

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.



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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. Furthermore, 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 you 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 and about ambient interior climate, 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.

The many layers of our acoustic systems

Category	System	Carrier layer	Absorber layer	Material layer
Suspended acoustic system Sub-construction	StoSilent Distance 	StoSilent Distance C StoSilent Distance S StoSilent Distance F 1 — Sub-construction 2a — Bonding 2b — Screw connection 3 — Acoustic panel	2 — Acoustic panel 4 — Edge profile	
	StoSilent Direct Full-surface application StoSilent Frame Partial application	1 — Priming coat	2 — Bonding 3 — Acoustic panel 4 — Levelling coat 5 — Edge profile	5 — Intermediate coat 6 — Finishing coat (tinted available as an option)
			2 — Bonding 3 — Acoustic panel made of sintered expanded glass granulate	Acoustic panel, coated at the factory; no further material layer



The many layers of our acoustic systems

Category	System	Carrier layer	Absorber layer	Material layer
Directly coated acoustic plaster system Applied directly to the resistant surface	StoSilent Compact	 1 — Prime coating	Absorbent material layer; no further absorber layer required	 2 — Intermediate coat 3 — Finishing coat
Suspended, modular acoustic elements Modular system with prefabricated elements	StoSilent Modular	 1 — Hanger	 2 — Sub-construction 3 — Horizontally suspended acoustic panel	StoSilent Modular 230: Fine-textured colour coating applied at the factory

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 support healthy room usage in the modern world of work, while also meeting the architectural demands of planners and architects.

Open-plan office



Dr. Jean Bausch GmbH & Co. KG, Cologne, DE
Building owner: Dr. Jean Bausch GmbH & Co. KG, Cologne, DE
Architecture: Thea Löhr Architektin, Cologne, DE
Specialised trade: Grahovic Bau, Leverkusen, DE
Sto proficiency: StoSilent Board 110 S, StoSilent Decor M
Photo: Guido Erbring, Cologne, DE

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.

The right solution for every room

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.

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.

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.



Billionaire St. Moritz, CH

Building owner: St. Moritz Bäder AG, St. Moritz, CH

Architecture: von Meiss Architekten, St. Moritz, CH

Specialised trade: Nicol. Hartmann & Cie. AG, St. Moritz, CH

Sto proficiency: StoSilent Distance S, StoSilent Top Finish, StoDeco Line

Photo: St. Moritz Bäder AG, St. Moritz, CH

The right solution for every room

Conference room



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

Building owner: Dr. Jean Bausch GmbH & Co. KG, Cologne, DE

Architecture: Thea Löhre Architektin, Cologne, DE

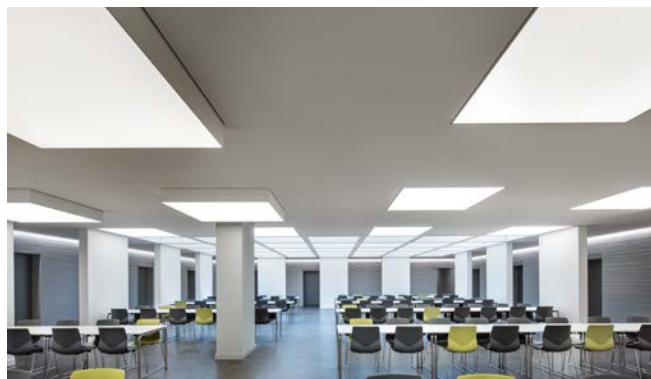
Specialised trade: Grahovic Bau, Leverkusen, DE

Sto proficiency: StoSilent Modular 230

Photo: Guido Erbring, Cologne, DE

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.

Acoustics in educational institutions



Vocational schools, Donaueschingen, DE

Building owner: district office, Villingen-Schwenningen, DE

Architecture: Formgewand, Stühlingen, DE

Specialised trade: Stuckateurbetrieb Gemeinder, Donaueschingen, DE

Sto proficiency: StoSilent Distance S, StoSilent Decor M

Photo: Martin Baitinger, Böblingen, DE

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, and aesthetic appeal – as demonstrated by the products in the StoSilent portfolio.

Schools



Vocational schools, Donaueschingen, DE

Building owner: district office, Villingen-Schwenningen, DE

Architecture: Formgewand, Stühlingen, DE

Specialised trade: Stuckateurbetrieb Gemeinder, Donaueschingen, DE

Sto proficiency: StoSilent Distance S, StoSilent Decor M

Photo: Martin Baitinger, Böblingen, DE

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.

The right solution for every room

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 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.

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.

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.

Food and drink



Safran organic catering, Radolfzell, DE

Specialised trade: Niederberger Putz & Stuck, Singen, DE

Sto proficiency: StoSilent Modular 230

Photo: Martin Baitinger, Böblingen, DE

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!

The right solution for every room

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, or diffusion. 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.

Swimming pool/spa



Kärnten Therme Warmbad spa, Villach, AT

Building owner: Kärnten Therme Betriebs GmbH, Villach, AT

Architecture: Architekten Penthaller ZT GmbH, Graz, AT

Specialised trade: Baierl & Demmelhuber Innenausbau GmbH, Töging, AT; Swietelsky BaugesmbH, Villach, AT; Freundl GmbH, Villach, AT

Sto proficiency: StoSilent Distance S, StoSilent Decor M

Photo: Christian Schellander, Schiefing am Wörthersee, AT

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.

Acoustics in living spaces, corridors, and canteens

Corridors



MOAE – Huamao Museum of Art Education, Ningbo, CN

Architecture: Carlos Castanheira and Álvaro Siza Vieira, Porto, PT

Sto proficiency: StoSilent Distance S, StoSilent Decor M

Photo: HouPictures, CN

The right solution for every room

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.

Living spaces



Residential building, Lörrach, DE

Architecture: HP Steinemann Architektur und Planung, Zurich, CH

Specialised trade: Nepple KG, Grenzach-Wyhlen, DE

Sto proficiency: StoSilent Modular 230

Photo: Martin Duckek, Ulm, DE

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/staircase 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.

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 Distance is a suspended system for wall and ceiling coverings in interiors.

StoSilent Distance C is suitable for rooms where there is no negative pressure between the room and the ceiling cavity. Ceilings with ventilated cavities or where there is negative pressure must be constructed using airtight panels in the StoSilent Distance S or StoSilent Distance F system. An all-round open shadow gap must be provided, with a free cross section of at least 0.8 % of the ceiling surface area.

StoSilent – Application fields according to climatic conditions and room use

Key: ✓ approved x not possible		Application			
Use		Interior			
Building element		Interiors		Climate-controlled swimming bath, no rooms exposed to moisture	
Stress during use	Requirements:	• 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
	Air temperature ¹⁾	≤ 30 °C	≤ 30 °C	≤ 30 °C ³⁾	≤ 30 °C ³⁾
	Humidity ²⁾	≤ 90 %	≤ 90 %	≤ 70 %	≤ 70 %
	Stress class according to Table 8 from EN 13964	B⁵⁾	B⁵⁾	A⁴⁾	A⁴⁾
	Condensation/precipitation/splash water	No	No	No	No
System	Wind load	None	None	None	None
	StoSilent Distance	✓	✓	✓ With load-bearing construction protected from corrosion and with vernier hangers in accordance with EN 13964	on request
	StoSilent Direct	✓	Calculations required as proof	• Only on solid and concrete ceilings • Not on gypsum plasterboard ceilings • Not with StoSilent Coll MW-G gypsum adhesive	
	StoSilent Frame	✓	Calculations required as proof	• Only on solid and concrete ceilings • Not on gypsum plasterboard ceilings	
	StoSilent Modular 230	✓	✓	On request, as a custom variant with load-bearing construction protected from corrosion	
	StoSilent Compact (StoSilent Miral AP)	✓	✓	✓ Only on solid and concrete ceilings	
Coating	StoSilent Top Basic	✓	✓	✓	on request
	StoSilent Top Finish	✓	✓	✓	
	StoSilent Decor	✓	✓	✓	
	StoColor Silent	✓	✓	✓	
	StoColor Climasan				

¹⁾ Fluctuating air temperature as defined by EN 13964. ²⁾ Fluctuating relative humidity as defined by EN 13964 4.8.2. ³⁾ Higher temperatures on request. ⁴⁾ Limited to 30 °C and 70 % relative humidity for climate-controlled swimming baths.

⁵⁾ 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 according to climatic conditions and room use

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



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 ¹⁾	α_w up to 0.95	α_w up to 0.70 (<i>L</i>)	α_w up to 0.80	α_w up to 0.80	α_w up to 0.45 (<i>H</i>)
Reaction to fire (class) EN 13501	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 light reflectance value	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 Panel with coating*	Approx. 28 mm	Approx. 22 mm	Approx. 28 mm	Approx. 27 mm	Approx. 17 mm
Mass of panel in kg/m ²	6.7	6.6	6.8	6.9	5.8
Mass of coating (wet) in kg/m ²	5.5	5.5	5.5	2.7 – 3.2	2.7
Mass of coating (dry) in kg/m ²	4.1 (StoSilent Top) 3.1 (StoSilent Decor)	4.1 (StoSilent Top) 3.1 (StoSilent Decor)	4.1	1.8 – 2.1	1.8
Mass of system (dry) in kg/m ²	10.8 (StoSilent Top) 9.8 (StoSilent Decor)	10.7 (StoSilent Top) 9.7 (StoSilent Decor)	10.9	8.7 – 9.0	7.6
Format Length x width x thickness	1,200 x 625 x 25 mm	1,200 x 800 x 19 mm	1,200 x 625 x 25 mm	1,200 x 625 x 25 mm	2400 x 1200 x 15 mm

¹⁾ Weighted sound absorption coefficient in accordance with EN ISO 11654* Approx. 15 mm layer thickness, measured over the highest points, achievable with 5 spray coatings;
approx. 25 mm layer thickness, achievable with around 10 spray coatings



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 ¹⁾	α_w up to 0.85	α_w up to 1.00	α_w up to 1.00	Depending on quantity and arrangement
Reaction to fire (class) EN 13501	A2-s1, d0	A2-s1, d0	A2-s1, d0	on request
Coating Surface	Seamless: • StoSilent Top • StoSilent Decor Visible joints: • StoSilent Decor	Seamless: • StoSilent Top • StoSilent Decor Visible joints: • StoSilent Decor	Seamless: • StoSilent Top • StoSilent Decor Visible joints: • StoSilent Decor	• Coated at the factory, visible joints
Coating colour shade	Depending on the coating: white, limited tintability, tintable in accordance with the StoColor System	Depending on the coating: white, limited tintability, tintable in accordance with the StoColor System	Depending on the coating: white, limited tintability, tintable in accordance with the StoColor System	White, RAL colour system
Coating texture	Depending on the coating: coarsely textured, textured, fine texture, or ultrafine texture	Depending on the coating: coarsely textured, textured, fine texture, or ultrafine texture	Depending on the coating: coarsely textured, textured, fine texture, or ultrafine texture	–
Coating LRV	Depending on colour shade	Depending on colour shade	Depending on colour shade	Depending on colour shade
Whiteness of coating	Depending on colour shade	Depending on colour shade	Depending on colour shade	Depending on colour shade
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
Mass of panel in kg / m ²	4.7	6.0	7.9	2.6 kg / piece
Mass of coating (wet) in kg / m ²	5.2 (StoSilent Decor), 5.0 – 5.5 (StoSilent Top)	5.2 (StoSilent Decor), 5.0 – 5.5 (StoSilent Top)	5.2 (StoSilent Decor), 5.0 – 5.5 (StoSilent Top)	–
Mass of coating (dry) in kg / m ²	4.0 (StoSilent Decor), 3.7 – 4.1 (StoSilent Top)	4.0 (StoSilent Decor), 3.7 – 4.1 (StoSilent Top)	4.0 (StoSilent Decor), 3.7 – 4.1 (StoSilent Top)	–
Mass of system (dry) in kg / m ²	12.0 (StoSilent Decor M), 12.0 – 12.4 (StoSilent Top)	13.3 (StoSilent Decor M), 13.3 – 13.7 (StoSilent Top)	15.2 (StoSilent Decor M), 15.2 – 15.6 (StoSilent Top)	–
Format Length x width x thickness	800 x 600 x 36 mm	800 x 600 x 46 mm	800 x 600 x 66 mm	625 x 310 x 50 mm

¹⁾ Weighted sound absorption coefficient in accordance with EN ISO 11654

* Approx. 15 mm layer thickness, measured over the highest points, achievable with 5 spray coatings;
approx. 25 mm layer thickness, achievable with around 10 spray coatings



Technical characteristics

System	
StoSilent acoustic plaster	StoSilent Miral AP
Degree of absorption¹⁾	α_w up to 0.50 (MH)
Reaction to fire (class) EN 13501	A2-s1, d0
Surface coating	StoSilent Miral AP/optionally: StoColor Silent
Coating colour shade	Limited tintability in accordance with StoColor System
Coating texture	Heavily textured
Coating LRV	80
Whiteness of coating	44 %
Thermal conductivity	0.10 W/(mK)
sd value	0.01–0.03 m
Minimum bending radius	Depending on substrate
System thickness*	Approx. 15 mm
Mass of coating (wet) in kg/m²	7.5
Mass of coating (dry) in kg/m²	4.0

¹⁾ Weighted sound absorption coefficient in accordance with EN ISO 11654

* Approx. 15 mm layer thickness, measured over the highest points, achievable with 5 spray coatings;
approx. 25 mm layer thickness, achievable with around 10 spray coatings

System	Acoustic elements
StoSilent ceiling element	StoSilent Modular 230
Absorption area	Depending on format, suspension height, and arrangement
Reaction to fire (class) EN 13501	A2-s1, d0 (carrier board), C-s3, d0 (PET nonwoven fibre)
Surface coating	Fine-textured colour coating
Coating colour shade	Tintable in accordance with the StoColor System
Coating texture	Finely textured
Coating LRV	83 (white)
Whiteness of coating	–
Thermal conductivity	–
Minimum bending radius	Not possible
System thickness*	Approx. 19 mm
Panel/formats/weight	Radius 575 mm/10.0 kg 1,150 x 1,150 mm/11.0 kg 2,350 x 750 mm/16.0 kg 2,350 x 1,150 mm/23.0 kg

Surface design

Our StoSilent acoustic systems can be completed with various surface finishes available in the wide colour range in the StoColor System.



StoSilent coating build-ups

StoSilent Decor

Porous, thin-layer spray plaster for matt, textured surfaces with fine graining. Depending on the system, StoSilent Decor enables seamless surfaces of up to 700 m².

- StoSilent Decor M: silicate-bound finishing coat, low-emission, eco-certified (TÜV); limited tintability in accordance with the StoColor System
- StoSilent Decor MF: finishing coat on a dispersion base, fully tintable in accordance with the StoColor System

Suitable for the following StoSilent acoustic systems:

- StoSilent Distance
- StoSilent Direct
- StoSilent Modular 400

StoSilent Top

These porous finishing coats on a dispersion base make for the finest possible matt surfaces. Depending on the system, StoSilent Top enables seamless surfaces of up to 200 m².

