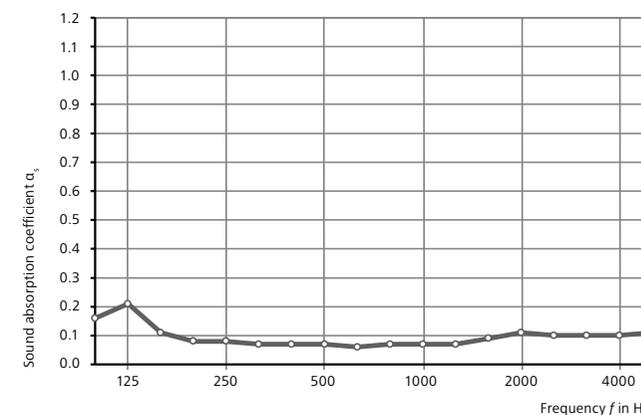


**System:** StoSilent Distance S  
**Build-up:** StoSilent Board 110 S  
**Coating:** StoSilent Decor M  
**Thickness:** 25 mm

**Structural**  
**height:** 270 mm  
 $\alpha_w$ : 0.75  
 $\alpha_{p, 125^2}$ : 0.30  
**NRC:** 0.75

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.29	0.32	0.68	0.94	0.81	0.76
Octave band	0.32	0.46	0.83	0.94	0.72	0.75
Third-octave band	0.29	0.51	0.89	0.86	0.73	0.71
$\alpha_p$	0.30	0.45	0.80	0.90	0.75	0.75

Test certificate: 129900\_35120\_81-VersionNEW-2014\_3



**System:** StoSilent Distance S  
**Build-up:** StoSilent Board 110 S, filled (reflective)  
**Coating:** StoSilent Decor M  
**Thickness:** 25 mm

**Structural**  
**height:** 270 mm  
 $\alpha_w$ : 0.10  
 $\alpha_{p, 125^2}$ : 0.15  
**NRC:** 0.10

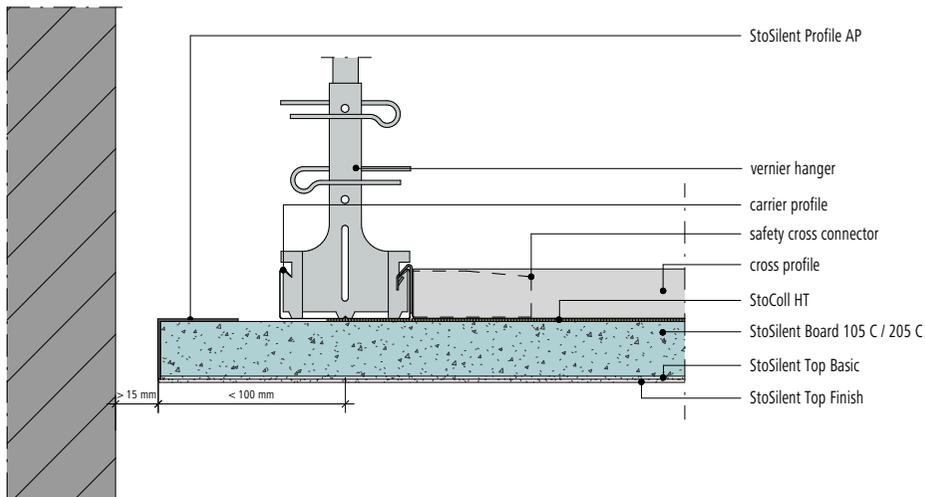
Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.16	0.08	0.07	0.07	0.09	0.10
Octave band	0.21	0.08	0.07	0.07	0.11	0.10
Third-octave band	0.11	0.07	0.06	0.07	0.10	0.11
$\alpha_p$	0.15	0.10	0.05	0.05	0.10	0.10

Test certificate: 129900\_35120\_92-VersionNEW-2014\_2

## StoSilent Distance C construction details

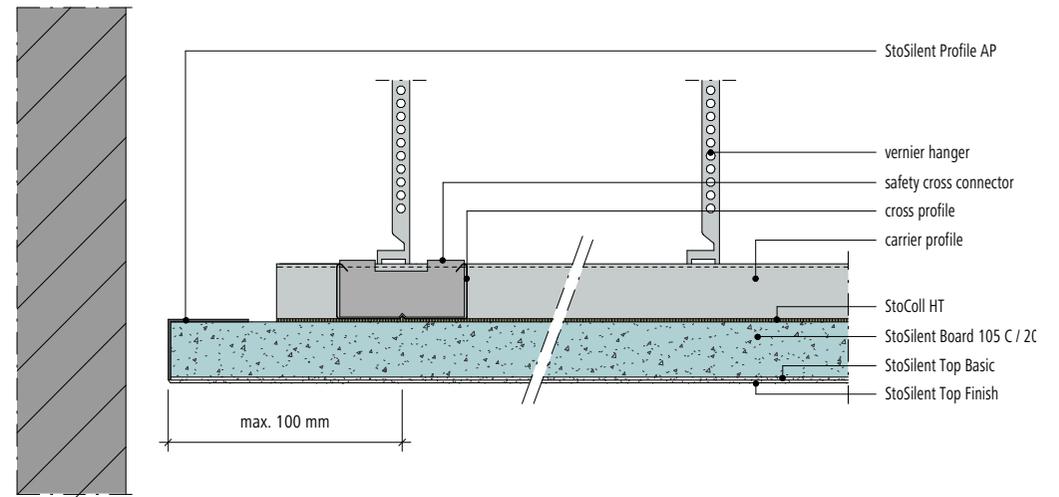
### Ceiling (vertical section): open wall junction

Sto-HQ-EN\_SSDI C-BT-0100\_2020-09-01



### Ceiling (vertical section): open wall junction

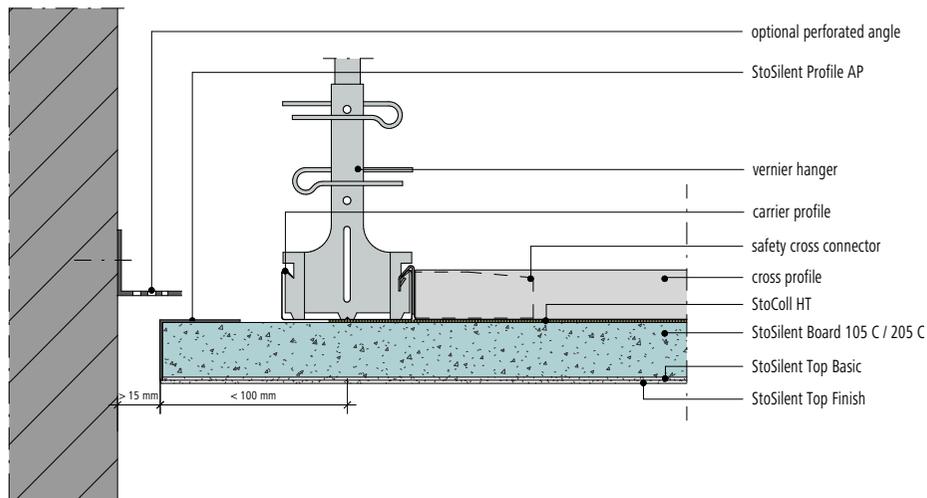
Sto-HQ-EN\_SSDI C-BT-0105\_2020-09-01



## StoSilent Distance C construction details

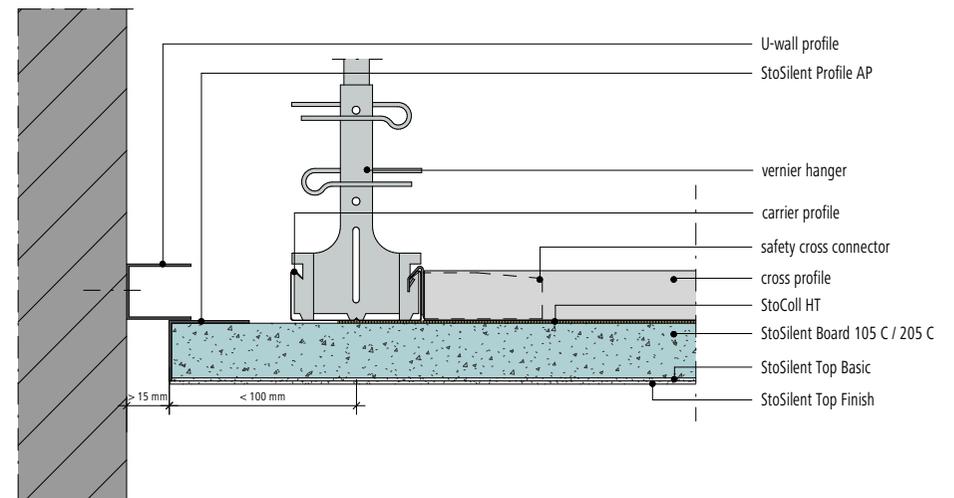
### Ceiling (vertical section): wall junction with perforated angle bracket

Sto-HQ-EN\_SSDI C-BT-0110\_2020-09-01



### Ceiling (vertical section): wall junction with U-wall profile

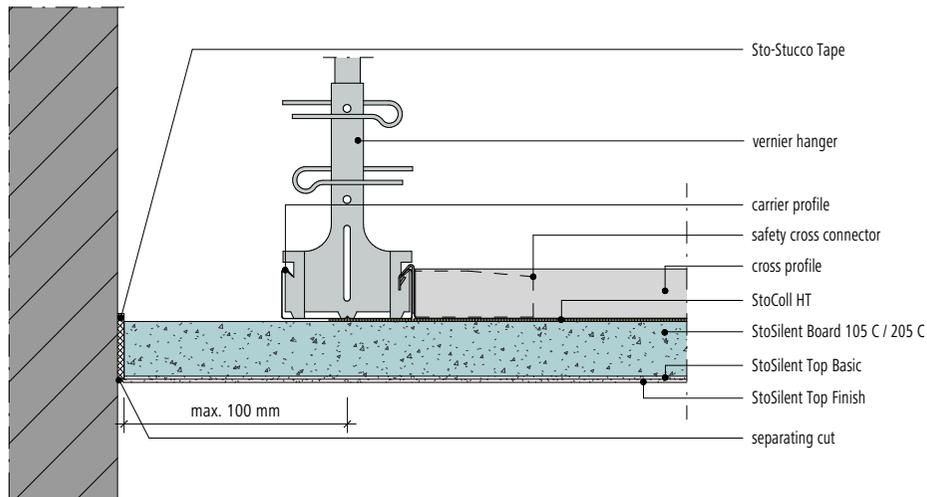
Sto-HQ-EN\_SSDI C-BT-0112\_2020-09-01



## StoSilent Distance C construction details

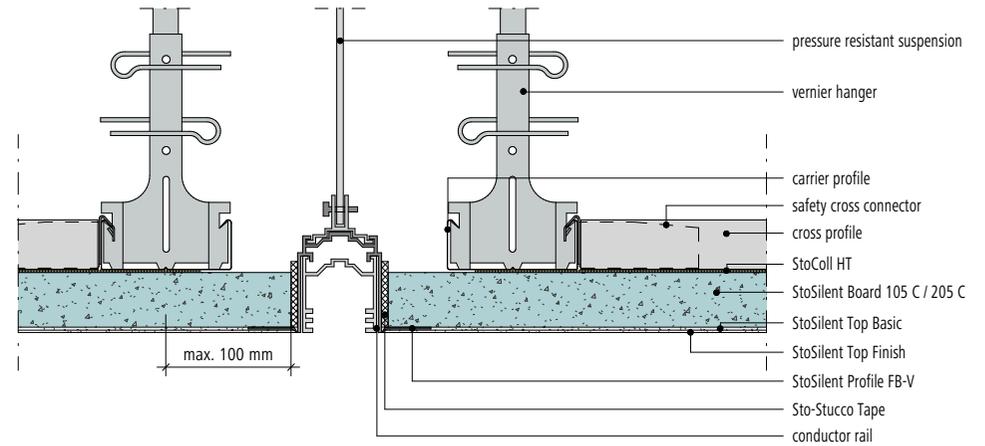
### Ceiling (vertical section): wall junction with Sto-Stucco Tape

Sto-HQ-EN\_SSDI C-BT-0115\_2020-09-01



### Ceiling (vertical section): installation of a busbar

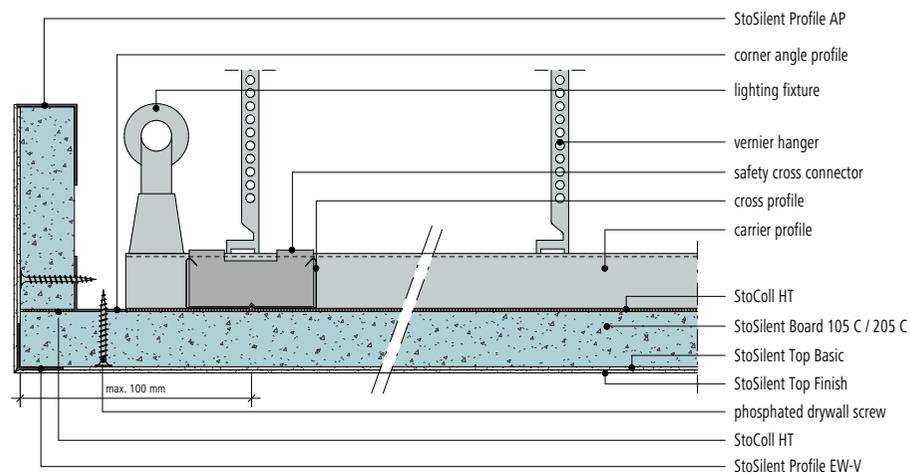
Sto-HQ-EN\_SSDI C-BT-0150\_2021-03-01



## StoSilent Distance C construction details

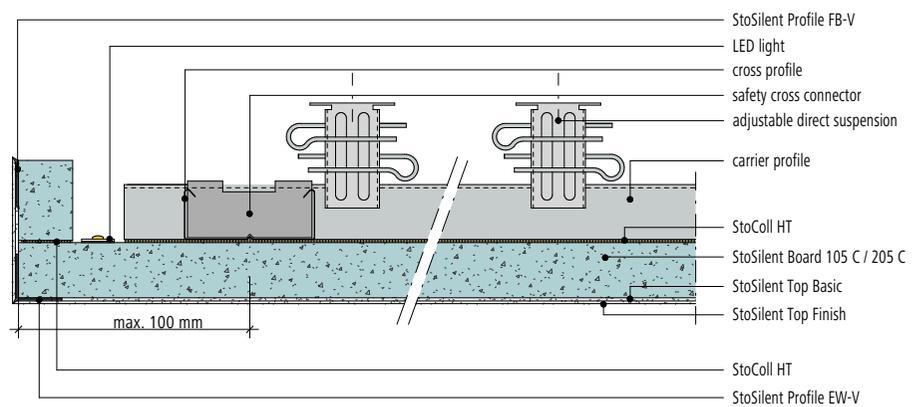
### Ceiling (vertical section): projection with upstanding edge and load with StoSilent profile EW-V

Sto-HQ-EN\_SSDI C-BT-0160\_2021-03-01



### Ceiling (vertical section): projection with upstanding edge and passive lighting

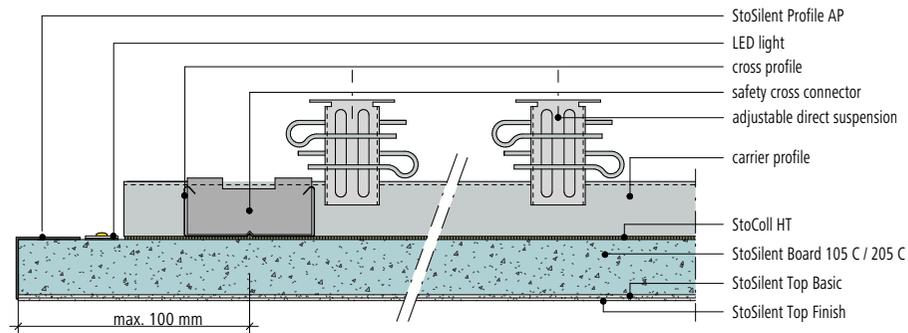
Sto-HQ-EN\_SSDI C-BT-0165\_2021-03-01



## StoSilent Distance C construction details

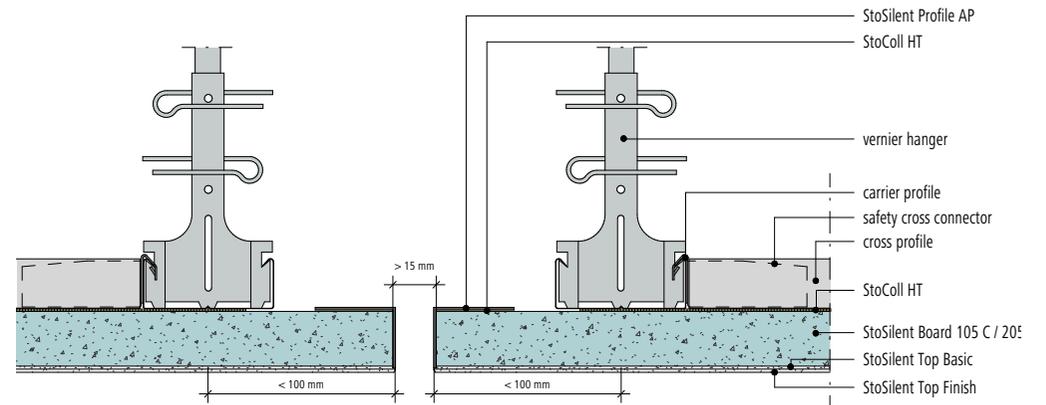
### Ceiling (vertical section): projection with passive lighting without upstanding edge

Sto-HQ-EN\_SSDI C-BT-0170\_2021-03-01



### Ceiling (vertical section): expansion joint formation

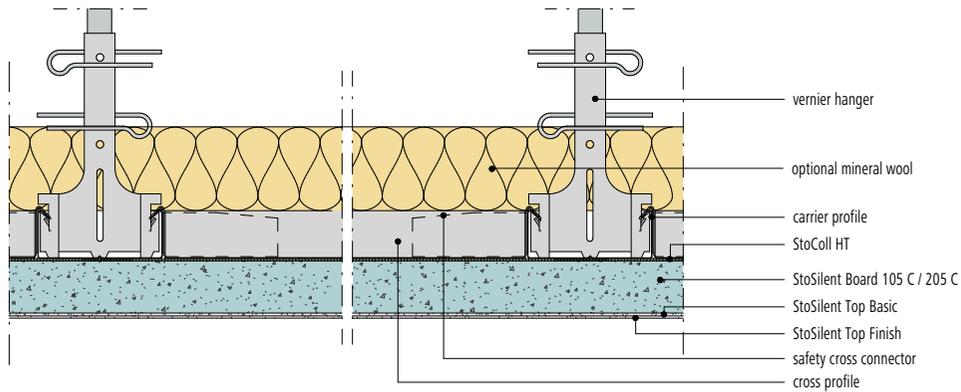
Sto-HQ-EN\_SSDI C-BT-0220\_2020-09-01



## StoSilent Distance C construction details

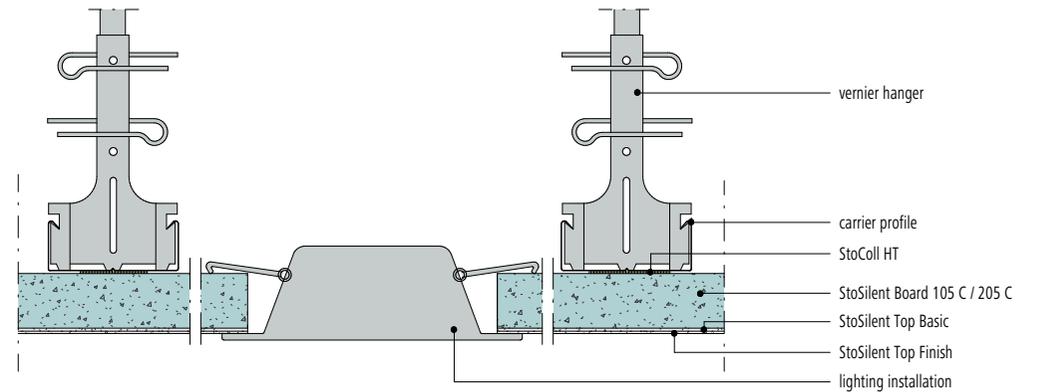
### Ceiling (vertical section): system build-up with deposited mineral wool

Sto-HQ-EN\_SSDI C-BT-0300\_2021-03-01



### Ceiling (vertical section): installation of lamps

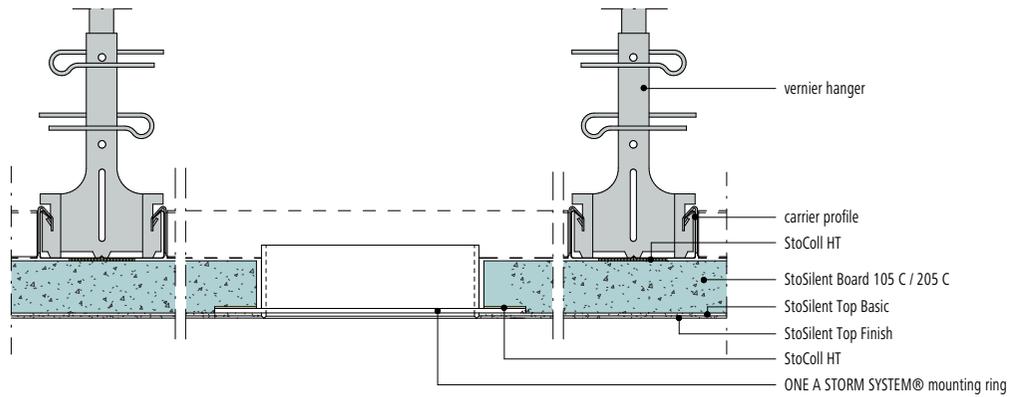
Sto-HQ-EN\_SSDI C-BT-0610\_2021-03-01



## StoSilent Distance C construction details

### Ceiling (vertical section): installation of lamps with ONE A STORM SYSTEM® mounting ring

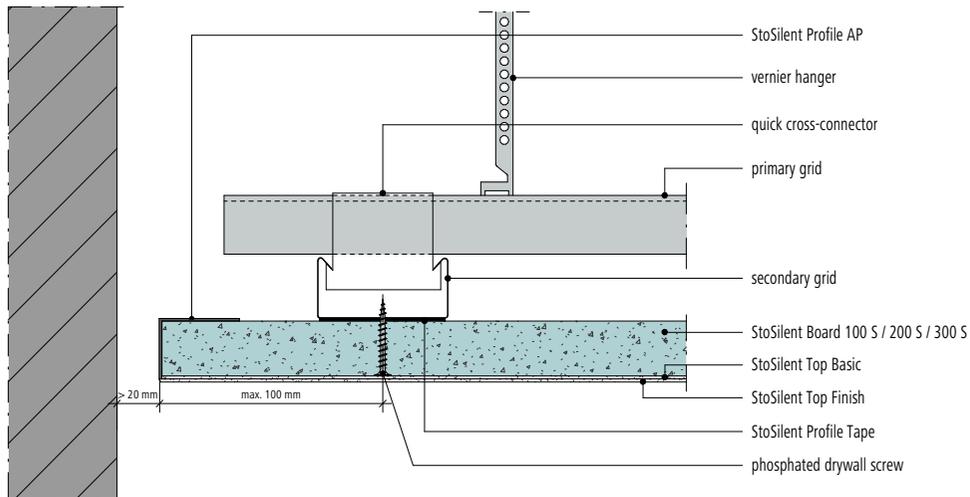
Sto-HQ-EN\_SSDI C-BT-0611\_2021-03-01



# StoSilent Distance S construction details

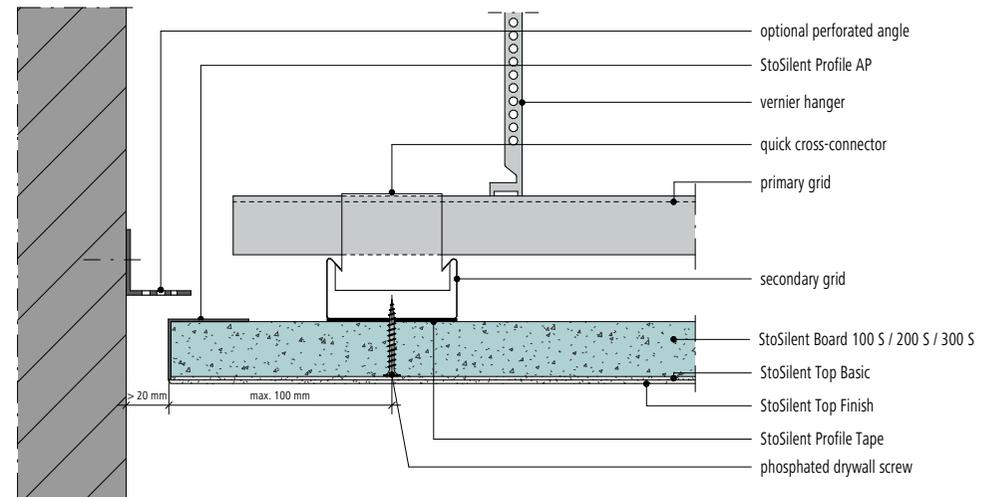
## Ceiling (vertical section): open wall junction

Sto-HQ-EN\_SSDI S-BT-0100\_2021-03-01



## Ceiling (vertical section): wall junction with perforated angle bracket

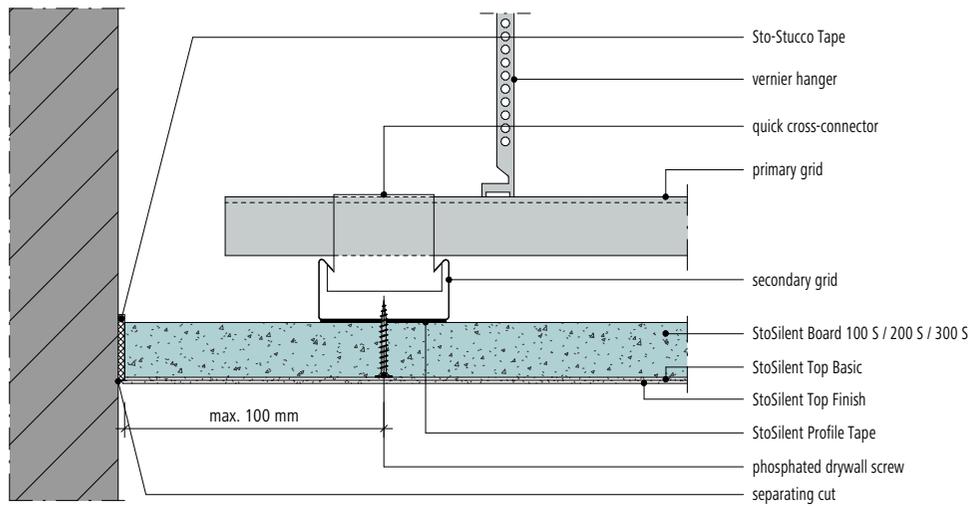
Sto-HQ-EN\_SSDI S-BT-0110\_2021-03-01



## StoSilent Distance S construction details

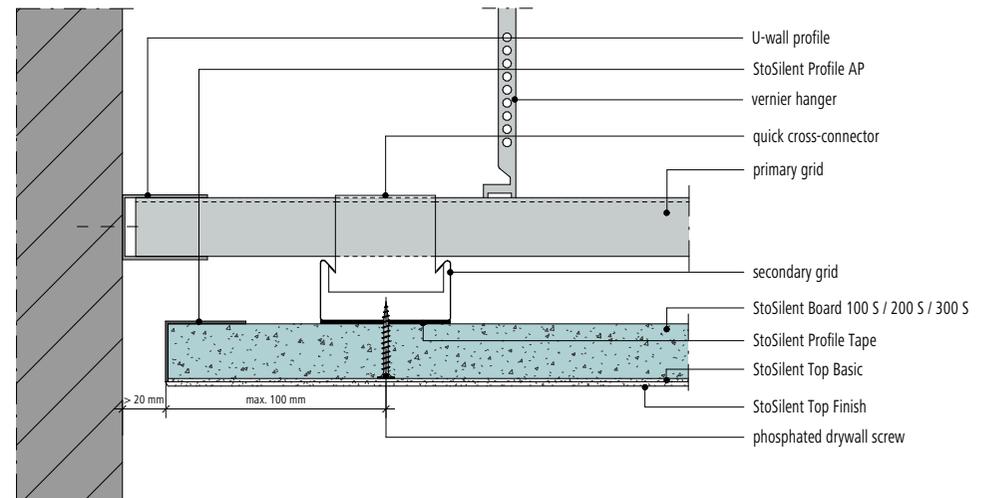
### Ceiling (vertical section): wall junction with Sto-Stucco Tape

Sto-HQ-EN\_SSDI S-BT-0115\_2021-03-01



### Ceiling (vertical section): wall junction with U-wall profile

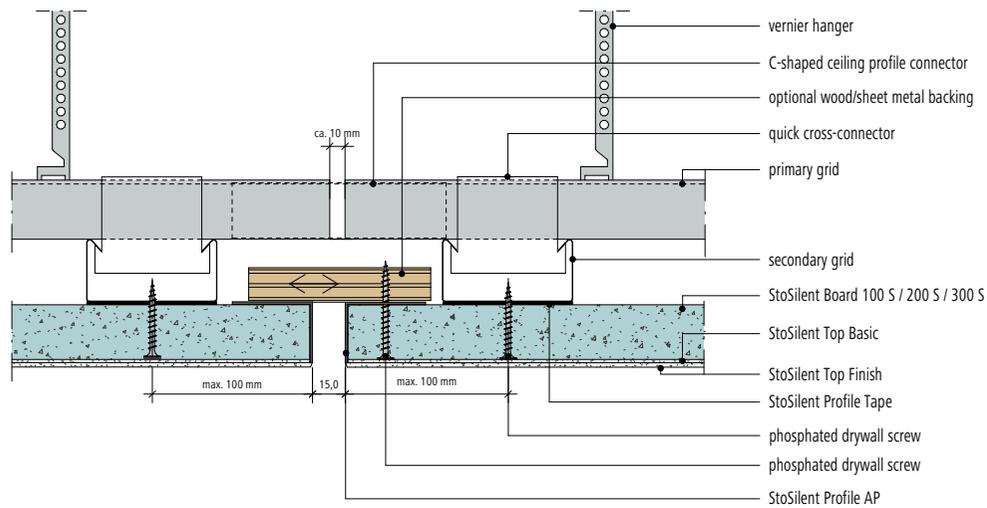
Sto-HQ-EN\_SSDI S-BT-0140\_2021-03-01



## StoSilent Distance S construction details

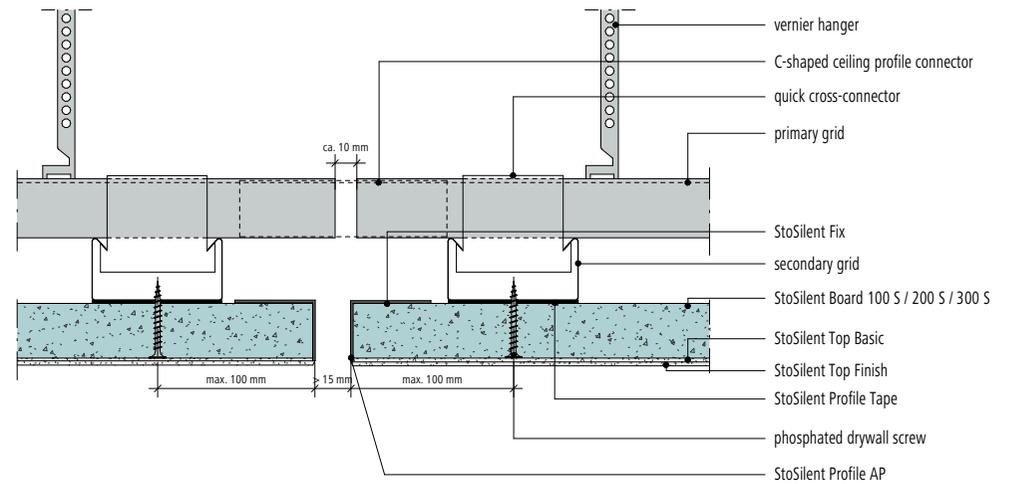
### Ceiling (vertical section): expansion joint formation, backed

Sto-HQ-EN\_SSDI S-BT-0210\_2021-03-01



### Ceiling (vertical section): expansion joint formation

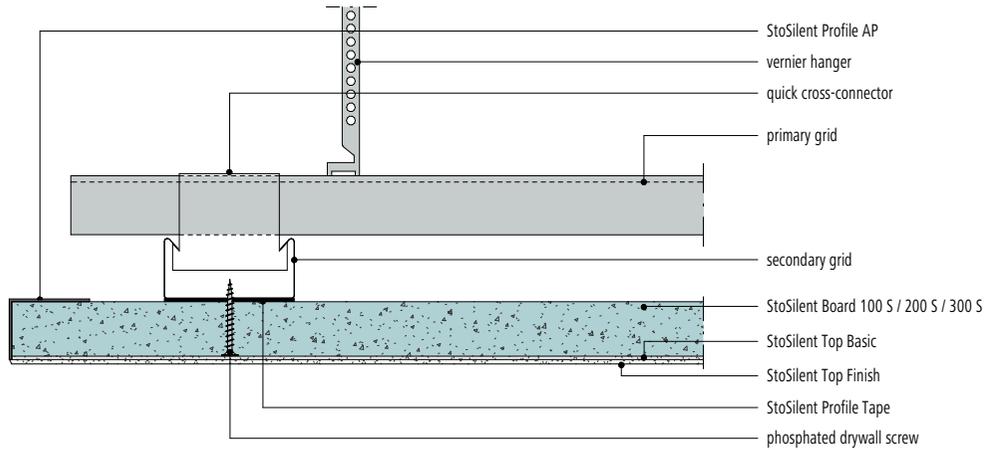
Sto-HQ-EN\_SSDI S-BT-0220\_2021-03-01



## StoSilent Distance S construction details

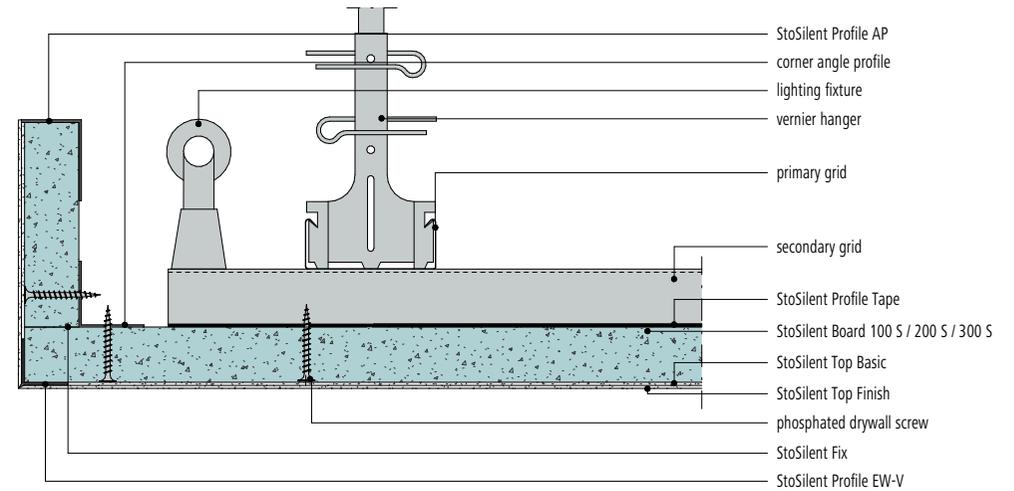
### Ceiling (vertical section): projection without load

Sto-HQ-EN\_SSDI S-BT-0310\_2021-03-01



### Ceiling (vertical section): projection with upstanding edge and load

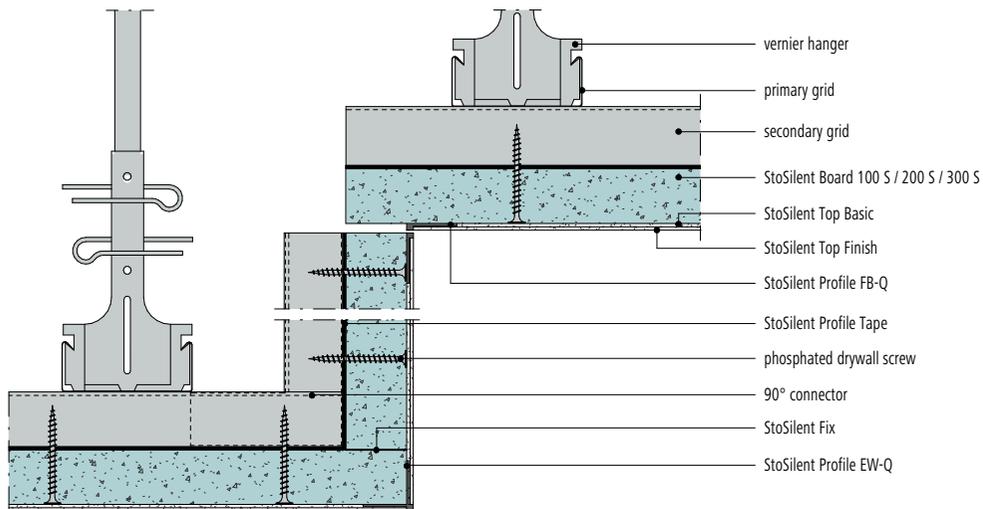
Sto-HQ-EN\_SSDI S-BT-0321\_2021-03-01



## StoSilent Distance S construction details

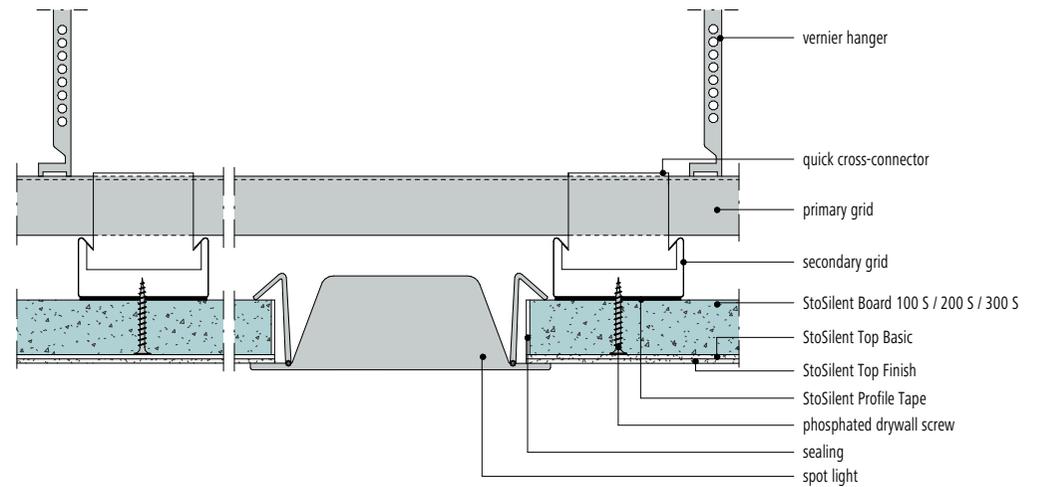
### Ceiling (vertical section): stepped structure in straight-edged application

Sto-HQ-EN\_SSDI S-BT-0410\_2021-03-01



### Ceiling (vertical section): installation of lamps

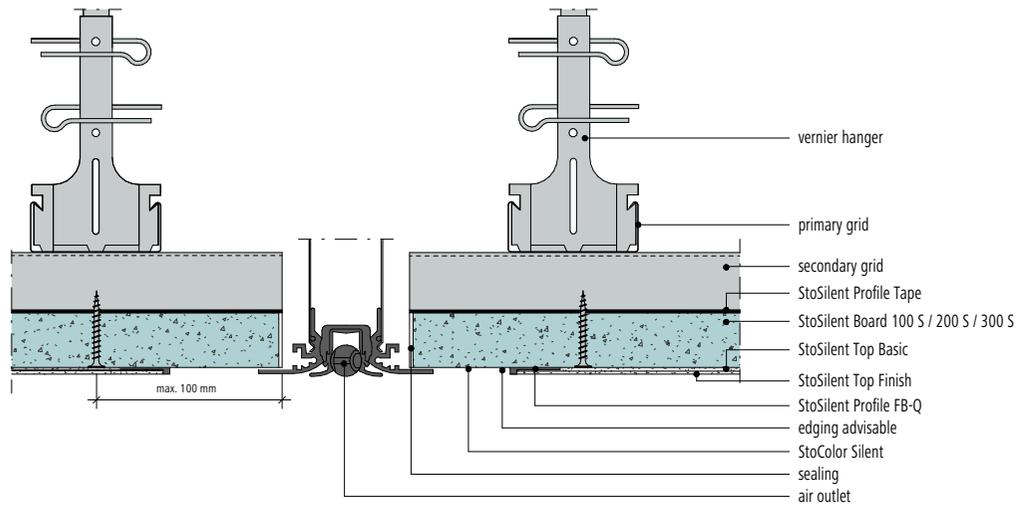
Sto-HQ-EN\_SSDI S-BT-0610\_2021-03-01



## StoSilent Distance S construction details

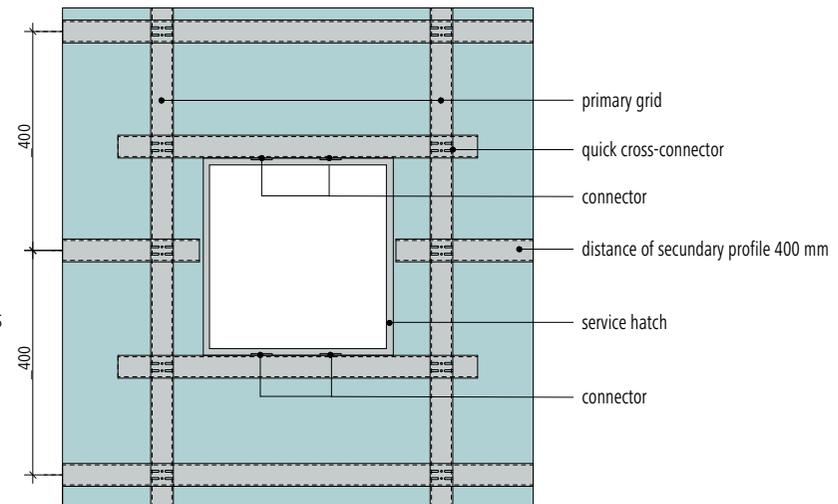
### Ceiling (vertical section): air outlet