- StoSilent Top Basic: intermediate coat and finishing coat with a smooth surface and fine graining, limited tintability in accordance with the StoColor System
- StoSilent Top Finish: finishing coat with a smooth surface and finest possible graining, limited tintability in accordance with the StoColor System

Suitable for the following StoSilent acoustic systems:

- StoSilent Distance
- StoSilent Direct
- StoSilent Modular 400

StoSilent Miral AP

Thanks to its coarse graining, the multi-layer, porous mineral acoustic spray plaster enables the creation of eye-catching rough surfaces.

- Unlimited seamless application
- Tintable with StoTint Aqua and/or when using the StoColor Silent finishing coat which can be tinted in accordance with the StoColor System

Suitable for the following StoSilent acoustic systems:

- StoSilent Compact Miral
- StoSilent Direct

StoColor Silent

The dead-matt, open-pored renovation paint on a dispersion base was developed specifically for the porous StoSilent acoustic systems and is fully tintable in accordance with the StoColor System.

Suitable for the following StoSilent acoustic systems:

- StoSilent Direct with StoSilent Decor
- StoSilent Compact Miral
- StoSilent Distance with StoSilent Decor

StoColor Silent N

The matt, open-pored, stain-blocking renovation paint on a dispersion base provides an excellent barrier effect against nicotine, lignin, soot, and water stains on the substrate and was developed specifically for the porous StoSilent acoustic systems. Limited tintability in accordance with StoColor System.

Suitable for the following StoSilent acoustic systems:

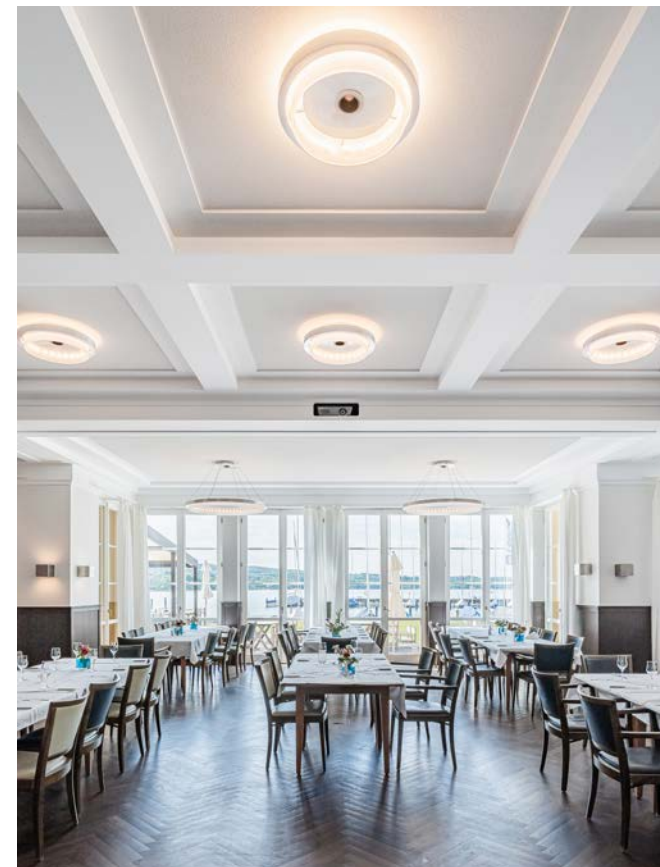
- StoSilent Direct with StoSilent Decor
- StoSilent Compact Miral
- StoSilent Distance with StoSilent Decor

Coating system for gypsum plasterboard perforated ceilings

Ceilings made from commercially available perforated gypsum plasterboards can be seamlessly coated with Sto products.

The coating build-up has the following composition:

- StoSilent Decor, 2 to 3 layers
- StoSilent Fleece
- StoSilent Fleece Coll
- StoPrim Plex
- StoSilent Fix
- Perforated gypsum plasterboard



Bayrischer Yachtclub, Starnberg, DE

Building owner: Bayerischer Yacht-Club e.V., Starnberg, DE

Architecture: Marco Götz Architekt GmbH, Starnberg, DE

Specialised trade: Maler Leierer GmbH, Landsberied, DE

Sto proficiency: StoSilent Direct, StoSilent Levell,

StoSilent Decor M, StoSilent Top Finish

Photo: Boris Storz, Munich, DE



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 StoColor System	Tintable in accordance with 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 Frame				✓
StoSilent Compact Miral AP	✓	✓*		
StoSilent Compact with StoColor Silent coating	✓		✓	
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	✓		✓	

* The spray plaster itself has limited tintability with StoTint Aqua in the mixing water. The technical documents must be observed.
Tintable by means of additional coating with StoColor Silent





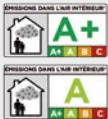
Seals of approval and quality

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 topics of health and the environment.

Products and systems		Seals of approval and test procedures							
Products						Reaction to fire (class) in accordance with EN 13501		EPD	Notes
	StoColl HT	–	–	✓	EC1 Plus	E	–	–	–
	StoSilent Board 105 C	A+	TM-PB 24-S1428-82	–	–	A2-s1, d0	EN 13964	✓	–
	StoSilent Board 100 S	A+	TM-PB 24-S1428-83	–	–	A2-s1, d0	EN 13964	✓	–
	StoSilent Board 110 S	A+	TM-PB 24-S1428-84	–	–	A2-s1, d0	EN 13964	✓	–
	StoSilent Board 205 C	A+	In progress	–	–	A2-s1, d0	EN 13964	✓	–
	StoSilent Board 310 F	A+	–	–	–	B-s1, d0	EN 13964	–	–
	StoSilent Board MW 100	A+	–	–	–	A2-s1, d0	EN 13162	✓	–
	StoSilent Board R 400	A+	–	–	–	Fire classification on request	–	–	Preservative-free
	StoSilent Coll MW	A+	–	–	–	Fire classification dependent on use within system	EN 998-1	✓	–
	StoSilent Coll MW-G	A+	–	–	–	–	–	✓	–
	StoSilent Decor M	A+	TM-PB 24-S1428-85 Europa-PB 24-S1428-86	–	–	–	–	✓	Preservative-free (untinted versions: white and Sto white shades)
	StoSilent Decor MF	A+	–	–	–	Fire classification dependent on use within system	–	✓	–
	StoSilent Filler	A+	–	–	–	–	–	✓	–
	StoSilent Fix	A+	In progress	–	–	–	EN 13963	–	–
	StoSilent Fleece Coll	A+	–	–	–	–	–	✓	Preservative-free
	StoSilent Plan	A+	In progress	–	–	Fire classification dependent on use within system	EN 15824	✓	–
	StoSilent Prep Quarz	A+	–	–	–	–	–	✓	–
	StoSilent Top Basic	A+	In progress	–	–	–	EN 15824	✓	–
	StoSilent Top Finish	A+	In progress	–	–	–	EN 15824	✓	–
	StoSilent Profile Tape	A+	–	–	EC1 Plus	–	–	✓	–



Seals of approval and quality

Products and systems		Seals of approval and test procedures		
			Reaction to fire (class) in accordance with EN 13501	
Systems	StoSilent Distance C	–	A2-s1, d0	EN 13964
	StoSilent Distance S	–	A2-s1, d0	EN 13964
	StoSilent Distance F	–	B-s1, d0	EN 13964
	StoSilent Direct, all versions	–	A2-s1, d0	–
		–	–	–
	StoSilent Miral AP	–	A2-s1, d0 (EN 13501-1), Class 1/A (ASTM E84)	–
	StoSilent Modular 230 (layer of PET fibre)	–	C-s1, d0	EN 13964
	StoSilent Modular 230 (expanded glass granulate carrier board)	A+	A2-s1, d0 (with coating)	EN 13964
	StoSilent Modular 400 (layer of PET fibre)	–	C-s1, d0	EN 13964
	StoSilent Modular 400 (expanded glass granulate carrier board)	A+	A2-s1, d0	EN 13964





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.



Finnish emissions label for building products

The Finnish emissions label for building products and furniture is one of the leading seals of approval in the Scandinavian region. The current certification body is the non-profit Building Information Foundation RTS sr, which awards the label in two categories – M1 and M2 (M1 is the best category and stands for “low pollutant”). The test basis for the seal of quality is a 28-day emission test (incl. ammonia, formaldehyde, and carcinogenic substances) and an odour test.



EOTA – European Organisation for Technical Assessment

The European Organisation for Technical Assessment (EOTA) is an association of Technical Assessment Bodies in Europe. It was established within the framework of the Construction Products Regulation (CPR). EOTA provides the organisational framework for the European Technical Assessment (ETA). This provides uniform, comparable information on the performance of building products. The EOTA network, based in Brussels (Belgium), enables manufacturers of innovative or non-standardised building products to place their products on the European market with CE marking.



EMICODE® – GEV classification criteria

The EMICODE® seal is awarded to modern, solvent-free, and low-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 semi-volatile organic compounds). This value is mandatory for the EMICODE® classification.



Fire classification

EN 13501: Fire classification of construction 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





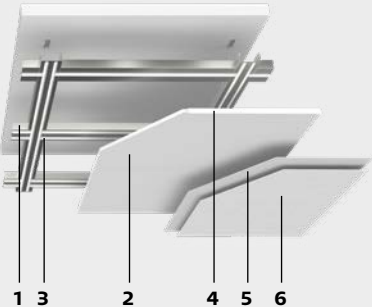
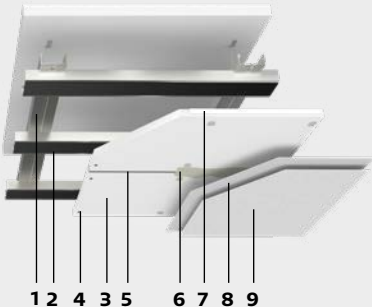
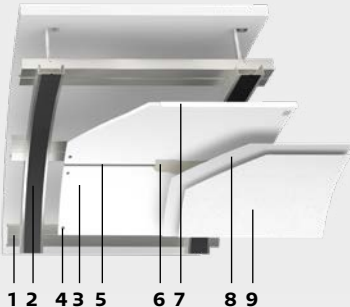
StoSilent overview

System		1 — Carrier layer	2 — Absorber layer	3 — Material layer		System properties	
Category	System name	Sub-construction	Acoustically effective layer	Finish	Colour spectrum	Maximum sound absorption α_w	Reaction to fire (class)
Suspended acoustic systems	StoSilent Distance C	 Sub-construction at the same level	StoSilent Board 205 C  Absorber made of expanded glass granulate	StoSilent Decor	■ ■	0.70 (L) ¹⁾	A2-s1, d0
				StoSilent Top Basic white	approx. RAL 9003	0.55	
				StoSilent Top Finish	■	0.65 (L) ¹⁾	
			StoSilent Board 105 C	StoSilent Decor	■ ■	0.95 ¹⁾	
				StoSilent Top Basic white	approx. RAL 9003	0.65 (L) ¹⁾	
				StoSilent Top Finish	■	0.80 ¹⁾	
	StoSilent Distance S	 Height-offset sub-construction	StoSilent Board 100 S  Absorber made of expanded glass granulate	StoSilent Top Basic white	approx. RAL 9003	0.65	A2-s1, d0
				StoSilent Top Finish	■	0.80	
	StoSilent Distance F	 Curved, height-offset sub-construction	StoSilent Board 310 F  Absorber made of expanded glass granulate	StoSilent Decor	■ ■	0.45 (H)	B-s1, d0
Bonded acoustic systems	StoSilent Direct	 Load-bearing ceiling construction with priming coat	StoSilent Board MW 100  Sandwich panel made of expanded glass granulate and stone wool	Visible joints StoSilent Decor	■ ■	1.00	A2-s1, d0
				Seamless StoMiral AP	■ ■	0.85	
				Seamless StoSilent Decor	■ ■	0.80 (L)	
				Seamless StoSilent Top Basic white	approx. RAL 9003	0.75 (single-layer) 0.65 (L) (with intermediate coat)	
				Seamless StoSilent Top Finish	■	0.65	
	StoSilent Frame	 Load-bearing ceiling construction with priming coat	StoSilent Board R 400  Absorber made of sintered expanded glass granulate	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 Miral AP, optionally StoColor Silent	■ ■	0.30 (H) 15 mm 0.50 (MH) 25 mm	
Acoustic elements	StoSilent Modular	 Horizontal suspension	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)

■ ■ excellent ■ good

¹⁾ With 30 mm insulant layer in accordance with EN 13162 AF

StoSilent Distance

StoSilent Distance C	StoSilent Distance S	StoSilent Distance F
Suspended, bonded acoustic system for level, unventilated seamless surfaces; with optional all-round open shadow gap for pressure equalisation	Suspended, screw-fixed acoustic system for level, ventilated seamless surfaces; with all-round open shadow gap for pressure equalisation	Suspended, screw-fixed acoustic system for curved, ventilated seamless surfaces; with all-round open shadow gap for pressure equalisation
		
1 — Sub-construction 2 — Acoustic panel 3 — Bonding 4 — Edge finish 5 — Intermediate coat 6 — Finishing coat	1 — Sub-construction 2 — Waterproofing layer 3 — Acoustic panel 4 — Screw connection 5 — Panel joint bonding 6 — Levelling coat 7 — Edge finish 8 — Intermediate coat 9 — Finishing coat	1 — Sub-construction 2 — Waterproofing layer 3 — Acoustic panel 4 — Screw connection 5 — Panel joint bonding 6 — Levelling coat 7 — Edge finish 8 — Intermediate coat 9 — Finishing coat

- StoSilent Distance is a suspended system for wall and ceiling coverings in interiors.
- StoSilent Distance C is suitable for rooms where there is no negative pressure between the room and the ceiling cavity.
- Ceilings with ventilated cavities or where there is negative pressure must be constructed using airtight panels in the StoSilent Distance S or StoSilent Distance F system. An all-round open shadow gap must be provided, with a free cross section of at least 0.8 % of the ceiling surface area.

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

To surfaces

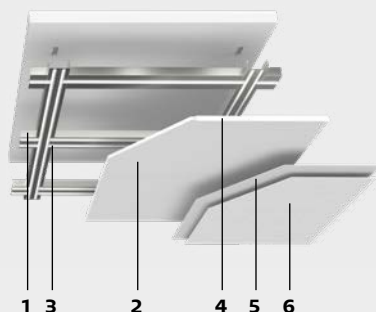
To absorption values

To construction details

To references

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 StoColor System



Organic acoustic plaster

- StoSilent Top
- Smooth surface
- Limited tintability in accordance with 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 C system version for unventilated wall and ceiling areas
- 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

Built-in speakers

Built-in speakers can be integrated into the StoSilent Distance S system. Both cone speakers and flat-panel speakers are possible. Detail solutions are available on request.



Guide values for seamless Sto acoustic panel systems

Max. surface area	200 m ²
Max. leg length	20 m
Surface area ≤ 100 m ²	All-round joint, b = 20 mm*
Surface area > 100 m ²	All-round joint, b = 25 mm*
Partial surface, leg length ≤ 10 m	Expansion joint b = 15 mm*
Partial surface, leg length > 10 m	Expansion joint b = 20 mm*

* In accordance with details. The proportion of the open, all-round joint must account for at least 0.8 % of the ceiling area.

Specifications for ceiling installations

Load cases	Retaining elements	Notes
Loads ≤ 2.0 kg point load	Cavity fixing	max. 2 pcs./m ²
Loads ≤ 10 kg/m ²	Direct fixing	Directly into the metal sub-construction or convert into distributed load, e.g. by backing with a wood veneer board.
Loads > 10 kg/m ²	Direct fixing	Directly to bare ceiling

Notes

- For the purposes of pressure equalisation, the StoSilent Distance S system needs to have open, all-round joints and/or ceiling apertures (min. 0.8 % of ceiling area).
- Existing structural expansion joints must always be incorporated.
- In the case of special kinds of construction geometry, required expansion joints need to be planned into the design (execution of expansion joints acc. to EN 13964 "Suspended ceilings – requirements and test methods").
- At all of the StoSilent Distance S system's connecting points (walls, ceilings, supports) and transition points between gypsum plasterboards and/or other dry construction elements, open joints must be incorporated in accordance with the planning details.

To surfaces

To absorption values

To construction details

To references



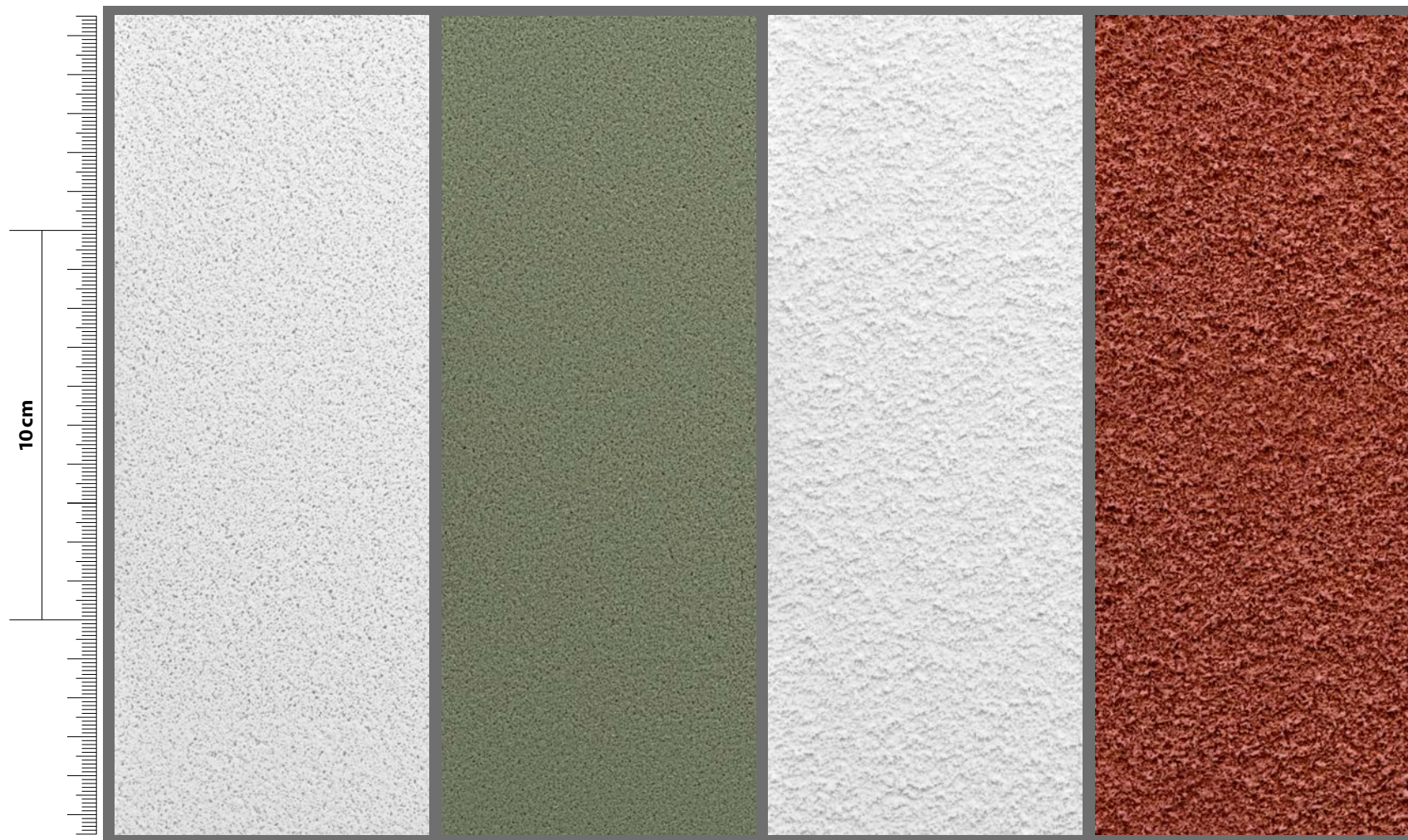
System versions

System description of StoSilent Distance

Systemvariante	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	
Airtight sealing refer to chapter: System components		StoSilent Profile Tape	
Fixing refer to chapter: System components		Drywall screw type TMN in accordance with EN 14566	
Bonding refer to chapter: System components	StoColl HT	Bond board edges and seal cut edges with StoSilent Fix	
Acoustic panel refer to chapter: System components	StoSilent Board 205 C or StoSilent Board 105 C	StoSilent Board 100 S	StoSilent Board 110 S or StoSilent Board 310 F
Filling and levelling coat refer to chapter: System components			Fill joints and screw holes with StoSilent Plan
Intermediate coat refer to chapter: System components	StoSilent Top Basic natural		StoSilent Decor M
Finish refer to chapter: System components	StoSilent Top Basic or StoSilent Top Finish	StoSilent Miral AP	StoSilent Decor M or StoSilent Decor MF

Surfaces

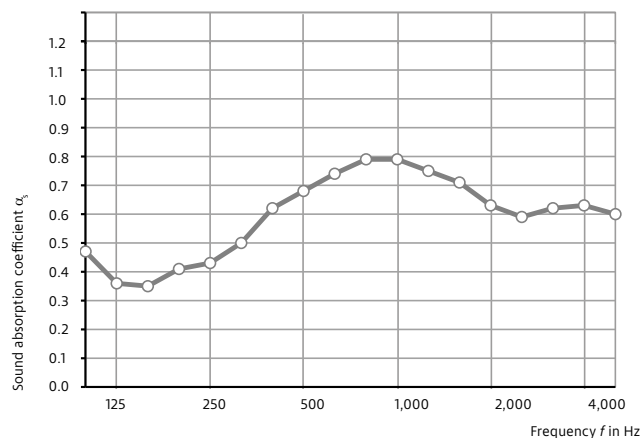
- 1 StoSilent Top Basic
- 2 StoSilent Top Finish
- 3 StoSilent Decor M
- 4 StoSilent Decor MF



StoSilent Distance – seals of approval and quality

Products and systems		Seals of approval and test procedures					
				Reaction to fire (class) in accordance with EN 13501		EPD	Notes
Systems	StoSilent Distance C	–	–	A2-s1, d0	EN 13964	–	–
	StoSilent Distance S	–	–	A2-s1, d0	EN 13964	–	–
	StoSilent Distance F	–	–	B-s1, d0	EN 13964	–	–
	StoSilent Decor M	A+	Test standard TM-10 Emulsion-based plasters 06/09	–	–	√	Preservative-free (untinted versions: white and Sto white shades)
Products	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 310 F	A+	–	B-s1, d0	EN 13964	–	–

Sound characteristics



Graphical representation of the spectrum of sound absorption as a function of frequency

- As the sound absorption coefficient for planar structures such as StoSilent Direct, StoSilent Distance, StoSilent Compact
- As the sound absorption area per object in m² for individual absorbers such as StoSilent Modular ceiling element

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

Structural height: 125 mm
α_w: 0.70
NRC: 0.65
Absorber cl.: C

System designations and descriptions of the test setup

Frequency <i>f</i> in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
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
α_p	0.40	0.45	0.70	0.80	0.65	0.60

Single-number ratings for sound absorption for planar structures such as StoSilent Direct, StoSilent Distance, StoSilent Compact

Frequency <i>f</i> in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
Third-octave band	0.10	0.30	0.30	0.46	0.68	0.60
Octave band	0.17	0.33	0.31	0.55	0.69	0.55
Third-octave band	0.19	0.28	0.37	0.64	0.67	0.55
α_p	0.15	0.30	0.35	0.55	0.70	0.55

Sound absorption for the third-octave centre frequencies according to the graphical representation

Practical sound absorption coefficient α_p

Allocation of frequencies to degrees of absorption

Frequency <i>f</i> in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
Third-octave band	100	200	400	800	1,600	3,150
Octave band	125	250	500	1,000	2,000	4,000
Third-octave band	160	315	630	1,250	2,500	5,000
α_p	125	250	500	1,000	2,000	4,000

Allocation of octave centre frequencies

Allocation of third-octave centre frequencies

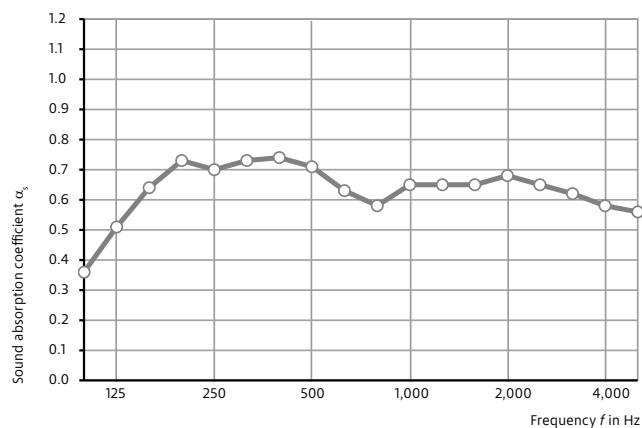
Allocation of octave centre frequencies

Explanation of single-number ratings for sound absorption

Key	
α_s	Sound absorption coefficient in accordance with EN ISO 354
α_p	Practical sound absorption coefficient in accordance with EN ISO 11654
α_w	Weighted sound absorption coefficient in accordance with EN ISO 11654
<i>L, M, H</i>	Shape indicators in accordance with EN ISO 11654 4.3 L at 250 Hz, M at 500 Hz and 1,000 Hz; H at 2,000 Hz and 4,000 Hz
A, B, C, etc.	Absorber class in accordance with Annex B of EN ISO 11654 (informative)
NRC	Noise reduction coefficient in accordance with ASTM C423

Single-number ratings for sound absorption and reference to the relevant standard for planar structures such as StoSilent Direct, StoSilent Distance, StoSilent Compact

StoSilent Distance C sound characteristics

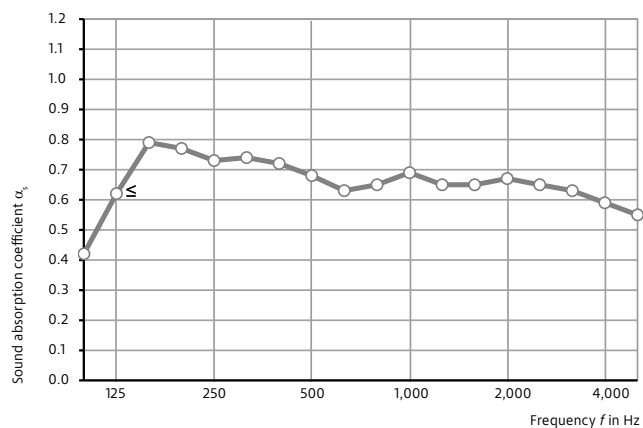


System: StoSilent Distance S
Build-up: StoSilent Board 105 C
Coating: StoSilent Top Basic, sprayed, and Decor M
Thickness: 25 mm

Structural height: 200 mm
 α_w : 0.70
NRC: 0.70
Absorber cl.: C

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
Third-octave band	0.36	0.73	0.74	0.58	0.65	0.62
Octave band	0.51	0.70	0.71	0.65	0.68	0.58
Third-octave band	0.64	0.73	0.63	0.65	0.65	0.56
α_p	0.50	0.70	0.70	0.65	0.65	0.60

Test certificate: 100960_2020-11-25 HR_10



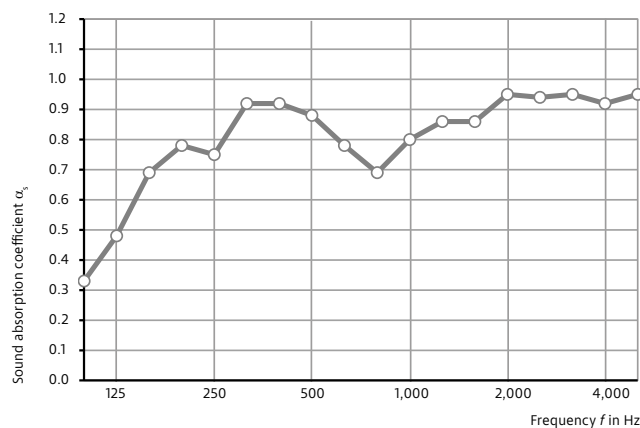
System: StoSilent Distance S
Build-up: StoSilent Board 105 C + mineral wool
Coating: StoSilent Top Basic, sprayed, and Decor M
Thickness: 25 mm

Structural height: 200 mm
 α_w : 0.70 (L)
NRC: 0.70
Absorber cl.: C

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
Third-octave band	0.42	0.77	0.72	0.65	0.65	0.63
Octave band	0.62	0.73	0.68	0.69	0.67	0.59
Third-octave band	0.79	0.74	0.63	0.65	0.65	0.55
α_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

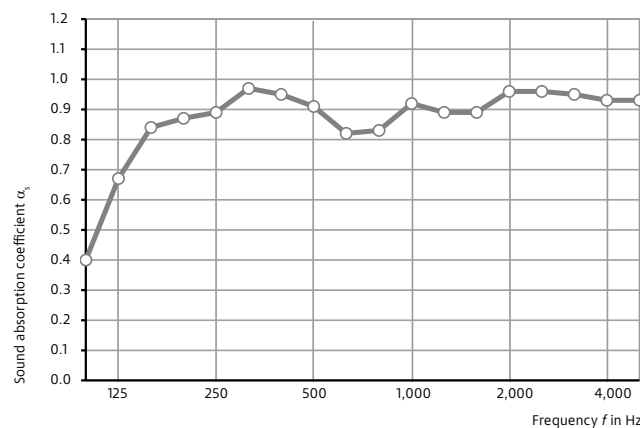


System: StoSilent Distance S
Build-up: StoSilent Board 105 C
Coating: StoSilent Top Basic, trowel application, and Decor M
Thickness: 25 mm