Sto-HQ-EN\_SSDI S-BT-0630\_2021-03-01



### Ceiling (horizontal section): service hatch with trimmer in the sub-construction

Sto-HQ-EN\_SSDI S-BT-0640\_2021-03-01

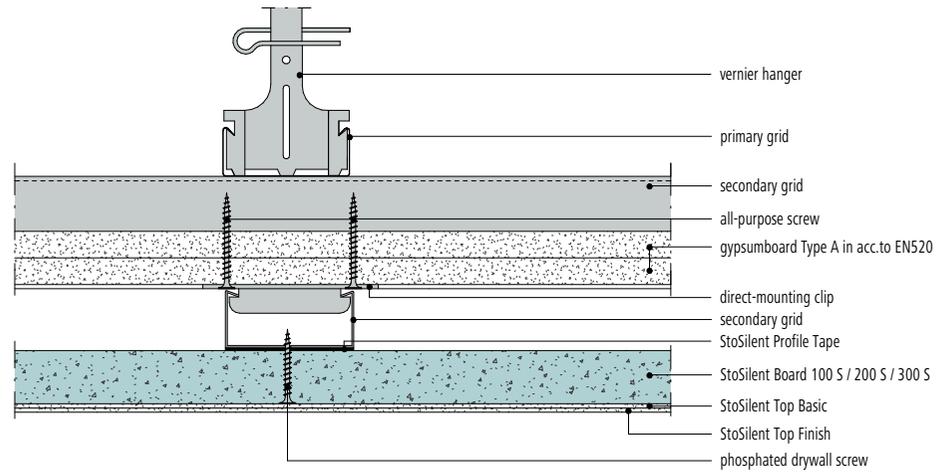




## StoSilent Distance S construction details

### Ceiling (vertical section): ceiling under ceiling system

Sto-HQ-EN\_SSDI S-BT-0720\_2021-03-01

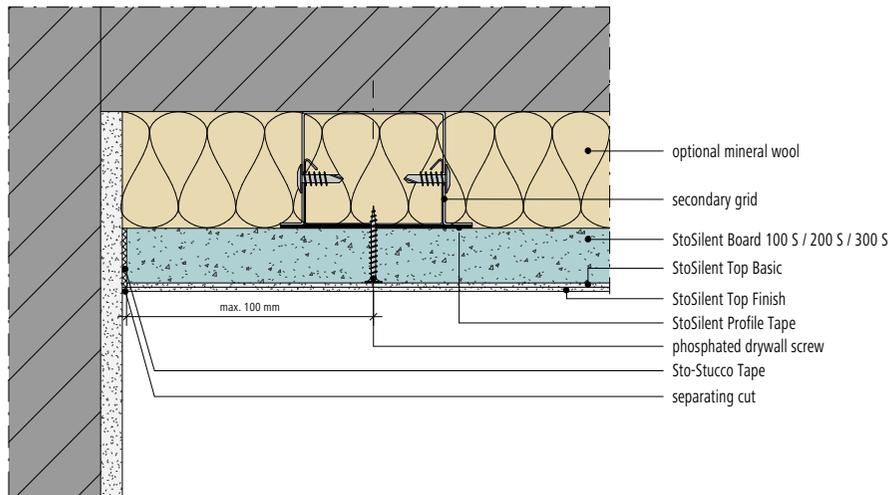




## StoSilent Distance S construction details

### Wall (horizontal section): lateral connection to wall covering

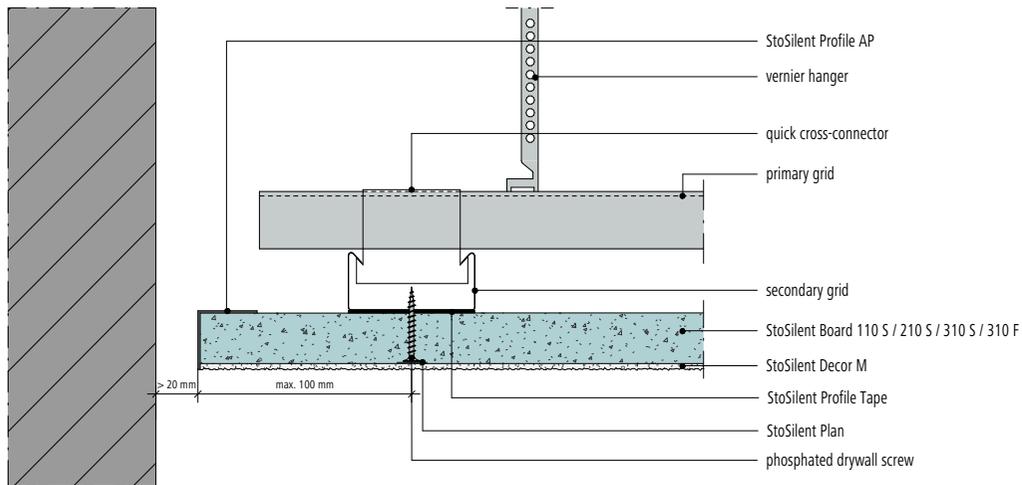
Sto-HQ-EN\_SSDI S-BT-0540\_2021-03-01



# StoSilent Distance S construction details

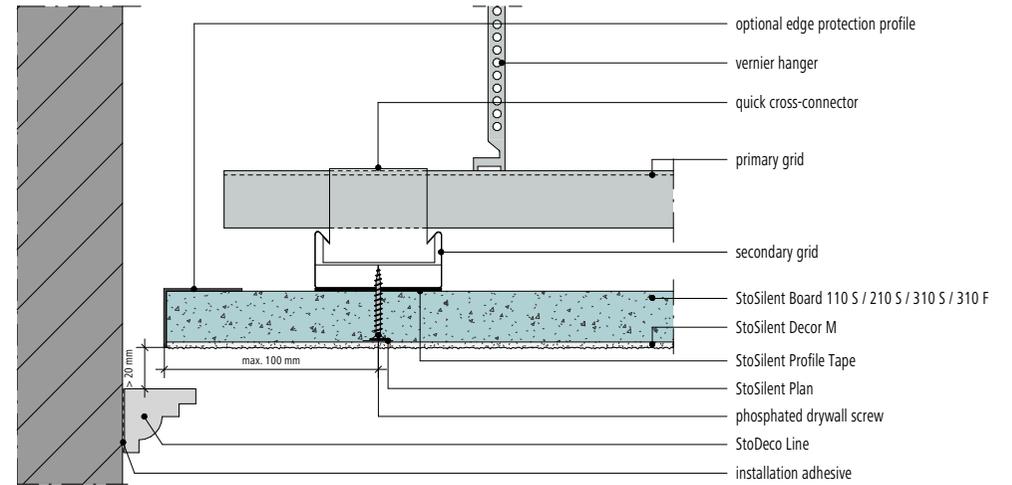
## Ceiling (vertical section): open wall junction

Sto-HQ-EN\_SSDI S-D-0100\_2021-03-01



## Ceiling (vertical section): wall junction with StoDeco Line

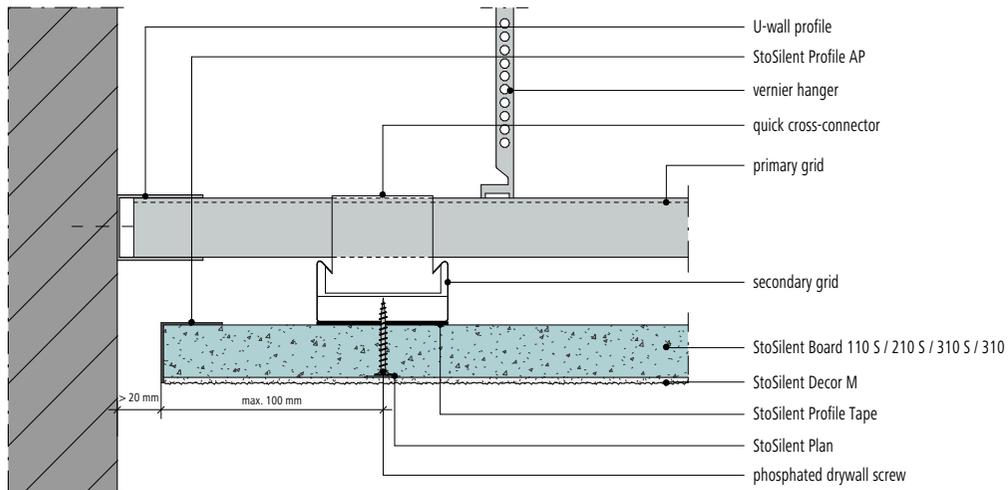
Sto-HQ-EN\_SSDI S-D-0120\_2021-03-01



## StoSilent Distance S construction details

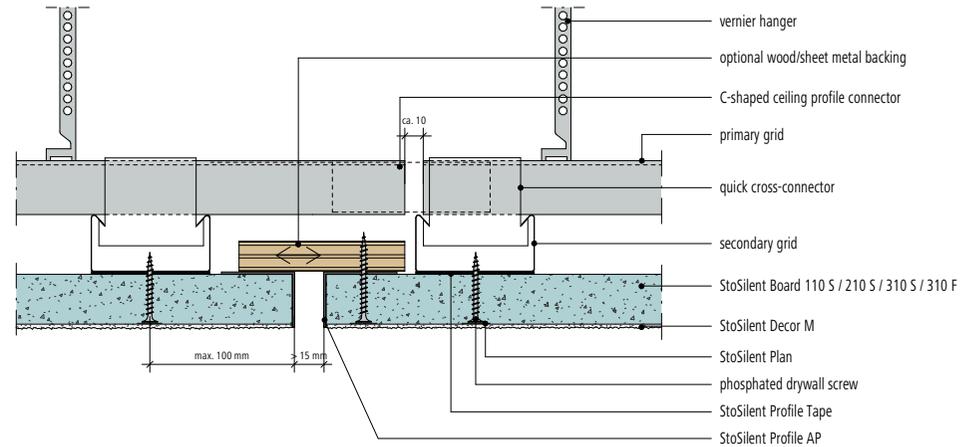
### Ceiling (vertical section): wall junction with U-wall profile

Sto-HQ-EN\_SSDI S-D-0140\_2021-03-01



### Ceiling (vertical section): expansion joint formation, backed

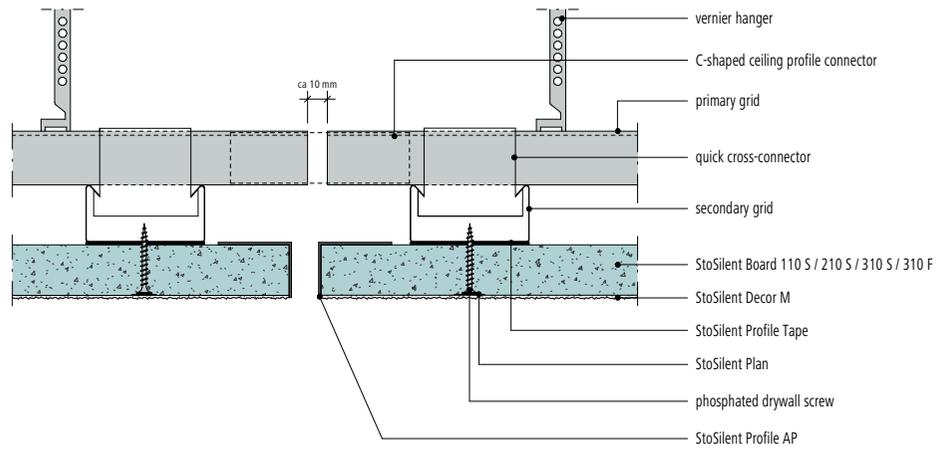
Sto-HQ-EN\_SSDI S-D-0210\_2021-03-01



## StoSilent Distance S construction details

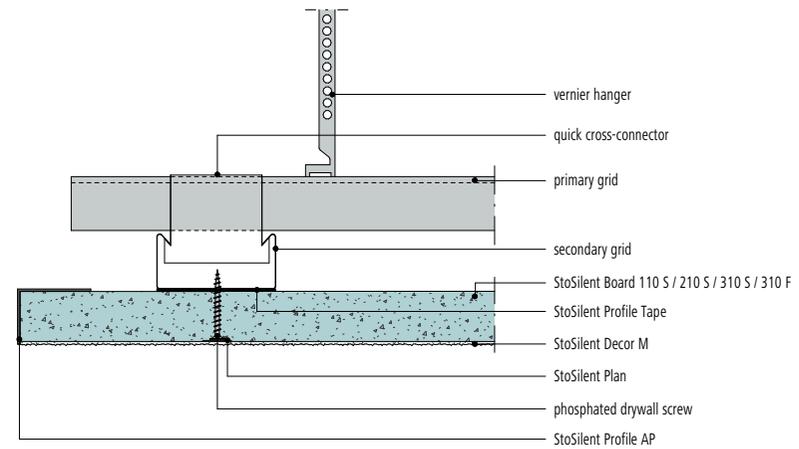
### Ceiling (vertical section): expansion joint formation, open

Sto-HQ-EN\_SSDI S-D-0220\_2021-03-01



### Ceiling (vertical section): projection without load

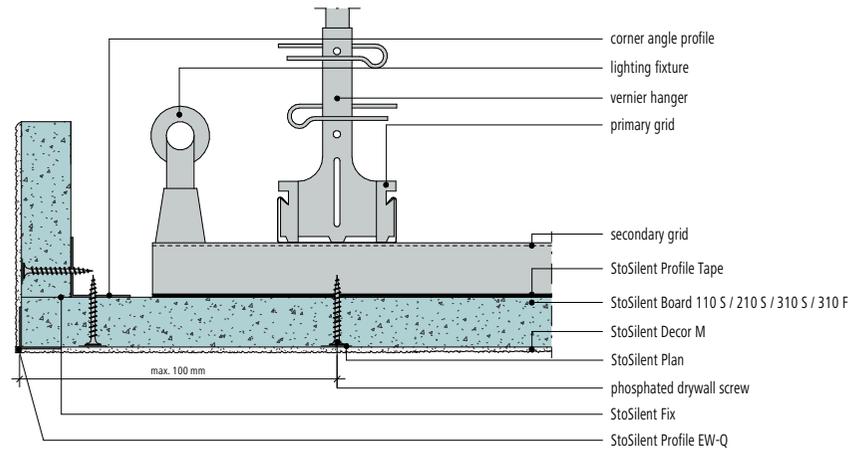
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## StoSilent Distance S construction details

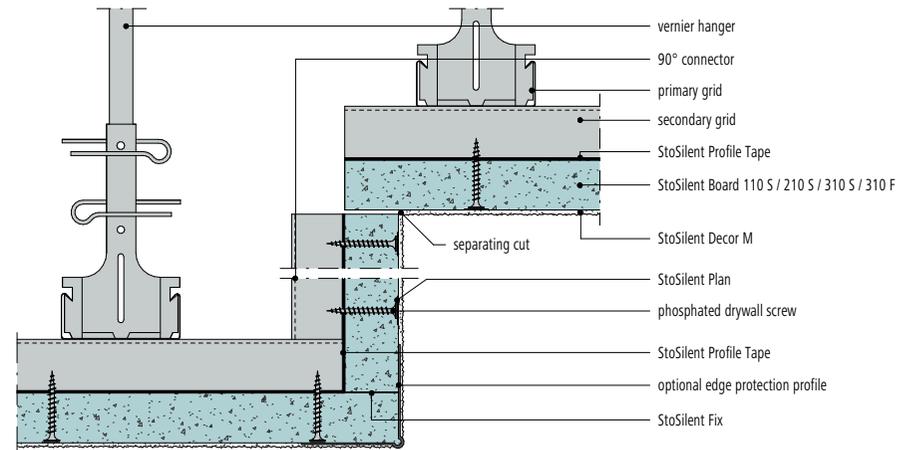
### Ceiling (vertical section): projection with upstanding edge and load

Sto-HQ-EN\_SSDI S-D-0320\_2021-03-01



### Ceiling (vertical section): stepped structure in straight-edged application

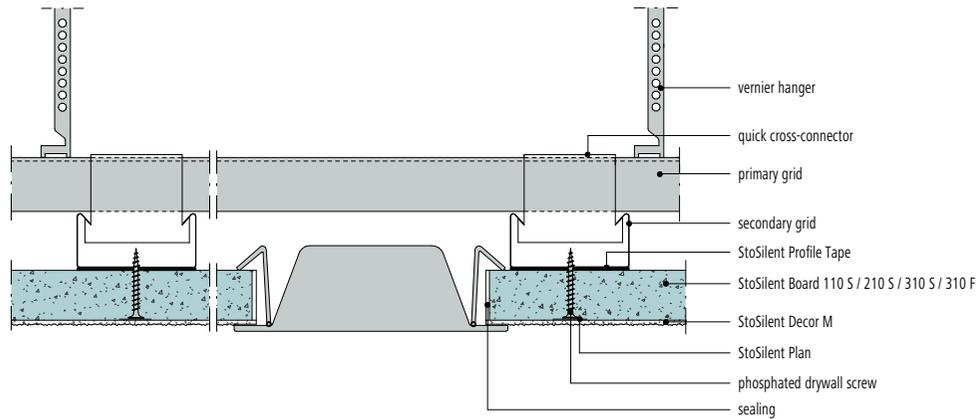
Sto-HQ-EN\_SSDI S-D-0410\_2021-03-01



## StoSilent Distance S construction details

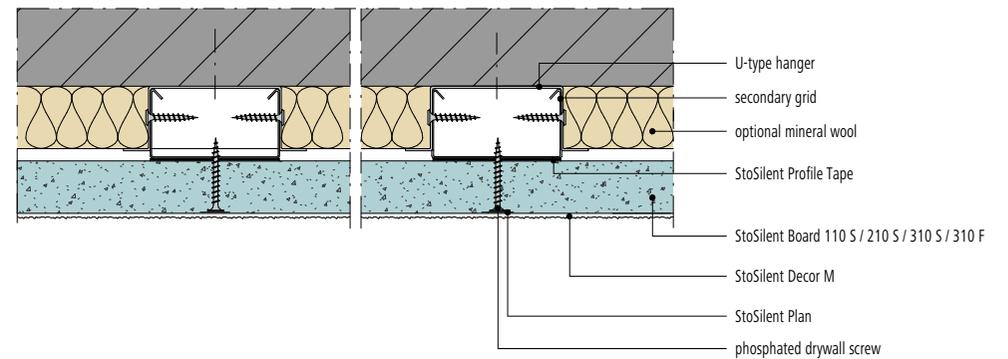
### Ceiling (vertical section): installation of lamps

Sto-HQ-EN\_SSDI S-D-0610\_2021-03-01



### Wall (horizontal section): wall covering with U-type hanger

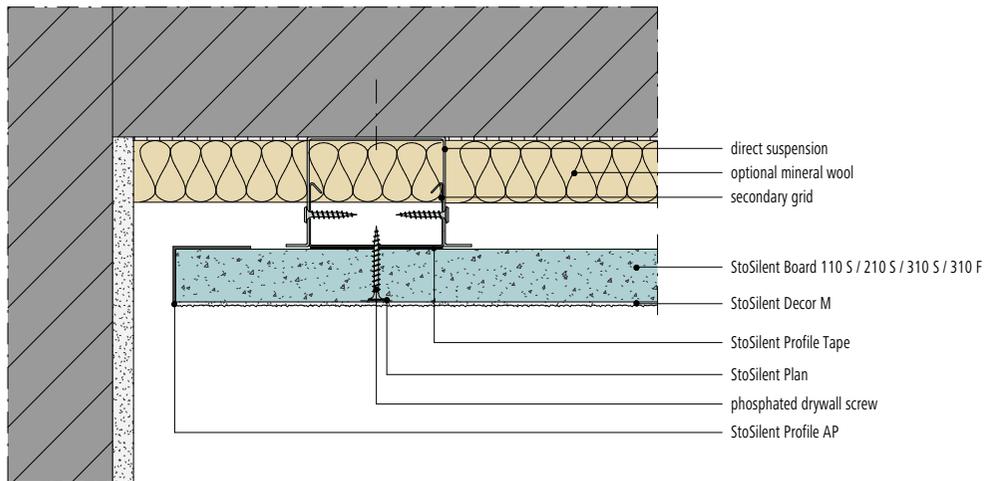
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## StoSilent Distance S construction details

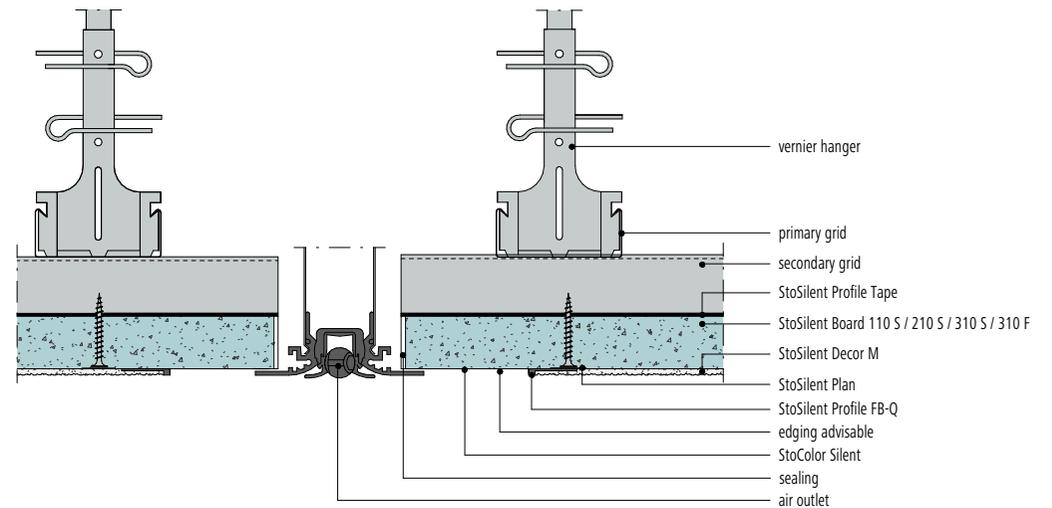
### Wall (horizontal section): lateral connection to a wall covering

Sto-HQ-EN\_SSDI S-D-0540\_2021-03-01



### Ceiling (vertical section): air outlet

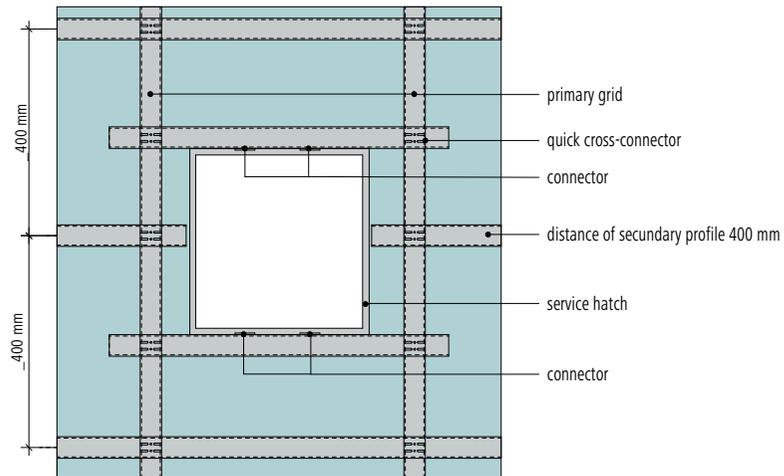
Sto-HQ-EN\_SSDI S-D-0630\_2021-03-01



## StoSilent Distance S construction details

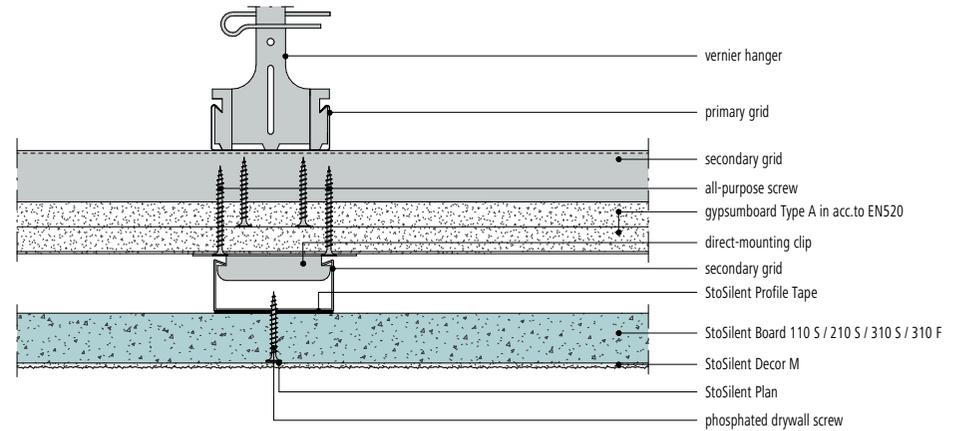
### Ceiling (horizontal section): service hatch with trimmer in the sub-construction

Sto-HQ-EN\_SSDI S-D-0640\_2021-03-01



### Ceiling (vertical section): ceiling under ceiling

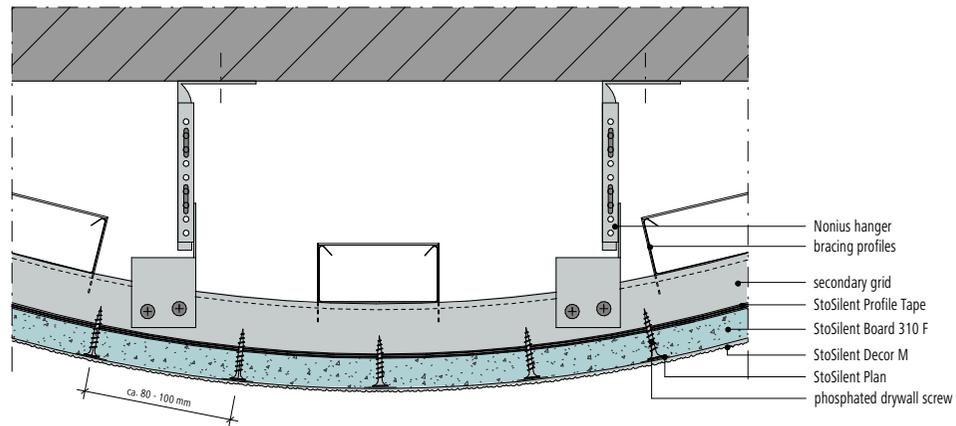
Sto-HQ-EN\_SSDI S-D-0720\_2021-03-01



## StoSilent Distance F construction details

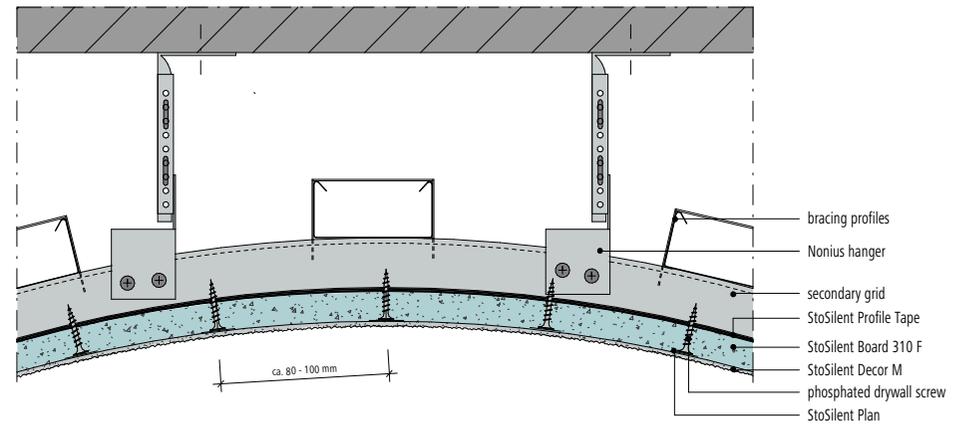
### Ceiling (vertical section): curved ceiling and wall areas for $R > 5\text{ m}$

Sto-HQ-EN\_SSDI F-D-0715\_2022-04-01



### Ceiling (vertical section): curved ceiling and wall areas for $R > 5\text{ m}$

Sto-HQ-EN\_SSDI F-D-0710\_2022-04-01



# StoSilent Direct

## Directly bonded acoustic system for seamless surfaces

The StoSilent Direct acoustic system is a high-quality acoustic sandwich of expanded glass granulate and stone wool. This is applied directly to the substrate and is ideal for large surface areas.

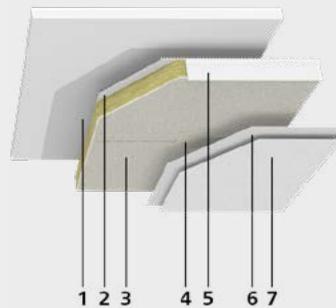
### System advantages

- Direct bonding onto walls/ceilings
- Simple application
- For smooth surfaces and curved surfaces (convex, concave, not spherical)

StoSilent Direct can be installed seamlessly or with visible joints, depending on the finishing coat.

## The system

### Build-up: StoSilent Direct, seamless with StoSilent Top Finish



#### Carrier layer

- 1 — Priming coat
- 2 — Bonding

#### Absorber layer

- 3 — Acoustic panel
- 4 — Filler and levelling coat
- 5 — Edge finish

#### Material layer

- 6 — Intermediate coat
- 7 — Finishing coat

### Material layer options



#### Silicate acoustic plaster

- StoSilent Decor
- Textured surface
- Tintable in accordance with the StoColor System



#### Organic acoustic plaster

- StoSilent Top
- Smooth surface
- Limited tintability in accordance with the StoColor System



#### Mineral acoustic spray plaster

- StoSilent Miral AP
- Rough surface
- Limited tintability with StoTint Aqua

### System properties

#### Application

- Interior
- For ceilings and upper wall areas
- Not suitable for wall areas which can be reached by hand or which are exposed to other types of mechanical stress
- Exterior, for selected areas
- For smooth surfaces and curved surfaces (convex, concave, no spherical surfaces)

#### Reaction to fire

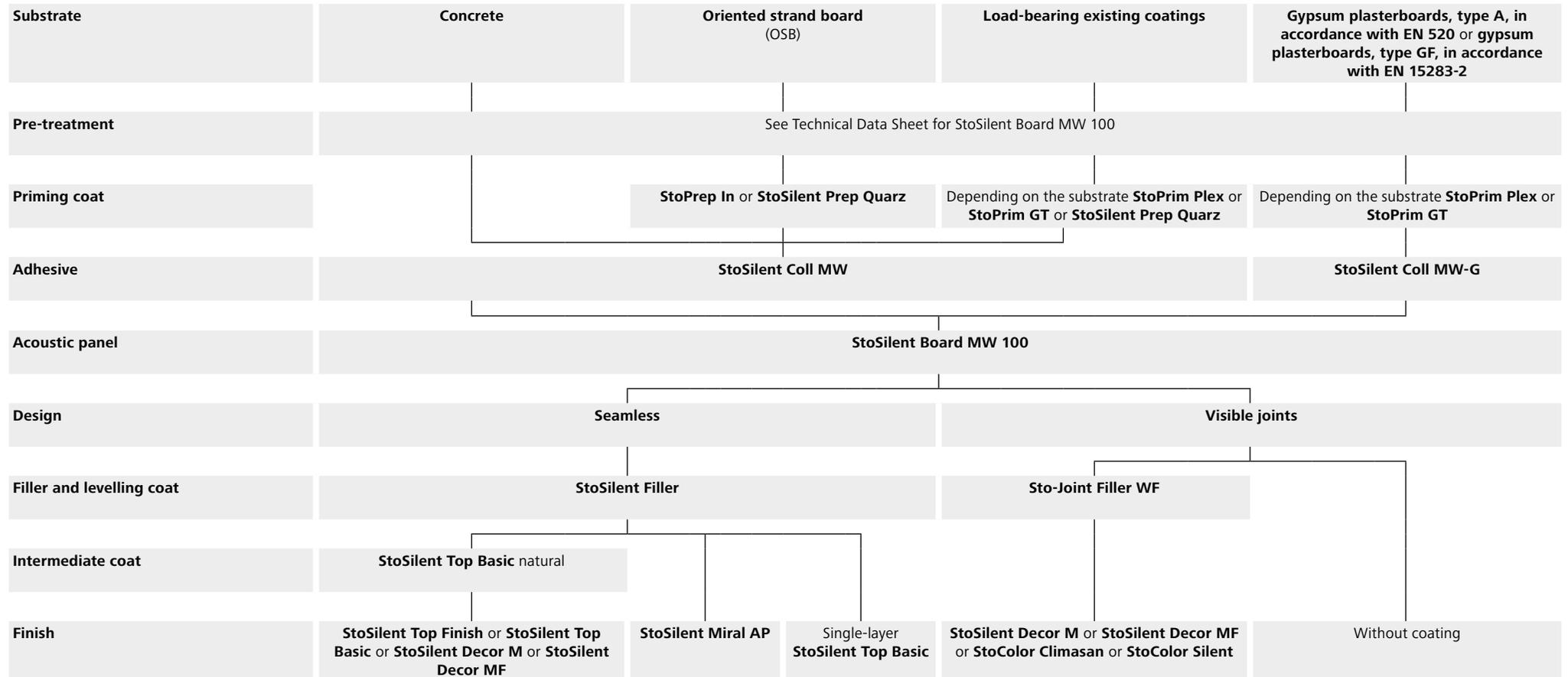
- Class A2-s1, d0 in accordance with EN 13501-1, non-combustible
- Fire resistance class REI60 in accordance with EN 13501-2 (wooden beam ceiling), classification report no. KB 3.2/19-423-1
- Class K<sub>2</sub>60 covering, classification report no. KB 3.2/19-423-2

#### Application

- Bonded directly to substrate
- By trained specialists

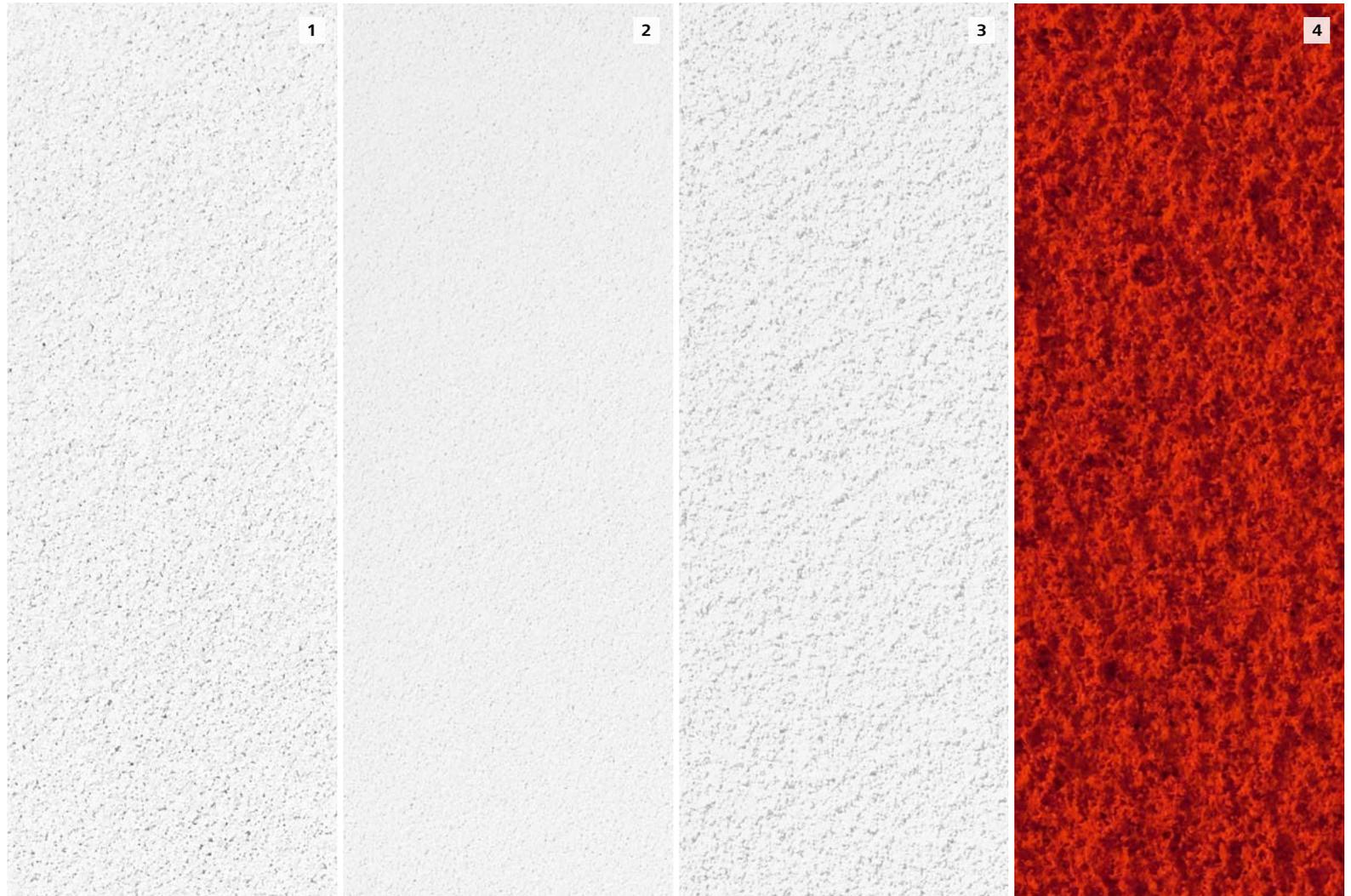


## System versions



## Surfaces

- 1 StoSilent Top Basic
- 2 StoSilent Top Finish
- 3 StoSilent Decor M
- 4 StoSilent Decor MF



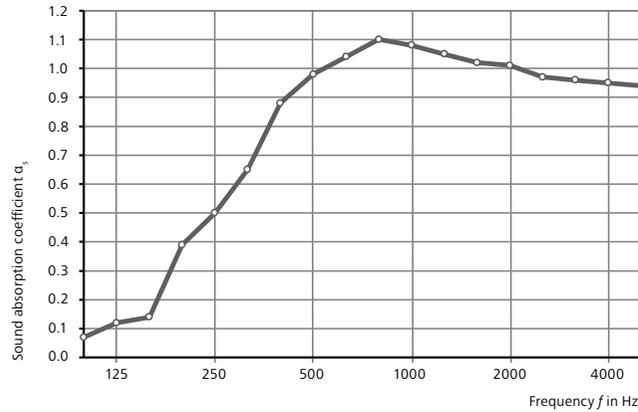


## Seals of approval and quality

Products and systems		Seals of approval and test procedures						Fire classification in accordance with EN 13501	CE
									
Systems	StoSilent Direct, all versions	–	–	–	–	–	–	A2-1, d0	–
		–	–	–	–	–	–	50 mm structure REI 60 K260 (wood joist ceiling, ceiling with 12.5 mm gypsum plasterboard)	–
Products	StoSilent Coll MW	A+	–	–	–	–	–	Fire classification dependent on use within system	EN 12004
	StoSilent Coll MW-G	A+	–	–	–	–	–	–	–
	StoSilent Decor M	A+	Test standard TM-10 Emulsion-based plasters 06/09	Preservative-free (untinted versions: white and Sto white shades)	Test standard TM-10 Emulsion-based plasters 06/09	–	–	–	–
	StoSilent Decor MF	A+	–	–	–	–	–	Fire classification dependent on use within system	–
	StoSilent Filler	A+	–	–	–	–	–	–	–
	StoSilent Plan	A+	–	–	–	–	–	–	EN 15824
	StoSilent Prep Quarz	A+	–	–	–	–	–	–	–
	StoSilent Top Basic	A+	–	–	–	–	–	–	EN 15824
StoSilent Top Finish	A+	–	–	–	–	–	–	EN 15824	
StoSilent Board MW 100	A+	–	–	–	–	–	–	A2-1, d0	–



## Sound characteristics

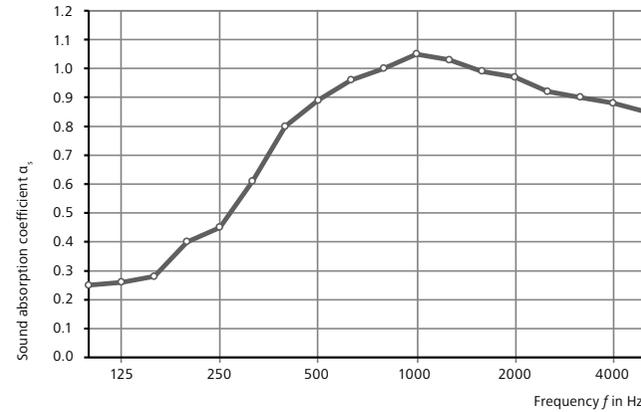


**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 36 mm  
**Coating:** Without finishing coat (visible joints)  
**Thickness:** 36 mm

**Structural height:** approx. 36 mm (type A)  
 $\alpha_w$ : 0.80 (H)  
 $\alpha_{p, 125}$ : 0.10  
**NRC:** 0.90

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.07	0.39	0.88	1.10	1.02	0.96
Octave band	0.12	0.50	0.98	1.08	1.01	0.95
Third-octave band	0.14	0.65	1.04	1.05	0.97	0.94
$\alpha_p$	0.10	0.50	0.95	1.00	1.00	0.95

Test certificate: 100960\_2017-12-12\_6

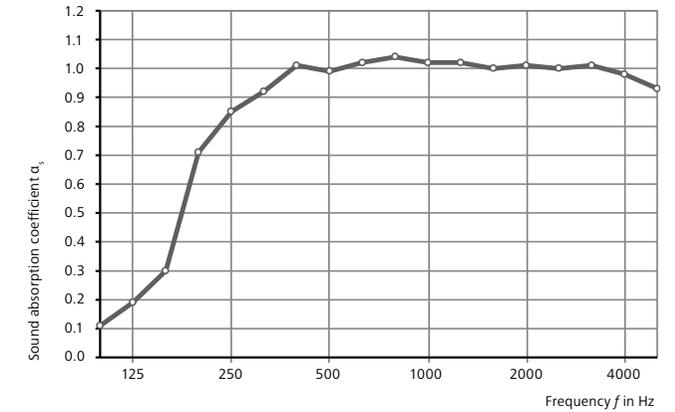


**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 36 mm  
**Coating:** Without finishing coat (visible joints)  
**Thickness:** 36 mm

**Structural height:** 200 mm  
 $\alpha_w$ : 0.80  
 $\alpha_{p, 125}$ : 0.25  
**NRC:** 0.85

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.25	0.40	0.80	1.00	0.99	0.90
Octave band	0.26	0.45	0.89	1.05	0.97	0.88
Third-octave band	0.28	0.61	0.96	1.03	0.92	0.85
$\alpha_p$	0.25	0.50	0.90	1.00	0.95	0.90

Test certificate: 100960\_2017-03-20\_5



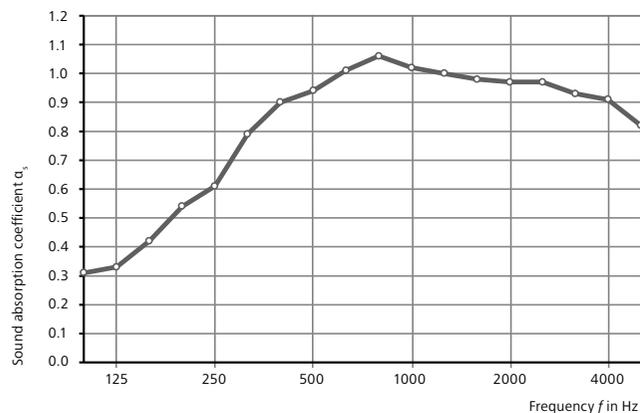
**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 46 mm  
**Coating:** Without finishing coat (visible joints)  
**Thickness:** 46 mm

**Structural height:** approx. 46 mm (type A)  
 $\alpha_w$ : 1.00  
 $\alpha_{p, 125}$ : 0.20  
**NRC:** 0.95

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.11	0.71	1.01	1.04	1.00	1.01
Octave band	0.19	0.85	0.99	1.02	1.01	0.98
Third-octave band	0.30	0.92	1.02	1.02	1.00	0.93
$\alpha_p$	0.20	0.85	1.00	1.00	1.00	0.95

Test certificate: 100960\_2017-12-12\_5

## Sound characteristics

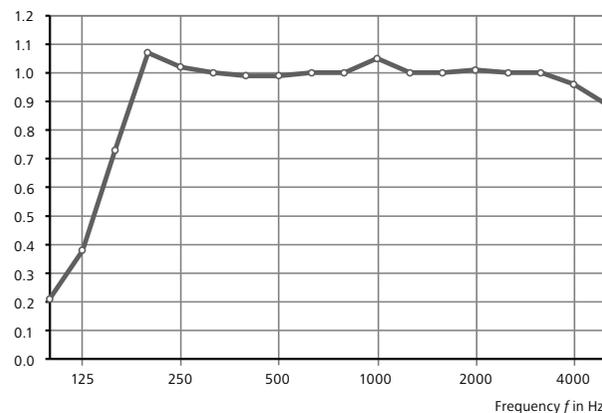


**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 46 mm  
**Coating:** Without finishing coat (visible joints)  
**Thickness:** 46 mm

**Structural height:** 200 mm  
 $\alpha_w$ : 0.95  
 $\alpha_{p, 125}$ : 0.35  
**NRC:** 0.90

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.31	0.54	0.90	1.06	0.98	0.93
Octave band	<b>0.33</b>	<b>0.61</b>	<b>0.94</b>	<b>1.02</b>	<b>0.97</b>	<b>0.91</b>
Third-octave band	0.42	0.79	1.01	1.00	0.97	0.82
$\alpha_p$	0.35	0.65	0.95	1.00	0.95	0.90

Test certificate: 100960\_2014-11-20\_1

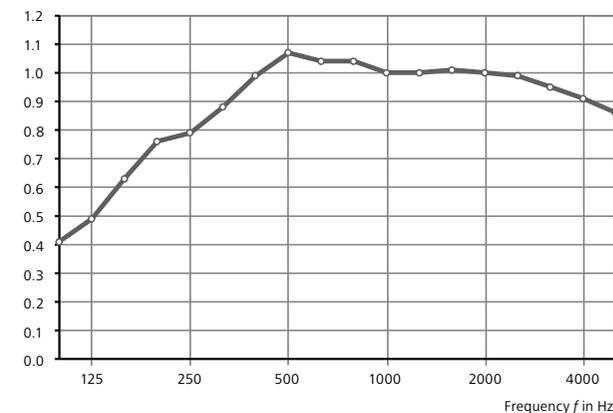


**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 66 mm  
**Coating:** Without finishing coat (visible joints)  
**Thickness:** 66 mm

**Structural height:** approx. 66 mm (type A)  
 $\alpha_w$ : 1.00  
 $\alpha_{p, 125}$ : 0.45  
**NRC:** 1.00

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.21	1.07	0.99	1.00	1.00	1.00
Octave band	<b>0.38</b>	<b>1.02</b>	<b>0.99</b>	<b>1.05</b>	<b>1.01</b>	<b>0.96</b>
Third-octave band	0.73	1.00	1.00	1.00	1.00	0.89
$\alpha_p$	0.45	1.00	1.00	1.00	1.00	0.95

Test certificate: 100960\_2017-12-12\_2



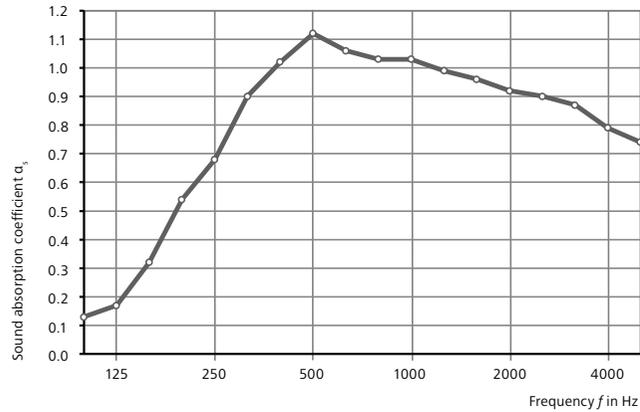
**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 66 mm  
**Coating:** Without finishing coat (visible joints)  
**Thickness:** 66 mm

**Structural height:** 200 mm  
 $\alpha_w$ : 1.00  
 $\alpha_{p, 125}$ : 0.50  
**NRC:** 0.95

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.41	0.76	0.99	1.04	1.01	0.95
Octave band	<b>0.49</b>	<b>0.79</b>	<b>1.07</b>	<b>1.00</b>	<b>1.00</b>	<b>0.91</b>
Third-octave band	0.63	0.88	1.04	1.00	0.99	0.86
$\alpha_p$	0.50	0.80	1.00	1.00	1.00	0.90

Test certificate: 100960\_2014-11-20\_5

## Sound characteristics

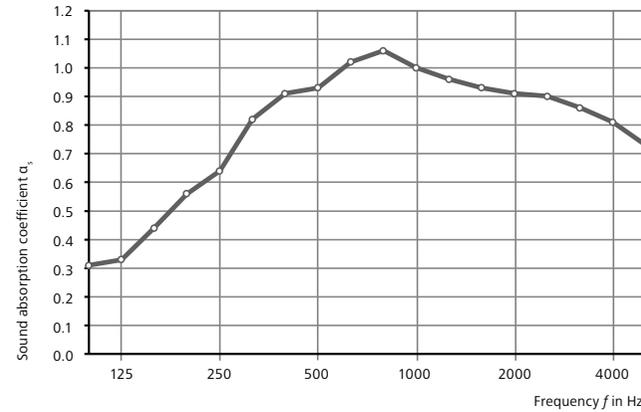


**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 46 mm  
**Coating:** StoColor Climasan (visible joints)  
**Thickness:** 46 mm

**Structural height:** approx. 46 mm (type A)  
 $\alpha_w$ : 0.95  
 $\alpha_{p, 125}$ : 0.20  
**NRC:** 0.95

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.13	0.54	1.02	1.03	0.96	0.87
Octave band	<b>0.17</b>	<b>0.68</b>	<b>1.12</b>	<b>1.03</b>	<b>0.92</b>	<b>0.79</b>
Third-octave band	0.32	0.90	1.06	0.99	0.90	0.74
$\alpha_p$	0.20	0.70	1.00	1.00	0.95	0.80

Test certificate: 100960\_2014-11-20\_14

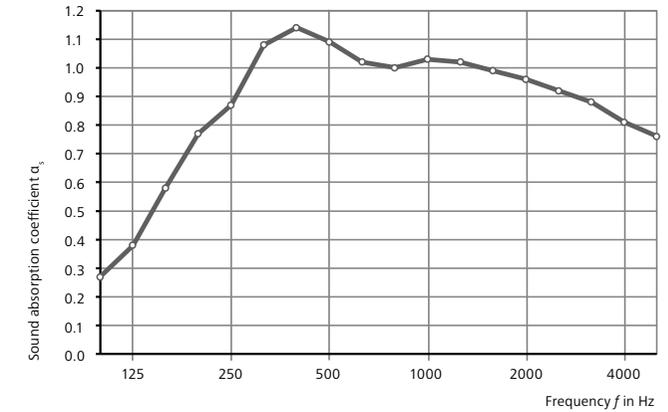


**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 46 mm  
**Coating:** StoColor Climasan (visible joints)  
**Thickness:** 46 mm

**Structural height:** 200 mm  
 $\alpha_w$ : 0.90  
 $\alpha_{p, 125}$ : 0.35  
**NRC:** 0.85

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.31	0.56	0.91	1.06	0.93	0.86
Octave band	<b>0.33</b>	<b>0.64</b>	<b>0.93</b>	<b>1.00</b>	<b>0.91</b>	<b>0.81</b>
Third-octave band	0.44	0.82	1.02	0.96	0.90	0.73
$\alpha_p$	0.35	0.65	0.95	1.00	0.90	0.80

Test certificate: 100960\_2014-11-20\_2



**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 66 mm  
**Coating:** StoColor Climasan (visible joints)  
**Thickness:** 66 mm

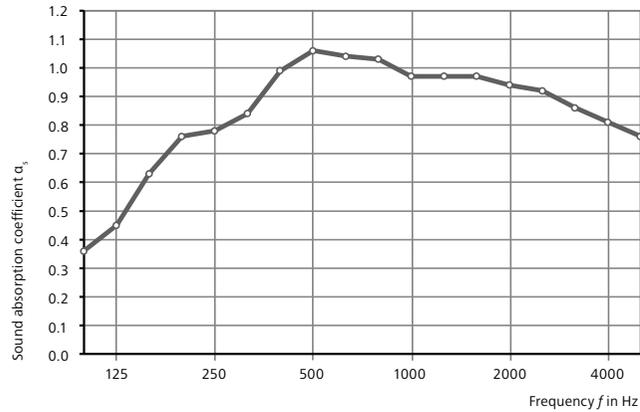
**Structural height:** approx. 66 mm (type A)  
 $\alpha_w$ : 0.95  
 $\alpha_{p, 125}$ : 0.40  
**NRC:** 1.00

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.27	0.77	1.14	1.00	0.99	0.88
Octave band	<b>0.38</b>	<b>0.87</b>	<b>1.09</b>	<b>1.03</b>	<b>0.96</b>	<b>0.81</b>
Third-octave band	0.58	1.08	1.02	1.02	0.92	0.76
$\alpha_p$	0.40	0.90	1.00	1.00	0.95	0.80

Test certificate: 100960\_2014-11-20\_11



## Sound characteristics

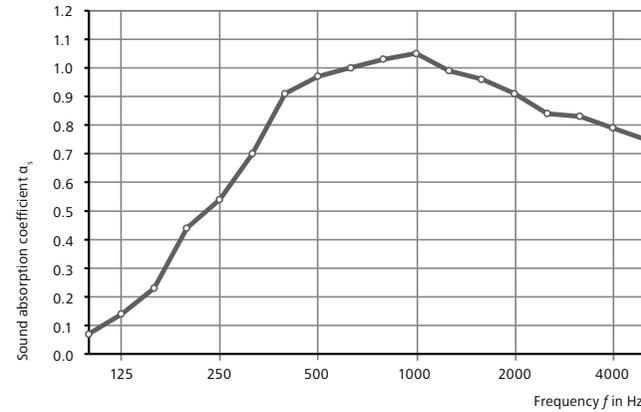


**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 66 mm  
**Coating:** StoColor Climasan (visible joints)  
**Thickness:** 66 mm

**Structural**  
**height:** 200 mm  
 $\alpha_w$ : 0.95  
 $\alpha_{p, 125}$ : 0.50  
**NRC:** 0.95

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.36	0.76	0.99	1.03	0.97	0.86
Octave band	0.45	0.78	1.06	0.97	0.94	0.81
Third-octave band	0.63	0.84	1.04	0.97	0.92	0.76
$\alpha_p$	0.50	0.80	1.00	1.00	0.95	0.80

Test certificate: 100960\_2014-11-20\_6

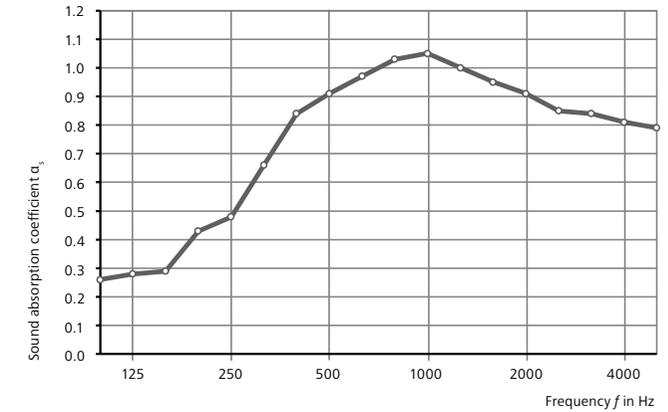


**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 36 mm  
**Coating:** StoSilent Decor (visible joints)  
**Thickness:** 36 mm

**Structural**  
**height:** approx. 40 mm (type A)  
 $\alpha_w$ : 0.85  
 $\alpha_{p, 125}$ : 0.15  
**NRC:** 0.85

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.07	0.44	0.91	1.03	0.96	0.83
Octave band	0.14	0.54	0.97	1.05	0.91	0.79
Third-octave band	0.23	0.70	1.00	0.99	0.84	0.75
$\alpha_p$	0.15	0.55	0.95	1.00	0.90	0.80

Test certificate: 100960\_2017-03-20\_2



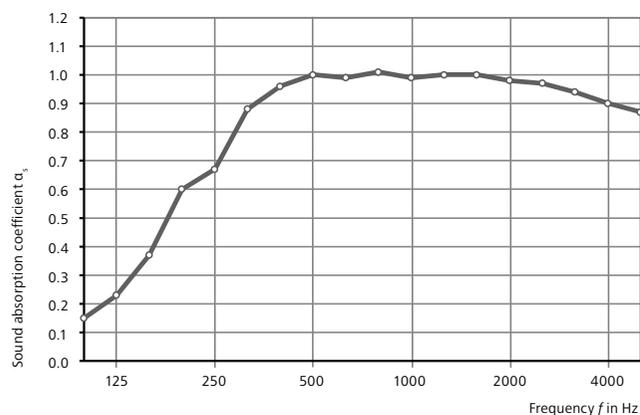
**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 36 mm  
**Coating:** StoSilent Decor (visible joints)  
**Thickness:** 36 mm

**Structural**  
**height:** 200 mm  
 $\alpha_w$ : 0.80  
 $\alpha_{p, 125}$ : 0.30  
**NRC:** 0.85

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.26	0.43	0.84	1.03	0.95	0.84
Octave band	0.28	0.48	0.91	1.05	0.91	0.81
Third-octave band	0.29	0.66	0.97	1.00	0.85	0.79
$\alpha_p$	0.30	0.50	0.90	1.00	0.90	0.80

Test certificate: 100960\_2017-03-20\_6

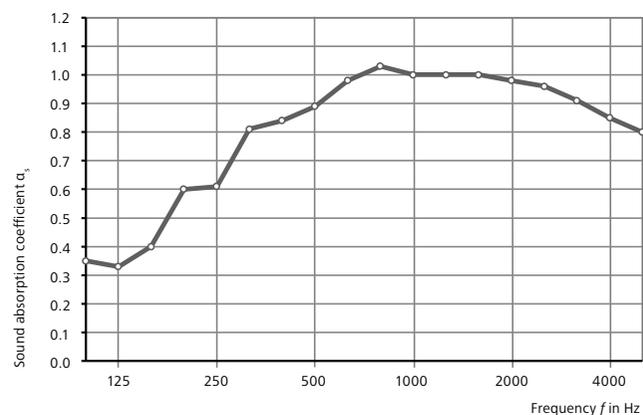
## Sound characteristics



<b>System:</b>	StoSilent Direct	<b>Structural</b>	
<b>Build-up:</b>	StoSilent Board MW 100, 46 mm	<b>height:</b>	approx. 50 mm (type A)
<b>Coating:</b>	StoSilent Decor (visible joints)	$\alpha_w$ :	1.00
<b>Thickness:</b>	46 mm	$\alpha_{p, 125}$ :	0.25
		<b>NRC:</b>	0.90

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.15	0.60	0.96	1.01	1.00	0.94
Octave band	0.23	0.67	1.00	0.99	0.98	0.90
Third-octave band	0.37	0.88	0.99	1.00	0.97	0.87
$\alpha_p$	0.25	0.70	1.00	1.00	1.00	0.90

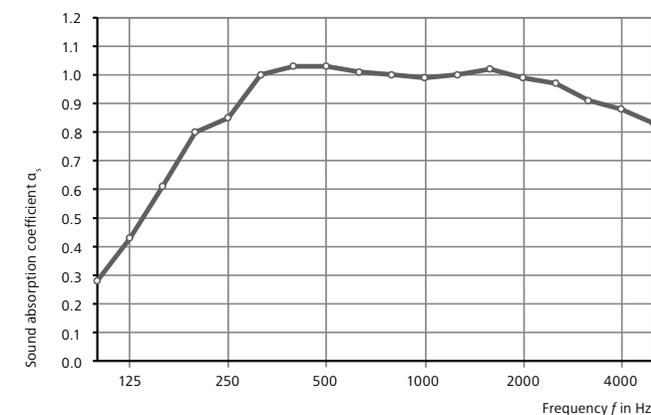
Test certificate: 100960\_2015-04-21\_7



<b>System:</b>	StoSilent Direct	<b>Structural</b>	
<b>Build-up:</b>	StoSilent Board MW 100, 46 mm	<b>height:</b>	200 mm
<b>Coating:</b>	StoSilent Decor (visible joints)	$\alpha_w$ :	0.90
<b>Thickness:</b>	46 mm	$\alpha_{p, 125}$ :	0.35
		<b>NRC:</b>	0.85

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.35	0.60	0.84	1.03	1.00	0.91
Octave band	0.33	0.61	0.89	1.00	0.98	0.85
Third-octave band	0.40	0.81	0.98	1.00	0.96	0.80
$\alpha_p$	0.35	0.65	0.90	1.00	1.00	0.85

Test certificate: 100960\_2015-04-21\_2

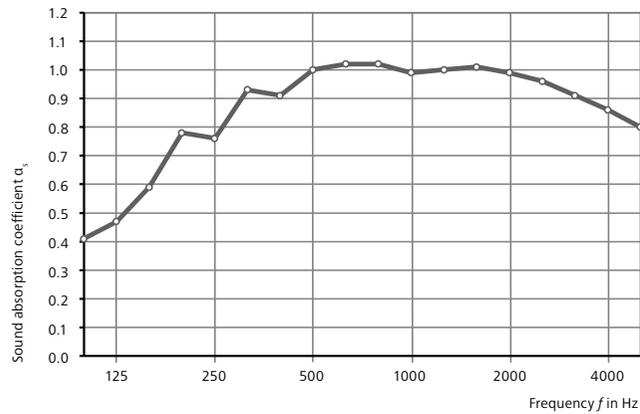


<b>System:</b>	StoSilent Direct	<b>Structural</b>	
<b>Build-up:</b>	StoSilent Board MW 100, 66 mm	<b>height:</b>	approx. 70 mm (type A)
<b>Coating:</b>	StoSilent Decor (visible joints)	$\alpha_w$ :	1.00
<b>Thickness:</b>	66 mm	$\alpha_{p, 125}$ :	0.45
		<b>NRC:</b>	0.95

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.28	0.80	1.03	1.00	1.02	0.91
Octave band	0.43	0.85	1.03	0.99	0.99	0.88
Third-octave band	0.61	1.00	1.01	1.00	0.97	0.83
$\alpha_p$	0.45	0.90	1.00	1.00	1.00	0.85

Test certificate: 100960\_2015-04-21\_5

## Sound characteristics

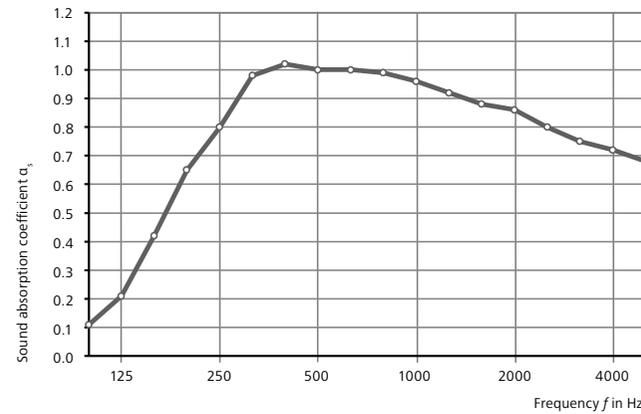


**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 66 mm  
**Coating:** StoSilent Decor (visible joints)  
**Thickness:** 66 mm

**Structural**  
**height:** 200 mm  
 $\alpha_w$ : 1.00  
 $\alpha_{p, 125}$ : 0.50  
**NRC:** 0.95

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.41	0.78	0.91	1.02	1.01	0.91
Octave band	<b>0.47</b>	<b>0.76</b>	<b>1.00</b>	<b>0.99</b>	<b>0.99</b>	<b>0.86</b>
Third-octave band	0.59	0.93	1.02	1.00	0.96	0.80
$\alpha_p$	0.50	0.80	1.00	1.00	1.00	0.85

Test certificate: 100960\_2015-04-21\_4

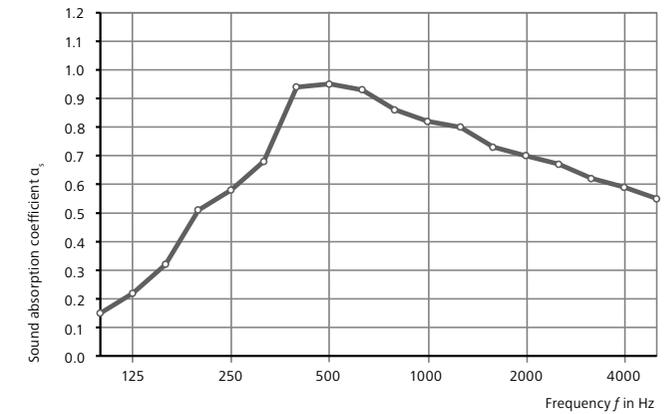


**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 46 mm  
**Coating:** StoSilent Miral AP, sprayed  
**Thickness:** 46 mm

**Structural**  
**height:** approx. 53 mm (type A)  
 $\alpha_w$ : 0.85  
 $\alpha_{p, 125}$ : 0.25  
**NRC:** 0.90

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.11	0.65	1.02	0.99	0.88	0.75
Octave band	<b>0.21</b>	<b>0.80</b>	<b>1.00</b>	<b>0.96</b>	<b>0.86</b>	<b>0.72</b>
Third-octave band	0.42	0.98	1.00	0.92	0.80	0.68
$\alpha_p$	0.25	0.80	1.00	0.95	0.85	0.70

Test certificate: 100960-2021-05 HR\_2



**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 36 mm  
**Coating:** StoSilent Top Basic white, single-layer  
**Thickness:** 36 mm

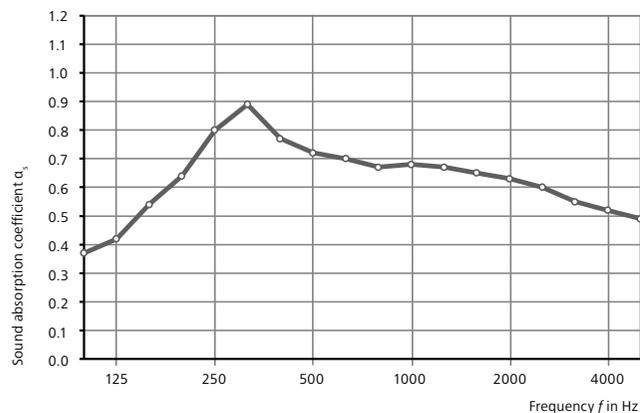
**Structural**  
**height:** approx. 41 mm (type A)  
 $\alpha_w$ : 0.75  
 $\alpha_{p, 125}$ : 0.25  
**NRC:** 0.75

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.15	0.51	0.94	0.86	0.73	0.62
Octave band	<b>0.22</b>	<b>0.58</b>	<b>0.95</b>	<b>0.82</b>	<b>0.70</b>	<b>0.59</b>
Third-octave band	0.32	0.68	0.93	0.80	0.67	0.55
$\alpha_p$	0.25	0.60	0.95	0.85	0.70	0.60

Test certificate: 100960\_2019-09-19\_4



## Sound characteristics

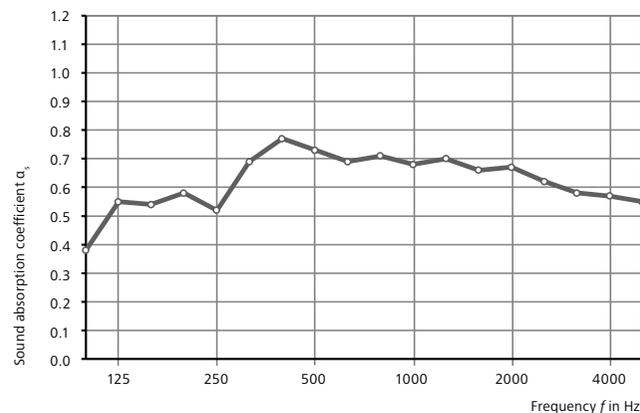


**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 66 mm  
**Coating:** StoSilent Top Basic white, single-layer  
**Thickness:** 66 mm

**Structural height:** approx. 71 mm (type A)  
 $\alpha_w$ : 0.65 (L)  
 $\alpha_{p, 125}$ : 0.45  
**NRC:** 0.70

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.37	0.64	0.77	0.67	0.65	0.55
Octave band	<b>0.42</b>	<b>0.80</b>	<b>0.72</b>	<b>0.68</b>	<b>0.63</b>	<b>0.52</b>
Third-octave band	0.54	0.89	0.70	0.67	0.60	0.49
$\alpha_p$	0.45	0.80	0.75	0.65	0.65	0.50

Test certificate: 100960\_2019-09-19\_1

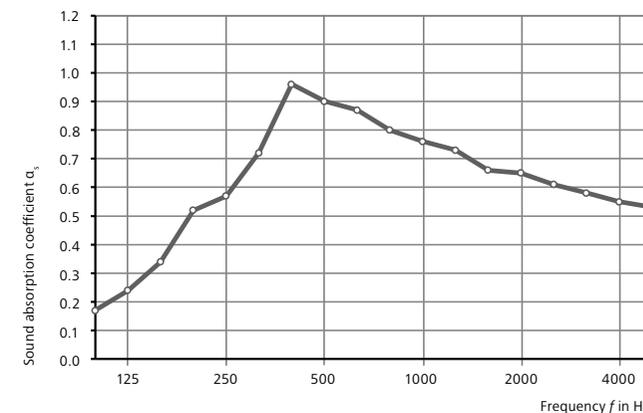


**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 66 mm  
**Coating:** StoSilent Top Basic white, single-layer  
**Thickness:** 66 mm

**Structural height:** 200 mm  
 $\alpha_w$ : 0.70  
 $\alpha_{p, 125}$ : 0.50  
**NRC:** 0.65

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.38	0.58	0.77	0.71	0.66	0.58
Octave band	<b>0.55</b>	<b>0.52</b>	<b>0.73</b>	<b>0.68</b>	<b>0.67</b>	<b>0.57</b>
Third-octave band	0.54	0.69	0.69	0.70	0.62	0.55
$\alpha_p$	0.50	0.60	0.75	0.70	0.65	0.55

Test certificate: 100960\_2019-09-19\_10



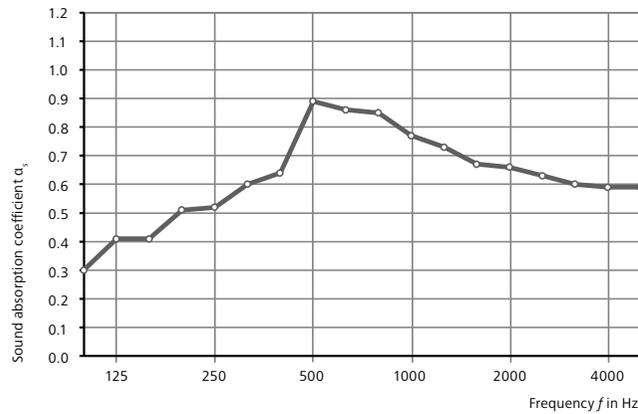
**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 36 mm  
**Coating:** StoSilent Top Basic & StoSilent Decor M  
**Thickness:** 36 mm

**Structural height:** approx. 42 mm (type A)  
 $\alpha_w$ : 0.70  
 $\alpha_{p, 125}$ : 0.25  
**NRC:** 0.70

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.17	0.52	0.96	0.80	0.66	0.58
Octave band	<b>0.24</b>	<b>0.57</b>	<b>0.90</b>	<b>0.76</b>	<b>0.65</b>	<b>0.55</b>
Third-octave band	0.34	0.72	0.87	0.73	0.61	0.53
$\alpha_p$	0.25	0.60	0.90	0.75	0.65	0.55

Test certificate: 100960\_2019-09-19\_5

## Sound characteristics

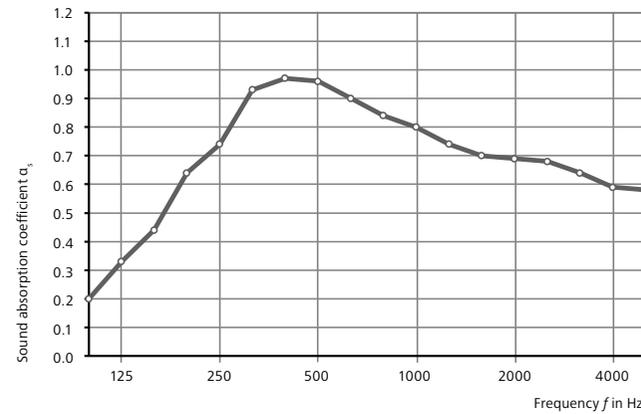


**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 36 mm  
**Coating:** StoSilent Top Basic & StoSilent Decor M  
**Thickness:** 36 mm

**Structural**  
**height:** 200 mm  
 $\alpha_w$ : 0.70  
 $\alpha_{p, 125}$ : 0.35  
**NRC:** 0.70

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.30	0.51	0.64	0.85	0.67	0.60
Octave band	0.41	0.52	0.89	0.77	0.66	0.59
Third-octave band	0.41	0.60	0.86	0.73	0.63	0.59
$\alpha_p$	0.35	0.55	0.80	0.80	0.65	0.60

Test certificate: 100960\_2019-09-19\_6

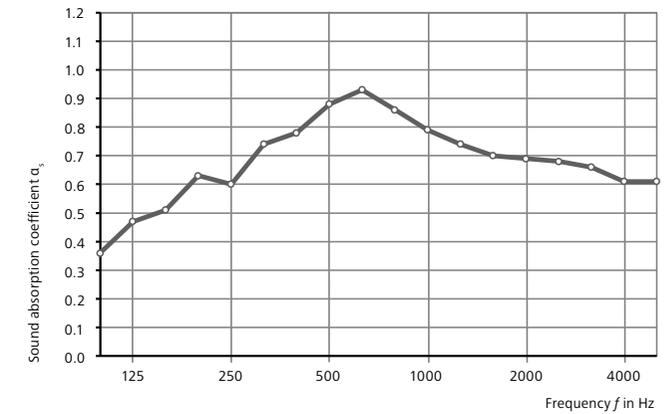


**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 46 mm  
**Coating:** StoSilent Top Basic & StoSilent Decor M  
**Thickness:** 46 mm

**Structural**  
**height:** approx. 52 mm (type A)  
 $\alpha_w$ : 0.75  
 $\alpha_{p, 125}$ : 0.30  
**NRC:** 0.80

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.20	0.64	0.97	0.84	0.70	0.64
Octave band	0.33	0.74	0.96	0.80	0.69	0.59
Third-octave band	0.44	0.93	0.90	0.74	0.68	0.58
$\alpha_p$	0.30	0.75	0.95	0.80	0.70	0.60

Test certificate: 100960\_2015-01-07\_6



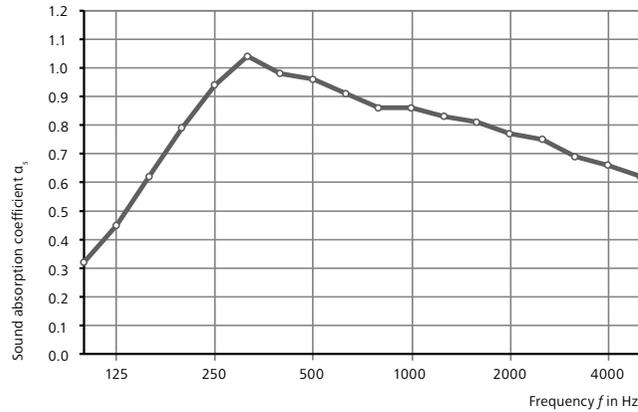
**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 46 mm  
**Coating:** StoSilent Top Basic & StoSilent Decor M  
**Thickness:** 46 mm

**Structural**  
**height:** 200 mm  
 $\alpha_w$ : 0.75  
 $\alpha_{p, 125}$ : 0.45  
**NRC:** 0.75

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.36	0.63	0.78	0.86	0.70	0.66
Octave band	0.47	0.60	0.88	0.79	0.69	0.61
Third-octave band	0.51	0.74	0.93	0.74	0.68	0.61
$\alpha_p$	0.45	0.65	0.85	0.80	0.70	0.65

Test certificate: 100960\_2015-01-07\_3

## Sound characteristics

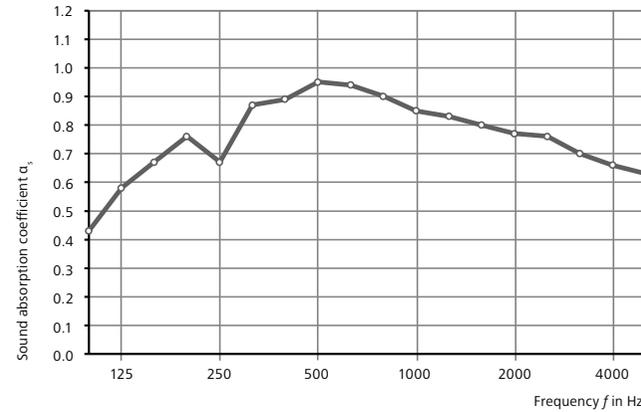


**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 66 mm  
**Coating:** StoSilent Top Basic & StoSilent Decor M  
**Thickness:** 66 mm

**Structural height:** approx. 72 mm (type A)  
 $\alpha_w$ : 0.80 (L)  
 $\alpha_{p,125}$ : 0.45  
**NRC:** 0.90

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.32	0.79	0.98	0.86	0.81	0.69
Octave band	0.45	0.94	0.96	0.86	0.77	0.66
Third-octave band	0.62	1.04	0.91	0.83	0.75	0.62
$\alpha_p$	0.45	0.90	0.95	0.85	0.80	0.65

Test certificate: 100960\_2015-01-07\_8

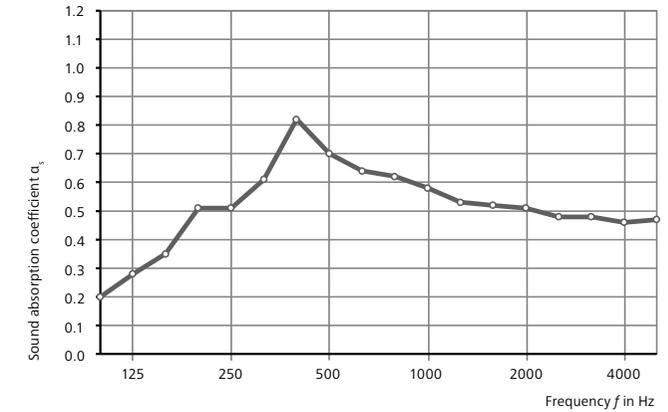


**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 66 mm  
**Coating:** StoSilent Top Basic & StoSilent Decor M  
**Thickness:** 66 mm

**Structural height:** 200 mm  
 $\alpha_w$ : 0.80  
 $\alpha_{p,125}$ : 0.55  
**NRC:** 0.80

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.43	0.76	0.89	0.90	0.80	0.70
Octave band	0.58	0.67	0.95	0.85	0.77	0.66
Third-octave band	0.67	0.87	0.94	0.83	0.76	0.63
$\alpha_p$	0.55	0.75	0.95	0.85	0.80	0.65

Test certificate: 100960\_2015-01-07\_2



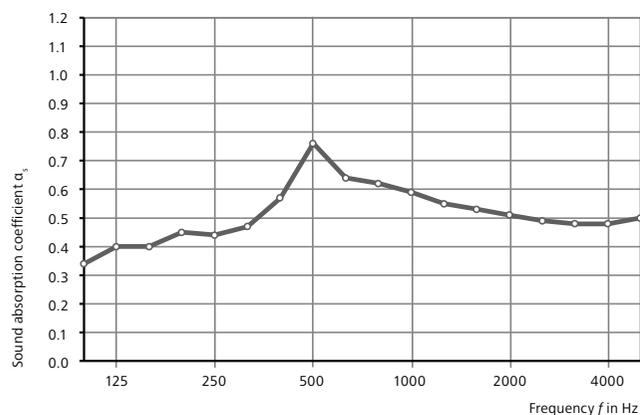
**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 36 mm  
**Coating:** StoSilent Top Basic & Top Basic white  
**Thickness:** 36 mm

**Structural height:** approx. 41 mm (type A)  
 $\alpha_w$ : 0.55  
 $\alpha_{p,125}$ : 0.30  
**NRC:** 0.60

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.20	0.51	0.82	0.62	0.52	0.48
Octave band	0.28	0.51	0.70	0.58	0.51	0.46
Third-octave band	0.35	0.61	0.64	0.53	0.48	0.47
$\alpha_p$	0.30	0.55	0.70	0.60	0.50	0.45

Test certificate: 100960\_2017-12-12\_4

## Sound characteristics

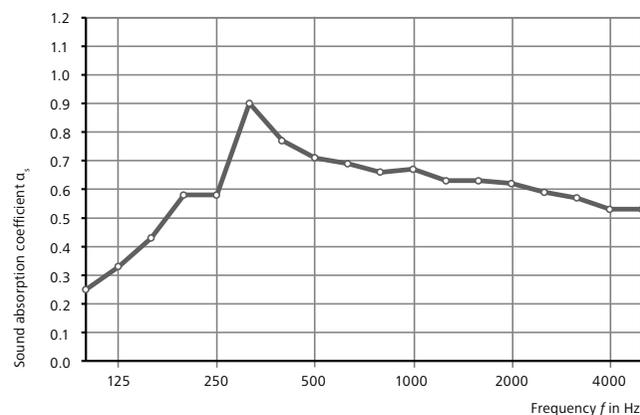


**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 36 mm  
**Coating:** StoSilent Top Basic & Top Basic white  
**Thickness:** 36 mm

**Structural**  
**height:** 200 mm  
 $\alpha_w$ : 0.60  
 $\alpha_{p, 125}$ : 0.40  
**NRC:** 0.60

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.34	0.45	0.57	0.62	0.53	0.48
Octave band	0.40	0.44	0.76	0.59	0.51	0.48
Third-octave band	0.40	0.47	0.64	0.55	0.49	0.50
$\alpha_p$	0.40	0.45	0.65	0.60	0.50	0.50

Test certificate: 100960\_2017-12-12\_9

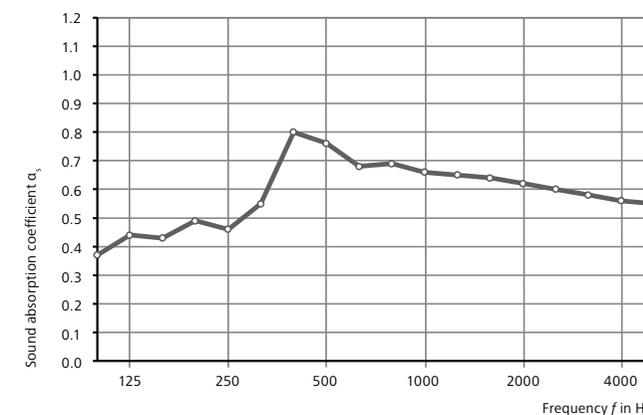


**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 46 mm  
**Coating:** StoSilent Top Basic & Top Basic white  
**Thickness:** 46 mm

**Structural**  
**height:** approx. 51 mm (type A)  
 $\alpha_w$ : 0.65 (L)  
 $\alpha_{p, 125}$ : 0.35  
**NRC:** 0.65

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.25	0.58	0.77	0.66	0.63	0.57
Octave band	0.33	0.58	0.71	0.67	0.62	0.53
Third-octave band	0.43	0.90	0.69	0.63	0.59	0.53
$\alpha_p$	0.35	0.70	0.70	0.65	0.60	0.55

Test certificate: 100960\_2017-12-12\_3



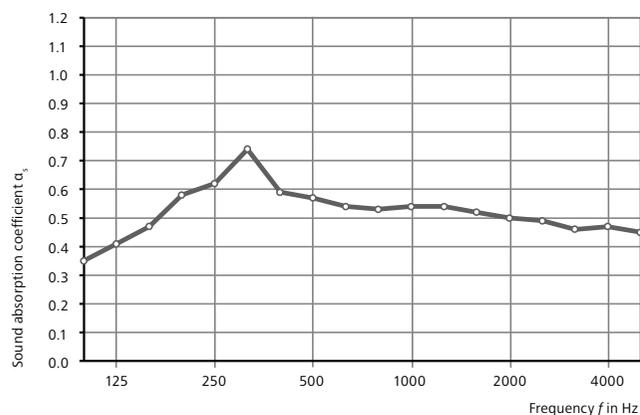
**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 46 mm  
**Coating:** StoSilent Top Basic & Top Basic white  
**Thickness:** 46 mm

**Structural**  
**height:** 200 mm  
 $\alpha_w$ : 0.65  
 $\alpha_{p, 125}$ : 0.40  
**NRC:** 0.65

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.37	0.49	0.80	0.69	0.64	0.58
Octave band	0.44	0.46	0.76	0.66	0.62	0.56
Third-octave band	0.43	0.55	0.68	0.65	0.60	0.55
$\alpha_p$	0.40	0.50	0.75	0.65	0.60	0.55

Test certificate: 100960\_2017-12-12\_8

## Sound characteristics

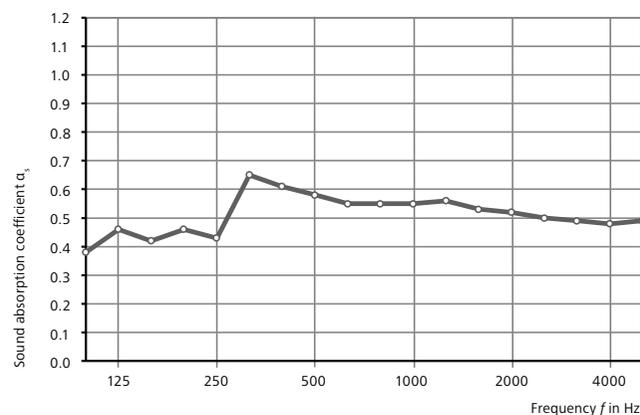


**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 66 mm  
**Coating:** StoSilent Top Basic & Top Basic white  
**Thickness:** 66 mm

**Structural height:** approx. 71 mm (type A)  
 $\alpha_w$ : 0.55 (L)  
 $\alpha_{p,125}$ : 0.40  
**NRC:** 0.55

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.35	0.58	0.59	0.53	0.52	0.46
Octave band	<b>0.41</b>	<b>0.62</b>	<b>0.57</b>	<b>0.54</b>	<b>0.50</b>	<b>0.47</b>
Third-octave band	0.47	0.74	0.54	0.54	0.49	0.45
$\alpha_p$	0.40	0.65	0.55	0.55	0.50	0.45