Structural height: 200 mm
 α_w : 0.85
NRC: 0.85
Absorber cl.: B

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
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
α_p	0.50	0.80	0.85	0.80	0.90	0.95

Test certificate: 100960_2021-02-18_8

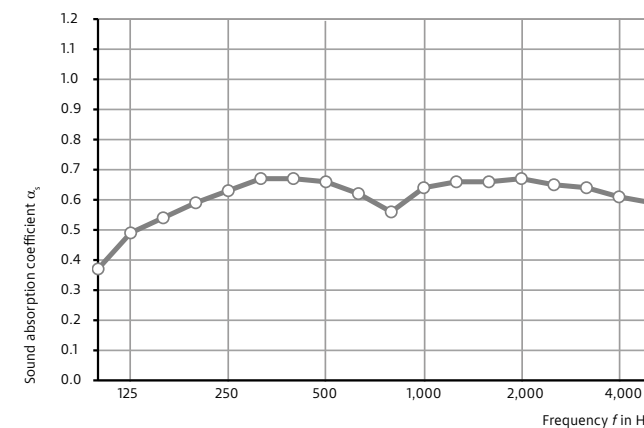


System: StoSilent Distance S
Build-up: StoSilent Board 105 C + mineral wool
Coating: StoSilent Top Basic, trowel application, and Decor M

Thickness: 25 mm
Structural height: 200 mm
 α_w : 0.95
NRC: 0.90
Absorber cl.: A

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
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
α_p	0.65	0.90	0.90	0.90	0.95	0.95

Test certificate: 100960_2021-02-18_11



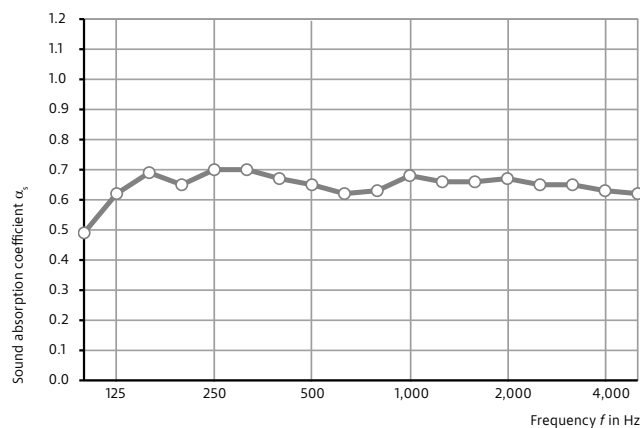
System: StoSilent Distance S
Build-up: StoSilent Board 105 C
Coating: StoSilent Top Basic, trowel application, and Top Basic white
Thickness: 25 mm

Structural height: 200 mm
 α_w : 0.65
NRC: 0.65
Absorber cl.: C

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
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
α_p	0.45	0.65	0.65	0.60	0.65	0.60

Test certificate: 100960_2021-02-18_9

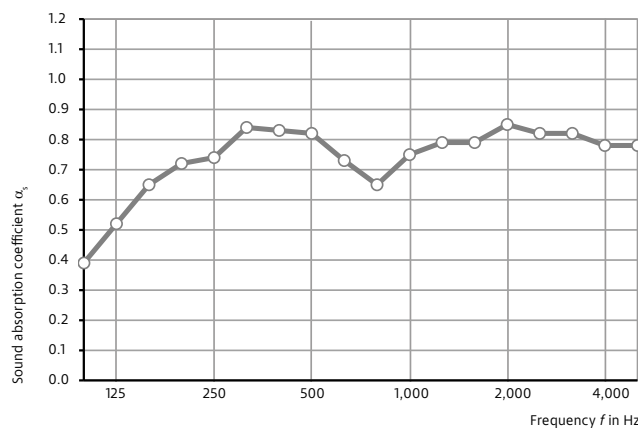
StoSilent Distance C sound characteristics



System: StoSilent Distance S
Build-up: StoSilent Board 105 C + mineral wool
Coating: StoSilent Top Basic, trowel application, and Top Basic white
Thickness: 25 mm
Structural height: 200 mm
 α_w : 0.65 (L)
NRC: 0.70
Absorber cl.: C

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
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
α_p	0.60	0.70	0.65	0.65	0.65	0.65

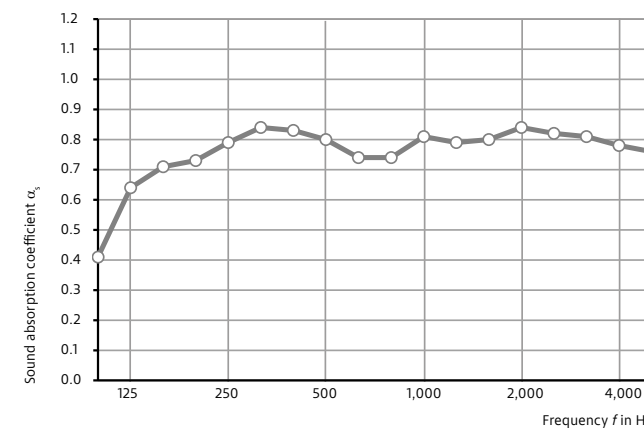
Test certificate: 100960_2021-02-18_10



System: StoSilent Distance C
Build-up: StoSilent Board 105 C
Coating: StoSilent Top Basic, trowel application, and Top Finish
Thickness: 25 mm
Structural height: 200 mm
 α_w : 0.80
NRC: 0.80
Absorber cl.: B

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
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
α_p	0.50	0.75	0.80	0.75	0.80	0.80

Test certificate: 100960_2021-02-18_7

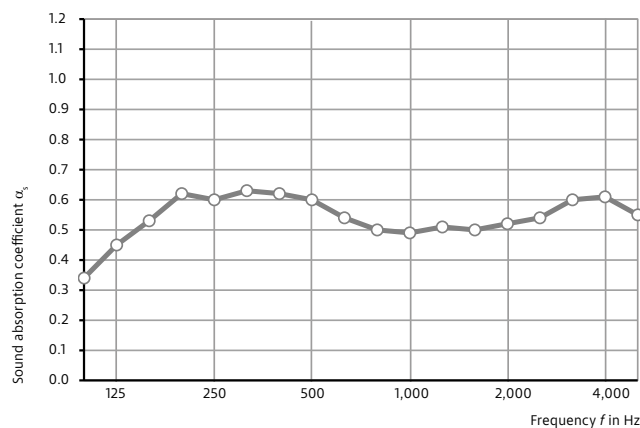


System: StoSilent Distance C
Build-up: StoSilent Board 105 C + mineral wool
Coating: StoSilent Top Basic, trowel application, and Top Finish
Thickness: 25 mm
Structural height: 200 mm
 α_w : 0.80
NRC: 0.80
Absorber cl.: B

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
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
α_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



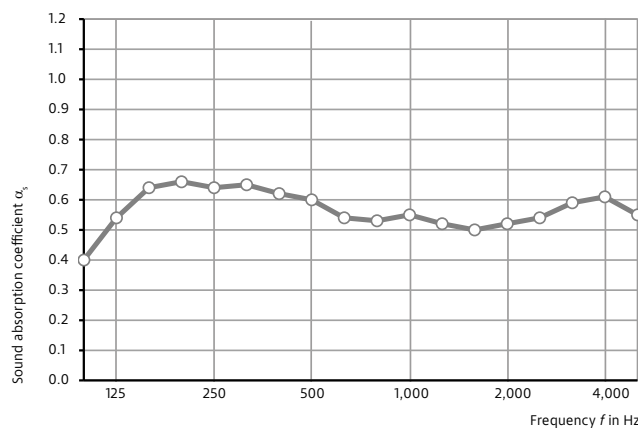
System: StoSilent Distance C
Build-up: StoSilent Board 205 C
Coating: StoSilent Top Basic, sprayed, and Decor M

Thickness: 19 mm

Structural height: 200 mm
 α_w : 0.55 (L)
NRC: 0.55
Absorber cl.: D

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
Third-octave band	0.34	0.62	0.62	0.50	0.50	0.60
Octave band	0.45	0.60	0.60	0.49	0.52	0.61
Third-octave band	0.53	0.63	0.54	0.51	0.54	0.55
α_p	0.45	0.60	0.60	0.50	0.50	0.60

Test certificate: 100960_2020-11-25 HR_3



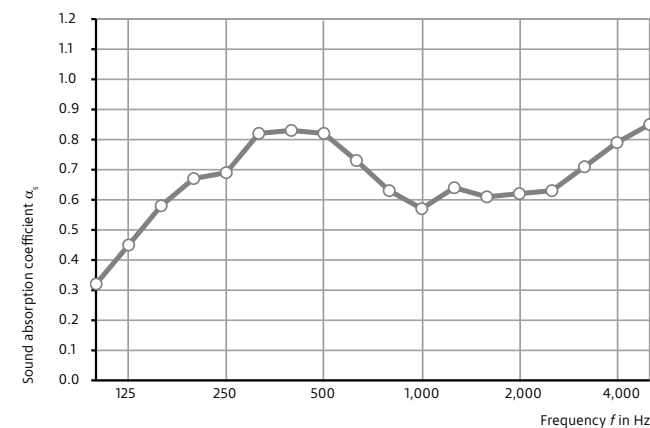
System: StoSilent Distance C
Build-up: StoSilent Board 205 C + mineral wool
Coating: StoSilent Top Basic, sprayed, and Decor M

Thickness: 19 mm

Structural height: 200 mm
 α_w : 0.55 (L)
NRC: 0.60
Absorber cl.: D

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
Third-octave band	0.40	0.66	0.62	0.53	0.50	0.59
Octave band	0.54	0.64	0.60	0.55	0.52	0.61
Third-octave band	0.64	0.65	0.54	0.52	0.54	0.55
α_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, and Decor M

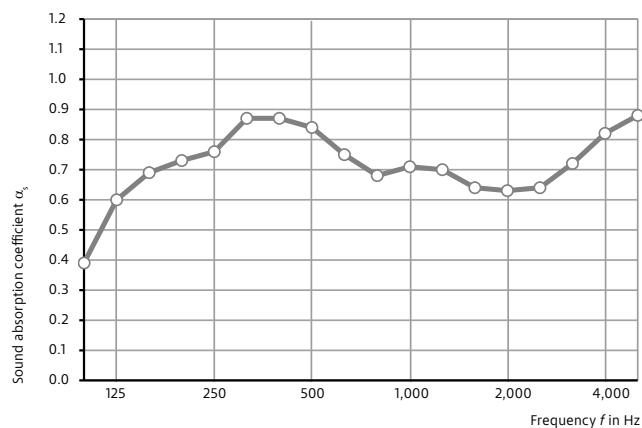
Thickness: 19 mm

Structural height: 200 mm
 α_w : 0.65 (LH)
NRC: 0.65
Absorber cl.: C

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
Third-octave band	0.32	0.67	0.83	0.63	0.61	0.71
Octave band	0.45	0.69	0.82	0.57	0.62	0.79
Third-octave band	0.58	0.82	0.73	0.64	0.63	0.85
α_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

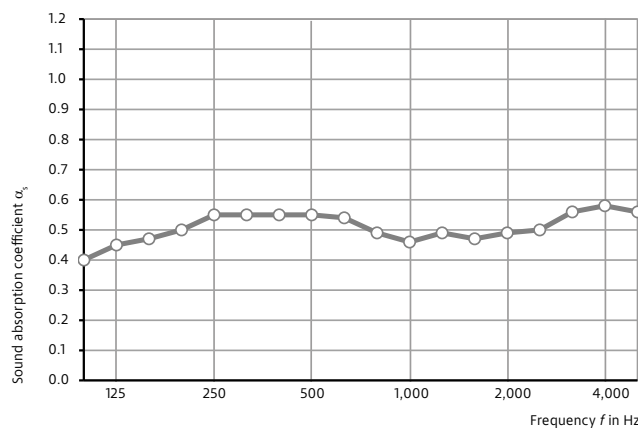


System: StoSilent Distance C
Build-up: StoSilent Board 205 C + mineral wool
Coating: StoSilent Top Basic, trowel application, and Decor M

Thickness: 19 mm
Structural height: 200 mm
 α_w : 0.70 (L)
NRC: 0.75
Absorber cl.: C

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
Third-octave band	0.39	0.73	0.87	0.68	0.64	0.72
Octave band	0.60	0.76	0.84	0.71	0.63	0.82
Third-octave band	0.69	0.87	0.75	0.70	0.64	0.88
α_p	0.55	0.80	0.80	0.70	0.65	0.80

Test certificate: 100960_2021-02-18_2



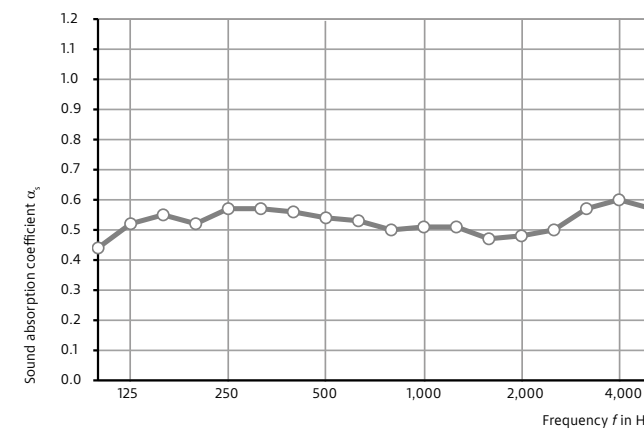
System: StoSilent Distance C
Build-up: StoSilent Board 205 C
Coating: StoSilent Top Basic, trowel application, and Top Basic white

Thickness: 19 mm

Structural height: 200 mm
 α_w : 0.55
NRC: 0.50
Absorber cl.: D

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
Third-octave band	0.40	0.50	0.55	0.49	0.47	0.56
Octave band	0.45	0.55	0.55	0.46	0.49	0.58
Third-octave band	0.47	0.55	0.54	0.49	0.50	0.56
α_p	0.45	0.55	0.55	0.50	0.50	0.55

Test certificate: 100960_2021-02-18_4



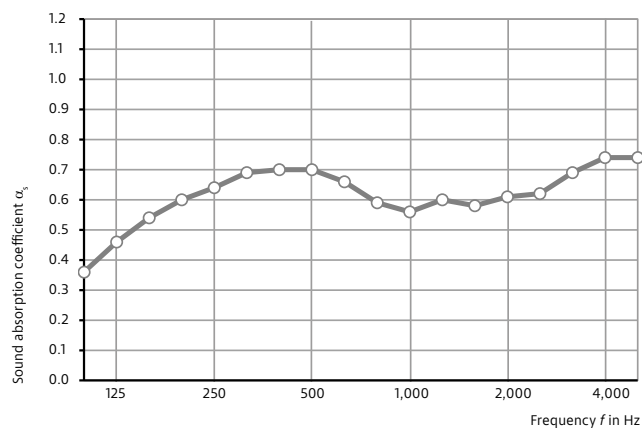
System: StoSilent Distance C
Build-up: StoSilent Board 205 C + mineral wool
Coating: StoSilent Top Basic, trowel application, and Top Basic white