Test certificate: 100960\_2017-12-12\_1

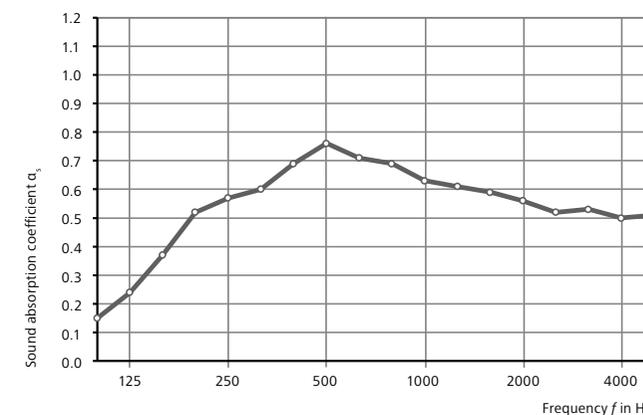


**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 66 mm  
**Coating:** StoSilent Top Basic & Top Basic white  
**Thickness:** 66 mm

**Structural height:** 200 mm  
 $\alpha_w$ : 0.55  
 $\alpha_{p,125}$ : 0.40  
**NRC:** 0.50

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.38	0.46	0.61	0.55	0.53	0.49
Octave band	<b>0.46</b>	<b>0.43</b>	<b>0.58</b>	<b>0.55</b>	<b>0.52</b>	<b>0.48</b>
Third-octave band	0.42	0.65	0.55	0.56	0.50	0.49
$\alpha_p$	0.40	0.50	0.60	0.55	0.50	0.50

Test certificate: 100960\_2017-12-12\_7



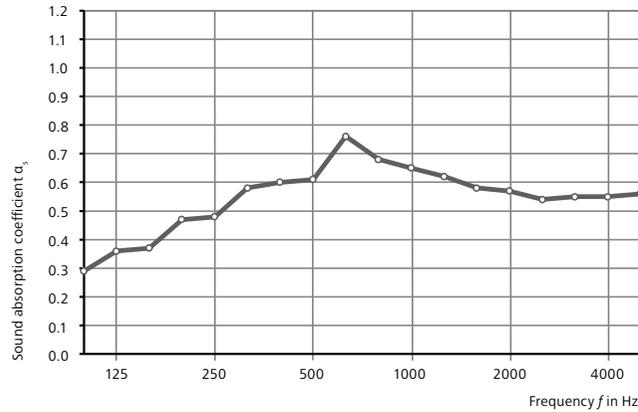
**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 36 mm  
**Coating:** StoSilent Top Basic & Top Finish  
**Thickness:** 36 mm

**Structural height:** approx. 41 mm (type A)  
 $\alpha_w$ : 0.60  
 $\alpha_{p,125}$ : 0.25  
**NRC:** 0.65

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.15	0.52	0.69	0.69	0.59	0.53
Octave band	<b>0.24</b>	<b>0.57</b>	<b>0.76</b>	<b>0.63</b>	<b>0.56</b>	<b>0.50</b>
Third-octave band	0.37	0.60	0.71	0.61	0.52	0.51
$\alpha_p$	0.25	0.55	0.70	0.65	0.55	0.50

Test certificate: 100960\_2017-03-20\_4

## Sound characteristics

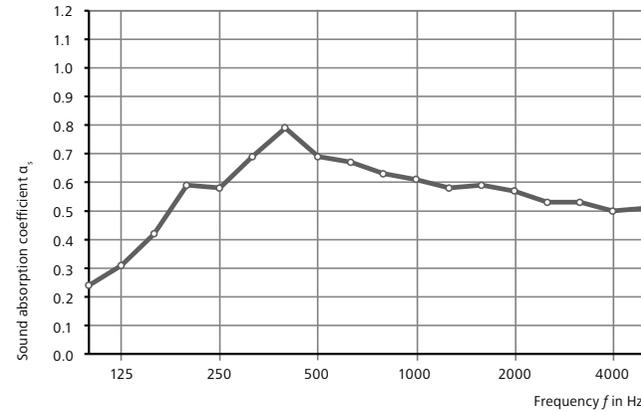


**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 36 mm  
**Coating:** StoSilent Top Basic & Top Finish  
**Thickness:** 36 mm

**Structural**  
**height:** 200 mm  
 $\alpha_w$ : 0.65  
 $\alpha_{p, 125}$ : 0.35  
**NRC:** 0.60

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.29	0.47	0.60	0.68	0.58	0.55
Octave band	<b>0.36</b>	<b>0.48</b>	<b>0.61</b>	<b>0.65</b>	<b>0.57</b>	<b>0.55</b>
Third-octave band	0.37	0.58	0.76	0.62	0.54	0.56
$\alpha_p$	0.35	0.50	0.65	0.65	0.55	0.55

Test certificate: 100960\_2017-03-20\_8

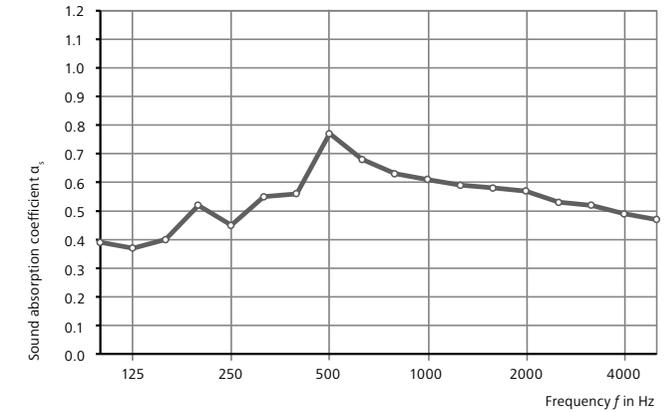


**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 46 mm  
**Coating:** StoSilent Top Basic & Top Finish  
**Thickness:** 46 mm

**Structural**  
**height:** approx. 51 mm (type A)  
 $\alpha_w$ : 0.60  
 $\alpha_{p, 125}$ : 0.30  
**NRC:** 0.60

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.24	0.59	0.79	0.63	0.59	0.53
Octave band	<b>0.31</b>	<b>0.58</b>	<b>0.69</b>	<b>0.61</b>	<b>0.57</b>	<b>0.50</b>
Third-octave band	0.42	0.69	0.67	0.58	0.53	0.51
$\alpha_p$	0.30	0.60	0.70	0.60	0.55	0.50

Test certificate: 100960\_2015-04-21\_8



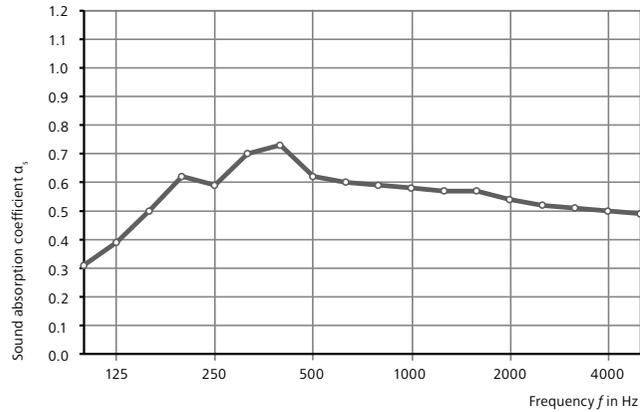
**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 46 mm  
**Coating:** StoSilent Top Basic & Top Finish  
**Thickness:** 46 mm

**Structural**  
**height:** 200 mm  
 $\alpha_w$ : 0.60  
 $\alpha_{p, 125}$ : 0.40  
**NRC:** 0.60

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.39	0.52	0.56	0.63	0.58	0.52
Octave band	<b>0.37</b>	<b>0.45</b>	<b>0.77</b>	<b>0.61</b>	<b>0.57</b>	<b>0.49</b>
Third-octave band	0.40	0.55	0.68	0.59	0.53	0.47
$\alpha_p$	0.40	0.50	0.65	0.60	0.55	0.50

Test certificate: 100960\_2015-04-21\_1

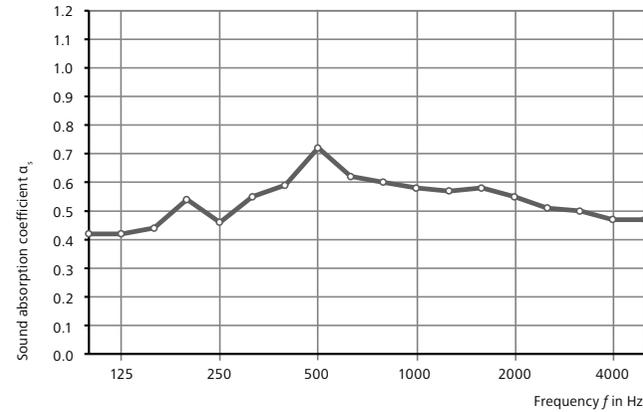
## Sound characteristics



<b>System:</b>	StoSilent Direct	<b>Structural</b>	
<b>Build-up:</b>	StoSilent Board MW 100, 66 mm	<b>height:</b>	approx. 71 mm (type A)
<b>Coating:</b>	StoSilent Top Basic & Top Finish	$\alpha_w$ :	0.60 (L)
<b>Thickness:</b>	66 mm	$\alpha_{p, 125}$ :	0.40
		<b>NRC:</b>	0.60

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
<b>Third-octave band</b>	0.31	0.62	0.73	0.59	0.57	0.51
<b>Octave band</b>	<b>0.39</b>	<b>0.59</b>	<b>0.62</b>	<b>0.58</b>	<b>0.54</b>	<b>0.50</b>
<b>Third-octave band</b>	0.50	0.70	0.60	0.57	0.52	0.49
$\alpha_p$	0.40	0.65	0.65	0.60	0.55	0.50

Test certificate: 100960\_2015-04-21\_6



<b>System:</b>	StoSilent Direct	<b>Structural</b>	
<b>Build-up:</b>	StoSilent Board MW 100, 66 mm	<b>height:</b>	200 mm
<b>Coating:</b>	StoSilent Top Basic & Top Finish	$\alpha_w$ :	0.60
<b>Thickness:</b>	66 mm	$\alpha_{p, 125}$ :	0.45
		<b>NRC:</b>	0.60

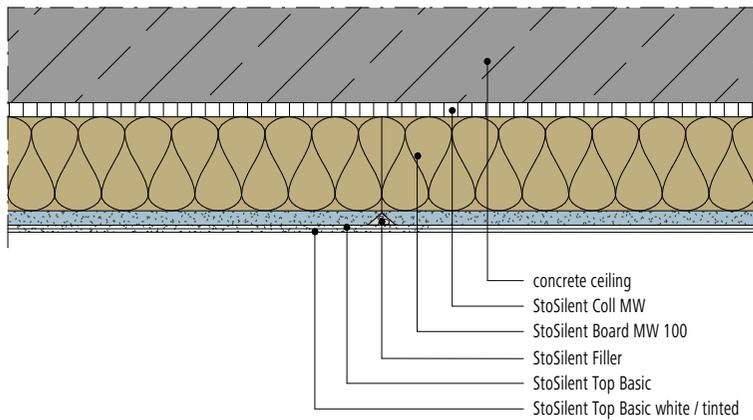
Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
<b>Third-octave band</b>	0.42	0.54	0.59	0.60	0.58	0.50
<b>Octave band</b>	<b>0.42</b>	<b>0.46</b>	<b>0.72</b>	<b>0.58</b>	<b>0.55</b>	<b>0.47</b>
<b>Third-octave band</b>	0.44	0.55	0.62	0.57	0.51	0.47
$\alpha_p$	0.45	0.50	0.65	0.60	0.55	0.50

Test certificate: 100960\_2015-04-21\_3

## Construction details

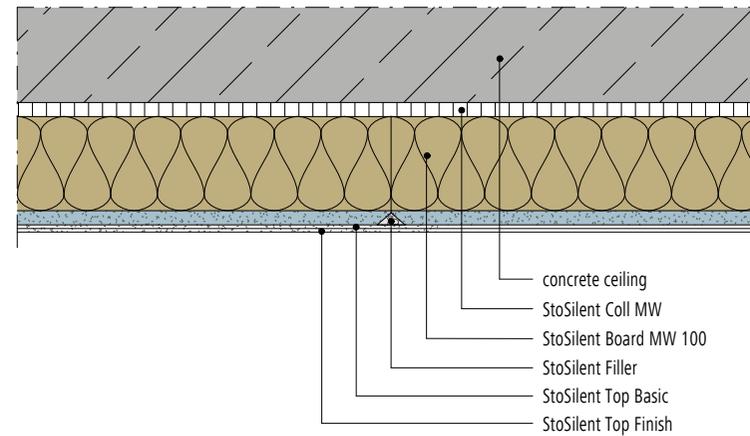
### Ceiling (section): system build-up with bonding and StoSilent Top Basic as coating

Sto-HQ-EN\_SSDR-BB-1010\_2019-12-01



### Ceiling (section): system build-up with bonding and StoSilent Top Finish as coating

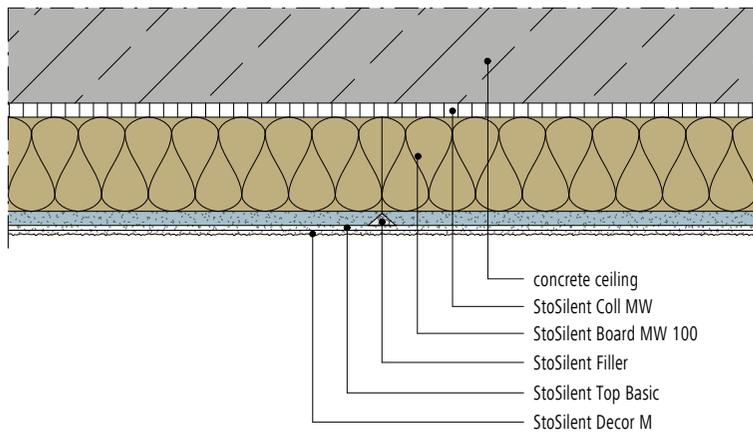
Sto-HQ-EN\_SSDR-BT-1010\_2019-12-01



## Construction details

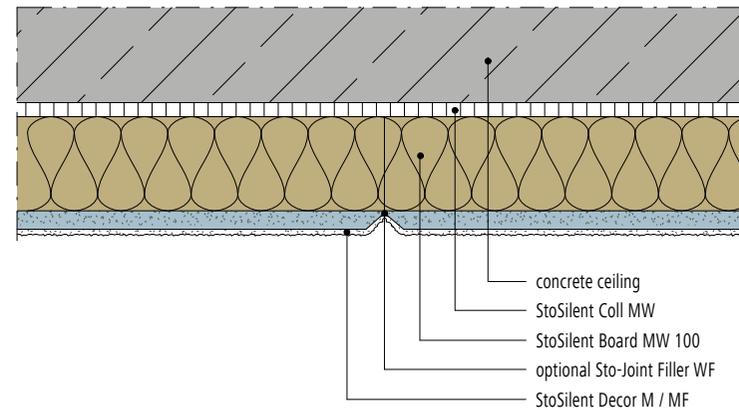
### Ceiling (section): system build-up with bonding and StoSilent Top Basic and StoSilent Decor M as coating

Sto-HQ-EN\_SSDR-BD-1010\_2019-12-01



### Ceiling (section): system build-up with bonding and StoSilent Decor M/MF as coating

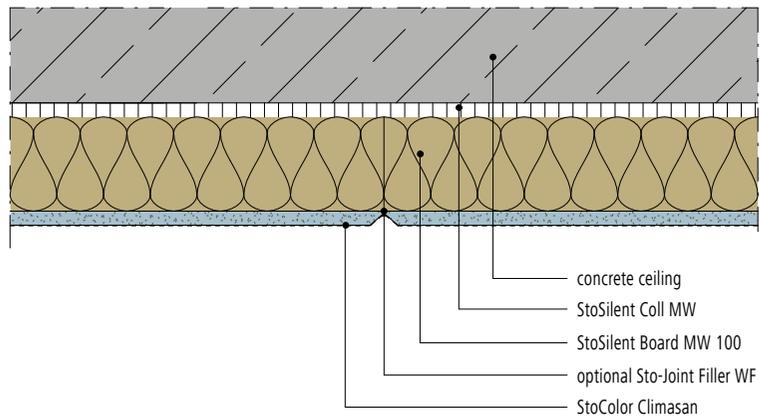
Sto-HQ-EN\_SSDR-D-1010\_2019-12-01



## Construction details

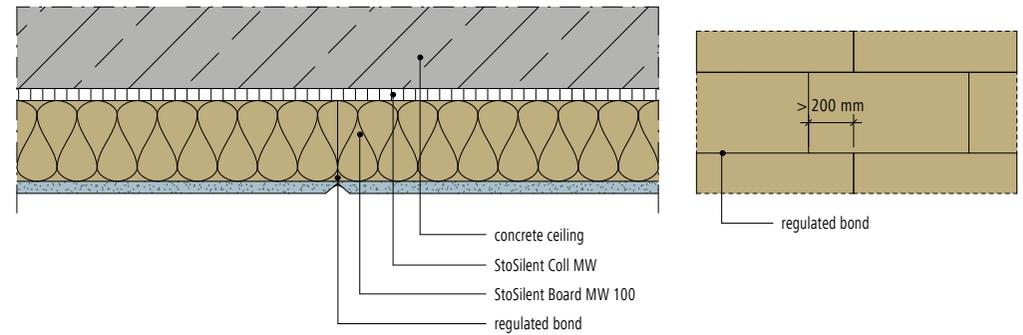
### Ceiling (section): system build-up with bonding and StoColor Climasan as coating

Sto-HQ-EN\_SSDR-C-1010\_2019-12-01



### Ceiling (section): system build-up with bonding, without coating

Sto-HQ-EN\_SSDR-O-1010\_2019-12-01

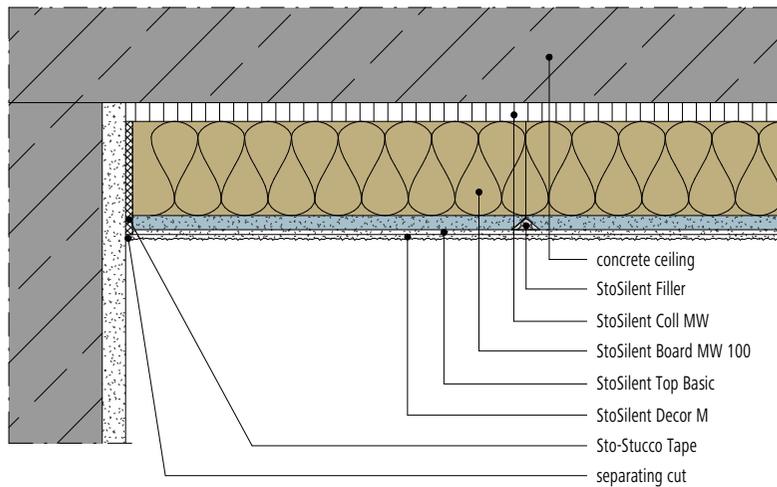




## Construction details

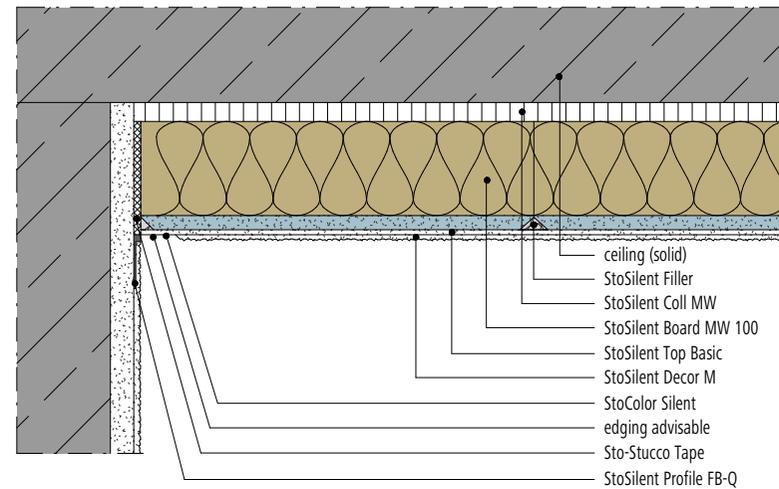
### Ceiling (section): connection to existing plaster with separating cut

Sto-HQ-EN\_SSDR-BD-1205\_2019-12-01



### Ceiling (section): connection to existing plaster with StoSilent Profile FB and formation of edging

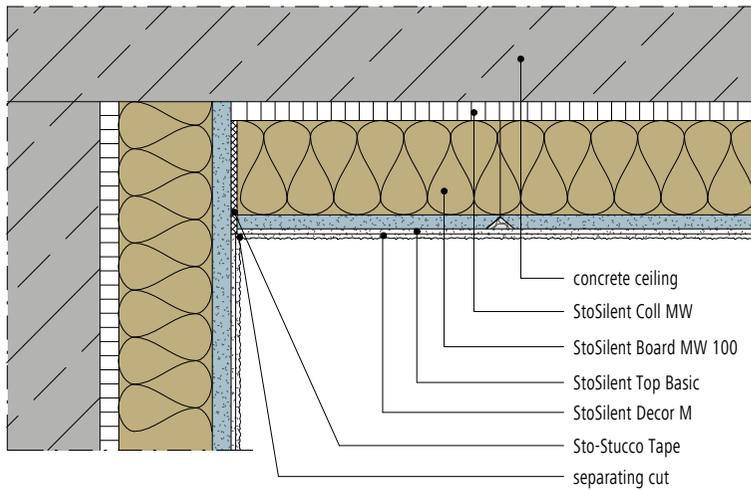
Sto-HQ-EN\_SSDR-BD-1206\_2019-12-01



## Construction details

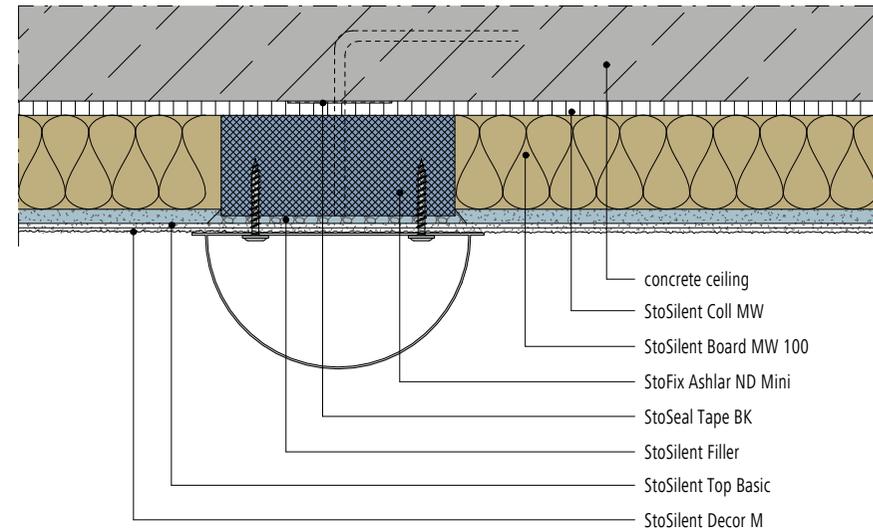
### Ceiling (section): connection to an internal corner with separating cut

Sto-HQ-EN\_SSDR-BD-1210\_2019-12-01



### Ceiling (section): lamp fixing

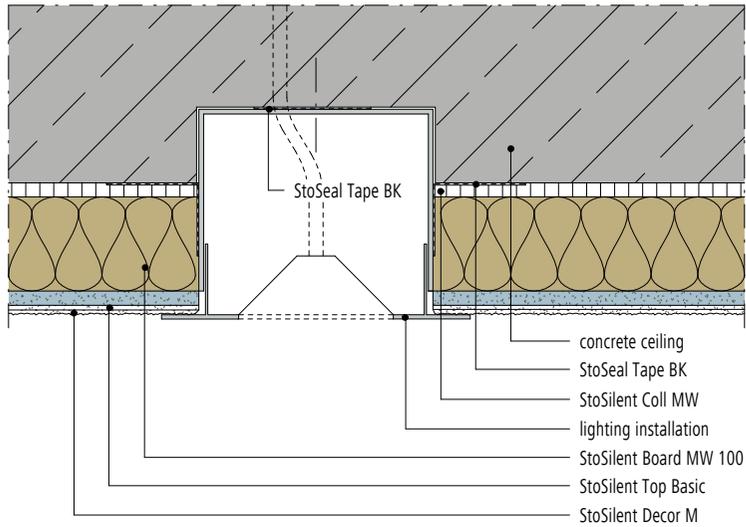
Sto-HQ-EN\_SSDR-BD-1215\_2019-12-01



## Construction details

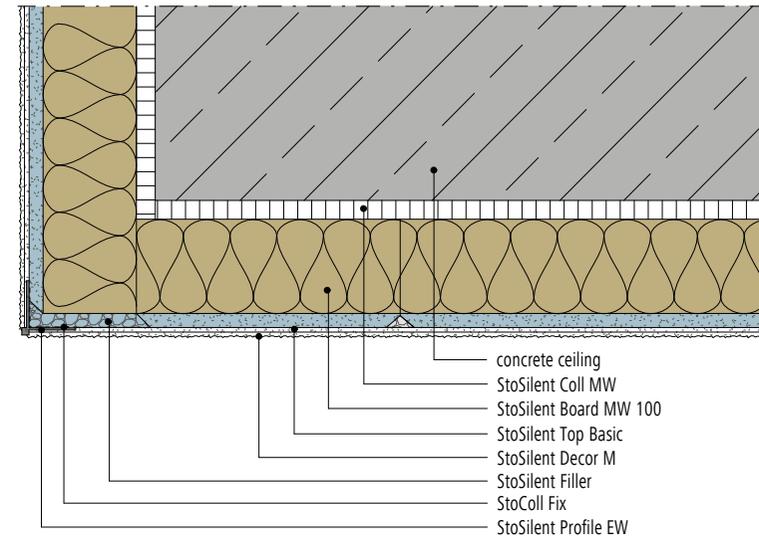
### Ceiling (section): fixing of lights

Sto-HQ-EN\_SSDR-BD-1225\_2019-12-01



### Ceiling (section): corner formation in the case of an offset ceiling

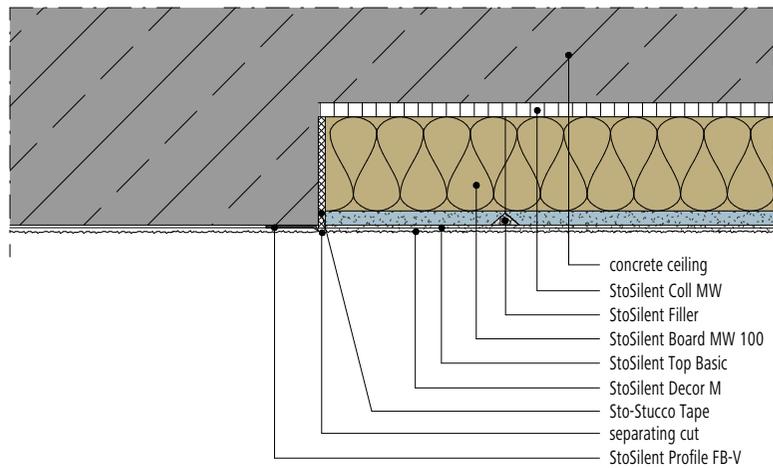
Sto-HQ-EN\_SSDR-BD-1230\_2019-12-01



## Construction details

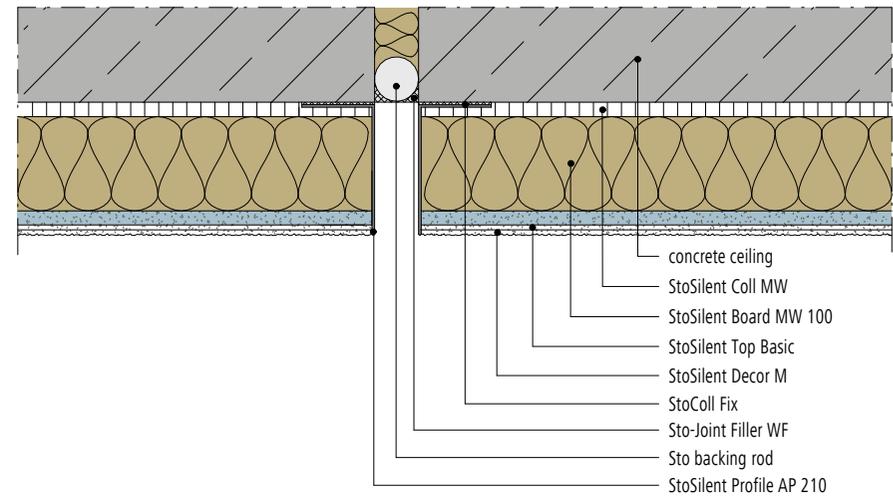
### Ceiling (section): connection to a transition for a change in material using StoSilent Profile FB

Sto-HQ-EN\_SSDR-BD-1241\_2019-12-01



### Ceiling (section): structural expansion joint with Sto-Backing Rod

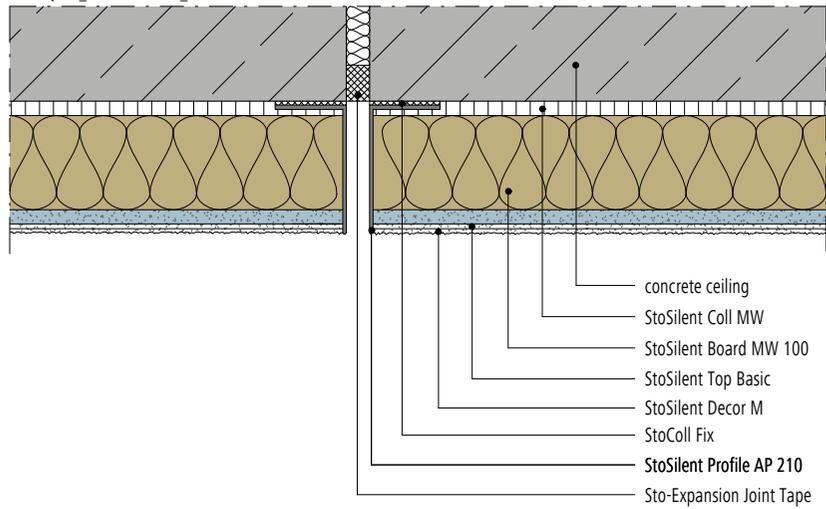
Sto-HQ-EN\_SSDR-BD-1800\_2019-12-01



## Construction details

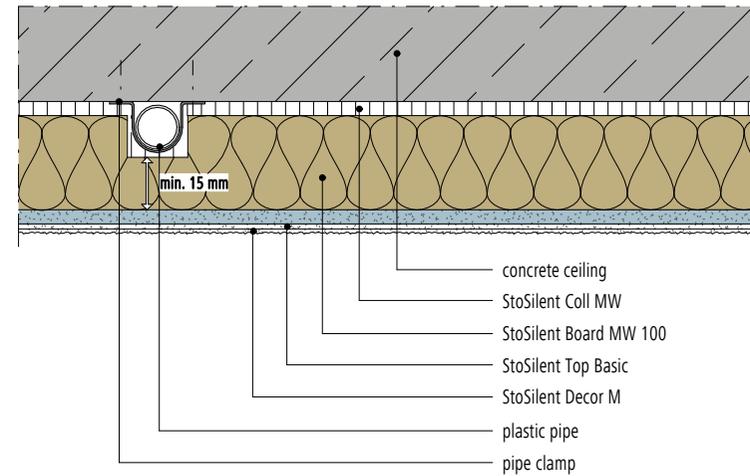
### Ceiling (section): structural expansion joint with Sto-Expansion Joint Tape

Sto-HQ-EN\_SSDR-BD-1805\_2019-12-01



### Ceiling (section): integration of a duct for installations

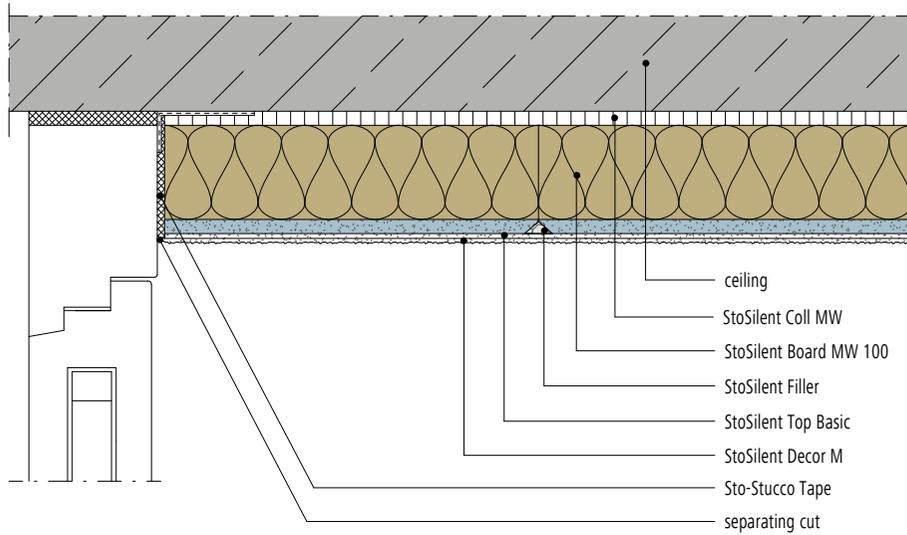
Sto-HQ-EN\_SSDR-BD-1900\_2019-12-01



## Construction details

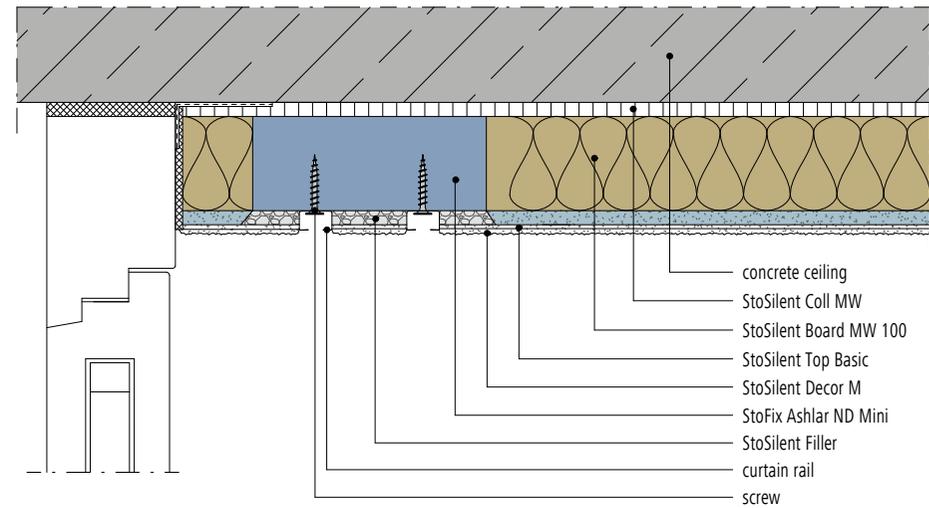
### Ceiling (section): connection to a window

Sto-HQ-EN\_SSDR-BD-1920\_2019-12-01



### Ceiling (section): window connection with integrated curtain rail (type VS 57)

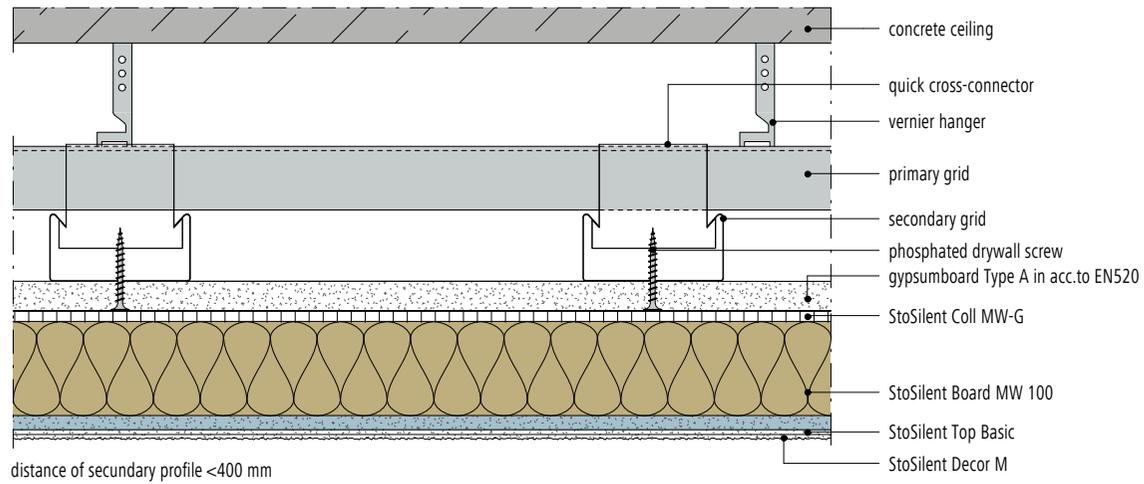
Sto-HQ-EN\_SSDR-BD-1925\_2019-12-01



## Construction details

### Ceiling (section): system build-up for a suspended ceiling

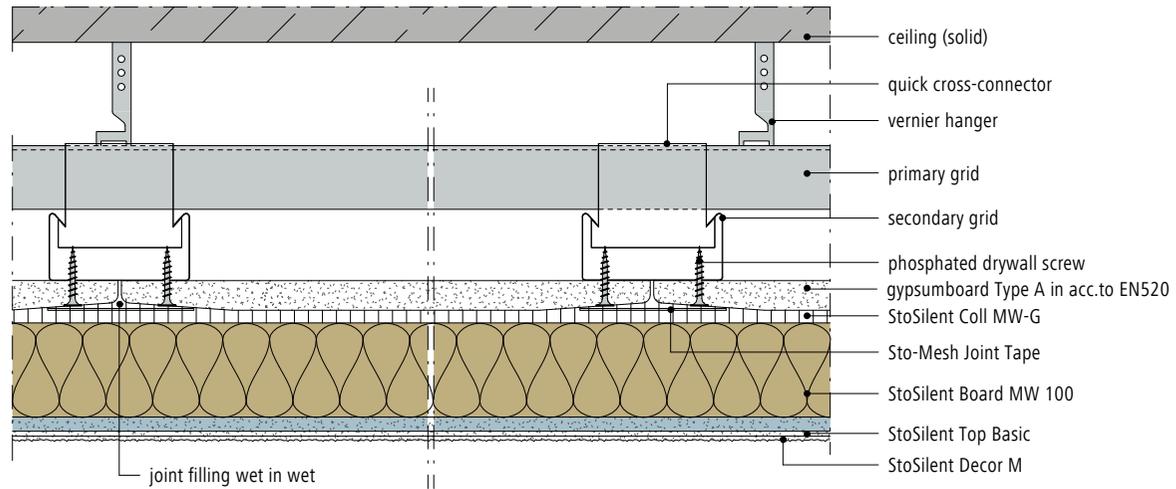
Sto-HQ-EN\_SSDR-BD-2000\_2019-12-01



## Construction details

### Ceiling (section): system build-up for a suspended ceiling

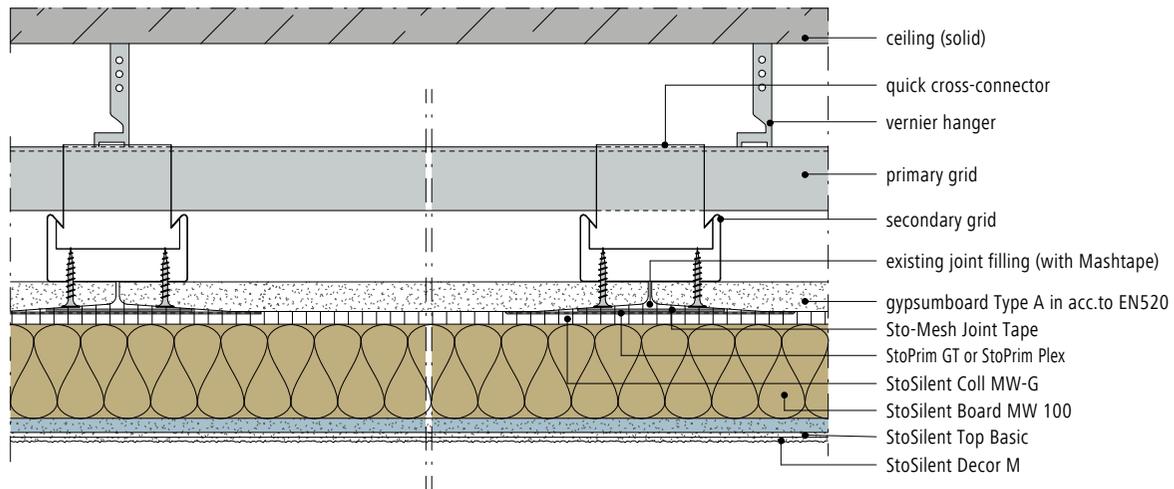
Sto-HQ-EN\_SSDR-BD-2020\_2019-12-01



## Construction details

### Ceiling (section): system build-up on existing joint filler and levelling coat

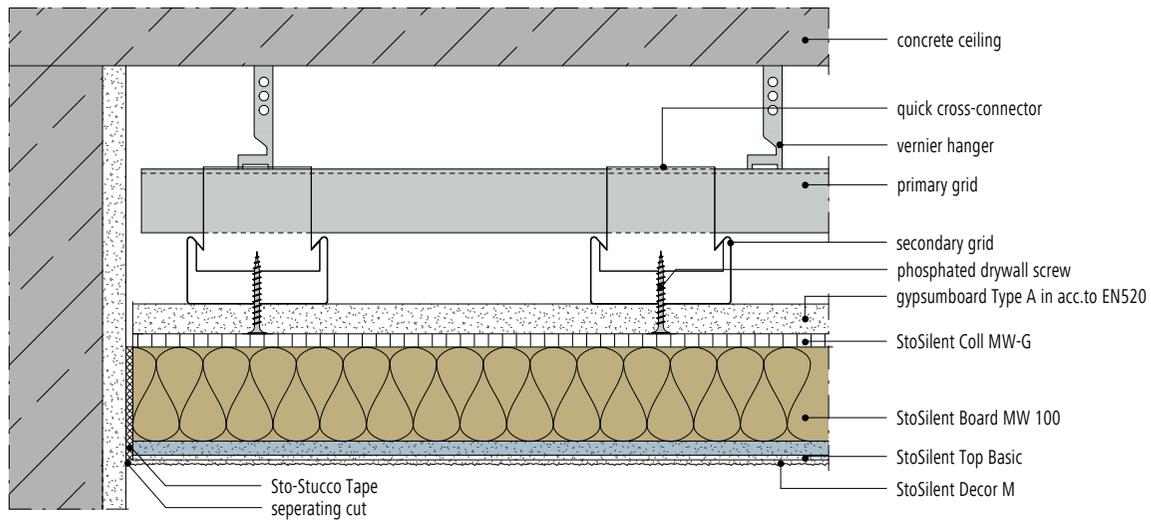
Sto-HQ-EN\_SSDR-BD-2025\_2019-12-01



## Construction details

### Ceiling (section): wall junction for a suspended concrete ceiling

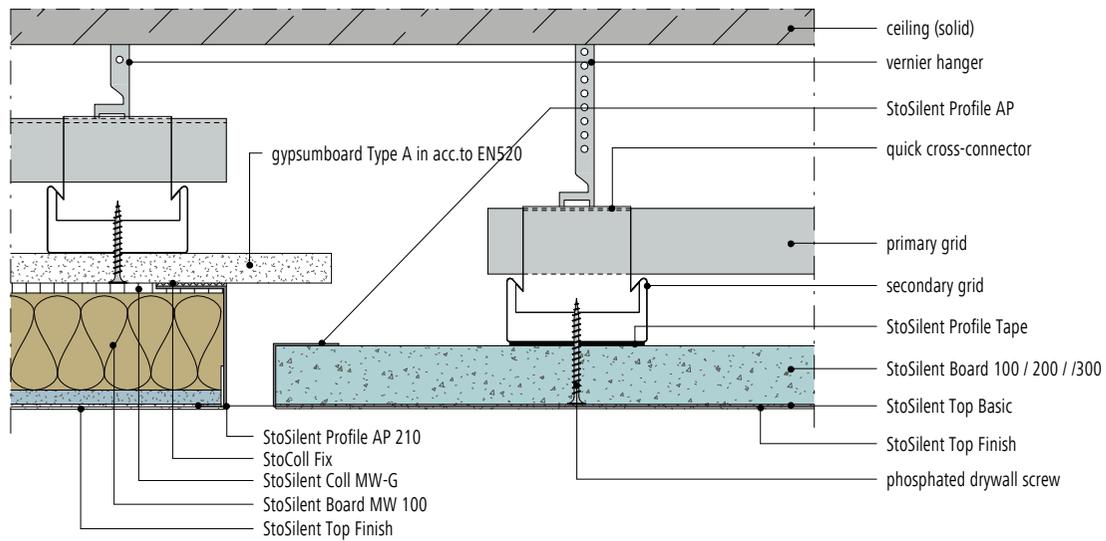
Sto-HQ-EN\_SSDR-BD-2010\_2019-12-01



## Construction details

### Ceiling (section): connection of joint formation from StoSilent Distance to StoSilent Direct

Sto-HQ-EN\_SSDR-BD-1930\_2019-12-01

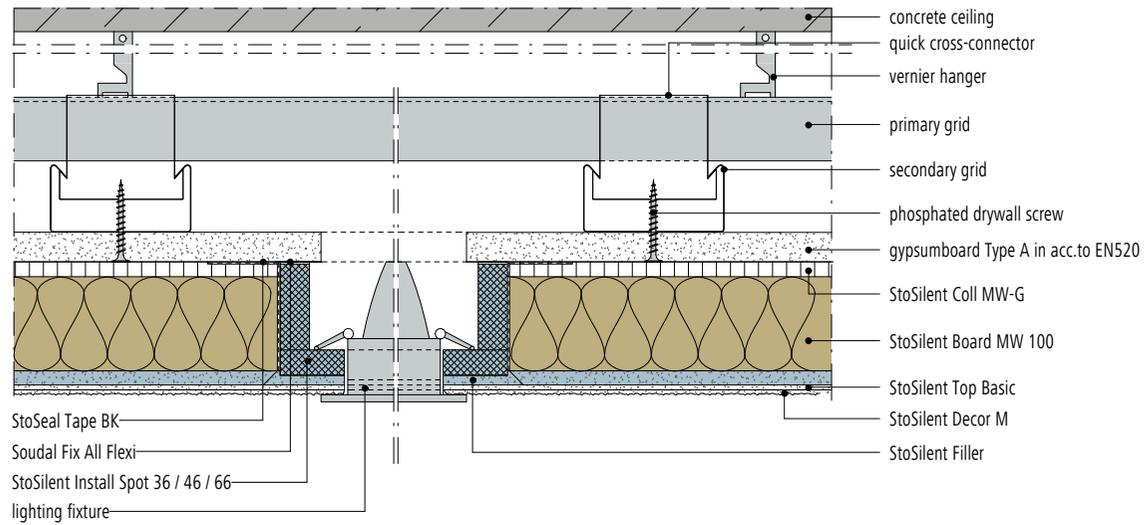




## Construction details

### Ceiling (section): installation of lights with StoSilent Install Spot

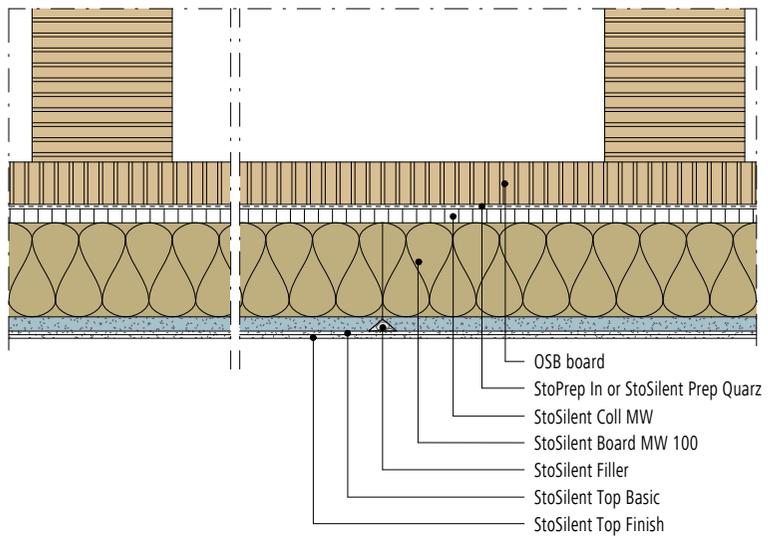
Sto-HQ-EN\_SSDR-BD-2200\_2019-12-01



## Construction details

### Ceiling (section): system build-up with bonding on oriented strand board

Sto-HQ-EN\_SSDR-BT-1016\_2019-12-01



# StoSilent Frame

## Directly bonded acoustic system for ceiling edges

The StoSilent Frame system was developed specially for the quick and cost-effective acoustic optimisation of rooms. Unlike other systems, the sound insulation material is applied in a ring around the room where the walls meet the ceiling.

### System advantages

- Consists of 95 % recycled material and does not contain any synthetic mineral fibres
- The acoustic panels are tested for harmful substances by TÜV Süd and are low-emission and recyclable
- Hard-wearing and hygienic absorber material
- Quick and simple application

## The system

### Build-up: StoSilent Frame



#### Carrier layer

- 1 — Priming coat
- 2 — Bonding

#### Acoustic layer

- 3 — Acoustic panel,  
coated at the factory

### System properties

#### Application

- Interior
- For ceilings
- Bonding in the edge area between the wall and ceiling
- For smooth surfaces
- Ideal for schools, nursery schools, public areas

#### Design options

- StoSilent Board R 400: coated at the factory

#### Colour range

- Colour shades in accordance with RAL colour fans

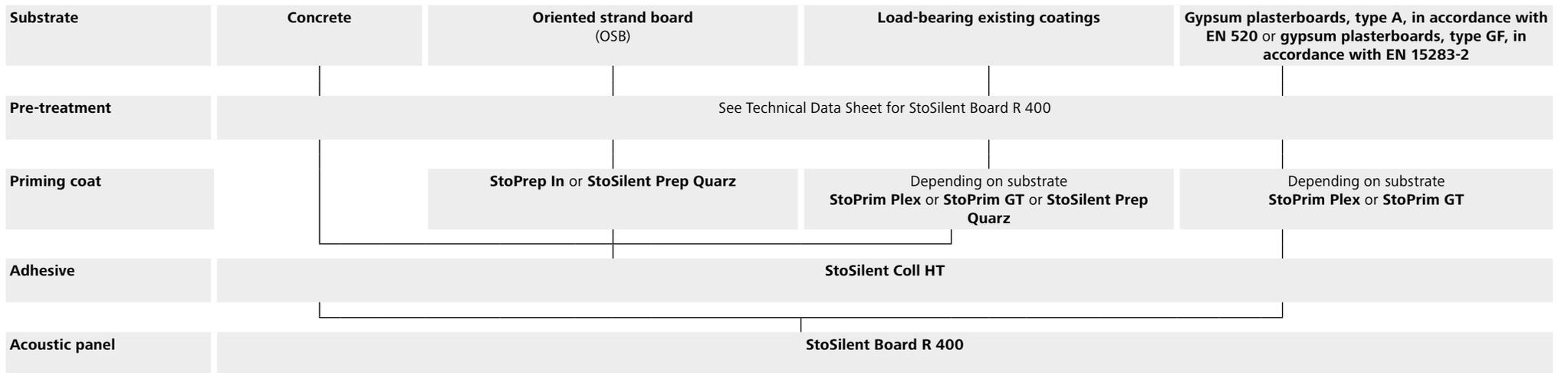
#### Application

- Bonded directly to substrate
- Fast and simple installation
- For immediate installation



## System versions

### StoSilent Frame system description



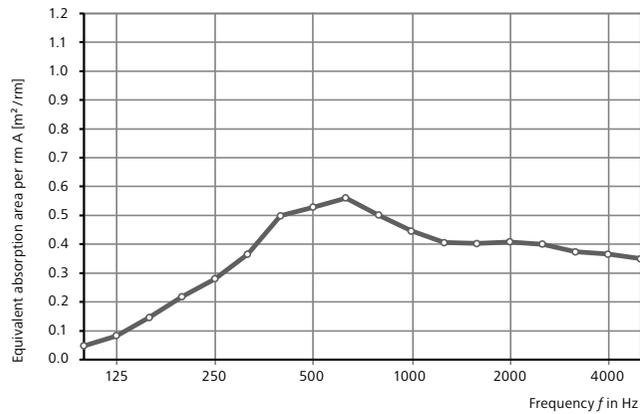


## Seals of approval and quality

Products and systems		Seals of approval and test procedures							
								Fire classification in accordance with EN 13501	
Products	StoColl HT	A+	–	Preservative-free	–	–	EC1 Plus	depending on the system	EN 12004
	StoSilent Board R 400	A+	–	Preservative-free	–	–	EC1 Plus	depending on the system	EN 12004



## Sound characteristics



**System:** StoSilent Frame  
**Build-up:** StoSilent Board R 400  
**Coating:** colour coating  
**Thickness:** 50 mm  
**Structural height:** approx. 50 mm

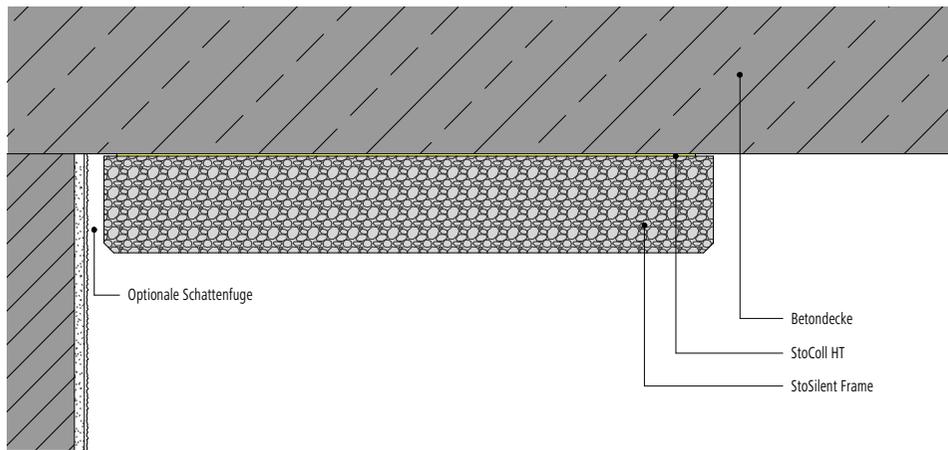
Frequency <i>f</i> in Hz	Equivalent absorption area per rm A [m <sup>2</sup> /rm]					
	125	250	500	1000	2000	4000
Third-octave band	0.05	0.22	0.50	0.50	0.40	0.37
Octave band	<b>0.08</b>	<b>0.28</b>	<b>0.53</b>	<b>0.45</b>	<b>0.41</b>	<b>0.37</b>
Third-octave band	0.15	0.37	0.56	0.41	0.40	0.35

Test certificate: 100960\_2021-05 HR\_3 (analysis)

## Construction details

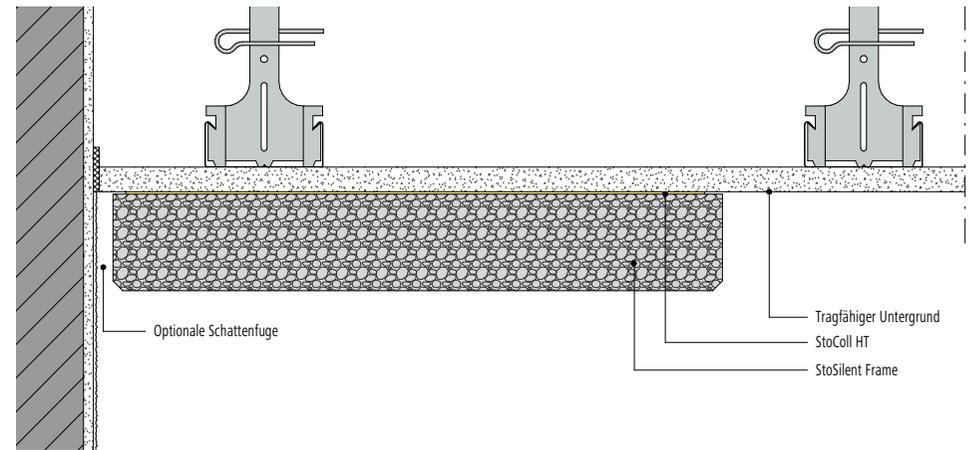
### Ceiling (vertical section): wall junction with optional shadow gap

Sto-HQ-DE\_SSFR-0100\_2022-10-01



### Ceiling (vertical section): wall junction with optional shadow gap

Sto-HQ-DE\_SSFR-0110\_2022-10-01



# StoSilent Compact

## Acoustic system for seamless surfaces

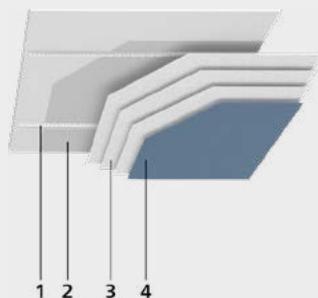
The StoSilent Compact acoustic plaster system is the perfect acoustic solution for rooms that are not suitable for suspended acoustic systems. We offer two solutions: StoSilent Miral AP and StoSilent Sil AP. Both are designed to enable you to quickly achieve a seamless, homogenous surface and are just as easy to apply as conventional plaster.

### System advantages

- Coating on curves and spherical surfaces possible
- Suitable for nearly all types of room
- Alternative to suspended or mounted systems (e.g. in listed buildings)

## The system

### Build-up: StoSilent Compact with StoSilent Sil AP and StoSilent Decor M



#### Carrier layer

- 1 — System profile
- 2 — Priming coat

#### Acoustic layer

- 3 — Intermediate coat

#### Material layer

- 4 — Finishing coat

### System properties

#### Application

- Interior
- For ceilings and upper wall areas
- Do not use on even surfaces and barrel vaults
- In saltwater spas, steam baths
- On gypsum fibreboards

#### Reaction to fire

- Reaction to fire (class) in accordance with EN 13501-1: C-s1, d0

#### Application

- Multi-layer
- Thickness: 25 mm
- By trained specialists

### Material layer options



#### Silicate acoustic plaster

- StoSilent Decor
- Textured surface
- Tintable in accordance with the StoColor System



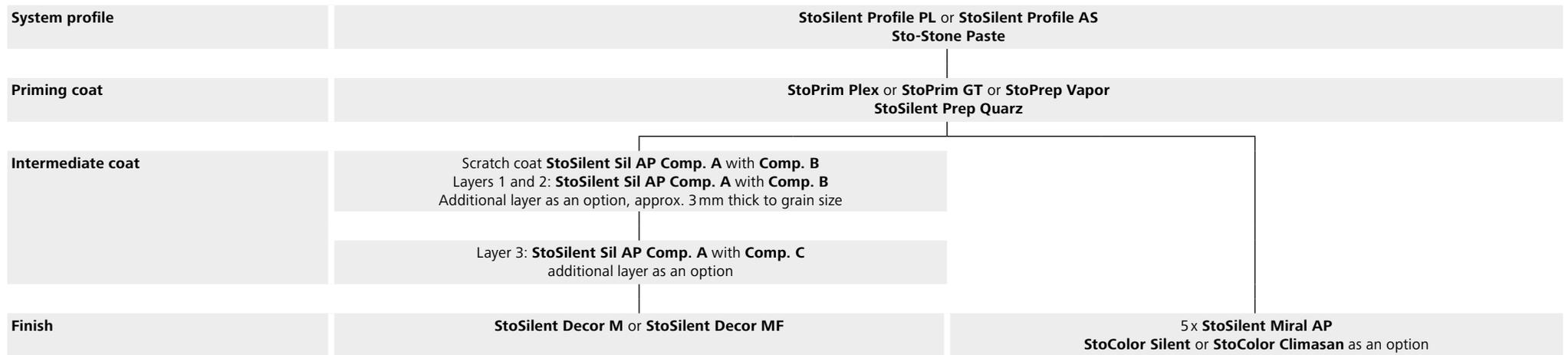
#### Organic acoustic plaster

- StoSilent Top
- Smooth surface
- Limited tintability in accordance with the StoColor System



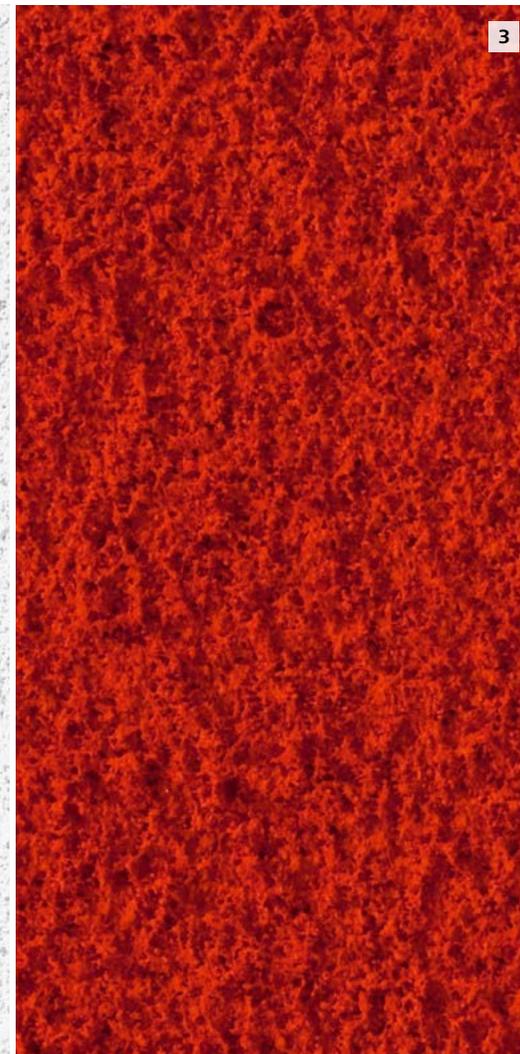
## System versions

### StoSilent Compact system description



## Surfaces

- 1 StoSilent Miral AP
- 2 StoSilent Decor M
- 3 StoSilent Decor MF

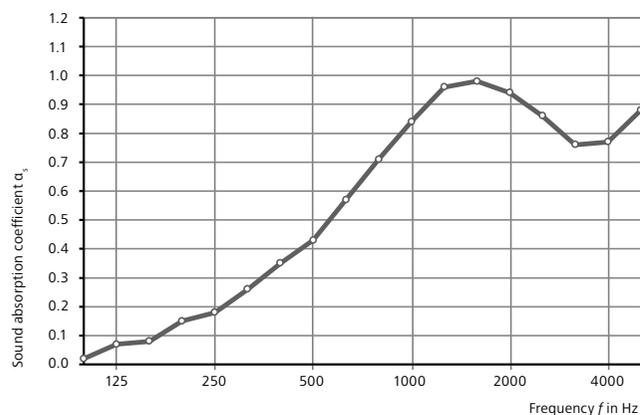




## Seals of approval and quality

Products and systems		Seals of approval and test procedures							
								Fire classification in accordance with EN 13501	
Products	StoSilent Sil AP	–	–	–	–	–	–	C-s1, d0	EN 15824
	StoSilent Miral AP	–	–	–	–	–	–	A2-s1, d0 (EN 13501-1), Class 1/A (ASTM E84)	–
	StoSilent Decor M	A+	Test standard TM-10 Emulsion-based plasters 06/09	Preservative-free (untinted versions: white and Sto white shades)	Test standard TM-10 Emulsion-based plasters 06/09	–	–	–	–
	StoSilent Decor MF	A+	–	–	–	–	–	Fire classification dependent on use within system	–
	StoSilent Prep Quarz	A+	–	–	–	–	–	–	–

## Sound characteristics

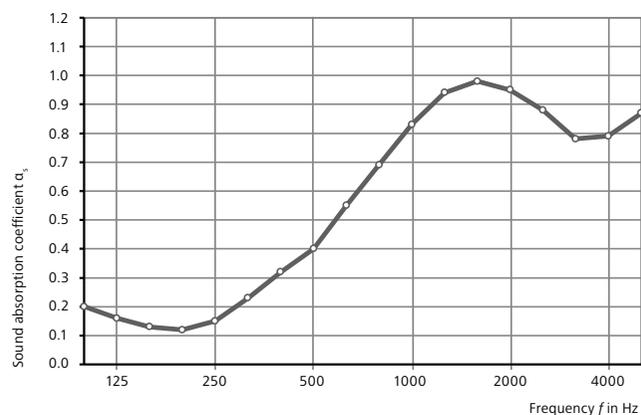


**System:** StoSilent Compact  
**Build-up:** StoSilent Sil AP  
**Coating:** StoSilent Decor MF  
**Thickness:** 25 mm

**Structural height:** approx. 25 mm (type B)  
 $\alpha_w$ : 0.45 (MH)  
 $\alpha_{p,125}$ : 0.05  
**NRC:** 0.60

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.02	0.15	0.35	0.71	0.98	0.76
Octave band	<b>0.07</b>	<b>0.18</b>	<b>0.43</b>	<b>0.84</b>	<b>0.94</b>	<b>0.77</b>
Third-octave band	0.08	0.26	0.57	0.96	0.86	0.88
$\alpha_p$	0.05	0.20	0.45	0.85	0.95	0.80

Test certificate: 35120\_95\_16

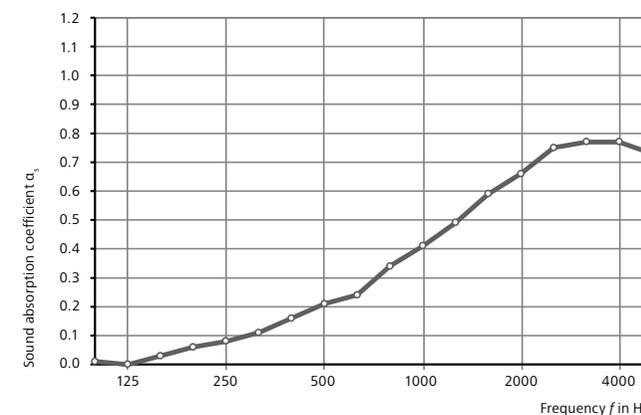


**System:** StoSilent Compact  
**Build-up:** StoSilent Sil AP  
**Coating:** StoSilent Decor MF  
**Thickness:** 25 mm

**Structural height:** 285 mm  
 $\alpha_w$ : 0.40 (MH)  
 $\alpha_{p,125}$ : 0.15  
**NRC:** 0.60

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.20	0.12	0.32	0.69	0.98	0.78
Octave band	<b>0.16</b>	<b>0.15</b>	<b>0.40</b>	<b>0.83</b>	<b>0.95</b>	<b>0.79</b>
Third-octave band	0.13	0.23	0.55	0.94	0.88	0.87
$\alpha_p$	0.15	0.15	0.40	0.80	0.95	0.80

Test certificate: 35120\_95\_15



**System:** StoSilent Compact  
**Build-up:** StoSilent Miral AP, 15 mm, processing by machine with screw pump  
**Coating:** none  
**Thickness:** 15 mm

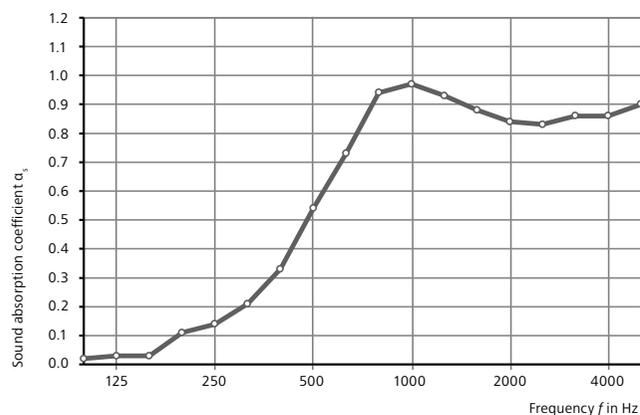
**Structural height:** approx. 15 mm (type A)  
 $\alpha_w$ : 0.30 (H)  
 $\alpha_{p,125}$ : 0.00  
**NRC:** 0.35

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.01	0.06	0.16	0.34	0.59	0.77
Octave band	<b>0.00</b>	<b>0.08</b>	<b>0.21</b>	<b>0.41</b>	<b>0.66</b>	<b>0.77</b>
Third-octave band	0.03	0.11	0.24	0.49	0.75	0.73
$\alpha_p$	0.00	0.10	0.20	0.40	0.65	0.75

Test certificate: 100960\_2014-09-11\_3



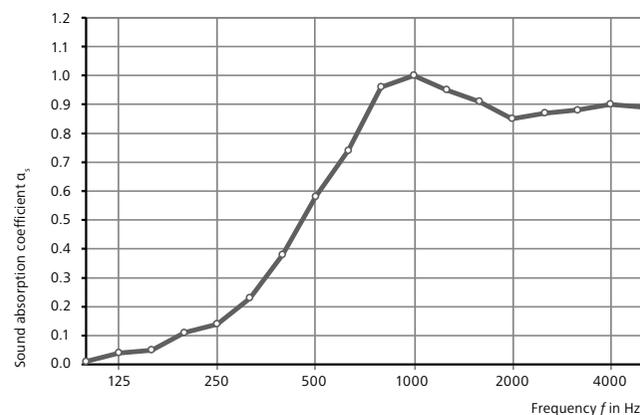
## Sound characteristics



**System:** StoSilent Compact  
**Build-up:** StoSilent Miral AP, 25 mm, processing by machine with screw pump  
**Coating:** none  
**Thickness:** 25 mm  
**Structural height:** approx. 25 mm (type A)  
 $\alpha_w$ : 0.45 (MH)  
 $\alpha_{p, 125}$ : 0.05  
**NRC:** 0.60

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.02	0.11	0.33	0.94	0.88	0.86
Octave band	0.03	0.14	0.54	0.97	0.84	0.86
Third-octave band	0.03	0.21	0.73	0.93	0.83	0.90
$\alpha_p$	0.05	0.15	0.55	0.95	0.85	0.85

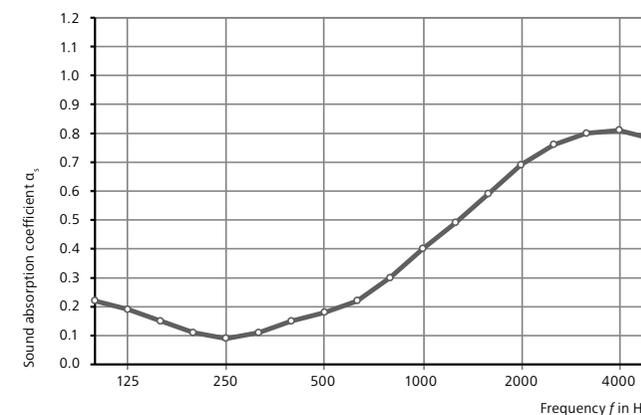
Test certificate: 100960\_2015-08-31\_18



**System:** StoSilent Compact  
**Build-up:** StoSilent Miral AP, 25 mm (screw pump) + renovation  
**Coating:** colour coating as a renovation coat  
**Thickness:** 25 mm  
**Structural height:** approx. 25 mm (type A)  
 $\alpha_w$ : 0.45 (MH)  
 $\alpha_{p, 125}$ : 0.05  
**NRC:** 0.65

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.01	0.11	0.38	0.96	0.91	0.88
Octave band	0.04	0.14	0.58	1.00	0.85	0.90
Third-octave band	0.05	0.23	0.74	0.95	0.87	0.89
$\alpha_p$	0.05	0.15	0.55	0.95	0.90	0.90

Test certificate: 100960\_2015-12-01\_9

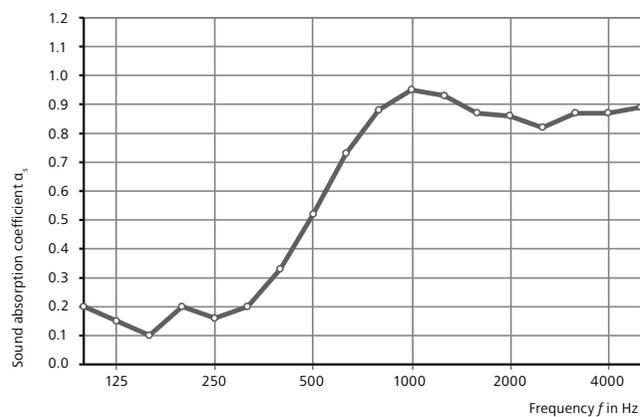


**System:** StoSilent Compact  
**Build-up:** StoSilent Miral AP, 15 mm, processing by machine with screw pump  
**Coating:** none  
**Thickness:** 15 mm  
**Structural height:** 200 mm  
 $\alpha_w$ : 0.30 (H)  
 $\alpha_{p, 125}$ : 0.20  
**NRC:** 0.35

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.22	0.11	0.15	0.30	0.59	0.80
Octave band	0.19	0.09	0.18	0.40	0.69	0.81
Third-octave band	0.15	0.11	0.22	0.49	0.76	0.78
$\alpha_p$	0.20	0.10	0.20	0.40	0.70	0.80

Test certificate: 100960\_2014-09-11\_2

## Sound characteristics



**System:** StoSilent Compact  
**Build-up:** StoSilent Miral AP, 25 mm, processing by machine with screw pump  
**Coating:** none  
**Thickness:** 25 mm  
**Structural height:** 200 mm  
 $\alpha_w$ : 0.50 (MH)  
 $\alpha_{p, 125}$ : 0.15  
**NRC:** 0.60

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
<b>Third-octave band</b>	0.20	0.20	0.33	0.88	0.87	0.87
<b>Octave band</b>	<b>0.15</b>	<b>0.16</b>	<b>0.52</b>	<b>0.95</b>	<b>0.86</b>	<b>0.87</b>
<b>Third-octave band</b>	0.10	0.20	0.73	0.93	0.82	0.89
$\alpha_p$	0.15	0.20	0.55	0.90	0.85	0.90

Test certificate: 100960\_2015-08-31\_5

# StoSilent Modular

## Sound-absorbing ceiling elements

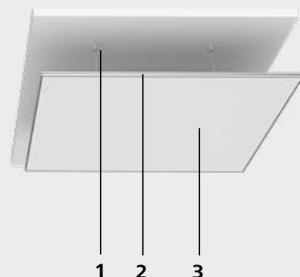
The use of StoSilent Modular ceiling elements is recommended wherever suspended or directly bonded systems are not possible, or where the acoustics need to be optimised when the room is already in use. The modules are designed to add a visual accent to the space. We offer a wide range of materials, colour shades, shapes, and integrated lighting elements, opening up a whole spectrum of design possibilities.

## System advantages

- Wide range of format and colour designs
- Quick to install and remove

## The system

### Build-up: StoSilent Modular 100



- Carrier layer**  
1 — Hanger  
2 — Aluminium frame
- Acoustic layer**  
3 — PET fibre board

### Sound-absorbing ceiling element made of recycled PET fibres on an aluminium frame

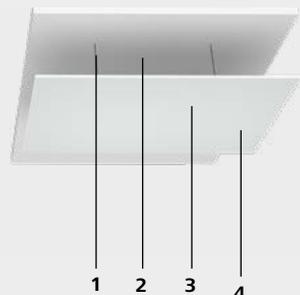
#### Size

- Thickness: 26.5 mm
- Length x width: 1150 x 750 mm, 1150 x 1150 mm, 1250 x 1250 mm, 2350 x 1150 mm, 3000 x 1250 mm
- Custom variants on request

#### Appearance

- White nonwoven surface with fine, directed fibre texture
- Anodised frame (aluminium silver, anodised, natural without texture)

### Build-up: StoSilent Modular 230



- Carrier layer**  
1 — Hanger  
2 — Sub-construction made of galvanised steel sheet
- Acoustic layer**  
3 — Carrier board with a layer of PET fibre  
4 — Finishing coat

### Sound-absorbing ceiling element made of expanded glass granulate with a fine-textured colour coating

#### Size

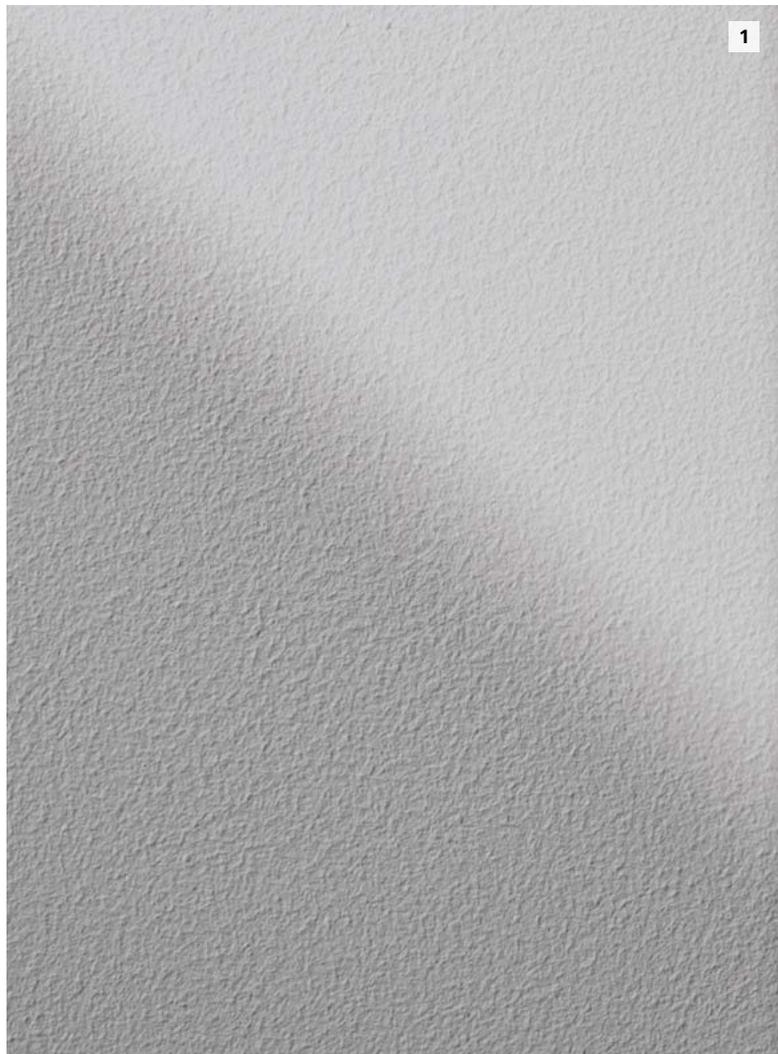
- Thickness: 19 mm
- Length x width: 1150 x 1150 mm, 2350 x 750 mm, 2350 x 1150 mm, 1150 mm circular
- Custom variants (polygons and free-form shapes) on request

#### Appearance

- Visible underside and edges with fine-textured colour coating
- Colour coating applied at the factory, fully tintable in accordance with the StoColor System
- With photocatalytic function for white paint, for the degradation of harmful substances and odours

## Surfaces

- 1) Colour coating on StoSilent Modular 230
- 2) Nonwoven surface on Modular 100

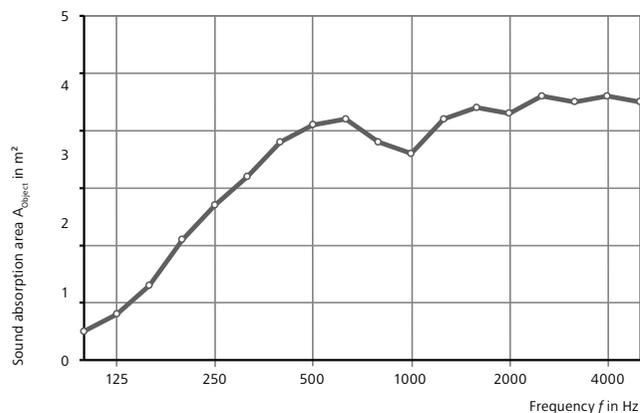




## Seals of approval and quality

Products and systems		Seals of approval and test procedures							
								Fire classification in accordance with EN 13501	
Products	StoSilent Modular 100	–	–	–	–	Oeko-Tex® standard 100, product class I (PET board)	EC1 Plus very low-emission (adhesive)	B-1, d0 (PET board), E (adhesive)	EN 13964
	StoSilent Modular 230 (layer of PET fibre)	–	–	–	–	–	–	C-1, d0	EN 13964
	StoSilent Modular 230 (expanded glass granulate carrier board)	A+	–	–	–	–	–	A2-1, d0 (with coating)	EN 13964
	StoSilent Modular 400 (layer of PET fibre)	–	–	–	–	–	–	C-1, d0	EN 13964
	StoSilent Modular 400 (expanded glass granulate carrier board)	A+	–	–	–	–	–	A2-1, d0	EN 13964

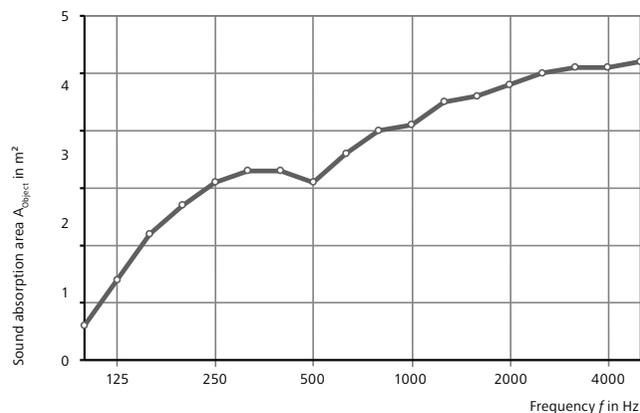
## Sound characteristics



**System:** StoSilent Modular  
100  
**Format:** 3.00 m x 1.25 m  
**Coating:** PET nonwoven fibre,  
white  
**Thickness:** 26 mm  
**Structural height:** 200 mm

Frequency f in Hz	Sound absorption area A <sub>Object</sub> in m <sup>2</sup>					
	125	250	500	1000	2000	4000
<b>Third-octave band</b>	0.50	2.10	3.80	3.80	4.40	4.50
<b>Octave band</b>	<b>0.80</b>	<b>2.70</b>	<b>4.10</b>	<b>3.60</b>	<b>4.30</b>	<b>4.60</b>
<b>Third-octave band</b>	1.30	3.20	4.20	4.20	4.60	4.50

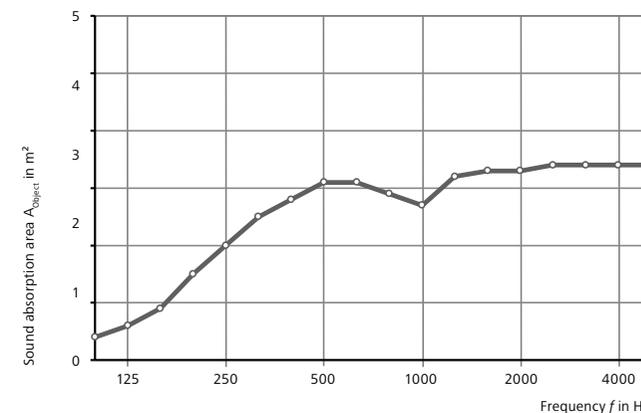
Test certificate: 100960\_2015-04-02\_1



**System:** StoSilent Modular  
100  
**Format:** 3.00 m x 1.25 m  
**Coating:** PET nonwoven fibre,  
white  
**Thickness:** 26 mm  
**Structural height:** 400 mm

Frequency f in Hz	Sound absorption area A <sub>Object</sub> in m <sup>2</sup>					
	125	250	500	1000	2000	4000
<b>Third-octave band</b>	0.60	2.70	3.30	4.00	4.60	5.10
<b>Octave band</b>	<b>1.40</b>	<b>3.10</b>	<b>3.10</b>	<b>4.10</b>	<b>4.80</b>	<b>5.10</b>
<b>Third-octave band</b>	2.20	3.30	3.60	4.50	5.00	5.20

Test certificate: 100960\_2015-04-02\_2

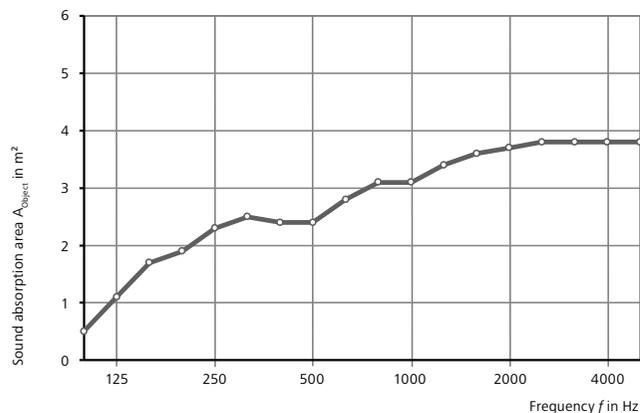


**System:** StoSilent Modular  
100  
**Format:** 2.35 m x 1.15 m  
**Coating:** PET nonwoven fibre,  
white  
**Thickness:** 26 mm  
**Structural height:** 200 mm

Frequency f in Hz	Sound absorption area A <sub>Object</sub> in m <sup>2</sup>					
	125	250	500	1000	2000	4000
<b>Third-octave band</b>	0.40	1.50	2.80	2.90	3.30	3.40
<b>Octave band</b>	<b>0.60</b>	<b>2.00</b>	<b>3.10</b>	<b>2.70</b>	<b>3.30</b>	<b>3.40</b>
<b>Third-octave band</b>	0.90	2.50	3.10	3.20	3.40	3.40

Test certificate: 100960\_2015-04-02\_5

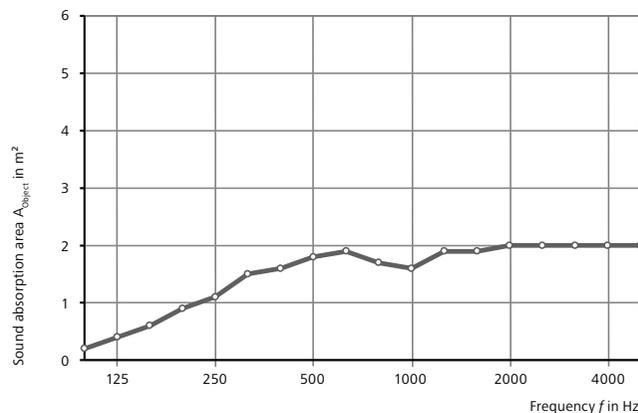
## Sound characteristics



**System:** StoSilent Modular 100  
**Format:** 2.35 m x 1.15 m  
**Coating:** PET nonwoven fibre, white  
**Thickness:** 26 mm  
**Structural height:** 400 mm