Thickness: 19 mm
Structural height: 200 mm
 α_w : 0.55
NRC: 0.55
Absorber cl.: D

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
Third-octave band	0.44	0.52	0.56	0.50	0.47	0.57
Octave band	0.52	0.57	0.54	0.51	0.48	0.60
Third-octave band	0.55	0.57	0.53	0.51	0.50	0.57
α_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

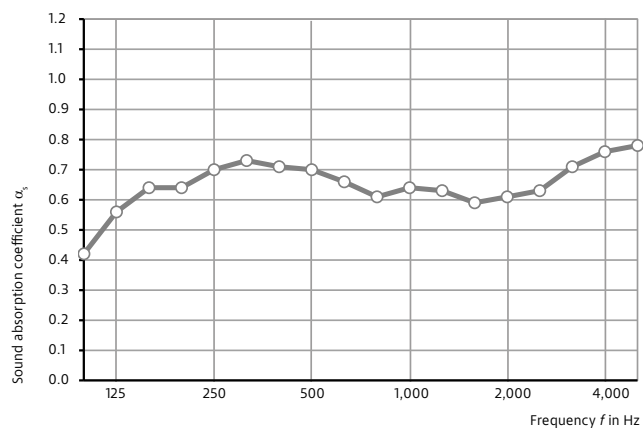


System: StoSilent Distance C
Build-up: StoSilent Board 205 C
Coating: StoSilent Top Basic, trowel application, and Top Finish
Thickness: 19 mm

Structural height: 200 mm
 α_w : 0.65
NRC: 0.65
Absorber cl.: C

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
Third-octave band	0.36	0.60	0.70	0.59	0.58	0.69
Octave band	0.46	0.64	0.70	0.56	0.61	0.74
Third-octave band	0.54	0.69	0.66	0.60	0.62	0.74
α_p	0.45	0.65	0.70	0.60	0.60	0.70

Test certificate: 100960_2021-02-18_6

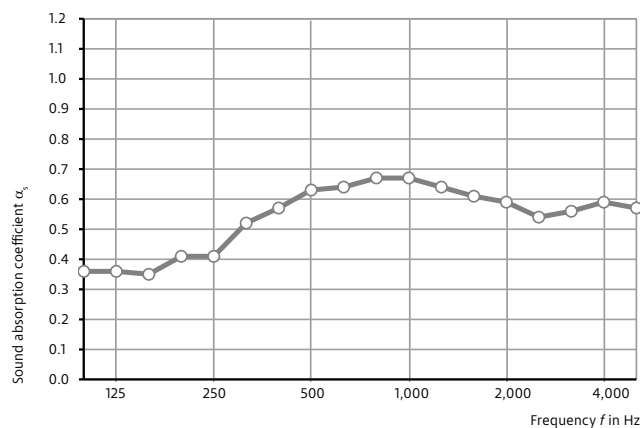


System: StoSilent Distance C
Build-up: StoSilent Board 205 C + mineral wool
Coating: StoSilent Top Basic, trowel application, and Top Finish
Thickness: 19 mm
Structural height: 200 mm
 α_w : 0.65 (L)
NRC: 0.65
Absorber cl.: C

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
Third-octave band	0.42	0.64	0.71	0.61	0.59	0.71
Octave band	0.56	0.70	0.70	0.64	0.61	0.76
Third-octave band	0.64	0.73	0.66	0.63	0.63	0.78
α_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

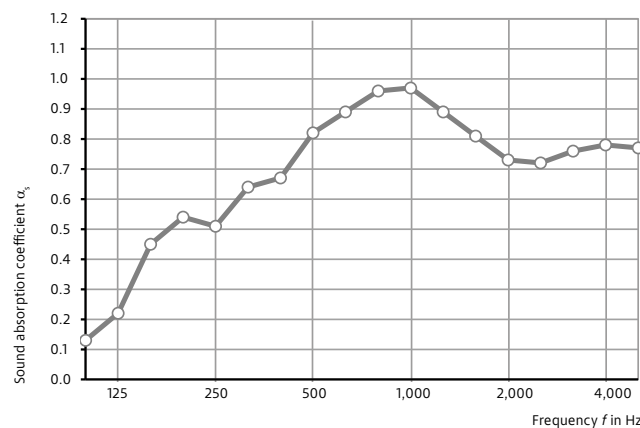


System: StoSilent Distance S
Build-up: StoSilent Board 100 S
Coating: StoSilent Top Basic and Top Basic white
Thickness: 25 mm

Structural height: 200 mm
 α_w : 0.65
 NRC: 0.60
Absorber cl.: C

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
Third-octave band	0.36	0.41	0.57	0.67	0.61	0.56
Octave band	0.36	0.41	0.63	0.67	0.59	0.59
Third-octave band	0.35	0.52	0.64	0.64	0.54	0.57
α_p	0.35	0.45	0.60	0.65	0.60	0.55

Test certificate: 100960_2017-03-20_9

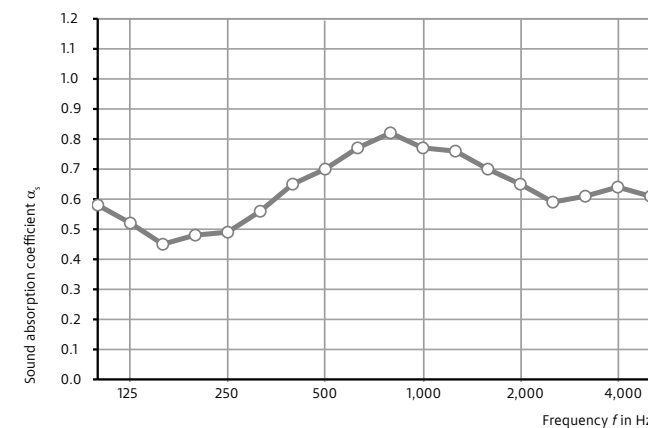


System: StoSilent Distance S
Build-up: StoSilent Board 100 S
Coating: StoSilent Top Basic and Top Finish
Thickness: 25 mm

Structural height: 55 mm
 α_w : 0.80
 NRC: 0.75
Absorber cl.: B

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
Third-octave band	0.13	0.54	0.67	0.96	0.81	0.76
Octave band	0.22	0.51	0.82	0.97	0.73	0.78
Third-octave band	0.45	0.64	0.89	0.89	0.72	0.77
α_p	0.25	0.55	0.80	0.95	0.75	0.75

Test certificate: 129900_35120_73-VersionNEU-2014_8



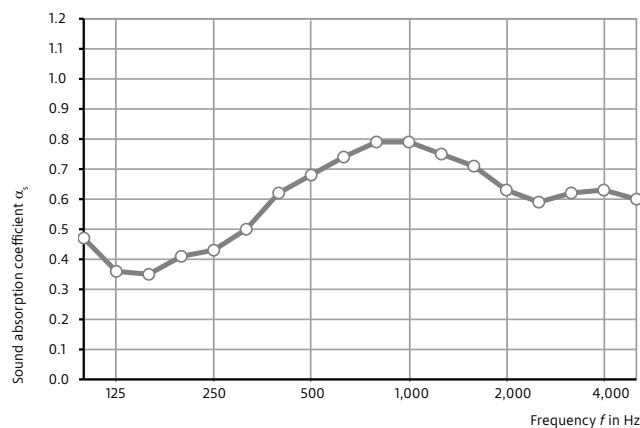
System: StoSilent Distance S
Build-up: StoSilent Board 100 S + mineral wool
Coating: StoSilent Top Basic and Top Finish
Thickness: 25 mm

Structural height: 55 mm
 α_w : 0.70
 NRC: 0.65
Absorber cl.: C

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
Third-octave band	0.58	0.48	0.65	0.82	0.70	0.61
Octave band	0.52	0.49	0.70	0.77	0.65	0.64
Third-octave band	0.45	0.56	0.77	0.76	0.59	0.61
α_p	0.50	0.50	0.70	0.80	0.65	0.60

Test certificate: 129900_35120-96_1

StoSilent Distance S sound characteristics

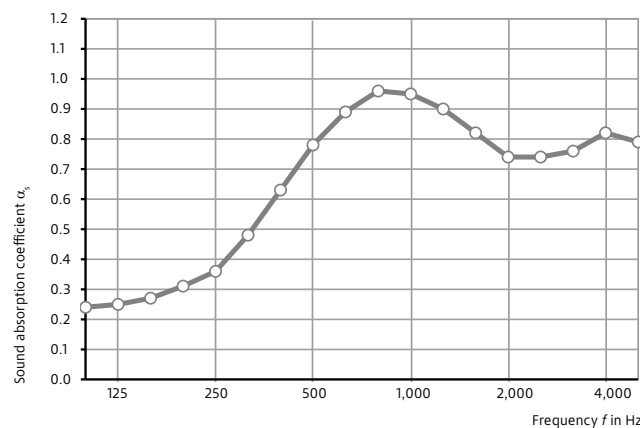


System: StoSilent Distance S
Build-up: StoSilent Board 100 S
Coating: StoSilent Top Basic and Top Finish
Thickness: 25 mm

Structural height: 125 mm
 α_w : 0.70
 NRC: 0.65
Absorber cl.: C

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
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
α_p	0.40	0.45	0.70	0.80	0.65	0.60

Test certificate: 129900_35120-96_10

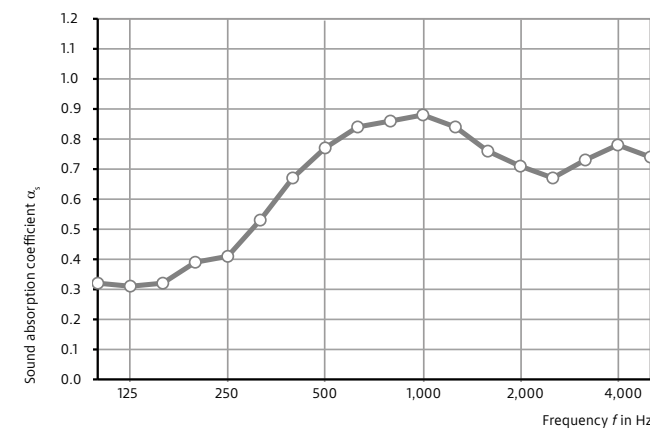


System: StoSilent Distance S
Build-up: StoSilent Board 100 S
Coating: StoSilent Top Basic and Top Finish
Thickness: 25 mm

Structural height: 270 mm
 α_w : 0.70 (M)
 NRC: 0.70
Absorber cl.: C

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
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
α_p	0.25	0.40	0.75	0.95	0.75	0.80

Test certificate: 129900_35120_73-VersionNEU-2014_5



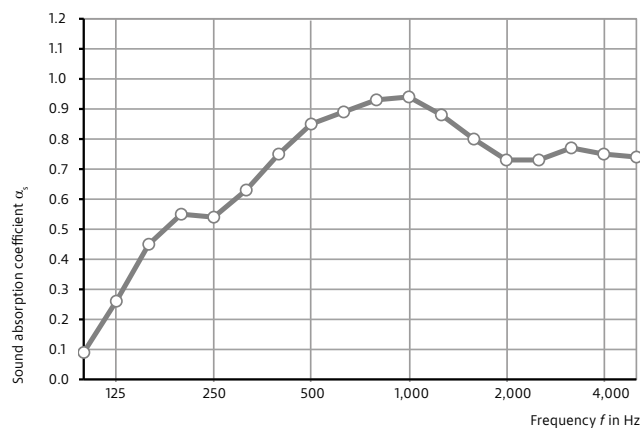
System: StoSilent Distance S
Build-up: StoSilent Board 100 S
Coating: StoSilent Top Basic and Top Finish, tinted black
Thickness: 25 mm

Structural height: 200 mm
 α_w : 0.70
 NRC: 0.70
Absorber cl.: C

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
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
α_p	0.30	0.45	0.75	0.85	0.70	0.75

Test certificate: 100960_2017-03-20_10

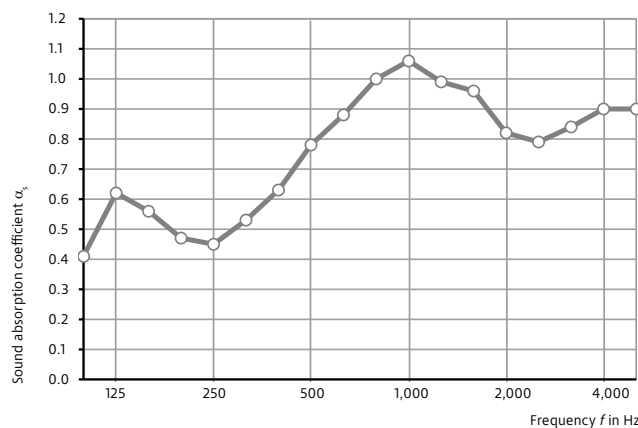
StoSilent Distance S sound characteristics



System: StoSilent Distance S
Build-up: StoSilent Board 110 S
Coating: StoSilent Decor M
Thickness: 25 mm
Structural height: 55 mm
 α_w : 0.80
NRC: 0.75
Absorber cl.: B

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
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
α_p	0.25	0.55	0.85	0.90	0.75	0.75

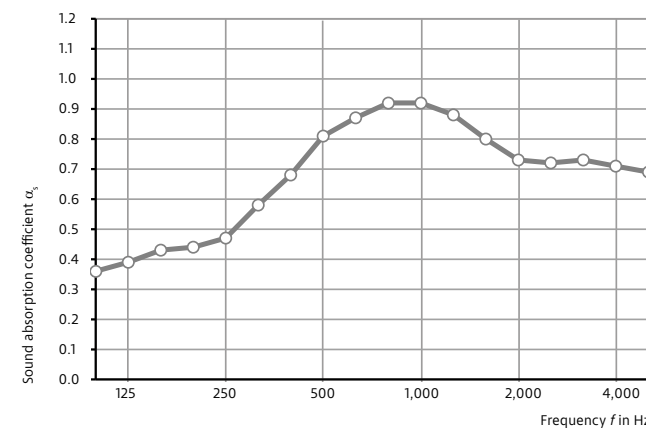
Test certificate: 129900_35120_81-VersionNEU-2014_1



System: StoSilent Distance S
Build-up: StoSilent Board 110 S + mineral wool
Coating: StoSilent Decor M
Thickness: 25 mm
Structural height: 55 mm
 α_w : 0.75 (MH)
NRC: 0.80
Absorber cl.: C

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
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
α_p	0.55	0.50	0.75	1.00	0.85	0.90

Test certificate: 129900_35120-93_2

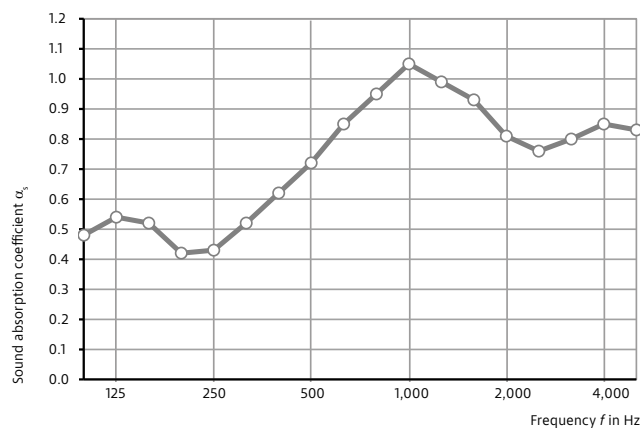


System: StoSilent Distance S
Build-up: StoSilent Board 110 S
Coating: StoSilent Decor M
Thickness: 25 mm
Structural height: 125 mm
 α_w : 0.75
NRC: 0.75
Absorber cl.: C

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
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
α_p	0.40	0.50	0.80	0.90	0.75	0.70

Test certificate: 129900_35120-81-VersionNEU-2014_2

StoSilent Distance S sound characteristics

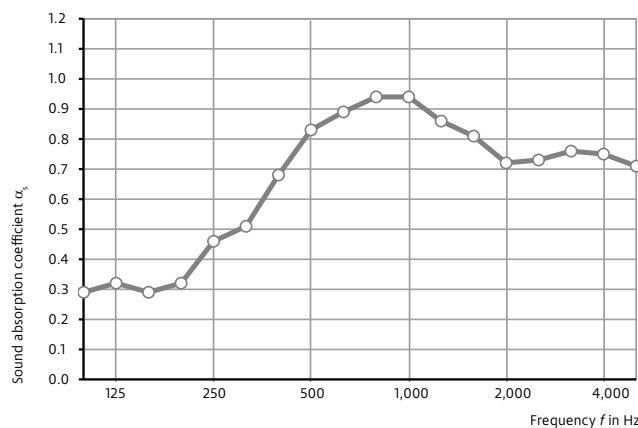


System: StoSilent Distance S
Build-up: StoSilent Board 110 S
 + mineral wool
Coating: StoSilent Decor M
Thickness: 25 mm

Structural height: 125 mm
 α_w : 0.75 (M)
NRC: 0.75
Absorber cl.: C

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
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
α_p	0.50	0.45	0.75	1.00	0.85	0.85

Test certificate: 129900_35120-93_6

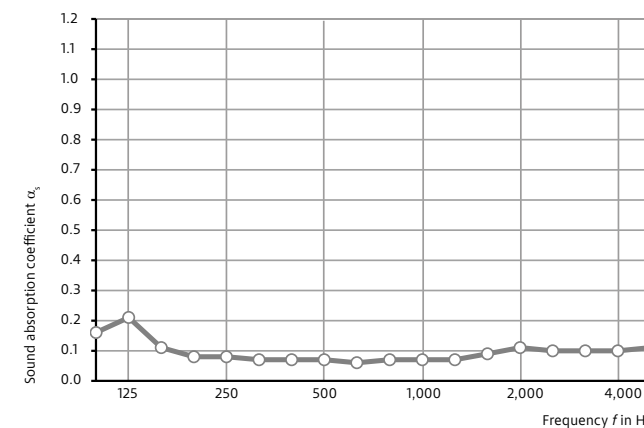


System: StoSilent Distance S
Build-up: StoSilent Board 110 S
Coating: StoSilent Decor M
Thickness: 25 mm

Structural height: 270 mm
 α_w : 0.75
NRC: 0.75
Absorber cl.: C

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
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
α_p	0.30	0.45	0.80	0.90	0.75	0.75

Test certificate: 129900_35120-81-VersionNEU-2014_3



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

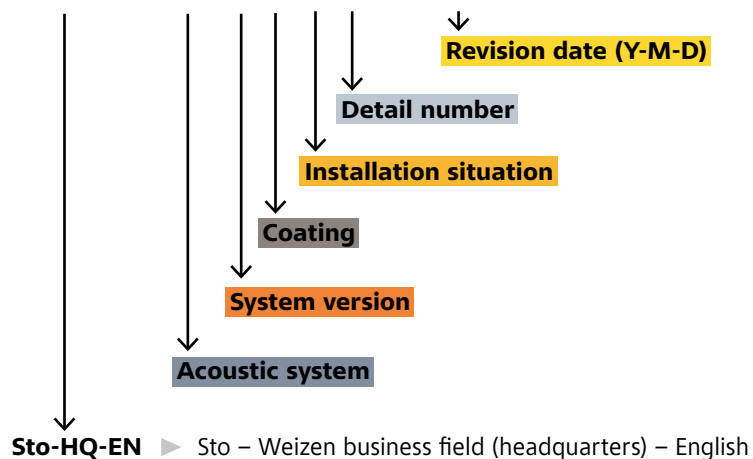
Structural height: 270 mm
 α_w : 0.10
NRC: 0.10
Absorber cl.: –

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
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
α_p	0.15	0.10	0.05	0.05	0.10	0.10

Test certificate: 129900_35120-92-VersionNEU-2014_2

Detail naming hierarchy

Sto-HQ-EN_XXXXX-XX-XXXX-XXXX-XX-XX



Acoustic system

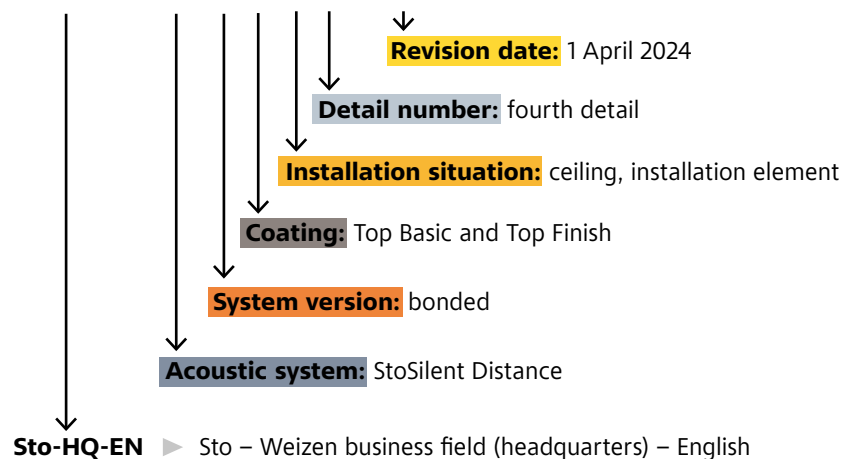
SSDI – StoSilent **D**istance
SSDR – StoSilent **D**irect
SSFR – StoSilent **F**rame
SSMO – StoSilent **M**odular
SSCO – StoSilent **C**ompact

System version

C – Bonded (**C**oll)
S – Screw-fixed (**S**crew)
F – Curved (**F**lex)

Example:

Sto-HQ-EN_SSDI C-BF-1304_2024-04-01



Coating

D – StoSilent **D**ecor M or StoSilent Decor MF
BD – StoSilent Top **B**asic/StoSilent **D**ecor M or StoSi-
 lent Decor MF
BB – StoSilent Top **B**asic
BF – StoSilent Top **B**asic/StoSilent Top **F**inish
M – StoSilent **M**iral AP
C – StoColor **C**limasan or StoSilent Color
O – Without coating

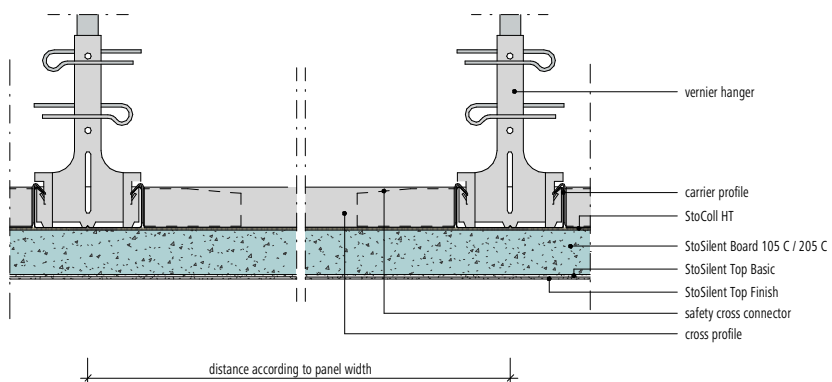
Installation situation

1XXX – Ceiling
2XXX – Wall
X1XX – Standard build-up
X2XX – Wall junction
X3XX – Installation element
X4XX – Expansion joint
X5XX – System transition
X6XX – Gradation/corner construction
X7XX – Top view
X8XX – Curved surfaces
X9XX – External application (requires approval)

StoSilent Distance C construction details

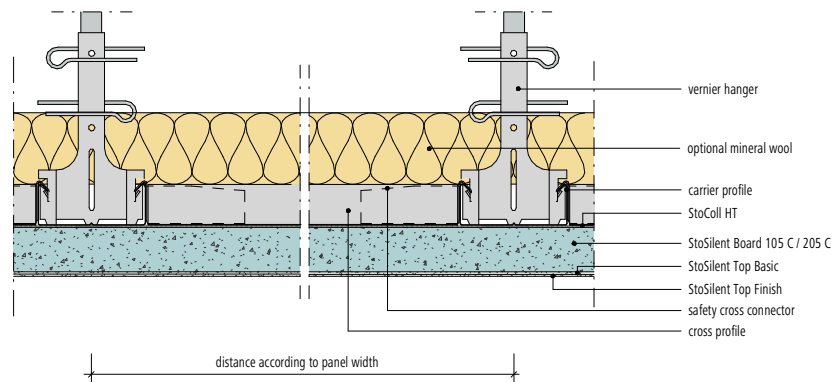
Ceiling (vertical section): system build-up with single-layer sub-construction

Sto-HQ-EN_SSDI C-BF-1101_2025-07-01



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

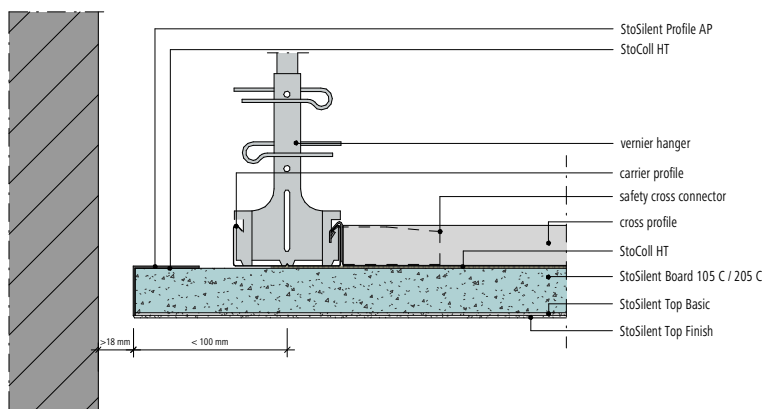
Sto-HQ-EN_SSDI C-BF-1102_2025-07-01



StoSilent Distance C construction details

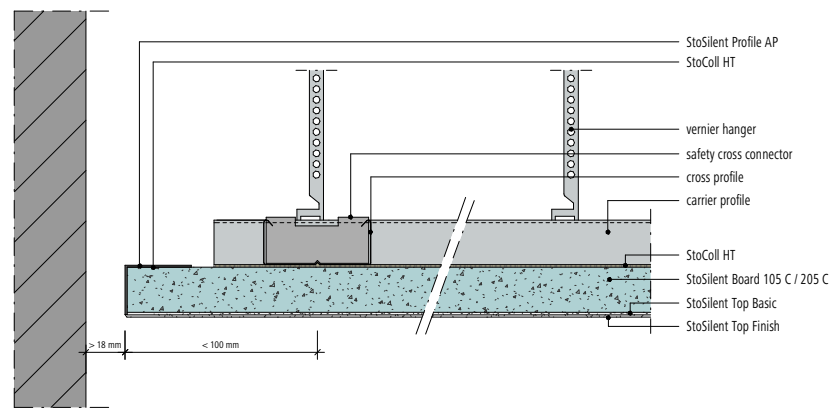
Ceiling (vertical section): open wall junction

Sto-HQ-EN_SSDI C-BF-1201_2025-07-01



Ceiling (vertical section): open wall junction

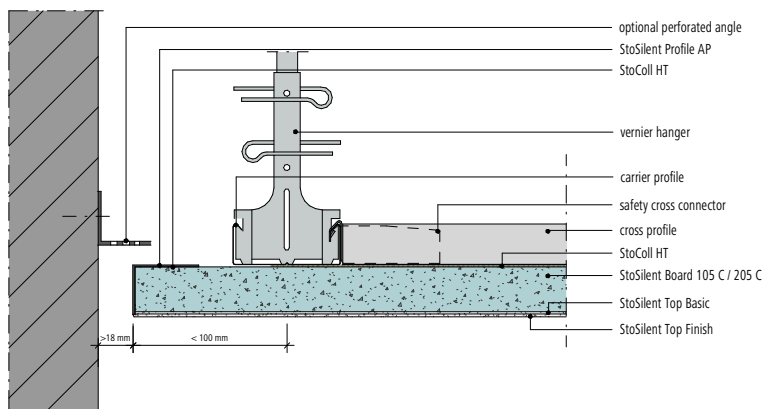
Sto-HQ-EN_SSDI C-BF-1202_2025-07-01



StoSilent Distance C construction details

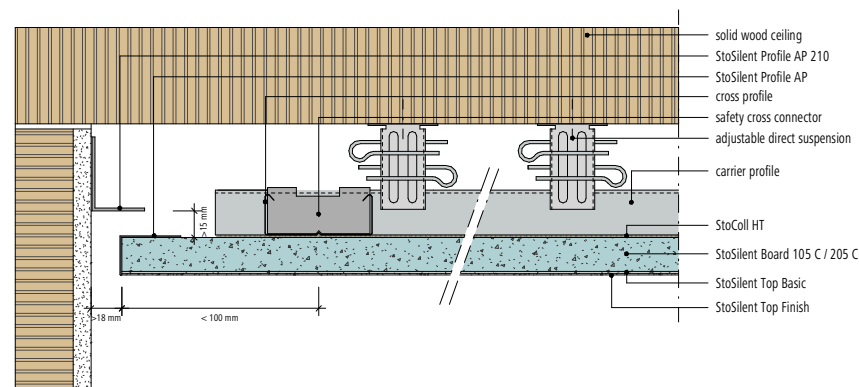
Ceiling (vertical section): wall junction with perforated angle bracket

Sto-HQ-EN_SSDI C-BF-1203_2024-04-01



Ceiling (vertical section): system build-up with open wall junction under solid wood ceiling