Frequency f in Hz	Sound absorption area A <sub>Object</sub> in m <sup>2</sup>					
	125	250	500	1000	2000	4000
Third-octave band	0.50	1.90	2.40	3.10	3.60	3.80
Octave band	1.10	2.30	2.40	3.10	3.70	3.80
Third-octave band	1.70	2.50	2.80	3.40	3.80	3.80

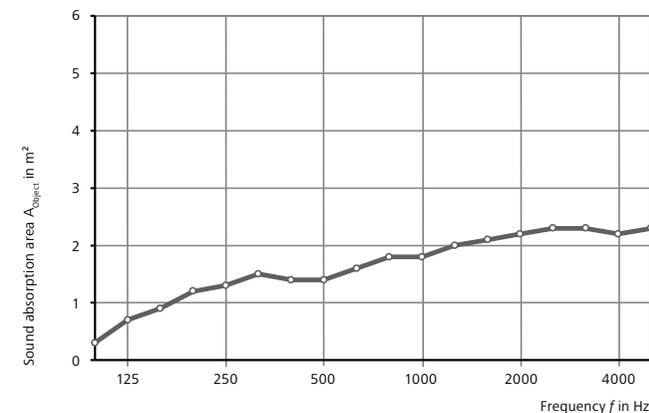
Test certificate: 100960\_2015-04-02\_6



**System:** StoSilent Modular 100  
**Format:** 1.25 m x 1.25 m  
**Coating:** PET nonwoven fibre, white  
**Thickness:** 26 mm  
**Structural height:** 200 mm

Frequency f in Hz	Sound absorption area A <sub>Object</sub> in m <sup>2</sup>					
	125	250	500	1000	2000	4000
Third-octave band	0.20	0.90	1.60	1.70	1.90	2.00
Octave band	0.40	1.10	1.80	1.60	2.00	2.00
Third-octave band	0.60	1.50	1.90	1.90	2.00	2.00

Test certificate: 100960\_2015-04-02\_3

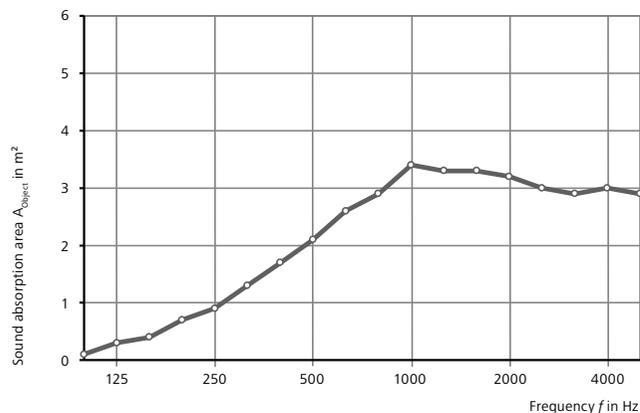


**System:** StoSilent Modular 100  
**Format:** 1.25 m x 1.25 m  
**Coating:** PET nonwoven fibre, white  
**Thickness:** 26 mm  
**Structural height:** 400 mm

Frequency f in Hz	Sound absorption area A <sub>Object</sub> in m <sup>2</sup>					
	125	250	500	1000	2000	4000
Third-octave band	0.30	1.20	1.40	1.80	2.10	2.30
Octave band	0.70	1.30	1.40	1.80	2.20	2.20
Third-octave band	0.90	1.50	1.60	2.00	2.30	2.30

Test certificate: 100960\_2015-04-02\_4

## Sound characteristics

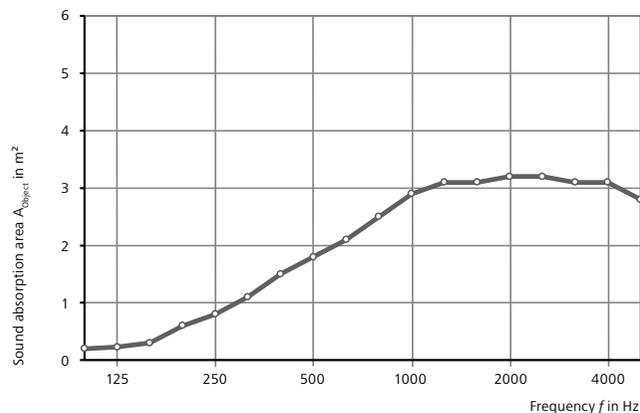


**System:** StoSilent Modular  
100 mounted with  
Connector  
**Thickness:** 26 mm  
**Structural  
height:** 71 mm

**Format:** 2.35 m x 1.15 m  
**Coating:** PET nonwoven fibre,  
white

Frequency f in Hz	Sound absorption area A <sub>Object</sub> in m <sup>2</sup>					
	125	250	500	1000	2000	4000
Third-octave band	0.10	0.70	1.70	2.90	3.30	2.90
Octave band	0.30	0.90	2.10	3.40	3.20	3.00
Third-octave band	0.40	1.30	2.60	3.30	3.00	2.90

Test certificate: 100960\_2019-12-17\_4

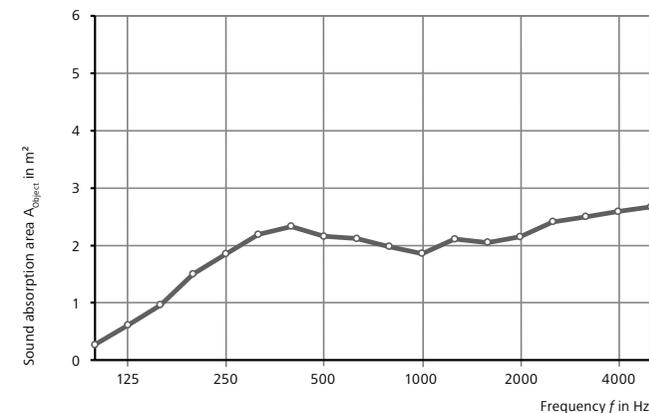


**System:** StoSilent Modular  
100 as wall element  
**Thickness:** 26 mm  
**Structural  
height:** 40 mm

**Format:** 2.35 m x 1.15 m  
**Coating:** PET nonwoven fibre,  
white

Frequency f in Hz	Sound absorption area A <sub>Object</sub> in m <sup>2</sup>					
	125	250	500	1000	2000	4000
Third-octave band	0.20	0.60	1.50	2.50	3.10	3.10
Octave band	0.20	0.80	1.80	2.90	3.20	3.10
Third-octave band	0.30	1.10	2.10	3.10	3.20	2.80

Test certificate: 100960\_2016-01-18\_18



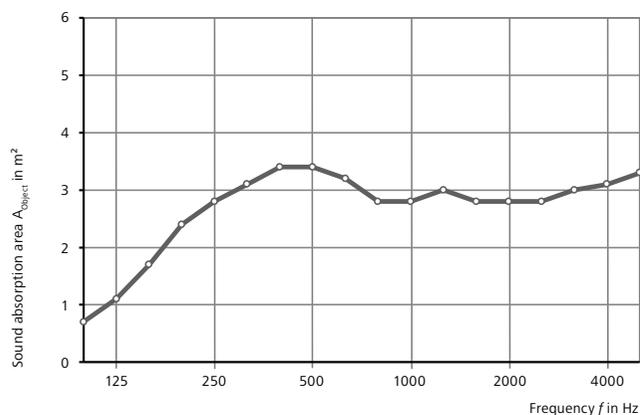
**System:** StoSilent Modular  
230  
**Structural  
height:** 200 mm

**Format:** 2.35 m x 1.15 m  
**Coating:** fine-textured colour  
coating, white  
**Thickness:** 19 mm

Frequency f in Hz	Sound absorption area A <sub>Object</sub> in m <sup>2</sup>					
	125	250	500	1000	2000	4000
Third-octave band	0.30	1.50	2.30	2.00	2.10	2.50
Octave band	0.60	1.90	2.20	1.90	2.20	2.60
Third-octave band	1.00	2.20	2.10	2.10	2.40	2.70

Test certificate: 100960\_2021-05 HR\_16

## Sound characteristics

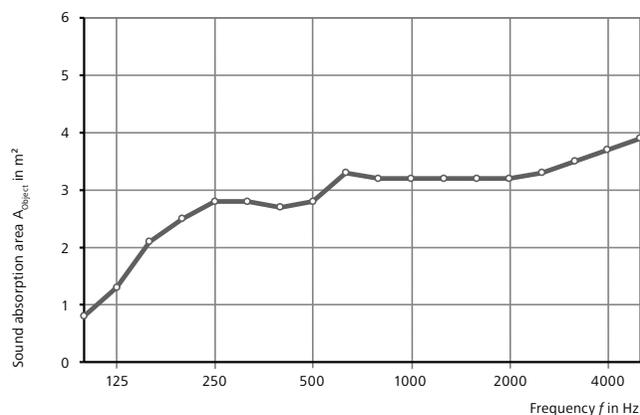


**System:** StoSilent Modular 230 + PET  
**Format:** 2.35 m x 1.15 m  
**Coating:** fine-textured colour coating, white

**Thickness:** 19 mm (without PET)  
**Structural height:** 200 mm

Frequency f in Hz	Sound absorption area A <sub>Object</sub> in m <sup>2</sup>					
	125	250	500	1000	2000	4000
Third-octave band	0.70	2.40	3.40	2.80	2.80	3.00
Octave band	1.10	2.80	3.40	2.80	2.80	3.10
Third-octave band	1.70	3.10	3.20	3.00	2.80	3.30

Test certificate: 100960-2019-09-19-11

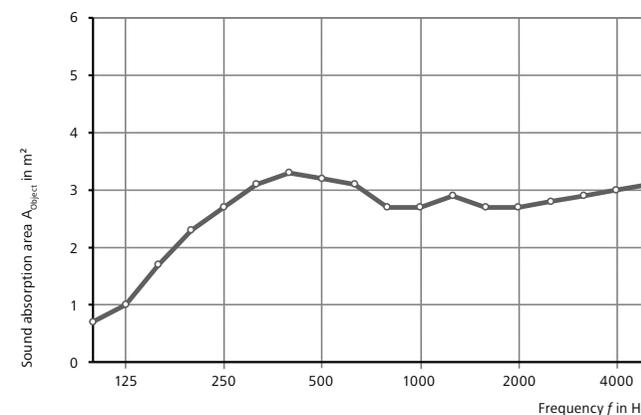


**System:** StoSilent Modular 230 + PET  
**Format:** 2.35 m x 1.15 m  
**Coating:** fine-textured colour coating, white

**Thickness:** 19 mm (without PET)  
**Structural height:** 400 mm

Frequency f in Hz	Sound absorption area A <sub>Object</sub> in m <sup>2</sup>					
	125	250	500	1000	2000	4000
Third-octave band	0.80	2.50	2.70	3.20	3.20	3.50
Octave band	1.30	2.80	2.80	3.20	3.20	3.70
Third-octave band	2.10	2.80	3.30	3.20	3.30	3.90

Test certificate: 100960-2019-09-19-12



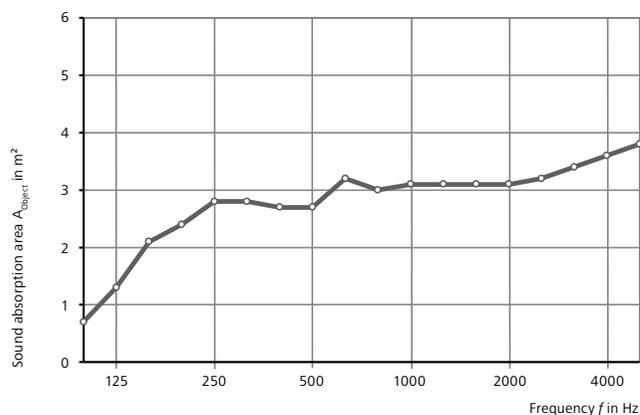
**System:** StoSilent Modular 230 + PET  
**Format:** 2.35 m x 1.15 m  
**Coating:** fine-textured colour coating, tinted (dark blue)

**Thickness:** 19 mm (without PET)  
**Structural height:** 200 mm

Frequency f in Hz	Sound absorption area A <sub>Object</sub> in m <sup>2</sup>					
	125	250	500	1000	2000	4000
Third-octave band	0.70	2.30	3.30	2.70	2.70	2.90
Octave band	1.00	2.70	3.20	2.70	2.70	3.00
Third-octave band	1.70	3.10	3.10	2.90	2.80	3.10

Test certificate: 100960-2019-12-17\_2

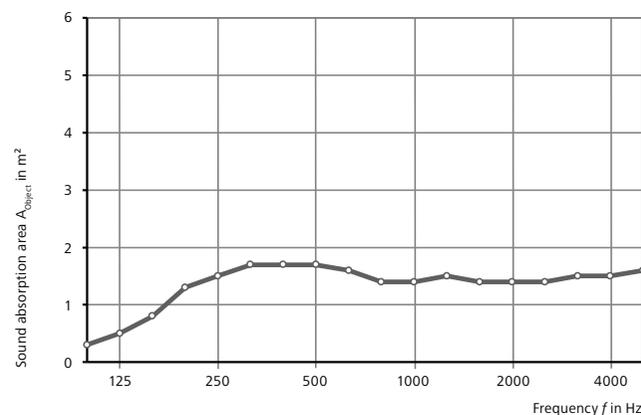
## Sound characteristics



**System:** StoSilent Modular 230 + PET  
**Format:** 2.35 m x 1.15 m  
**Coating:** fine-textured colour coating, tinted (dark blue)  
**Thickness:** 19 mm (without PET)  
**Structural height:** 400 mm

Frequency f in Hz	Sound absorption area A <sub>Object</sub> in m <sup>2</sup>					
	125	250	500	1000	2000	4000
Third-octave band	0.70	2.40	2.70	3.00	3.10	3.40
Octave band	1.30	2.80	2.70	3.10	3.10	3.60
Third-octave band	2.10	2.80	3.20	3.10	3.20	3.80

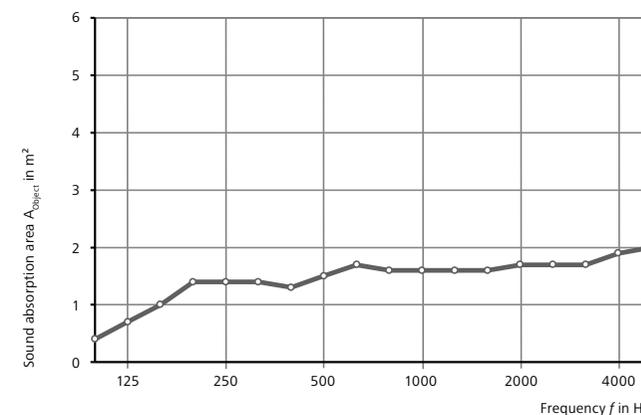
Test certificate: 100960-2019-12-17\_3



**System:** StoSilent Modular 230 + PET  
**Format:** 1.15 m x 1.15 m  
**Coating:** fine-textured colour coating, white  
**Thickness:** 19 mm (without PET)  
**Structural height:** 200 mm

Frequency f in Hz	Sound absorption area A <sub>Object</sub> in m <sup>2</sup>					
	125	250	500	1000	2000	4000
Third-octave band	0.30	1.30	1.70	1.40	1.40	1.50
Octave band	0.50	1.50	1.70	1.40	1.40	1.50
Third-octave band	0.80	1.70	1.60	1.50	1.40	1.60

Test certificate: 100960-2019-09-19-14

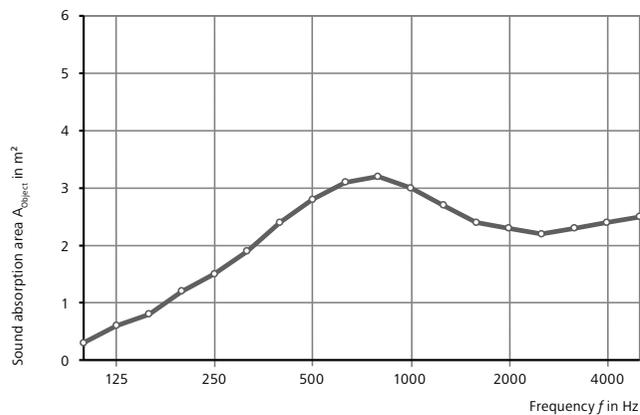


**System:** StoSilent Modular 230 + PET  
**Format:** 1.15 m x 1.15 m  
**Coating:** fine-textured colour coating, white  
**Thickness:** 19 mm (without PET)  
**Structural height:** 400 mm

Frequency f in Hz	Sound absorption area A <sub>Object</sub> in m <sup>2</sup>					
	125	250	500	1000	2000	4000
Third-octave band	0.40	1.40	1.30	1.60	1.60	1.70
Octave band	0.70	1.40	1.50	1.60	1.70	1.90
Third-octave band	1.00	1.40	1.70	1.60	1.70	2.00

Test certificate: 100960-2019-09-19-13

## Sound characteristics



**System:** StoSilent Modular  
230 as wall element  
+ PET

**Thickness:** coating, white  
19 mm (without  
PET)

**Format:** 2.35 m x 1.15 m

**Coating:** fine-textured colour

**Structural height:** 51 mm

Frequency $f$ in Hz	Sound absorption area $A_{\text{Object}}$ in $\text{m}^2$					
	125	250	500	1000	2000	4000
<b>Third-octave band</b>	0.30	1.20	2.40	3.20	2.40	2.30
<b>Octave band</b>	<b>0.60</b>	<b>1.50</b>	<b>2.80</b>	<b>3.00</b>	<b>2.30</b>	<b>2.40</b>
<b>Third-octave band</b>	0.80	1.90	3.10	2.70	2.20	2.50

Test certificate: 100960-2019-12-17\_1

# StoSilent Baffle

## Sound-absorbing acoustic element

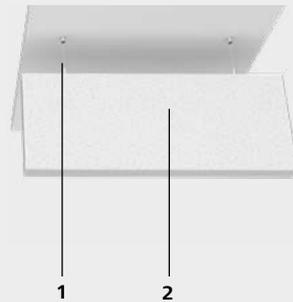
Baffles are frameless absorbers that – unlike ceiling elements – are suspended from the ceiling in a vertical position. They are designed for use in rooms where the ceiling cannot extend from wall to wall.

## System advantages

- Consists of 95 % recycled material and does not contain any synthetic mineral fibres
- Sound absorption through front and rear side
- Hard-wearing and hygienic absorber material
- The acoustic panels are tested for harmful substances by TÜV Süd and are low-emission and recyclable
- Simple application

## The system

### Build-up: StoSilent Baffle



#### Carrier layer

1 — Hanger

#### Acoustic layer

2 — Acoustic panel, coated at the factory

### System properties

#### Application

- Interior
- For ceilings
- Ideal for offices, sport and educational facilities, or retail
- Ideal for rooms in which other acoustic solutions are not possible for technical or aesthetic reasons

#### Design options

- Coated at the factory

#### Colour range

- Colour shades in accordance with RAL colour fans

#### Application

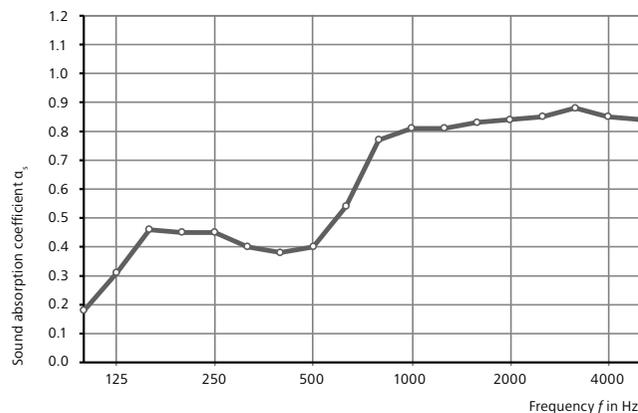
- Fast and simple installation
- For immediate installation
- Vertical suspension



## Seals of approval and quality

Products		Seals of approval and test procedures							
								Fire classification in accordance with EN 13501	
Products	StoSilent Baffle R 100	A+	–	Preservative-free	–	–	–	Fire classification on request	–

## Sound characteristics

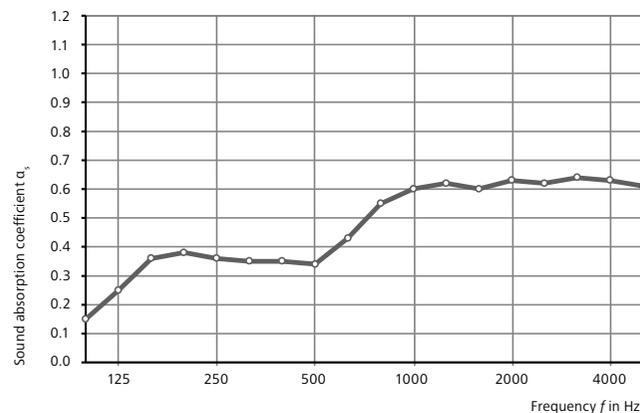


**System:** StoSilent Baffle  
**Build-up:** StoSilent Baffle R 100, AH 0 mm, LA 50 mm, RAM 310 mm  
**Coating:** colour coating

**Thickness:** 50 mm  
**Structural height:** approx. 310 mm (type J)  
 $\alpha_w$ : 0.55 (MH)  
 $\alpha_{p,125}$ : 0.30  
**NRC:** 0.65

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.18	0.45	0.38	0.77	0.83	0.88
Octave band	0.31	0.45	0.40	0.81	0.84	0.85
Third-octave band	0.46	0.40	0.54	0.81	0.85	0.84
$\alpha_p$	0.30	0.45	0.45	0.80	0.85	0.85

Test certificate: 100960-2021-05 HR\_4

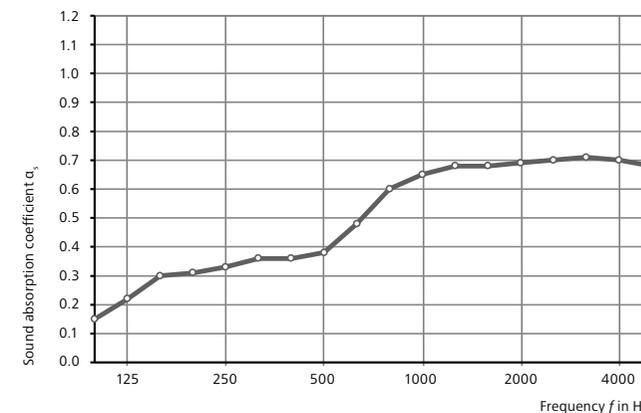


**System:** StoSilent Baffle  
**Build-up:** StoSilent Baffle R 100, AH 0 mm, LA 50 mm, RAM 620 mm  
**Coating:** colour coating

**Thickness:** 50 mm  
**Structural height:** approx. 310 mm (type J)  
 $\alpha_w$ : 0.45 (H)  
 $\alpha_{p,125}$ : 0.25  
**NRC:** 0.50

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.15	0.38	0.35	0.55	0.60	0.64
Octave band	0.25	0.36	0.34	0.60	0.63	0.63
Third-octave band	0.36	0.35	0.43	0.62	0.62	0.61
$\alpha_p$	0.25	0.35	0.35	0.60	0.60	0.65

Test certificate: 100960-2021-05 HR\_5



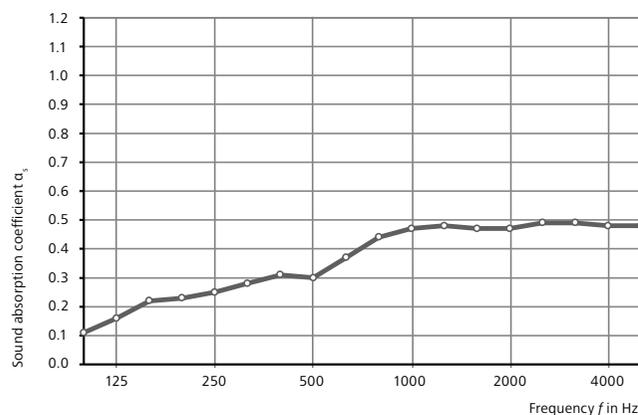
**System:** StoSilent Baffle  
**Build-up:** StoSilent Baffle R 100, AH 0 mm, LA 575 mm, RAM 310 mm  
**Coating:** colour coating

**Thickness:** 50 mm  
**Structural height:** approx. 310 mm (type J)  
 $\alpha_w$ : 0.50 (H)  
 $\alpha_{p,125}$ : 0.20  
**NRC:** 0.50

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.15	0.31	0.36	0.60	0.68	0.71
Octave band	0.22	0.33	0.38	0.65	0.69	0.70
Third-octave band	0.30	0.36	0.48	0.68	0.70	0.68
$\alpha_p$	0.20	0.35	0.40	0.65	0.70	0.70

Test certificate: 100960-2021-05 HR\_7

## Sound characteristics

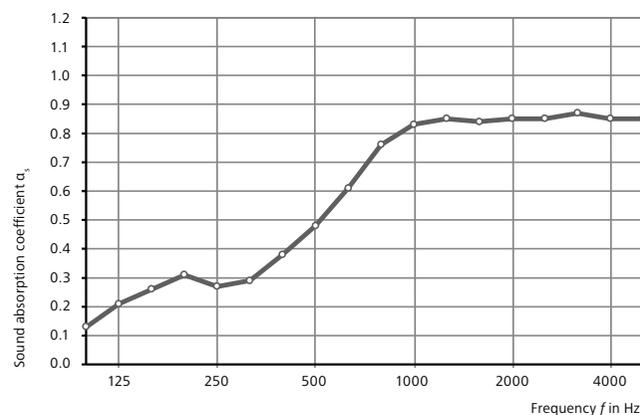


**System:** StoSilent Baffle  
**Build-up:** StoSilent Baffle R 100, AH 0 mm, LA 575 mm, RAM 620 mm  
**Coating:** colour coating  
**Thickness:** 50 mm

**Structural height:** approx. 310 mm (type J)  
 $\alpha_w$ : 0.45  
 $\alpha_{p,125}$ : 0.15  
**NRC:** 0.35

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.11	0.23	0.31	0.44	0.47	0.49
Octave band	0.16	0.25	0.30	0.47	0.47	0.48
Third-octave band	0.22	0.28	0.37	0.48	0.49	0.48
$\alpha_p$	0.15	0.25	0.35	0.45	0.50	0.50

Test certificate: 100960-2021-05 HR\_6

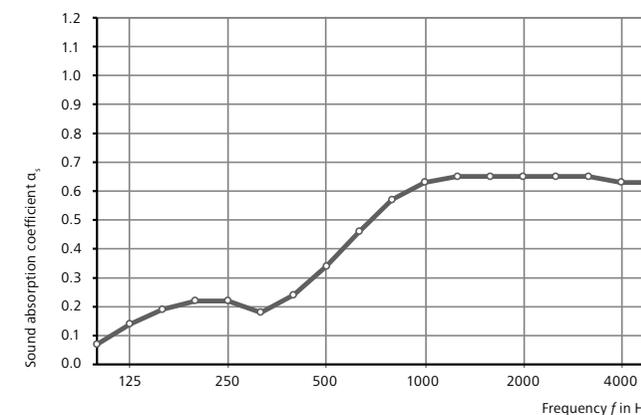


**System:** StoSilent Baffle  
**Build-up:** StoSilent Baffle R 100, AH 200 mm, LA 50 mm, RAM 310 mm  
**Coating:** colour coating  
**Thickness:** 50 mm

**Structural height:** approx. 510 mm (type J)  
 $\alpha_w$ : 0.55 (MH)  
 $\alpha_{p,125}$ : 0.20  
**NRC:** 0.60

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.13	0.31	0.38	0.76	0.84	0.87
Octave band	0.21	0.27	0.48	0.83	0.85	0.85
Third-octave band	0.26	0.29	0.61	0.85	0.85	0.85
$\alpha_p$	0.20	0.30	0.50	0.80	0.85	0.85

Test certificate: 100960-2021-05 HR\_11



**System:** StoSilent Baffle  
**Build-up:** StoSilent Baffle R 100, AH 200 mm, LA 50 mm, RAM 620 mm  
**Coating:** colour coating  
**Thickness:** 50 mm

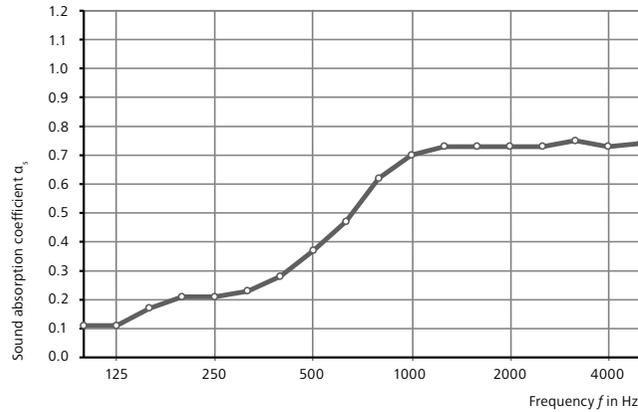
**Structural height:** approx. 510 mm (type J)  
 $\alpha_w$ : 0.40 (H)  
 $\alpha_{p,125}$ : 0.15  
**NRC:** 0.45

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.07	0.22	0.24	0.57	0.65	0.65
Octave band	0.14	0.22	0.34	0.63	0.65	0.63
Third-octave band	0.19	0.18	0.46	0.65	0.65	0.63
$\alpha_p$	0.15	0.20	0.35	0.60	0.65	0.65

Test certificate: 100960-2021-05 HR\_10



## Sound characteristics

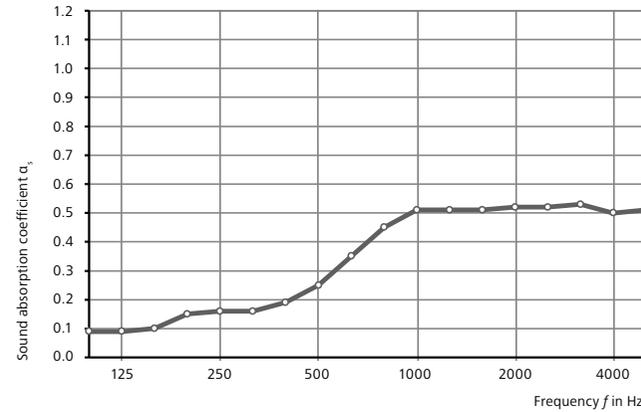


**System:** StoSilent Baffle  
**Build-up:** StoSilent Baffle R 100, AH 200mm, LA 575 mm, RAM 310 mm  
**Coating:** colour coating  
**Thickness:** 50 mm

**Structural height:** approx. 510 mm (type J)  
 $\alpha_w$ : 0.40 (MH)  
 $\alpha_{p, 125}$ : 0.15  
**NRC:** 0.50

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.11	0.21	0.28	0.62	0.73	0.75
Octave band	<b>0.11</b>	<b>0.21</b>	<b>0.37</b>	<b>0.70</b>	<b>0.73</b>	<b>0.73</b>
Third-octave band	0.17	0.23	0.47	0.73	0.73	0.74
$\alpha_p$	0.15	0.20	0.35	0.70	0.75	0.75

Test certificate: 100960-2021-05 HR\_8

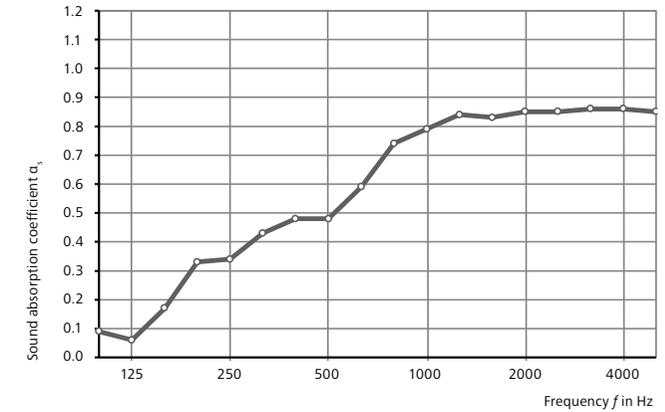


**System:** StoSilent Baffle  
**Build-up:** StoSilent Baffle R 100, AH 200mm, LA 620 mm, RAM 620 mm  
**Coating:** colour coating  
**Thickness:** 50 mm

**Structural height:** approx. 510 mm (type J)  
 $\alpha_w$ : 0.35 (H)  
 $\alpha_{p, 125}$ : 0.10  
**NRC:** 0.35

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.09	0.15	0.19	0.45	0.51	0.53
Octave band	<b>0.09</b>	<b>0.16</b>	<b>0.25</b>	<b>0.51</b>	<b>0.52</b>	<b>0.50</b>
Third-octave band	0.10	0.16	0.35	0.51	0.52	0.51
$\alpha_p$	0.10	0.15	0.25	0.50	0.50	0.50

Test certificate: 100960-2021-05 HR\_9



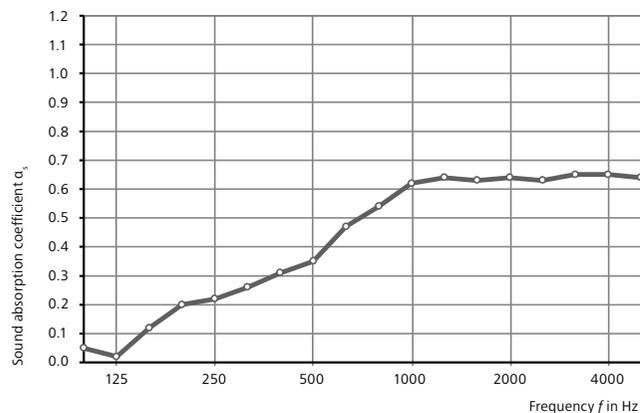
**System:** StoSilent Baffle  
**Build-up:** StoSilent Baffle R 100, AH 500 mm, LA 50 mm, RAM 310 mm  
**Coating:** colour coating  
**Thickness:** 50 mm

**Structural height:** approx. 810 mm (type J)  
 $\alpha_w$ : 0.55 (MH)  
 $\alpha_{p, 125}$ : 0.10  
**NRC:** 0.60

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.09	0.33	0.48	0.74	0.83	0.86
Octave band	<b>0.06</b>	<b>0.34</b>	<b>0.48</b>	<b>0.79</b>	<b>0.85</b>	<b>0.86</b>
Third-octave band	0.17	0.43	0.59	0.84	0.85	0.85
$\alpha_p$	0.10	0.35	0.50	0.80	0.85	0.85

Test certificate: 100960-2021-05 HR\_12

## Sound characteristics

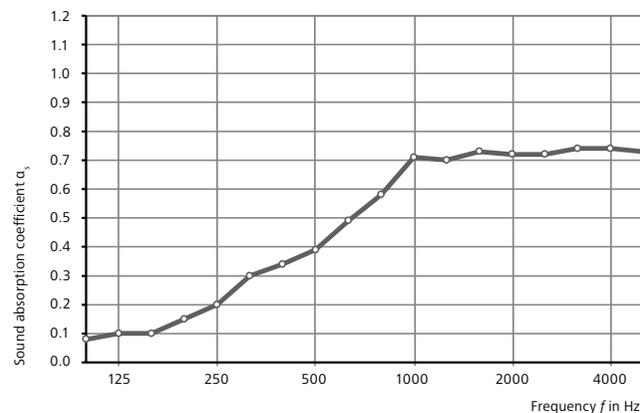


**System:** StoSilent Baffle  
**Build-up:** StoSilent Baffle R 100, AH 500mm, LA 50mm, RAM 620mm  
**Coating:** colour coating  
**Thickness:** 50mm

**Structural height:** approx. 810mm (type J)  
 $\alpha_w$ : 0.45 (H)  
 $\alpha_{p,125}$ : 0.05  
**NRC:** 0.45

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.05	0.20	0.31	0.54	0.63	0.65
Octave band	0.02	0.22	0.35	0.62	0.64	0.65
Third-octave band	0.12	0.26	0.47	0.64	0.63	0.64
$\alpha_p$	0.05	0.25	0.40	0.60	0.65	0.65

Test certificate: 100960-2021-05 HR\_13

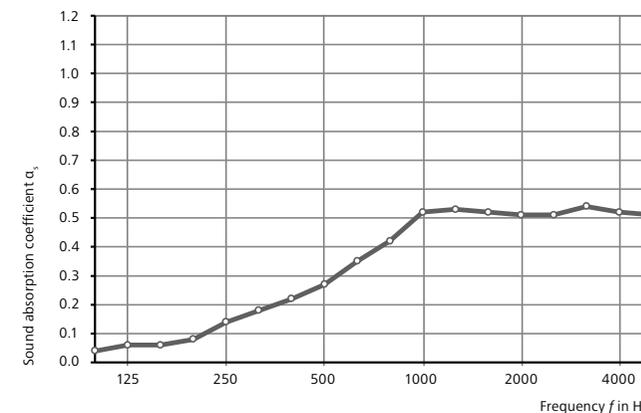


**System:** StoSilent Baffle  
**Build-up:** StoSilent Baffle R 100, AH 500mm, LA 575mm, RAM 310mm  
**Coating:** colour coating  
**Thickness:** 50mm

**Structural height:** approx. 810mm (type J)  
 $\alpha_w$ : 0.45 (H)  
 $\alpha_{p,125}$ : 0.10  
**NRC:** 0.50

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.08	0.15	0.34	0.58	0.73	0.74
Octave band	0.10	0.20	0.39	0.71	0.72	0.74
Third-octave band	0.10	0.30	0.49	0.70	0.72	0.73
$\alpha_p$	0.10	0.20	0.40	0.65	0.70	0.75

Test certificate: 100960-2021-05 HR\_15



**System:** StoSilent Baffle  
**Build-up:** StoSilent Baffle R 100, AH 500mm, LA 575mm, RAM 620mm  
**Coating:** colour coating  
**Thickness:** 50mm

**Structural height:** approx. 810mm (type J)  
 $\alpha_w$ : 0.35 (H)  
 $\alpha_{p,125}$ : 0.05  
**NRC:** 0.35

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.04	0.08	0.22	0.42	0.52	0.54
Octave band	0.06	0.14	0.27	0.52	0.51	0.52
Third-octave band	0.06	0.18	0.35	0.53	0.51	0.51
$\alpha_p$	0.05	0.15	0.30	0.50	0.50	0.50

Test certificate: 100960-2021-05 HR\_14



## Reference overview

MOAE – Huamao Museum of Art Education, Ningbo, CN    Harbitz Torg, Oslo, NO

Haus der Bayerischen Geschichte, Regensburg, DE

Cafe Giuseppe x Kunstmühle, Rosenheim, DE

Unilever's Indonesia headquarters in Jakarta, ID

Dr. Jean Bausch GmbH & Co. KG, Cologne, DE

MAC II Museum Art & Cars 2, Singen, DE

Arter, Istanbul, TR

Operation Smile Centre, Oujda, MAR

Vocational schools, Donaueschingen, DE

Öschberghof, Donaueschingen, DE

IHK for Munich and Upper Bavaria (IHK für München und Oberbayern), headquarters, Munich, DE



## Reference overview

Auditorium of the University of Cervera, ES

Restaurant Toro Tapas – Osborne Group, Cádiz, ES

New building: Post Sportverein e.V., Augsburg, DE

Primary and secondary school FFB Nord, Fürstenfeldbruck, DE

Casino Milupa, Fulda, DE

Das Spittelberg, Vienna, AT

Safran organic catering, Radolfzell, DE

Kirnbacher Hof, Wolfach-Kirnbach, DE

St. Gallus day-care centre, Merzhausen, DE

## MOAE – Huamao Museum of Art Education Ningbo, CN

Planning: Carlos Castanheira &  
Álvaro Siza Vieira, Porto, PT  
Sto expertise: StoSilent Distance S,  
StoSilent Decor M  
Photo: HouPictures, CN





## Harbitz Torg Oslo, NO

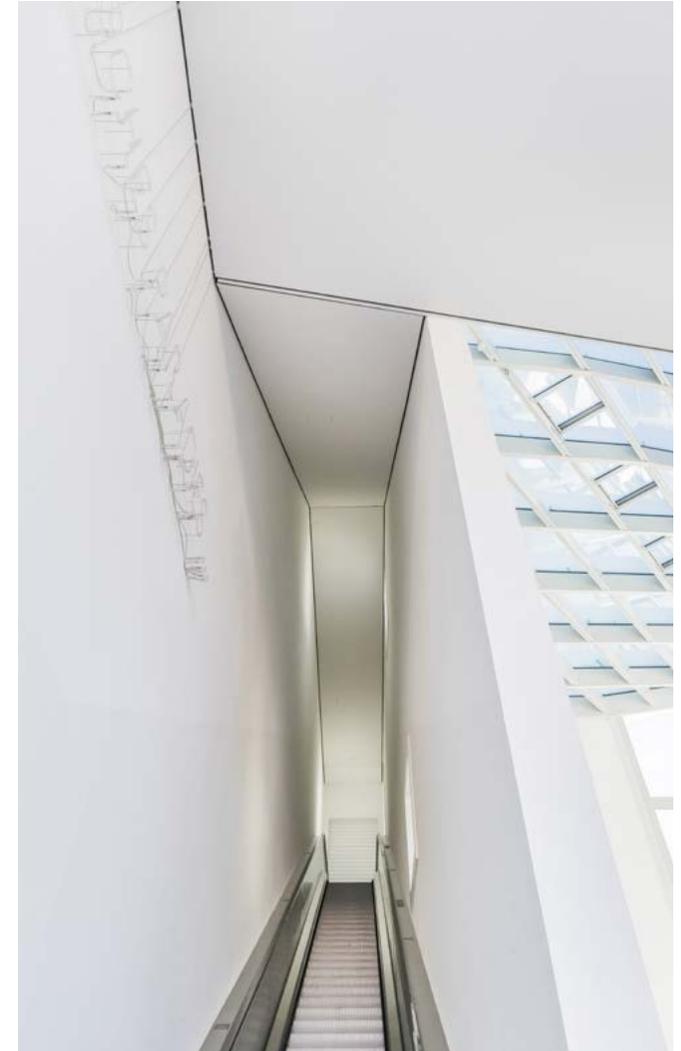
**Building owner:** Møller Eiendom Holding AS, Oslo, NO  
**Planner:** LPO arkitekter A/S, Oslo, NO  
**Execution:** Byggimpuls AS, Oslo, NO  
**Sto expertise:** StoSilent Distance S, StoSilent Board 310, StoSilent Decor M  
**Photo:** Tove Lauluten, Oslo, NO