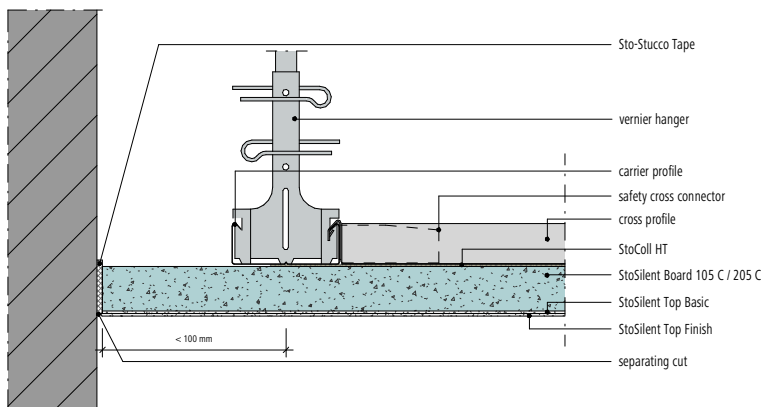
Sto-HQ-EN_SSDI C-BF-1204_2024-04-01



StoSilent Distance C construction details

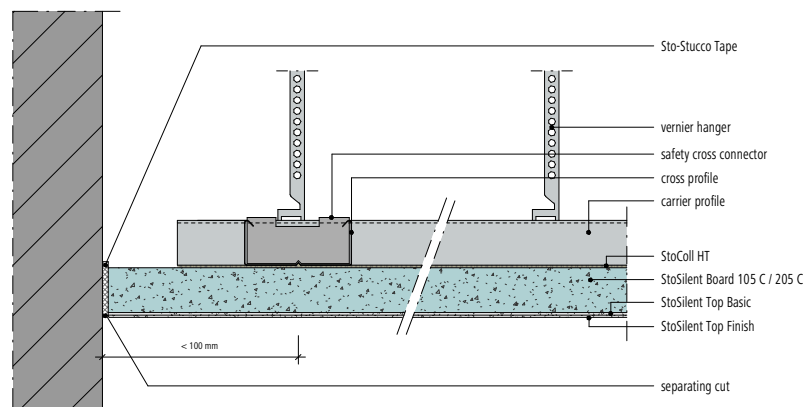
Ceiling (vertical section): wall junction with Sto-Stucco Tape

Sto-HQ-EN_SSDI C-BF-1205_2024-04-01



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

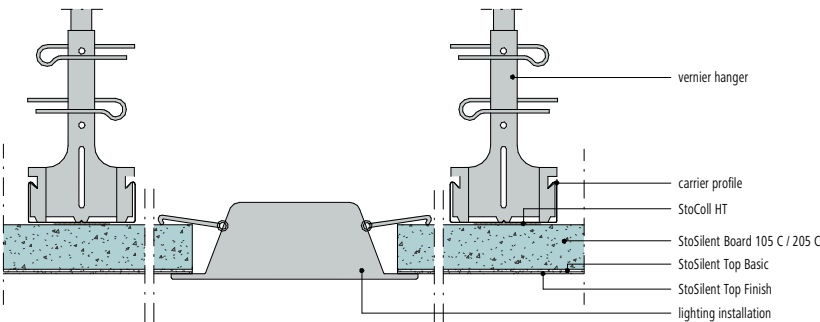
Sto-HQ-EN_SSDI C-BF-1206_2024-04-01



StoSilent Distance C construction details

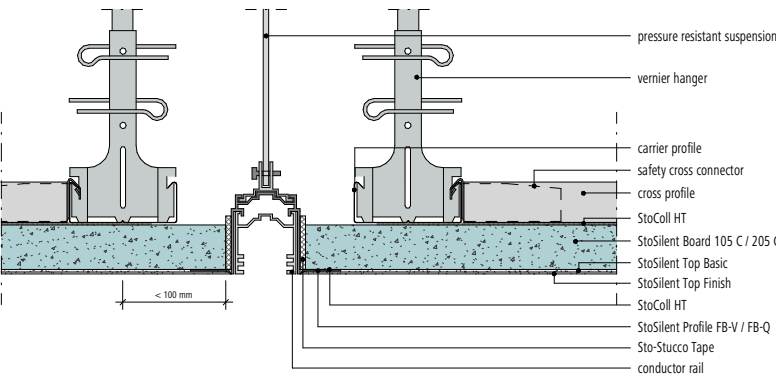
Ceiling (vertical section): installation of lamps

Sto-HQ-EN_SSDI C-BF-1301_2024-04-01



Ceiling (vertical section): installation of a busbar

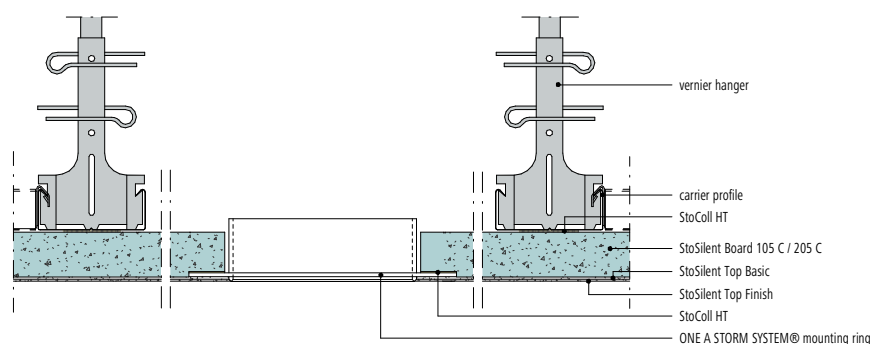
Sto-HQ-EN_SSDI C-BF-1304_2024-04-01



StoSilent Distance C construction details

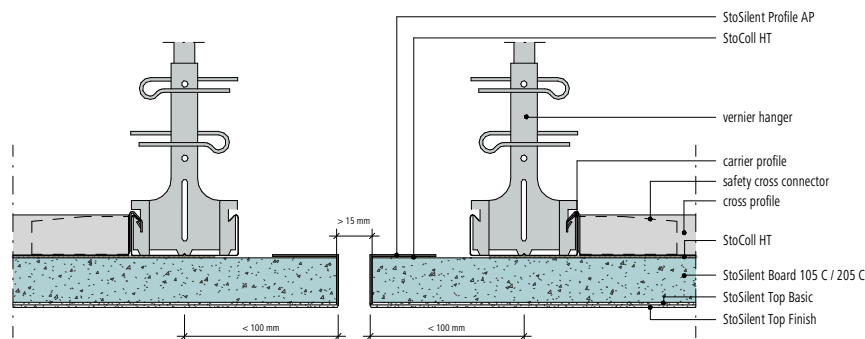
Ceiling (vertical section): installation of lamps with ONE A STORM SYSTEM® mounting ring

Sto-HQ-EN_SSDI C-BF-1305_2024-04-01



Ceiling (vertical section): expansion joint formation

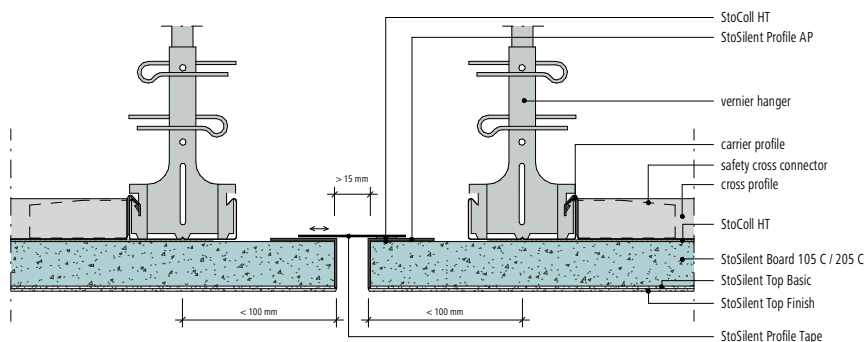
Sto-HQ-EN_SSDI C-BF-1401_2024-04-01



StoSilent Distance C construction details

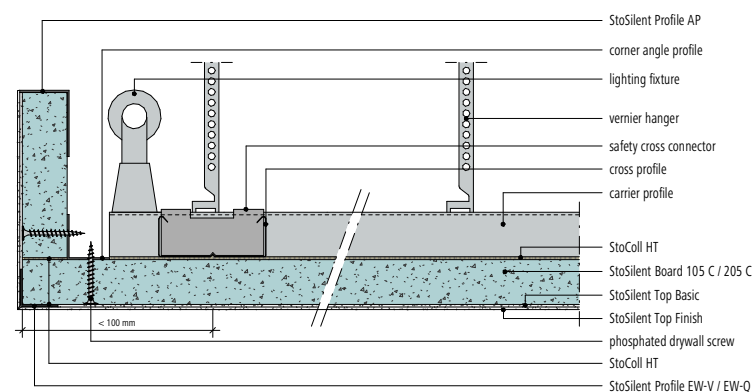
Ceiling (vertical section): expansion joint formation, backed

Sto-HQ-EN_SSDI C-BF-1402_2024-04-01



Ceiling (vertical section): projection with upstanding edge and load with StoSilent Profile EW

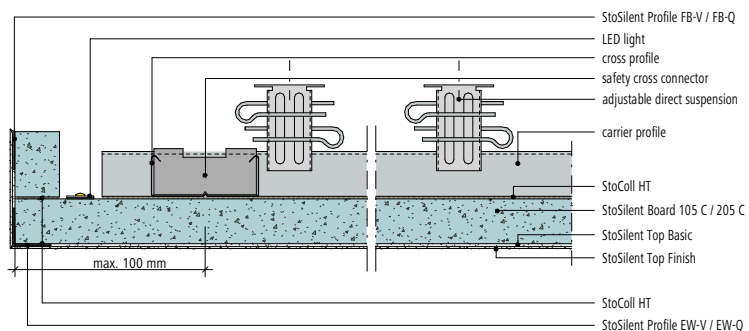
Sto-HQ-EN_SSDI C-BF-1601_2024-04-01



StoSilent Distance C construction details

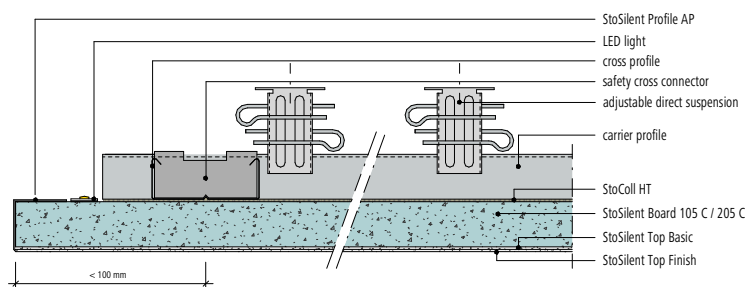
Ceiling (vertical section): projection with upstanding edge and passive lighting

Sto-HQ-EN_SSDI C-BD-1602_2024-04-01



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

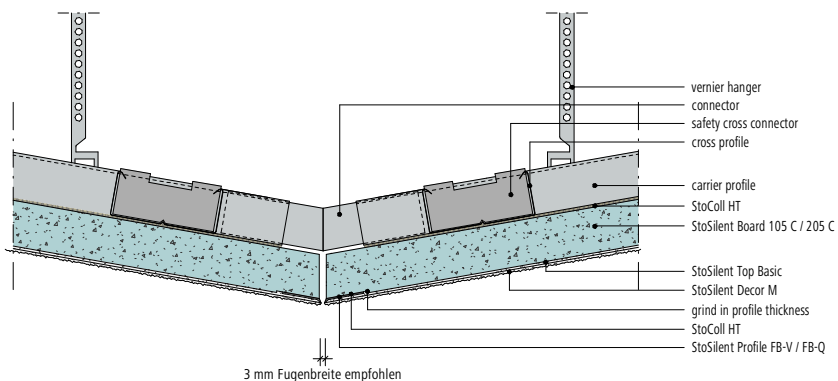
Sto-HQ-EN_SSDI C-BF-1603_2024-04-01



StoSilent Distance C construction details

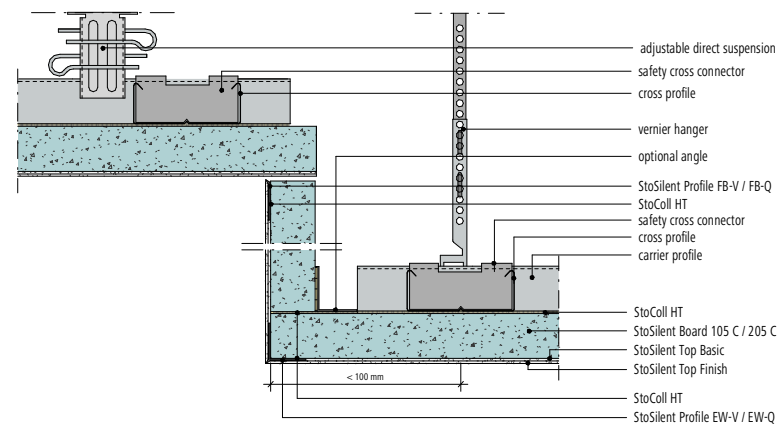
Ceiling (vertical section): separated panel joint with minimal expansion joint

Sto-HQ-EN_SSDI C-BD-1610_2024-04-01



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

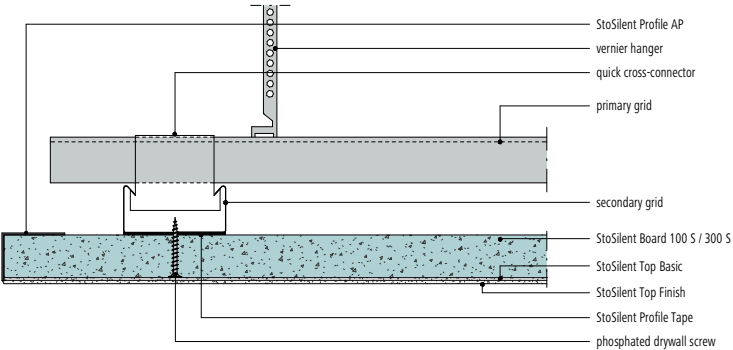
Sto-HQ-EN_SSDI C-BF-1604_2025-06-01



StoSilent Distance S construction details

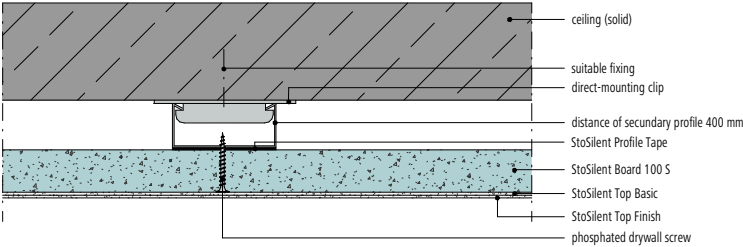
Ceiling (vertical section): projection without load