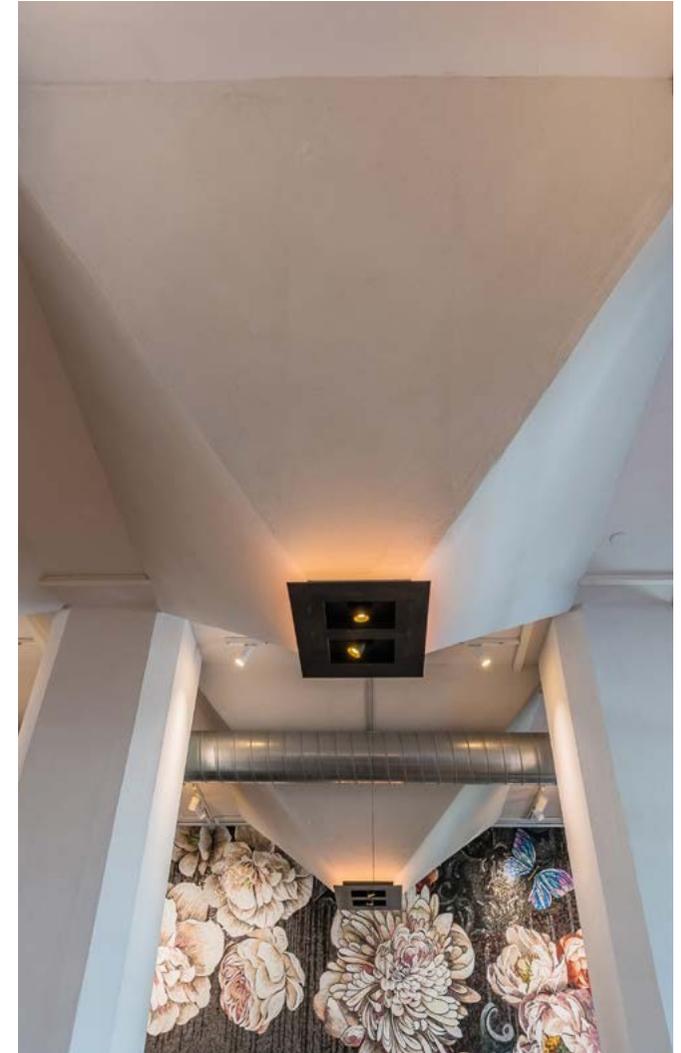
## Haus der Bayerischen Geschichte Regensburg, DE

**Building owner:** Staatliches Bauamt  
Regensburg, Regensburg, DE  
**Planning:** wörner traxler richter  
planungsgesellschaft mbh,  
Frankfurt, DE  
**Execution:** Akustik-, Stuck-, und  
Trockenbau Sommer GmbH,  
Kirchdorf, DE, Reiner Pock  
Malereibetrieb, Langenaltheim, DE  
**Sto expertise:** StoSilent Distance S,  
StoSilent Board 100 S  
**Photo:** Boris Storz, Munich, DE



## Cafe Giuseppe × Kunstmühle Rosenheim, DE

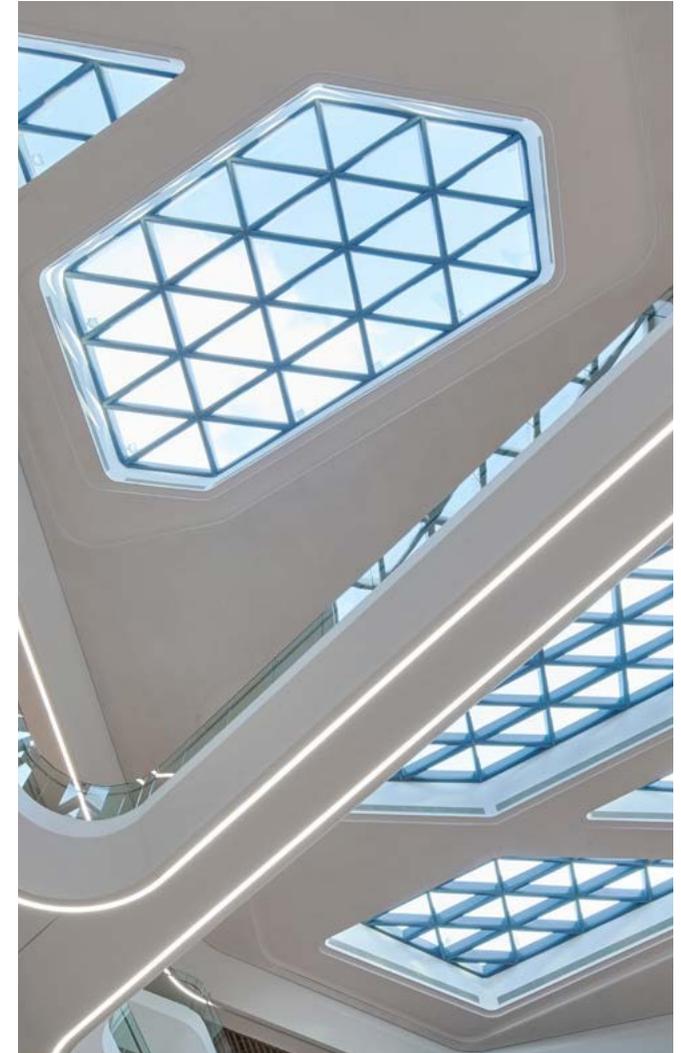
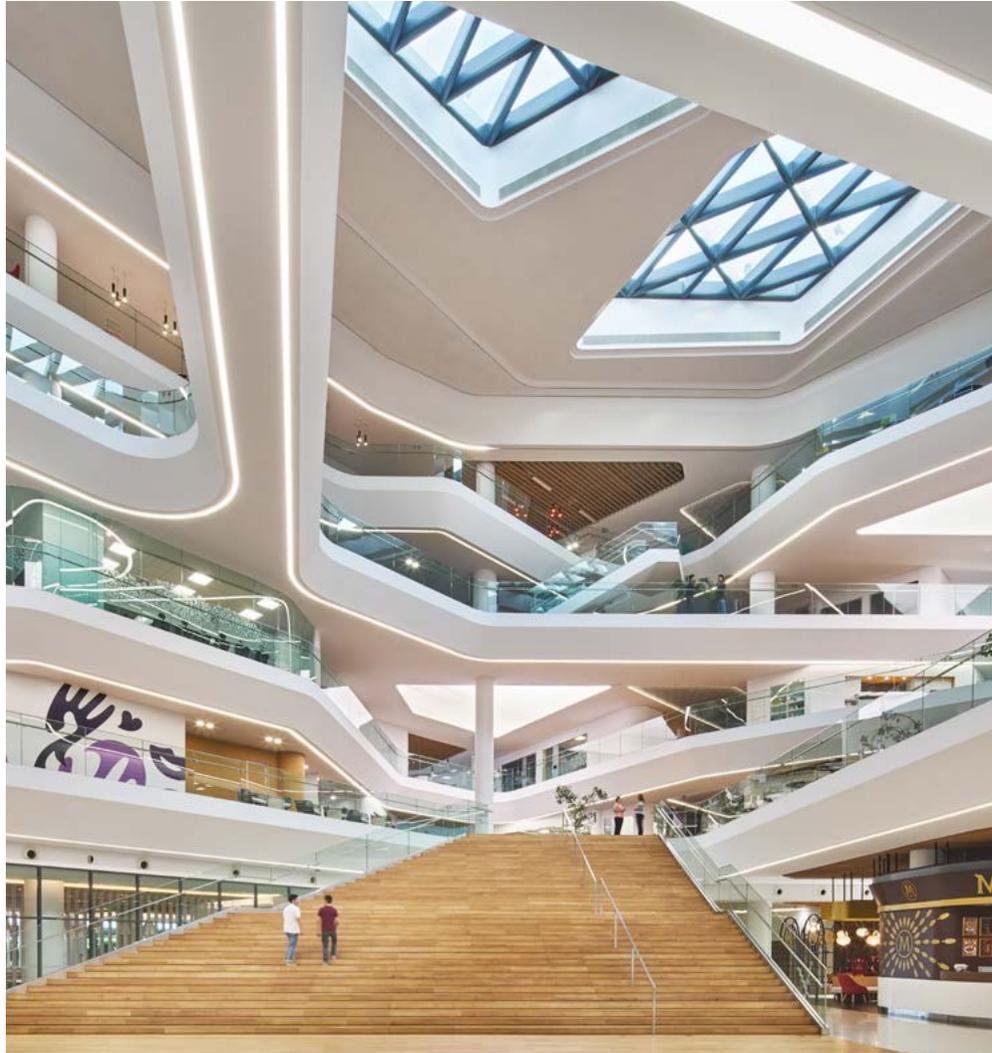
**Building owner:** Quest AG,  
Kolbermoor, DE  
**Planning:** Guggenbichler +  
Wagenstaller GbR, Rosenheim, DE  
**Execution:** Malerbetrieb Hübsch,  
Rosenheim, DE  
**Sto expertise:** StoSilent Distance S,  
StoSilent Board 100 S, StoSilent Top  
Basic  
**Photo:** Boris Storz, Munich, DE





## Unilever's Indonesia headquarters Jakarta, ID

**Building owner:** PT. Unilever Indonesia, Tbk, Banten, ID  
**Planning:** Aedas, Singapore, SG  
**Execution:** PT Panutan Sejati, Jakarta, ID  
**Sto expertise:** StoSilent Distance S, StoSilent Board 110 S, StoSilent Decor M  
**Photo:** Sasja van Vechgel, Architenhis Asia Pte, Ltd, Singapore, SG





## Dr. Jean Bausch GmbH & Co. KG Cologne, DE

**Building owner:** Dr. Jean Bausch GmbH & Co. KG, Cologne, DE  
**Planning:** Thea Löhr Architektin, Cologne, DE  
**Execution:** Grahovic Bau, Leverkusen, DE  
**Sto expertise:** StoSilent Modular 230, StoSilent Distance S, StoSilent Board 110 S  
**Photo:** Guido Erbring, Cologne, DE



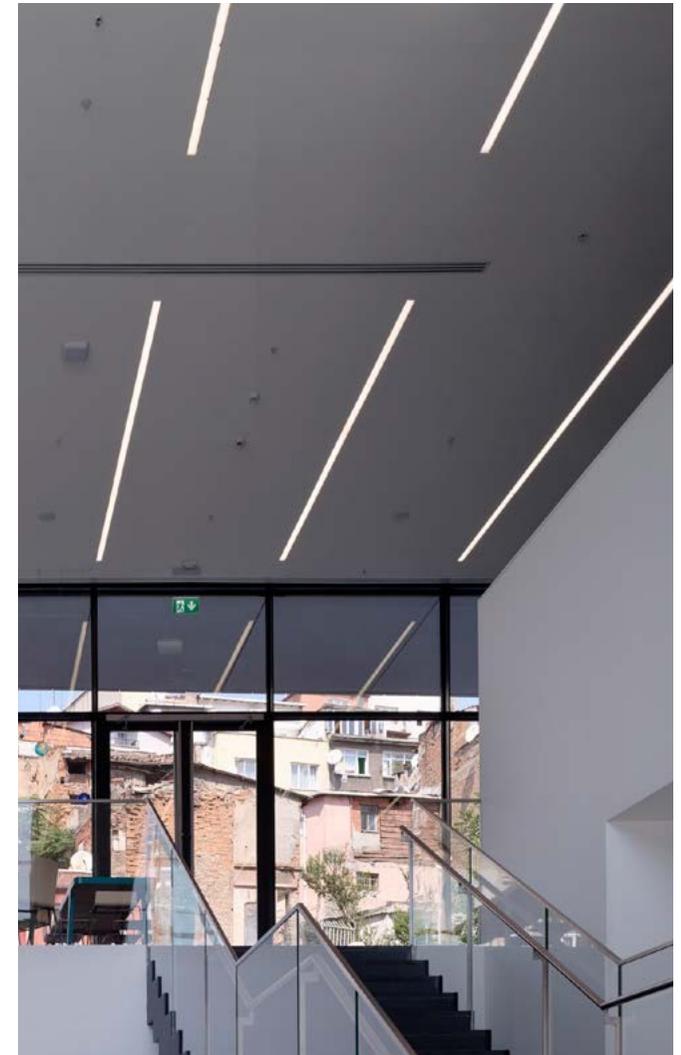
## MAC II Museum Art & Cars 2 Singen, DE

**Building owner:** Hermann Maier and Gabriela Unbehaun-Maier, Singen, DE  
**Planning:** Daniel Binder, Gottmadingen, DE  
**Execution:** Tip-Top-Bau GmbH, Hilzingen, DE  
**Sto expertise:** StoSilent Distance S, StoSilent Board 310, StoSilent Decor M, StoSilent Decor MF  
**Photo:** Martin Baitinger, Böblingen, DE



## Arter Istanbul, TR

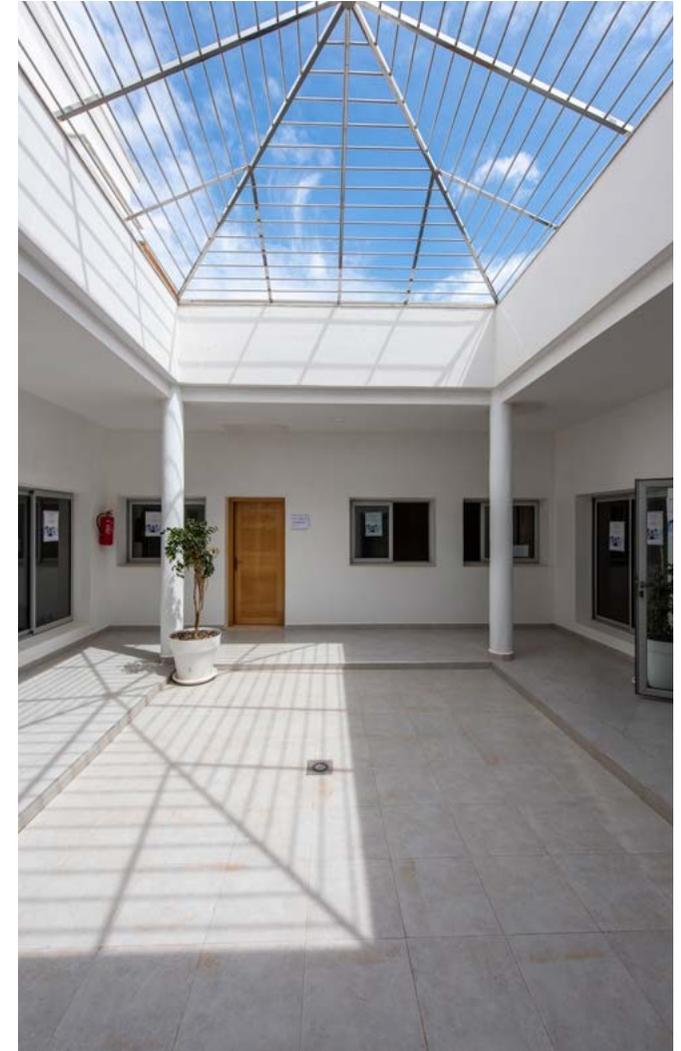
**Building owner:** Vehbi Koç Foundation, Istanbul, TR  
**Planning:** Grimshaw Architects, London, UK  
**Execution:** Baf Control, Istanbul, TR  
**Sto expertise:** StoSilent Distance S, StoSilent Board 110 S, StoSilent Decor M, StoSilent Decor MF  
**Photo:** Cemal Emden, Istanbul, TR





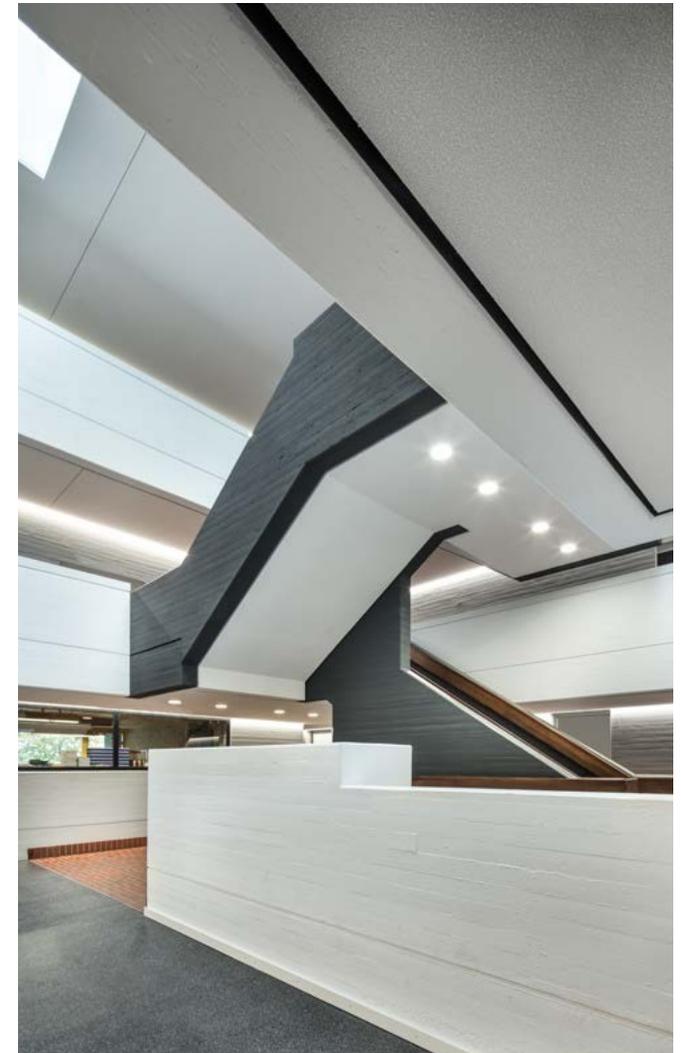
## Operation Smile Clinic Oujda, MAR

**Building owner:** Fouzia Mahmoudi, Oujda, MAR  
**Planning:** Bea Sennewald, London, UK  
**Execution:** Webb Yates Engineers Ltd., London, UK  
Max Fordham, London, UK  
**Sto expertise:** StoTherm Classic, StoSignature, StoSilent Distance S, StoSilent Decor M  
**Photo:** -



## Vocational schools Donaueschingen, DE

**Building owner:** Landratsamt  
(administrative district office),  
Villingen-Schwenningen, DE  
**Planning:** Formgewand, Stühlingen,  
DE  
**Application:** Stuckateurbetrieb  
Gemeinder, Donaueschingen, DE  
**Sto expertise:** StoSilent Distance S,  
StoSilent Board 310, StoSilent Decor  
M  
**Photo:** Martin Baitinger, Böblingen, DE





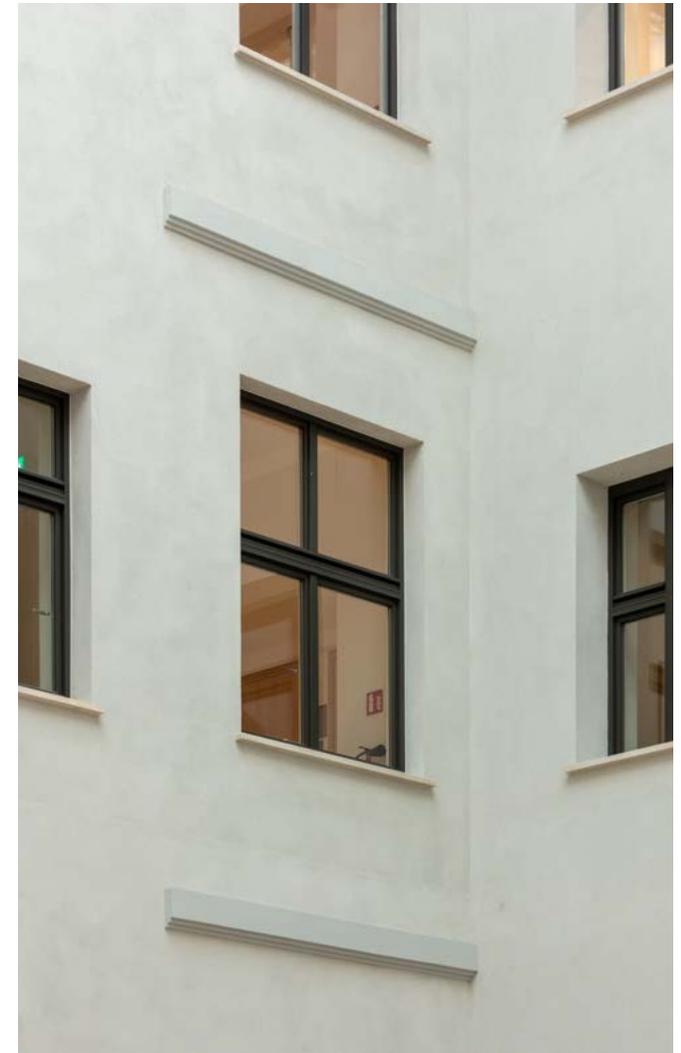
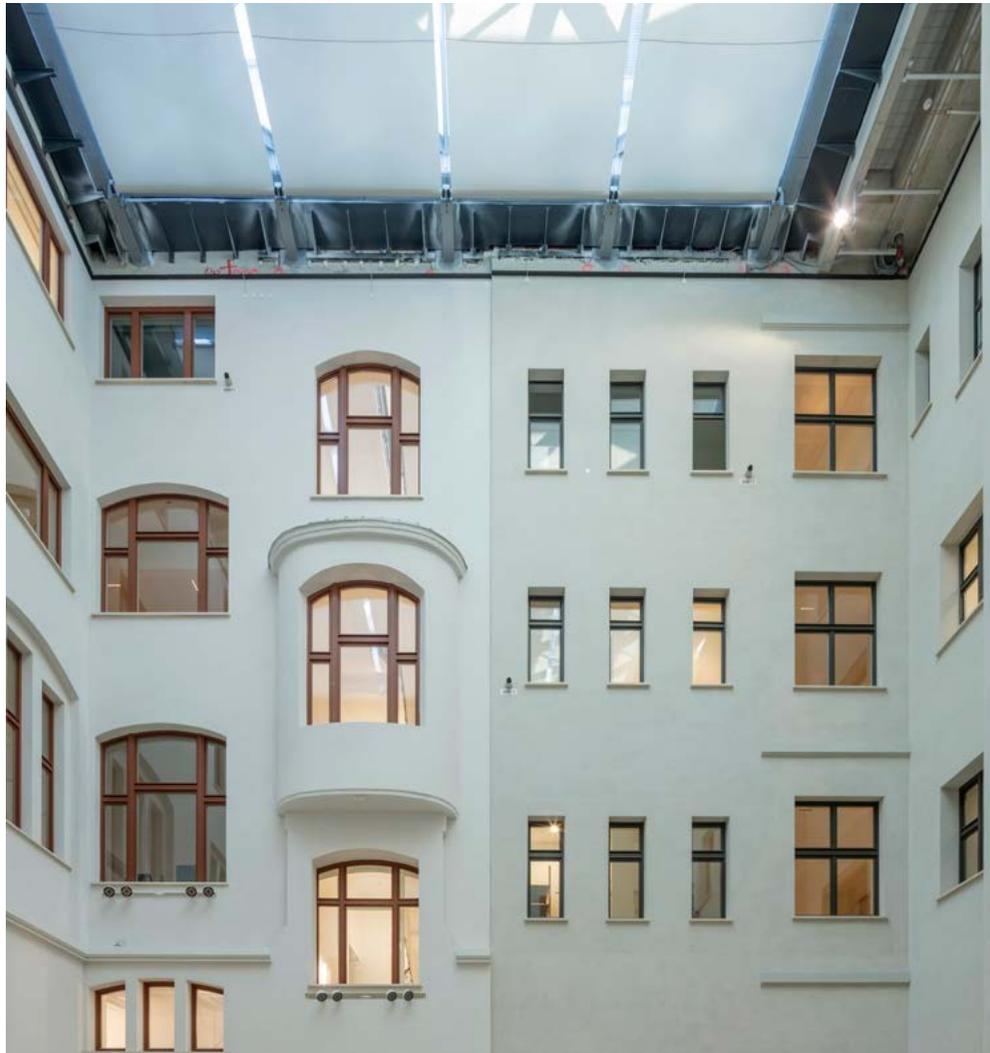
# Öschberghof Donaueschingen, DE

**Building owner:** Carolin Becker  
**Planning:** Allmann Sattler, Wappner  
Architekten GmbH, Munich, DE  
**Execution:** Hauch GmbH,  
Villingen-Schwenningen, DE, Sauter  
GmbH Putz & Farbe, Singen, DE  
**Sto expertise:** StoSilent Direct,  
StoSilent Decor M  
**Photo:** Martin Baitinger, Böblingen, DE



## IHK for Munich and Upper Bavaria (IHK für München und Oberbayern), headquarters Munich, DE

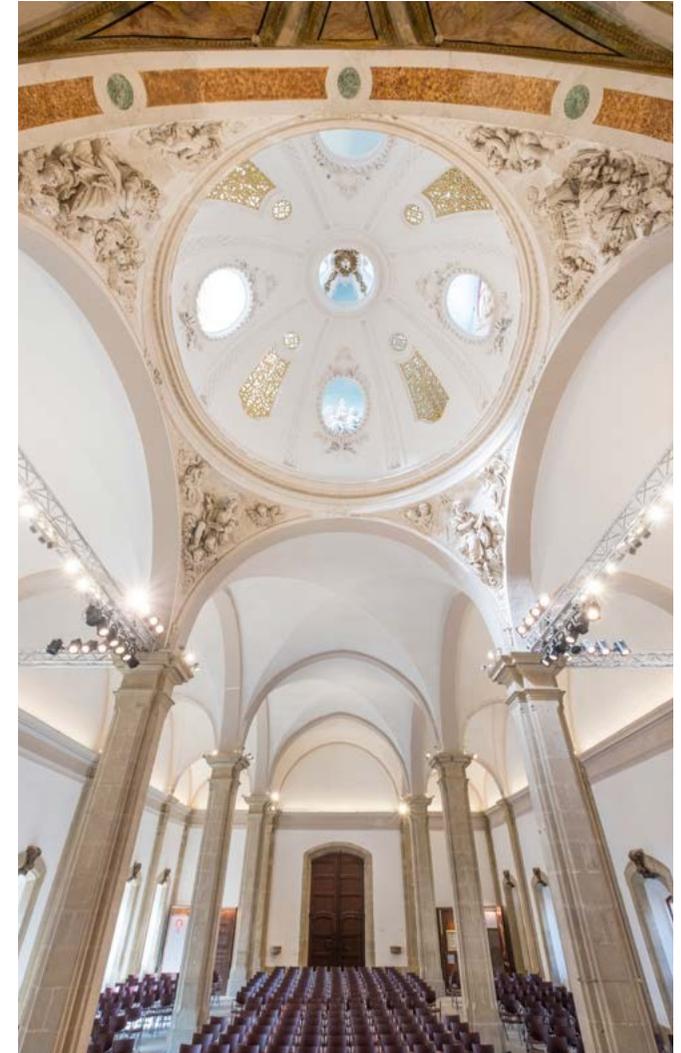
**Building owner:** IHK für München und Oberbayern, Munich, DE  
**Planning:** Anderhalten Architekten GmbH, Berlin, DE  
**Execution:** BS Verputz GmbH, Munich, DE  
**Sto expertise:** StoSilent Direct, StoSilent Direct Board MW 100, StoSilent Top Basic  
**Photo:** Gerhard Hagen Fotografie, Bamberg, DE





## Auditorium of the University of Cervera, ES

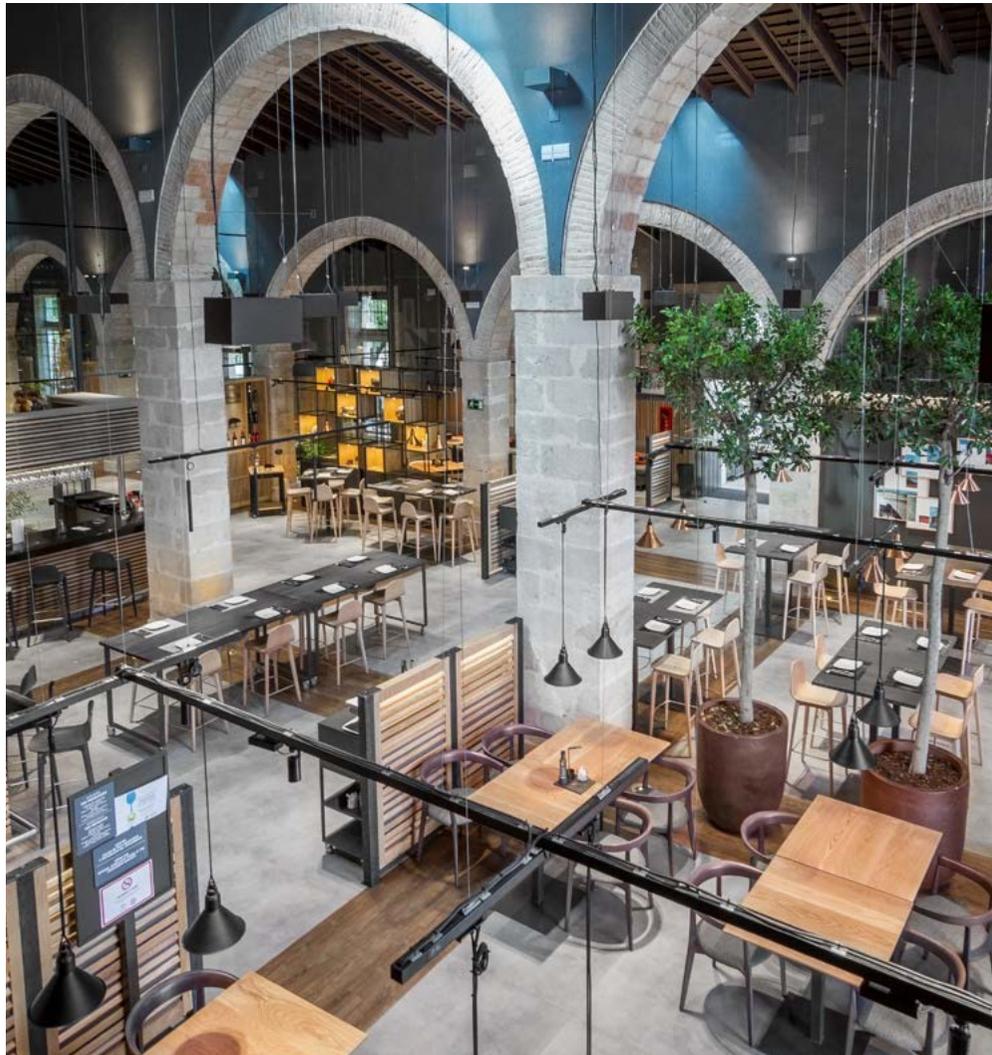
Planning: Acústics Ambient S.L.,  
Lleida, ES  
Execution: Dolomada Grupo S.L.,  
Lleida, ES  
Sto expertise: StoSilent Compact,  
StoSilent Sil AP, StoSilent Decor M





## Restaurant Toro Tapas – Osborne Group Cádiz, ES

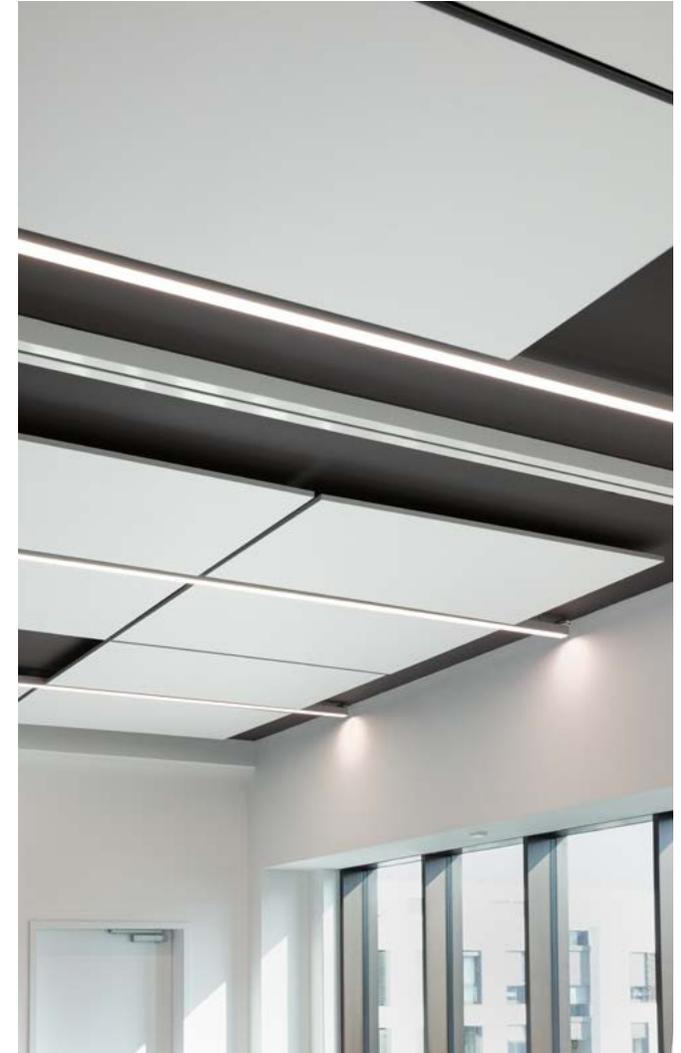
Planning: Estudio Ollero, S.A., El Puerto de Santa María, Cádiz, ES  
Execution: Albam Técnicas de la Construcción S.L., Granada, ES  
Sto expertise: StoSilent Compact, StoSilent Sil AP, StoSilent Decor MF





## New building: Post Sportverein e.V. Augsburg, DE

New building: Post Sportverein  
Augsburg e.V., Augsburg, DE  
Planning: Kögl Architekten,  
Neusäß-Steppach, DE  
Execution: TM Ausbau, Puchheim,  
DE  
Sto expertise: StoSilent Modular  
100  
Photo: Martin Baitinger, Böblingen, DE



## Primary and secondary school FFB Nord Fürstenfeldbruck, DE

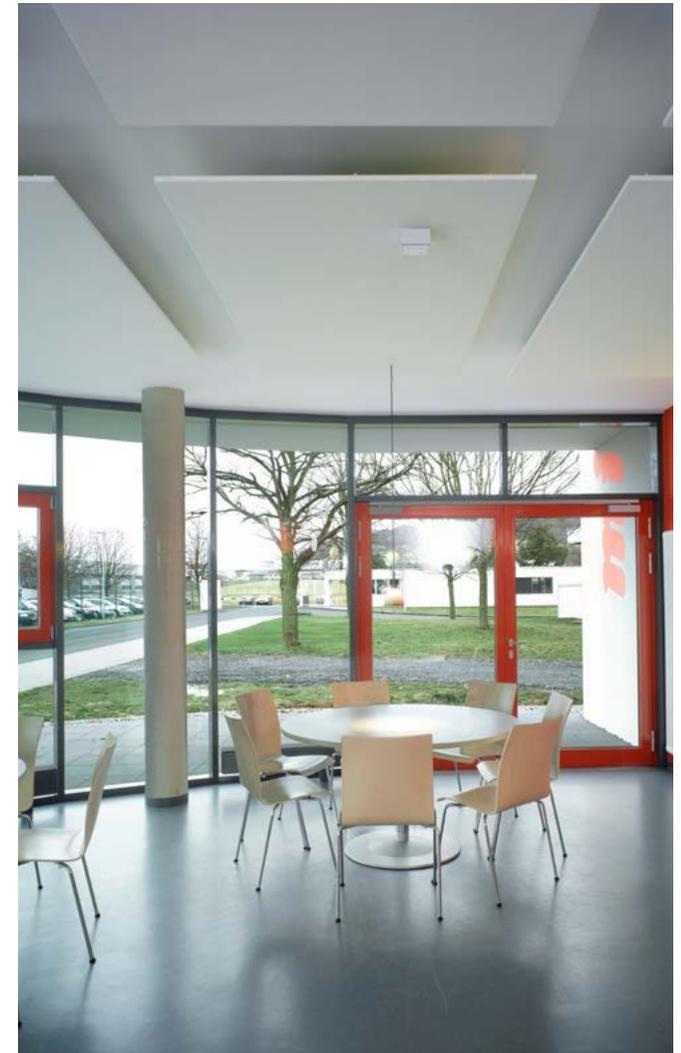
**Building owner:** Große Kreisstadt  
Fürstenfeldbruck, DE  
**Planning:** Claus Reitberger,  
Fürstenfeldbruck, DE  
**Execution:** Leierer Malerbetrieb  
GmbH, Landsberied, DE  
**Sto expertise:** StoSilent Modular  
100  
**Photo:** Martin Baitinger, Böblingen, DE





## Casino Milupa Fulda, DE

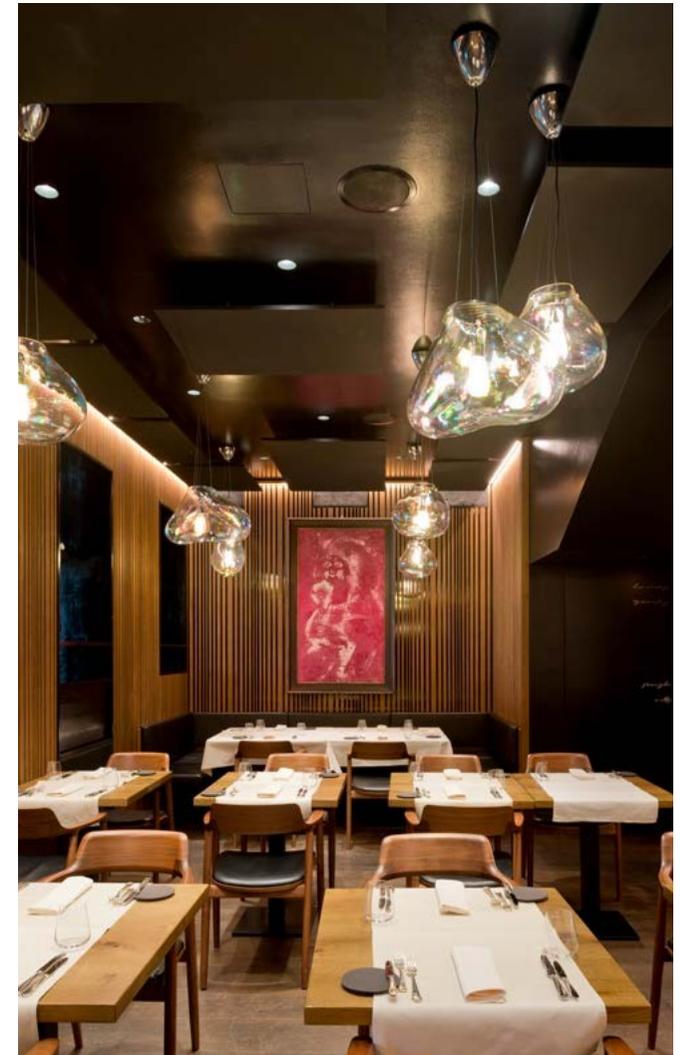
Building owner: Casino Milupa,  
Fulda, DE  
Execution: Klüber Putz GmbH,  
Künzell, DE  
Sto expertise: StoSilent Modular  
230  
Photo: Gerhard Hagen





## Das Spittelberg Vienna, AT

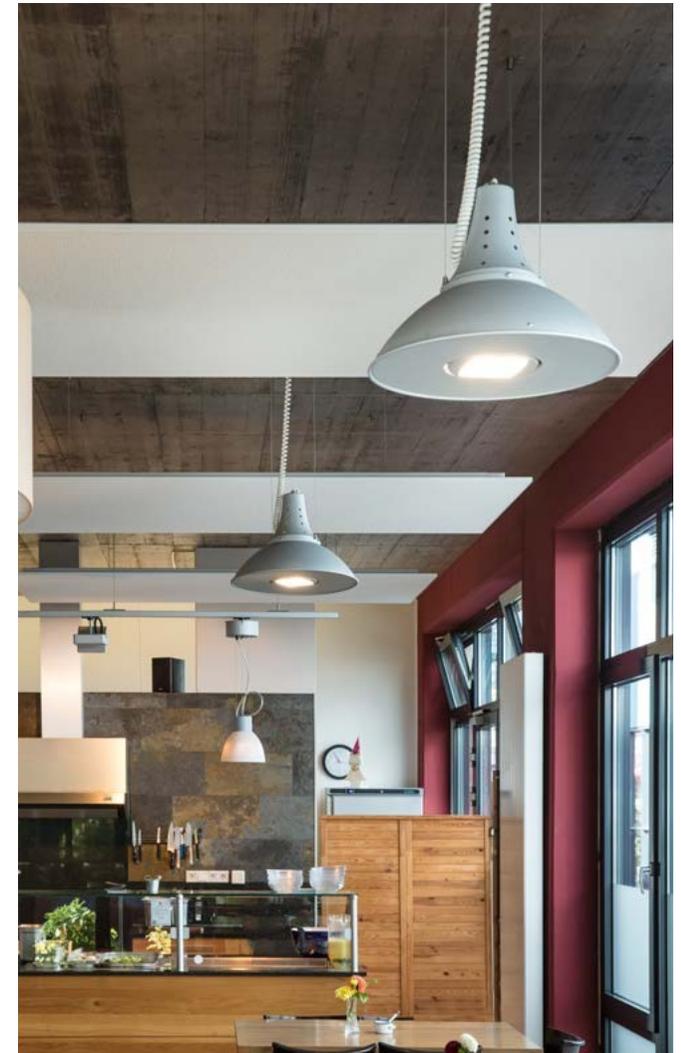
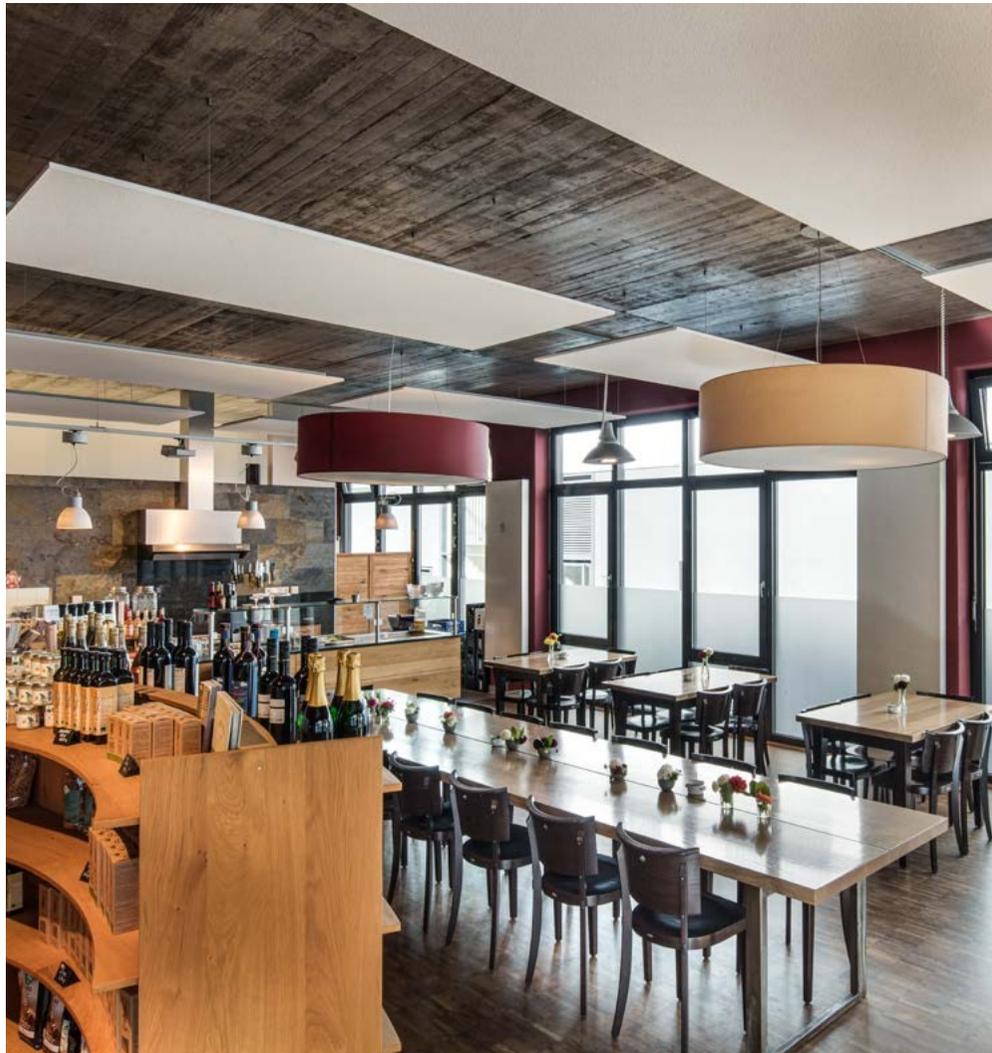
Execution: Fenz GmbH, Laa an der  
Thaya, AT  
Sto expertise: StoSilent Modular  
230  
Photo: Christian Schellander, Villach, AT





## Safran organic catering Radolfzell, DE

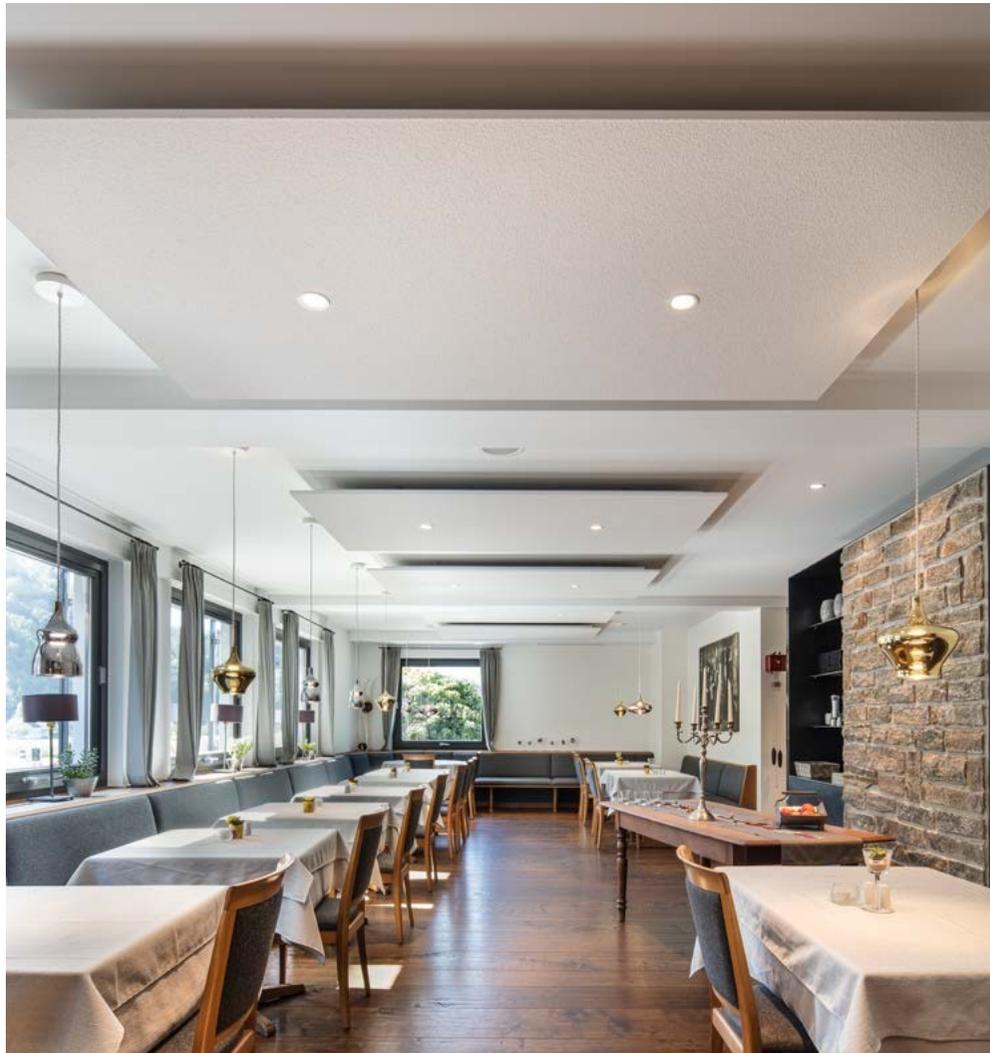
Building owner: Safran organic catering, Radolfzell, DE  
Execution: Niederberger Putz & Stuck, Singen, DE  
Sto expertise: StoSilent Modular 230  
Photo: Martin Baitinger, Böblingen, DE





## Kirnbacher Hof Wolfach-Kirnbach, DE

Building owner: Kirnbacher Hof,  
Wolfach-Kirnbach, DE  
Execution: Gipser Hilberer GmbH,  
Lahr, DE  
Sto expertise: StoSilent Modular  
230  
Photo: Martin Baitinger, Böblingen, DE





## St. Gallus day-care centre Merzhausen, DE

**Building owner:** Catholic church, DE  
**Planning:** Werkgruppe Freiburg, Freiburg, DE  
**Execution:** Hermann Emter GmbH, Freiburg, DE  
**Sto expertise:** StoSilent Modular 230, StoSilent Decor M  
**Photo:** Oliver Kern, Freiburg, DE



# StoSilent Decor

## General information

The StoSilent Decor coating system comprising the StoSilent Decor M and StoSilent Decor MF finishes should only be treated in the event of damage and/or soiling. If there are no complaints with respect to surface quality, the surface should not be treated, and should be kept in its original condition. The system demonstrates optimum acoustic performance in its original condition.

Coating the StoSilent Decor surface at a later date with commercially available paint using a paint brush or a roller is not permitted. Overcoating blocks the open pores required for sound absorption. This would destroy the acoustic effectiveness of the ceiling. Renovations are to be performed solely in accordance with the specifications of Sto SE & Co. KGaA.

In order to avoid soiling the ceiling surface, protective cotton gloves must be worn while working on the system.

Avoid any damage to the ceiling, for example due to the installation of lights, mechanical stress, etc.

Increased formation of dust, for example as a result of sanding parquet floors or similar, causes heavy soiling and the open-pored texture of the acoustically effective ceiling surface to become clogged. This is therefore to be avoided.

If work is still required on the system despite having taken all precautionary measures, this work must only be performed by specialists trained in the installation of StoSilent acoustic ceilings. Manual installation in particular greatly affects the acoustic performance and the appearance of the ceiling and

must therefore be performed with the utmost precision.

## Local soiling

Local soiling directly on the surface of StoSilent Decor can often be removed depending on the type of soiling. Surface treatment of this nature must be clarified on an individual basis and discussed in advance with Technical Consulting at Sto SE & Co. KGaA. We would like to expressly state that the removal of local soiling does not always guarantee the required cleaning effect. We are also unable to guarantee that the original, uniform surface texture will be restored. For these reasons, we strongly recommend performing a full-surface renovation as described in the paragraph "Renovation for full-surface soiling" or a local renovation as described in the paragraph "Renovation in cases of local soiling and/or damage".

## Full-surface soiling

Light full-surface soiling can be carefully removed from the ceiling with the aid of an industrial vacuum cleaner with a brush attachment. If the dirt cannot be removed, a full-surface renovation must be performed as described in the paragraph "Renovation for full-surface soiling".

## Renovation

**Before carrying out any renovation work, the cause of the soiling and/or damage must always be identified – particularly when the filled spots are affected by marking/stains as a result of airflow through ceiling boards due to acoustic panels having been left open on the rear side or having been installed incorrectly. It is strongly recommended to seek advice from Technical**

**Consulting at Sto SE & Co. KGaA in order to determine the most appropriate overcoating method.**

## Renovation in cases of local soiling and/or damage

The existing finishing coat must be carefully removed by sanding or wetting, and then knocking off the material from a small area encompassing the damage.

In the event of damage to the board surface (fleece or mesh surface on StoSilent Board), this damage must be filled with the StoSilent Plan system filler, and must be sanded smooth after drying. Multiple filler stages may be necessary.

In the event of serious damage to the board, a section of the board may have to be replaced with a new piece. The existing StoSilent Decor finishing coat surrounding the damaged areas must then be covered.

Apply StoSilent Decor to the area from which the coating was previously removed in several spray applications, in accordance with the up-to-date Technical Data Sheet from Sto SE & Co. KGaA. The drying times and quantities specified must be strictly observed.

Once the touched-up areas have dried, StoSilent Decor must be sprayed over a slightly wider area. After drying, carefully break the tips of the finishing coat in the touched-up area using a large tool (finishing spatula). Then repeat this process once or twice to minimise the transition between the touched-up area and the original finish. It is then advisable to apply a final, full-surface overcoat of StoSilent Decor to the entire surface.



## StoSilent Decor

### Renovation for full-surface soiling

Soiling covering the entire surface must be removed carefully with the aid of an industrial vacuum cleaner with a brush attachment. The entire surface should then be overcoated with StoSilent Decor. In accordance with the up-to-date technical documentation from Sto SE & Co. KGaA, StoSilent Decor must be sprayed onto the surface in one or two spray layers in a criss-cross pattern until a visually even surface appearance is achieved. More than two spray layers may be necessary in order to cover soiling. The drying times and quantities specified by the StoSilent Decor Technical Data Sheet must be strictly observed.



# StoSilent Top Basic

## General information

StoSilent Top Basic is only approved for use as a finishing coat if the colour version is selected.

The StoSilent Top Basic finishing coat should only be treated in the event of damage and/or soiling. If there are no complaints with respect to surface quality, the surface should not be treated, and should be kept in its original condition. The system demonstrates optimum acoustic performance in its original condition.

Coating the ceiling surface at a later date with commercially available paint using a paint brush or a roller is not permitted. Overcoating blocks the open pores required for sound absorption. This would destroy the acoustic effectiveness of the ceiling. Renovations are to be performed solely in accordance with the specifications of Sto SE & Co. KGaA.

In order to avoid soiling the ceiling surface, protective cotton gloves must be worn while working on the system.

Avoid any damage to the ceiling, for example due to the installation of lights, mechanical stress, etc.

Increased formation of dust, for example as a result of sanding parquet floors or similar, causes heavy soiling and the open-pored texture of the acoustically effective ceiling surface to become clogged. This is therefore to be avoided.

If work is still required on the system despite having taken all precautionary measures, this work must only be performed by specialists trained in the installation of StoSilent acoustic ceilings. Manual installation in particular greatly affects the

acoustic performance and the appearance of the ceiling and must therefore be performed with the utmost precision.

## Local soiling

Local soiling directly on the surface of StoSilent Top Basic can often be removed depending on the type of soiling. Surface treatment of this nature must be clarified on an individual basis and discussed in advance with Technical Consulting at Sto SE & Co. KGaA. We would like to expressly state that the removal of local soiling does not always guarantee the required cleaning effect. We are also unable to guarantee that the original, uniform surface texture will be restored. For these reasons, we strongly recommend performing a full-surface renovation as described in the paragraph "Renovation for full-surface soiling" or a local renovation as described in the paragraph "Renovation in cases of local soiling and/or damage".

## Full-surface soiling

Light full-surface soiling can be carefully removed from the ceiling with the aid of an industrial vacuum cleaner with a brush attachment. If the dirt cannot be removed, a full-surface renovation must be performed as described in the paragraph "Renovation for full-surface soiling".

## Overcoating with StoSilent Decor

If the StoSilent Top Basic surface is undamaged, light soiling can be concealed by applying a StoSilent Decor full-surface overcoat.

As StoSilent Decor has a significantly different surface texture

from StoSilent Top Basic, this type of overcoat must be approved by the client after applying a test surface of at least 5 m<sup>2</sup>. StoSilent Decor is to be applied in accordance with the valid Sto SE & Co. KGaA application guidelines.

If the client does not want a StoSilent Decor surface texture, a full-surface renovation must be performed as described in the paragraph "Renovation for full-surface soiling".

## Renovation

Before carrying out any renovation work, the cause of the soiling and/or damage must always be identified – particularly when the filled spots are affected by marking/stains as a result of airflow through ceiling boards due to acoustic panels having been left open on the rear side or having been installed incorrectly. It is strongly recommended to seek advice from Technical Consulting at Sto SE & Co. KGaA in order to determine the most appropriate overcoating method.

## Renovation in cases of local soiling and/or damage

Small-scale damage to the StoSilent Top Basic surface can be touched up by carrying out a local repair. However, we would like to expressly state that differences in the colour and texture may remain visible on the surface even after local repairs of this nature have been completed.



## StoSilent Top Basic

If this has a detrimental effect on the appearance of the surface, we recommend fully removing the uppermost covering layer and reapplying it as described in the paragraph "Renovation for full-surface soiling".

- For damage up to a maximum of approx. 5 x 10 cm, remove the material from the surface. Moisten the surface locally, then knock off and remove the material using a suitable tool.
- In the event of minor scrapes, the material can be directly applied without having to knock off the covering layer locally beforehand.
- Fill the damage with excess StoSilent Top Basic using a bucket trowel. If damage is present on the base layer, this must be filled in beforehand using StoSilent Top Basic. Allow an appropriate drying time before continuing to touch up the covering layer with StoSilent Top Basic.
- At the end of the application time, the newly applied material is worked into the surface by means of a plastic trowel.

### Renovation for full-surface soiling

- Moisten the entire surface with clean water using a pressure sprayer or backpack sprayer and allow the moisture to soak in for approx. 10 minutes.
- Completely scrape off the StoSilent Top Basic finishing coat using a plastering trowel. The base layer should remain undamaged during this application cycle.
- Please also note that areal scaffolding is compulsory when applying StoSilent Top Basic and an adequate number of employees must be provided to complete the work.

# StoSilent Top Finish

## Maintenance and use instructions for StoSilent Top Finish

### General information

The StoSilent Top Finish finishing coat should only be treated in the event of damage and/or soiling. If there are no complaints with respect to surface quality, the surface should not be treated, and should be kept in its original condition. The system demonstrates optimum acoustic performance in its original condition.

Coating the ceiling surface at a later date with commercially available paint using a paint brush or a roller is not permitted. Overcoating blocks the open pores required for sound absorption. This would destroy the acoustic effectiveness of the ceiling. Renovations are to be performed solely in accordance with the specifications of Sto SE & Co. KGaA.

In order to avoid soiling the ceiling surface, protective cotton gloves must be worn while working on the system. Avoid any damage to the ceiling, for example due to the installation of lights, mechanical stress, etc.

Increased formation of dust, for example as a result of sanding parquet floors or similar, causes heavy soiling and the open-pored texture of the acoustically effective ceiling surface to become clogged. This is therefore to be avoided.

If work is still required on the system despite having taken all precautionary measures, this work must only be performed by specialists trained in the installation of StoSilent acoustic ceilings. Manual installation in particular greatly affects the acoustic performance and the appearance of the ceiling and

must therefore be performed with the utmost precision.

### Removing soiling

#### Local soiling

Local soiling directly on the surface of StoSilent Top Finish can often be removed depending on the type of soiling. Surface treatment of this nature must be clarified on an individual basis and discussed in advance with Technical Consulting at Sto SE & Co. KGaA.

In the case of small-scale scuff marks on the surface, we recommend removing the soiling with the aid of a rubber/eraser. The use of a white rubber for paper and drawing film (e.g. Staedtler "Mars® plastic", art. no. 526 50) has proved successful here. Alternatively, white melamine resin foam can also be used.

We would like to expressly state that the removal of local soiling does not always guarantee the required cleaning effect. We are also unable to guarantee that the original, uniform surface texture will be restored. For these reasons, we strongly recommend performing a full-surface renovation as described in the paragraph "Renovation for full-surface soiling" or a local renovation as described in the paragraph "Renovation in cases of local soiling and/or damage".

#### Full-surface soiling

Light full-surface soiling can be carefully removed from the ceiling with the aid of an industrial vacuum cleaner with a brush attachment. If the dirt cannot be removed, a full-surface renovation must be performed as described in the paragraph "Renovation for full-surface soiling".

### Overcoating with StoSilent Decor

If the StoSilent Top Finish surface is undamaged, light soiling can be concealed by applying a StoSilent Decor full-surface overcoat. As StoSilent Decor has a significantly different surface texture from StoSilent Top Finish, this type of overcoat must be approved by the client after applying a test surface of at least 5 m<sup>2</sup>. StoSilent Decor is to be applied in accordance with the valid Sto SE & Co. KGaA application guidelines.

If the client does not want a StoSilent Decor surface texture, a full-surface renovation must be performed as described in the paragraph "Renovation for full-surface soiling".

### Renovation

Before carrying out any renovation work, the cause of the soiling and/or damage must always be identified – particularly when the filled spots are affected by marking/stains as a result of airflow through ceiling boards due to acoustic panels having been left open on the rear side or having been installed incorrectly. It is strongly recommended to seek advice from Technical Consulting at Sto SE & Co. KGaA in order to determine the most appropriate overcoating method.

#### Renovation in cases of local soiling and/or damage

Small-scale damage to the StoSilent Top Finish surface can be touched up by carrying out a local repair. However, we would like to expressly state that differences in the colour and texture may remain visible on the surface even after local repairs of this nature have been completed.

If this has a detrimental effect on the appearance of the surface, we recommend fully removing the uppermost



## StoSilent Top Finish

covering layer and reapplying it as described in the paragraph "Renovation for full-surface soiling".

- For damage up to a maximum of approx. 5 x 10 cm, remove the material from the surface. Moisten the surface locally, then knock off and remove the material using a suitable tool.
- In the event of minor scrapes, the material can be directly applied without having to knock off the covering layer locally beforehand. Fill the damage with excess StoSilent Top Finish using a bucket trowel. If damage is present on the StoSilent Top Basic base layer, this must be filled in beforehand using StoSilent Top Basic. Allow an appropriate drying time before continuing to touch up the covering layer with StoSilent Top Finish.
- After the surface drying time (surface of the fresh StoSilent Top Finish becomes slightly matt), work the material into the surface using a plastic trowel. The introduced moisture starts to dissolve the material in the edge zone; this generally results in the area that has been touched up remaining slightly visible (similar to the appearance of a water stain).

### Renovation for full-surface soiling

- Moisten the entire surface with clean water using a pressure sprayer or backpack sprayer and allow the moisture to soak in for approx. 10 minutes.
- Scrape off StoSilent Top Finish with the plastering trowel. The StoSilent Top Basic base layer must remain undamaged during this application cycle.
- Once the moistened base layer has dried out completely, apply StoSilent Top Finish to the full surface in accordance with the up-to-date technical documentation from Sto SE &

Co. KGaA. If necessary, carefully sand the intermediate coat of StoSilent Top Basic. Please also note that areal scaffolding is compulsory when applying StoSilent Top Finish and an adequate number of employees must be provided to complete the work.



## StoColor Climasan/StoColor Silent

### Maintenance and use instructions for StoColor Climasan/StoColor Silent

#### General information

The StoColor Climasan and StoColor Silent finishing coats should only be treated in the event of damage and/or soiling. If there are no complaints with respect to surface quality, the surface should not be treated, and should be kept in its original condition. The system demonstrates optimum acoustic performance in its original condition.

A coat of commercially available paint must never be applied to the ready-coated surface at a later date with a paint brush or a roller. Overcoating blocks the open pores required for sound absorption. This would destroy the acoustic effectiveness of the ceiling. Renovations are to be performed solely in accordance with the specifications of Sto SE & Co. KGaA.

In order to avoid soiling the ready-coated surface, clean protective cotton gloves must be worn while working on the system.

Avoid any damage to the surface, for example due to the installation of lights, mechanical stress, etc. Increased formation of dust, for example as a result of sanding parquet floors or similar, causes soiling and blocks the open-pored structure of the acoustically effective surface. This is therefore to be avoided.

If work is still required on the system despite having taken all precautionary measures, this work must only be performed by applicators who have been professionally trained in the

installation of StoSilent acoustic ceilings. The work carried out by the tradesperson has a particularly significant effect on the acoustic performance and appearance of the system. Therefore, it must be performed with the utmost precision.

#### Removing soiling

##### Local soiling

Light soiling can be removed by using appropriate aids to target the affected areas, e.g. a sponge that has been moistened with water. Do not allow the moisture to penetrate the surface, as this can cause the finishing coat to peel off.

##### Full-surface soiling

If a full-surface overcoat is required, one or two spray coatings of StoColor Climasan or StoColor Silent should be professionally applied (applied quantity of approx. 150–300 g/m<sup>2</sup>) until a visually even surface appearance is achieved. More than two application cycles may be necessary in order to cover soiling.

##### Overcoating with StoSilent Decor

If the StoColor Climasan or StoColor Silent surface is undamaged, an alternative way of concealing light soiling is to apply a full-surface overcoat of StoSilent Decor Decor. As StoSilent Decor has a significantly different surface texture from StoColor Climasan or StoColor Silent, this type of overcoat must be approved by the client after applying a test surface of at least 5 m<sup>2</sup>. StoSilent Decor is to be applied in accordance with the valid Sto SE & Co. KGaA application guidelines.

#### Renovation

Before carrying out any renovation work, the cause of the soiling or damage must always be identified – particularly when the filled spots are affected by marking/stains as a result of airflow through ceiling boards due to acoustic panels having been left open on the rear side or installed incorrectly, or as a result of water stains. It is strongly recommended to seek advice from Technical Consulting at Sto SE & Co. KGaA in order to determine the most appropriate overcoating method.

##### Renovation in cases of local soiling and/or damage

Small-scale damage to the surface can be touched up by carrying out a local repair. However, we would like to expressly state that differences in the colour and texture may remain visible on the surface even after local repairs of this



## StoColor Climasan/StoColor Silent

nature have been completed. Damage to the surface must be compensated by applying the relevant finishing coat to make the surface level. Once the local damage has been touched up, the surrounding finishing coat must be flush with the area that has had the overcoat applied to it. Visible transitions in height and surface texture must be avoided. For information on how to repair local damage with an overcoat, please see the section on "Renovation in cases of local soiling and/or damage" for the relevant type of finishing coat.

At the end of the finishing coat through-drying time, an overcoat of StoColor Climasan/StoColor Silent can be applied using one to two application cycles.

### Renovation for full-surface soiling

Soiling covering the entire surface must be removed carefully with the aid of an industrial vacuum cleaner with a brush attachment. A thin and even overcoat of StoColor Climasan or StoColor Silent should then be applied to the entire surface. One or two spray coatings of StoColor Climasan or

StoColor Silent should be professionally applied (applied quantity of approx. 150–300 g/m<sup>2</sup>) until a visually even surface appearance is achieved. More than two application cycles may be necessary in order to cover soiling. Particularly in the context of spraying on the colour coating, the work carried out by the tradesperson greatly affects the acoustic performance and the appearance of the ceiling element. Therefore, it must be performed with the utmost precision.



# StoSilent Modular

## StoSilent Modular 100

### Parameters

- With water and a damp cloth
- With a special cleaner suitable for interiors in the case of coarse soiling (grease, etc.)
- No contact between cleaning agent and PET board

### Board

- Remove dust with suction cleaning, using a soft brush and low suction power.

### Installation

- Wear clean white cotton gloves.

## StoSilent Modular 230

### General information

The fine-textured colour coating of the StoSilent Modular 230 system should only be treated in the event of damage and/or soiling. If there are no complaints with respect to surface quality, the surface should not be treated, and should be kept in its original condition. The system demonstrates optimum acoustic performance in its original condition. A coat of commercially available paint must never be applied to the colour coating at a later date with a paint brush or a roller. Overcoating blocks the open pores required for sound absorption. In turn, this significantly reduces the acoustic effectiveness of the ceiling element. Renovations are to be performed solely in accordance with the specifications of Sto SE & Co. KGaA. In order to avoid soiling the ceiling surface, clean protective cotton gloves must be worn during installation and when working on the ceiling element. Avoid

causing any damage to the StoSilent Modular 230 system during installation, for example do not stand the elements on edge and avoid knocking the edges. If work is still required on the ceiling element despite having taken all precautionary measures, this work must only be performed by applicators who have been professionally trained in the installation of StoSilent acoustic ceilings. The work carried out by the tradesperson has a particularly significant effect on the acoustic performance and appearance of the StoSilent Modular system. Therefore, it must be performed with the utmost precision.

### Removing local soiling

Light local soiling can be removed with white melamine resin foam. Carefully rub the dry melamine resin foam over the soiling until the dirt disappears from the surface. If the dirt cannot be removed, moisten the melamine resin foam and carefully repeat the process. Once the treated area has dried, carefully blow the surface with compressed air. We would like to expressly state that the removal of local soiling does not always guarantee the required cleaning effect. We are also unable to guarantee that the original, uniform surface texture will be preserved. Rubbing the surface with melamine resin foam is an abrasive process. Depending on the incidence of light and viewing angle, differences in the surface texture may become visible as a result of the abrasion.

### Renovation for full-surface soiling

Soiling covering the entire ceiling element surface must be removed carefully with the aid of an industrial vacuum cleaner with a brush attachment. A thin and even overcoat of StoColor Opticryl Matt should then be applied to the

entire ceiling area. One or two spray coatings of StoColor Opticryl Matt should be applied (applied quantity of approx. 150–300 g/m<sup>2</sup>) until a visually even surface appearance is achieved. More than two application cycles may be necessary in order to cover soiling. Particularly in the context of spraying on colour coatings, the work carried out by the tradesperson greatly affects the acoustic performance and the appearance of the ceiling element. Therefore, it must be performed with the utmost precision.



## Coated Reapor acoustic panel

### StoSilent Board R 400/StoSilent Baffle R 100

#### General information

Light soiling must be removed carefully with the aid of an industrial vacuum cleaner with a brush attachment.

Ingrained soiling on the surface can be removed with soapy water and aids such as a clean, damp sponge or a clean, damp soft brush.



# StoSilent Compact

## General information

The StoSilent Compact coating system comprising the StoSilent Compact Miral and StoSilent Compact Sil finishing coats should only be treated in the event of damage and/or soiling. If there are no complaints with respect to surface quality, the surface should not be treated, and should be kept in its original condition. The system demonstrates optimum acoustic performance in its original condition.

Coating the ceiling surface at a later date with commercially available paint using a paint brush or a roller is not permitted. Overcoating blocks the open pores required for sound absorption. This would destroy the acoustic effectiveness of the ceiling. Renovations are to be performed solely in accordance with the specifications of Sto SE & Co. KGaA.

Avoid any damage to the ceiling, for example due to the installation of lights, mechanical stress, etc.

Increased formation of dust, for example as a result of sanding parquet floors or similar, causes heavy soiling and the open-pored texture of the acoustically effective ceiling surface to become clogged. This is therefore to be avoided.

If work is still required on the system despite having taken all precautionary measures, this work must only be performed by specialists trained in the installation of StoSilent acoustic ceilings. Manual installation in particular greatly affects the acoustic performance and the appearance of the ceiling and must therefore be performed with the utmost precision.

## StoSilent Miral AP

### Local and full-surface soiling and damage

A full-surface overcoat is recommended even in the case of small-scale, local soiling.

#### Application cycle 1

Suction clean the surface

#### Application cycle 2

Local touch-up with StoSilent Miral AP. This involves filling the material in the relevant places using a bucket trowel.

#### Application cycle 3

Break the tips. Use a sanding board and minimal pressure to break the tips over the entire surface.

#### Application cycle 4

Gently sweep the surface

#### Application cycle 5

Spray the coating over the surface. One to two additional layers of StoSilent Miral AP are sprayed onto the entire surface using suitable machine technology (e.g. Sto-Hopper Gun).

## StoSilent Sil AP

### Local and full-surface soiling and damage

A full-surface overcoat is recommended even in the case of small-scale, local soiling.

#### Application cycle 1

Suction clean the surface

#### Application cycle 2

Local touch-up with StoSilent Sil AP (Comp. A and Comp. B). This involves filling the material in the relevant places using a bucket trowel.

#### Application cycle 3

Overcoating with StoSilent Decor. Overcoat the entire surface with one to two spray layers, as required, using suitable machine technology (e.g. Sto-Hopper Gun).



# Glossary

Even in the ancient world, construction works were designed to take account of acoustic factors. World-famous semi-amphitheatres and amphitheatres that are thousands of years old can be found far and wide, from the Mediterranean area right through to Great Britain. With their simple yet ingenious construction methods, these treasures of antiquity still have the power to amaze onlookers and “onhearers” alike. Distinguished theatres, opera houses, and concert halls exist all over the world. What’s more, acoustics have become ubiquitous in everyday life, whether in the form of the speech or music that we choose to listen to or the invasive noise over which we have no control.

Acoustics is the branch of physics that focuses on describing and calculating sound in the broadest possible sense. Sound is absolutely everywhere – an essential factor for health and well-being, communication, and relaxation; and also very important from an economic perspective.

StoSilent is primarily concerned with room acoustics. The applications are as diverse as the requirements associated with each one.

However, StoSilent also offers solutions for the tasks of building acoustics and sound immission protection, which are encountered in various guises within the context of further applications.

Rooms and buildings of every conceivable type are targeted, encompassing not only the applications and uses covered by directives and standards but also voluntary use in private homes.

StoSilent offers solutions that make a direct impression on the ear and immediately attract the eye.

StoSilent – sets the tone in acoustics.

## Absorption

In this document, sound absorption means the energy loss that is achieved by damping the impacting airborne sound within suitable textures, constructions, and materials. Sound-absorbing materials such as foam structures, fibre insulating materials, or fabrics are porous absorbers.

Oscillating boards act as membrane absorbers in accordance with the mass-spring principle. Resonance absorbers trap sound by relying on holes that are located in front of an enclosed cavity. The level of absorption generally depends on the frequency and operating principle of the absorber concerned.

## Degree of absorption

In this document, the term sound absorption coefficient refers to the degree of absorption. It describes the ratio between the sound energy that is absorbed by a material (i.e. not reflected) and the impacting sound energy that hits the surface of the material. The possible values range from 0

(corresponding to full sound reflection) to 1 (corresponding to full absorption). The sound absorption coefficient is dependent on the frequency.

## Acoustics

The study of sound and its propagation. The field of construction is primarily concerned with room and building acoustics, protection against structure-borne noise, and sound immission protection.

## Room-acoustic requirements

Room-acoustic requirements for the parameters in question are set based on standards, directives, legal specifications, and general technology rules, but also based on relevant literature and expertise. These parameters include reverberation time, background noise, sound distribution, acoustic quality, and masking.

## Equivalent sound absorption area $A_{eq}$

Defined as the product of surface  $S$  of an absorber in  $m^2$  and the degree of absorption  $\alpha$  of the absorber. The equivalent sound absorption area  $A_{eq}$  is specified in  $m^2$  and, just like the sound absorption coefficient itself, is dependent on the frequency. It refers to an abstract model area for a surface  $S$  material with a sound absorption coefficient of 1, and is used to represent the real material under consideration. In a reverberant room with a diffuse sound field, the model area would absorb the same amount of sound energy as the surface of the real absorber material under consideration. For instance, a smooth  $100m^2$  concrete area with a sound absorption coefficient of 0.01 has an equivalent sound absorption area of  $1m^2$ , which is exactly the same as for a  $1m^2$  fibre insulating material with a sound absorption coefficient of 1.00. In areas following the US system, the sabin is used as the unit for the sound absorption area. A sound absorption area  $A$  of  $1m^2$  is defined as 1 metric sabin.

## Equivalent sound absorption area per $A_{obj}$

For individual objects such as ceiling elements and wall panels, but also including furniture and people, the equivalent sound absorption area  $A_{eq}$  is specified in  $m^2$  and defined as equivalent sound absorption area per object  $A_{obj}$ .

## A/V ratio

Refers to the ratio between the total sound absorption area  $A$  in  $m^2$  within a room and the volume of the room  $V$  in  $m^3$ . It is a significant planning variable for flat rooms such as industrial buildings and open-plan offices.

## Diffraction

Refers to the manner in which sound waves are physically diverted when they strike edges, obstacles, and boundary surfaces. As part of this process, sound waves also bend around edges and three-dimensional bodies. The diffraction is dependent on frequency and is also determined by the ratio between the sound wavelength and the spatial dimension of the obstacle.

## Weighted sound absorption coefficient

Single-number frequency-independent value obtained using the standardised weighting method and which equals the value of the reference curve at 500 Hz after it was shifted as specified in the international standard EN ISO 11654. This method is based on the practical sound absorption coefficients  $\alpha_p$ .

## Diffuse sound field

Describes a sound field in rooms, whereby the sound incidence remains consistent at virtually every point (almost) regardless of the direction of sound incidence. A diffuse sound field is achieved when the boundary surfaces of the room do not merely reflect sound geometrically but also scatter it diffusely (by acting as diffusers). Furnishings also scatter sound and can increase the level of diffusion. Having a diffuse sound field that distributes sound evenly within the room is a prerequisite for planning the room acoustics of auditoria.

## Diffuser

A building element or sculptural shape that disperses impacting sound waves so that the sound is distributed evenly within the room. In this way, multiple reflections between parallel surfaces – also known as flutter echoes – can be avoided. The effect is dependent on the ratio between the dimensions and the sound wavelength.

## Direct sound

Proportion of the sound emanating from a sound source that reaches the listener directly without first being reflected.

## Echo

Refers to the reflection of a sound signal that arrives at the reception point so much later than the direct sound that it is perceived as a separate auditory event. The time lag between the arrival of the direct sound and the arrival of the subsequent reflection must be at least 30 ms, or closer to 50 ms, in order for the reflection to be perceived as an echo. Within the context of room acoustics, echoes are a nuisance because they generally reduce speech intelligibility and make music less enjoyable.



# Glossary

## Flutter echo

Multiple reflections which occur at periodic time intervals and may be caused by sound-reflecting surfaces arranged in parallel within rooms. Flutter echoes interfere with room acoustics and must be prevented by implementing suitable geometric measures or installing some kind of sound-absorbing material.

## Shape indicators L, M, H

Indication showing practical sound absorption coefficients  $\alpha_p$ , exceeding those of the shifted reference curve in accordance with EN ISO 11654 by at least 0.25 in different frequency ranges. They are used as follows: (L) at 250 Hz, (M) at 500 Hz and 1000 Hz, (H) at 2000 Hz and 4000 Hz.

## Extraneous noise

Also: background noise, noise level, in open-plan offices in accordance with EN ISO 3382-3; the unweighted sound pressure level SPL of the extraneous noise LpB in decibels at the workplaces along the measurement path during working hours when people are absent. It is used as a planning parameter for room acoustics. It is determined by noise from mains utilities, neighbouring rooms, and noise from outside.

## Frequency

Within the context of acoustics, the frequency  $f$  of sound waves means the number of oscillations per second. The unit is hertz with the symbol Hz. The frequency determines the pitch heard by the listener.

## Critical distance

In enclosed rooms, this describes the distance  $r_H$  in metres from a sound source at which the direct and reverberant sound levels are equal, assuming a static sound field. The critical distance is determined by the sound absorption area within the room, the volume of the room, and – in turn – the reverberation time. Consequently, it is dependent on frequency. In reverberant rooms, the critical distance is small but in dampened rooms it tends to be quite large.

## Reverberation chamber

A special acoustic laboratory with a set geometry and volume and whose reflective surfaces result in long reverberation. Reverberation chambers meeting the requirements of EN ISO 354 or ASTM C423 are used, among other things, to determine the sound absorption coefficient  $\alpha_s$  of materials, building materials, systems, and individual elements. This is determined indirectly by measuring the reverberation time with and without test bodies that must be produced in accordance with the applicable standards.

## Auditory range

The human auditory range (also known as the auditory field) lies roughly within the frequency range of 20 Hz to 20,000 Hz, and encompasses a noise level range that starts at the 0 dB hearing threshold and ends at the 140 dB threshold of discomfort. The upper and lower values of the frequency and noise level ranges are also known as the limits of audibility. The limits of audibility vary significantly from one person to another. As people get older, their ability to hear high frequencies diminishes and their hearing threshold increases, thereby reducing their auditory range. The same effect occurs in the event of hearing damage.

## Acoustic quality

Generic term describing the impact of acoustic properties in a room designed to provide auditory experiences, e.g. music or speech, as perceived at the location of the listener.

## Hearing threshold

The highest level that can be heard by the human ear is approx. 140 dB, which is identified as the pain threshold.

## Noise

Refers to sound and noises that are unwanted, disturbing, stressful, or even harmful to health. The manner in which the sound is perceived and evaluated by the individual hearer is what determines whether or not it is regarded as noise.

## Loudness

A psychoacoustic quantity that describes how sound is individually evaluated by a particular person in terms of its perceived volume. Loudness is given in the unit *phon* and is not to be confused with volume.

## Volume

A technical quantity that describes the physically measurable amplitude of the sound, or in common parlance, its intensity. It generally involves measuring the sound pressure level, which is specified in decibels (dB). Volume is not to be confused with loudness, which refers to how the sound is perceived by particular people.

## Masking

Acoustic masking describes the masking of sounds by other sound events. It involves adjusting and tuning the background noise in the room in such a way that background noise is masked or “overlaid”, including by active sound sources. It is the preferred tool for adjusting the acoustics in open-plan offices. The ventilation noise overlays and masks the sound

transmission of speech throughout the office. This results in increased confidentiality by masking interfering speech over longer distances.

## Reverberation

Describes the continuous reflection of sound in enclosed rooms/spaces.

## Reverberation time

Amount of time in seconds it takes for the sound pressure level to drop by 60 dB within a room following the end of sound field excitation. The reverberation time is specified in seconds. The reverberation time is a frequency-dependent quantity.

## Noise reduction coefficient NRC

In accordance with ASTM C 423, the *noise reduction coefficient (NRC)* is averaged from the third-octave values of the sound absorption coefficient  $\alpha_s$  at 250, 500, 1000, and 2000 Hz and rounded to 0.05.

## Room-acoustic planning

Designing rooms according to their purpose, depending on their use as offices, classrooms, foyers, operating sites, theatres, opera halls, and auditoriums. The results of this – mostly tailored – planning include suitable reverberation time, adapted background noise, ideal sound distribution with the aim of acoustic quality, speech intelligibility, and quietness.

## Porous absorber

Refers to a foam or fibre material whose texture swallows sound energy through the processes of energy conversion and friction, thereby resulting in sound absorption. The characteristic properties are the porosity, airflow resistance, and structure factor. The thickness of the absorber has a significant impact on the level of sound absorption and the frequency response. Thick absorbers will routinely absorb more sound than thin ones made from the same material.

## Practical sound absorption coefficient $\alpha_p$

Determined in accordance with EN ISO 11654. As a basis, the third-octave values of the sound absorption coefficient  $\alpha_s$  are averaged for the octaves from 125 Hz to 4000 Hz and rounded to 0.05. These values provide the basis for determining the weighted sound absorption coefficient  $\alpha_w$ .

## Room acoustics

The specialist field of acoustics that deals with the impact of the structural properties of a room on the sound events occurring inside it.



# Glossary

## Reflection

When a sound wave bounces off a sound-reflecting obstacle of sufficient size (large in relation to wavelength).

## Sabin

Designates  $1 \text{ m}^2$  sound absorption area; see also Equivalent sound absorption area  $A_{\text{eq}}$ .

## Sabine's formula

A simple equation that quantitatively describes the acoustics of a room. It can be used to calculate the reverberation time if the room volume and sound absorption area are both known. Conversely, if the reverberation time and volume are known, it is possible to calculate the available sound absorption area. Sabine's formula is  $T=0.163 V/A$  in seconds.  $T$  is the reverberation time in seconds,  $V$  is the volume of the room being filled with sound in  $\text{m}^3$ , and  $A$  is the sound absorption area of the room in  $\text{m}^2$ . The constant factor 0.163 includes the 60 dB reduction in the sound pressure level in accordance with the definition of reverberation time. If room volume  $V$  is known and the reverberation time  $T$  is calculated or measured, the absorption area  $A$  in the room can be calculated:  $A = 0.163 V/T$ .

## Sound

Mechanical oscillations of elastic media (gaseous, fluid, or solid). In building and room acoustics, sound processes in the air which surrounds us as a medium and via which our ear perceives the sound are of primary importance.

## Sound absorption class

Used to classify the sound absorber in accordance with EN ISO 11654. The classification system provided in Annex B – which is informative rather than normative – is primarily intended for use in connection with broadband noise. The single-number value  $\alpha_w$  is used to specify the sound absorption class in accordance with Table 8.1 of the standard. On this basis, the weighted sound absorption coefficients  $\alpha_w$  are classified as follows: values 1.00, 0.95, and 0.90 belong to class A, values 0.85 and 0.80 belong to class B, values falling in the range from 0.75 to 0.60 belong to class C, values falling in the range from 0.55 to 0.30 belong to class D, the range 0.2 to 0.15 belongs to class E.

The weighted sound absorption coefficient values  $\alpha_w$  falling in the range from 0.10 to 0.00 are not classified at all. The sound absorption classes do not provide an appropriate basis for room acoustics calculations and for verifying the project-specific suitability of an absorber. The absorber categories are not a quality classification for absorbers. Even “non-classified”

absorbers can be suitable, e.g. in concert halls, where class A absorbers are completely unsuitable. The best absorbers fit the room in terms of quality and dimensions, regardless of their absorption values.

## Sound absorption

Describes the sound energy that gets converted into thermal energy when a sound wave strikes a building element, a surface, or a material. The sound absorption is specified in the form of the sound absorption coefficient  $\alpha$ .

## Sound absorption coefficient $\alpha_s$

The sound absorption coefficient  $\alpha_s$  describes the capacity of a material to absorb sound. It specifies the ratio between the sound energy absorbed by the material and the impacting sound energy.  $\alpha$  is dependent on frequency. The sound absorption coefficient  $\alpha_s$  indicates how well a material is able to absorb sound as a function of frequency. It is determined in a reverberation chamber that meets the requirements of EN ISO 354 or ASTM C423.

## Sound pressure

Describes the pressure fluctuations that occur in a compressible sound transmission medium (such as air) when sound is propagated. Pressure fluctuations are converted into an auditory sensation by the ear.

## Sound pressure level

A logarithmic sound field quantity that is specified as a level in decibels (dB). It is used to describe the intensity of a sound event. The reference value for determining the level is the hearing threshold sound pressure at 1000 Hz, which corresponds to a sound pressure level of 0 dB.

## Sound power, sound power level

Acoustic sound energy quantity in watts that describes the sound energy emitted by a sound source over a period of time. It is used to evaluate sound sources and is also expressed as sound power level  $L_W$  in decibels (dB). It describes the source strength of a sound generator. It can be used in rooms to calculate the sound pressure level  $L_p$  if the room volume  $V$  and reverberation time  $T$  or the sound absorption area  $A$  are known. The relationship is  $L_p = L_w - 10 \log (A/4)$  in dB and applies to diffuse sound fields.

## Speech intelligibility

A criterion for room acoustics that describes the quality with which speech is transferred from the speaker to the hearer. When planning the room acoustics of auditoria, the aim is to achieve a level of speech intelligibility that falls somewhere within the range of sufficiently good to excellent.

## Speech transmission index (STI)

A measure of speech intelligibility when speech is transmitted from speaker to hearer in a room or via a loudspeaker system. The possible values range from 0 (incomprehensible) to 1 (excellent). When planning the room acoustics of auditoria, the aim is to achieve a level of speech intelligibility that falls somewhere within the range of sufficiently good to excellent along with correspondingly high STI values.

## Wavelength

Describes the smallest distance between two points with the same phase on a periodic wave. It is the speed of sound divided by the frequency and is specified in metres. In the case of low pitches with a low frequency, the wavelength is long; in the case of high frequencies, the wavelength is short.



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