Sto-HQ-EN_SSDI S-BF-1101_2024-04-01



Ceiling (vertical section): system build-up with minimal structural height

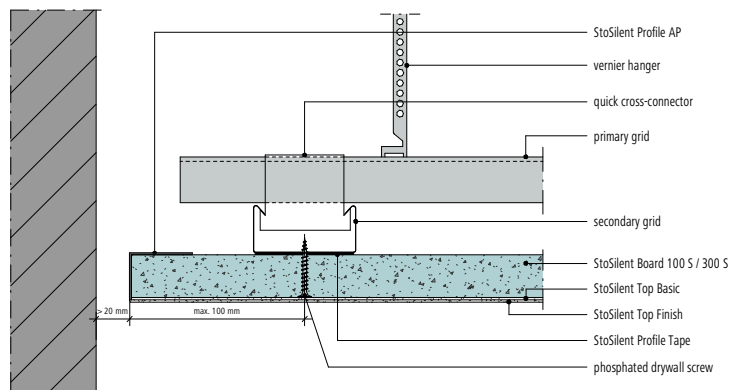
Sto-HQ-EN_SSDI S-BF-1105_2024-04-01



StoSilent Distance S construction details

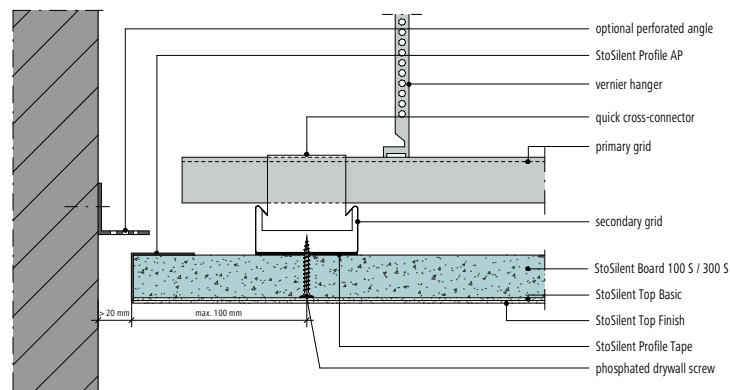
Ceiling (vertical section): open wall junction

Sto-HQ-EN_SSDI S-BF-1201_2024-04-01



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

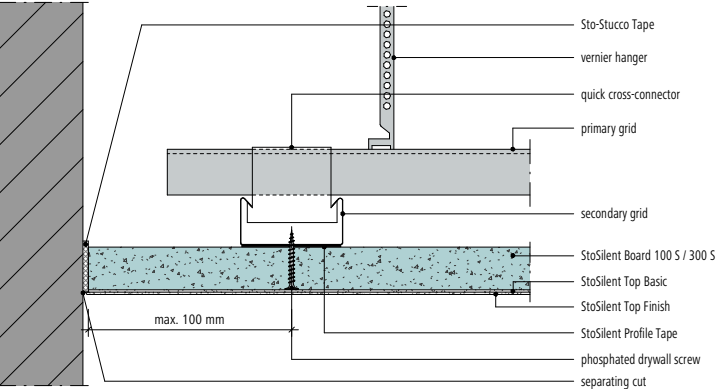
Sto-HQ-EN_SSDI S-BF-1202_2024-04-01



StoSilent Distance S construction details

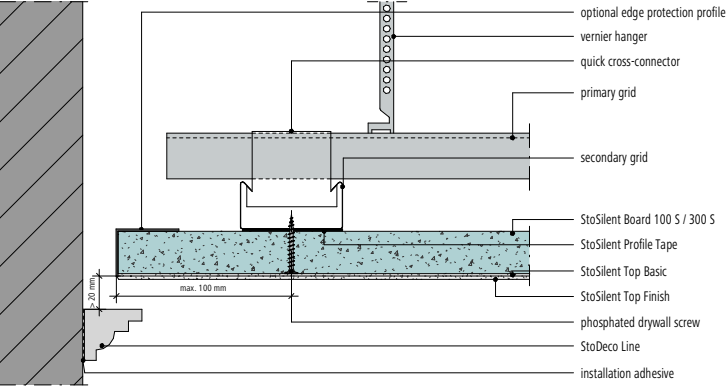
Ceiling (vertical section): wall junction with Sto-Stucco Tape

Sto-HQ-EN_SSDI S-BF-1203_2024-04-01



Ceiling (vertical section): wall junction with StoDeco Line

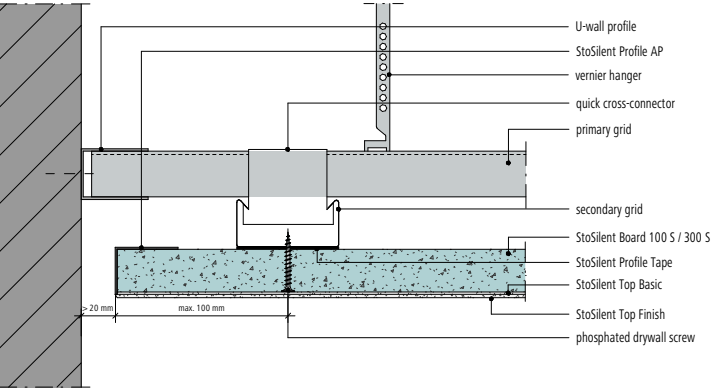
Sto-HQ-EN_SSDI S-BF-1204_2024-04-01



StoSilent Distance S construction details

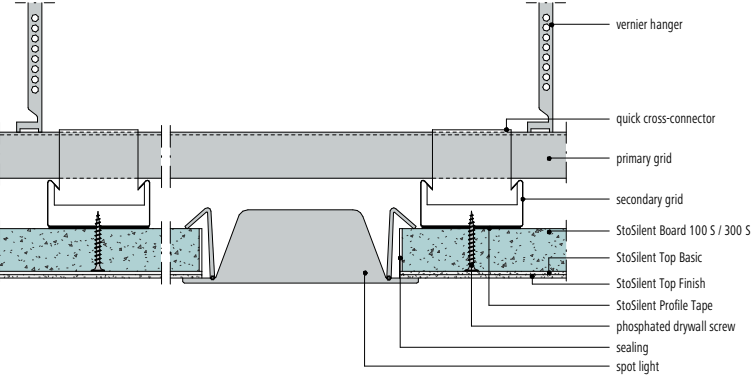
Ceiling (vertical section): wall junction with U-wall profile

Sto-HQ-EN_SSDI S-BF-1205_2024-04-01



Ceiling (vertical section): installation of lamps

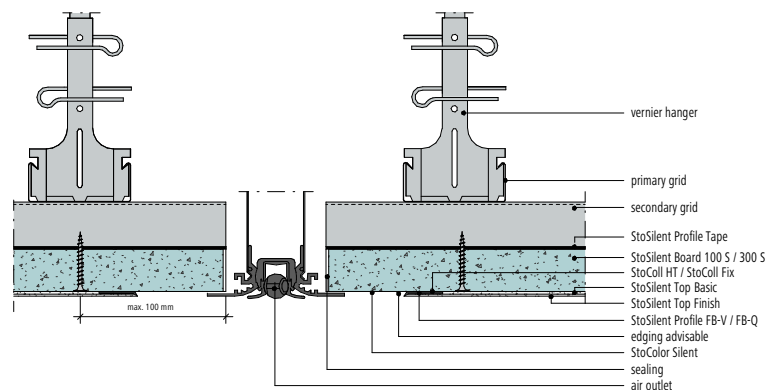
Sto-HQ-EN_SSDI S-BF-1301_2024-04-01



StoSilent Distance S construction details

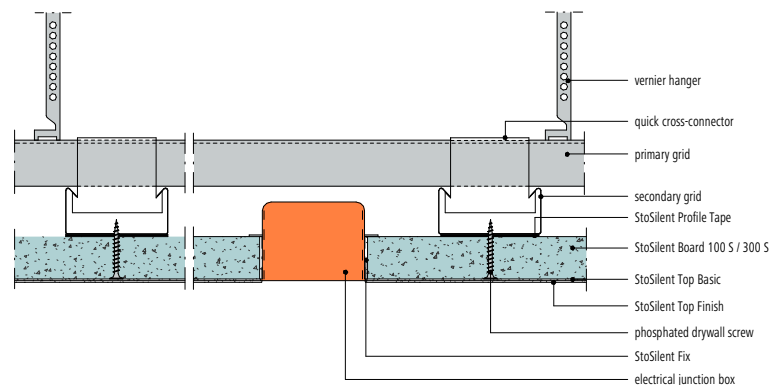
Ceiling (vertical section): air outlet

Sto-HQ-EN_SSDI S-BF-1302_2024-04-01



Ceiling (vertical section): installation of an airtight electrical junction box

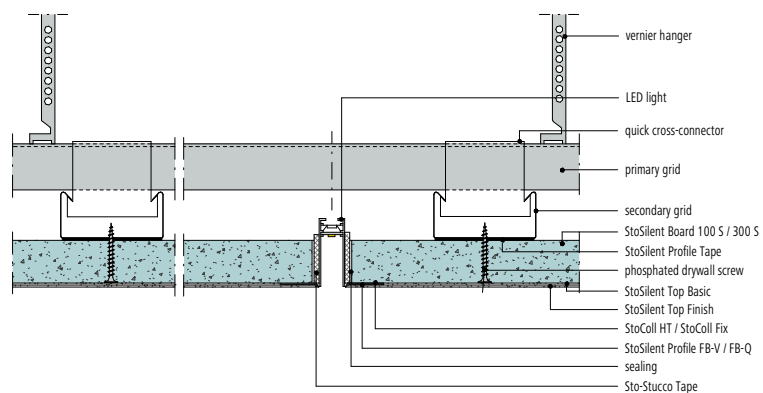
Sto-HQ-EN_SSDI S-BF-1303_2024-04-01



StoSilent Distance S construction details

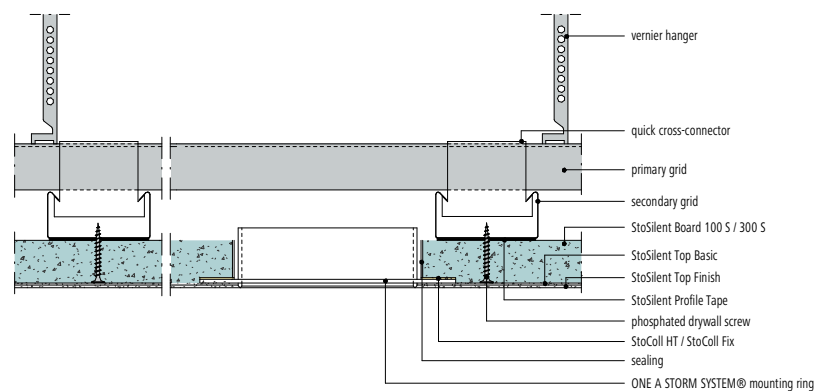
Ceiling (vertical section): installation of a busbar or LED rail with StoSilent Profile FB

Sto-HQ-EN_SSDI S-BF-1304_2024-04-01



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

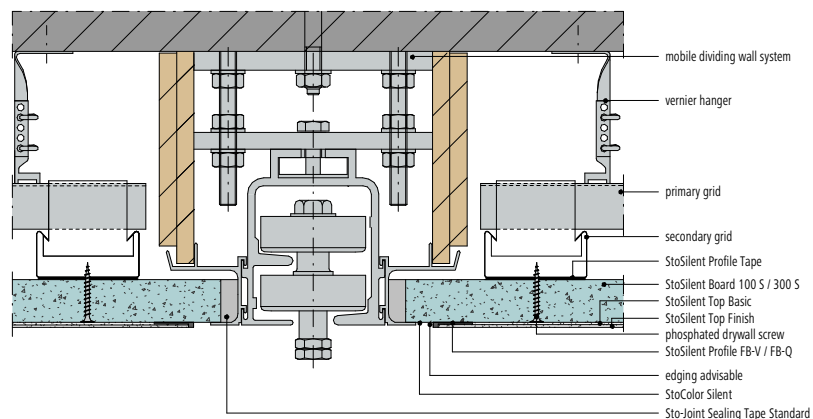
Sto-HQ-EN_SSDI S-BF-1305_2024-04-01



StoSilent Distance S construction details

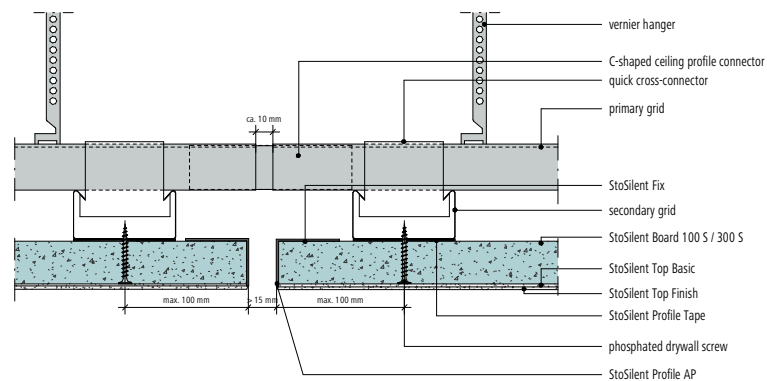
Ceiling (vertical section): mobile separating wall

Sto-HQ-EN_SSDI S-BF-1306_2024-04-01



Ceiling (vertical section): expansion joint formation, open

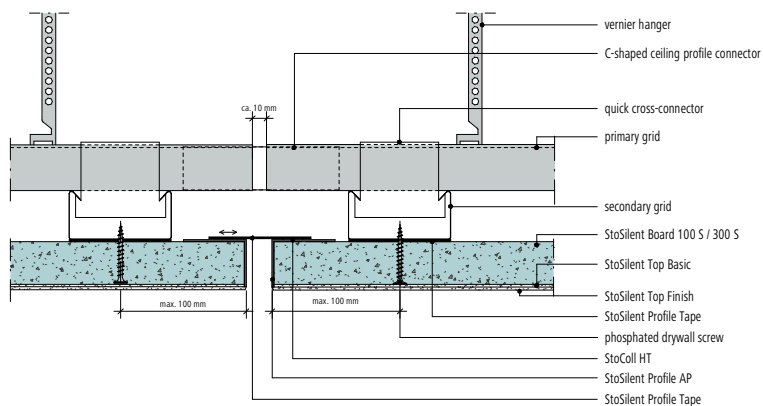
Sto-HQ-EN_SSDI S-BF-1401_2024-04-01



StoSilent Distance S construction details

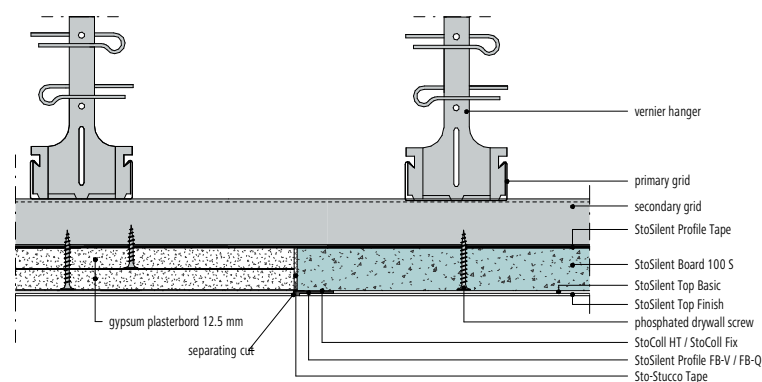
Ceiling (vertical section): expansion joint formation, backed

Sto-HQ-EN_SSDI S-BF-1402_2024-04-01



Ceiling (vertical section): single-layer transition from StoSilent Board to gypsum plasterboard

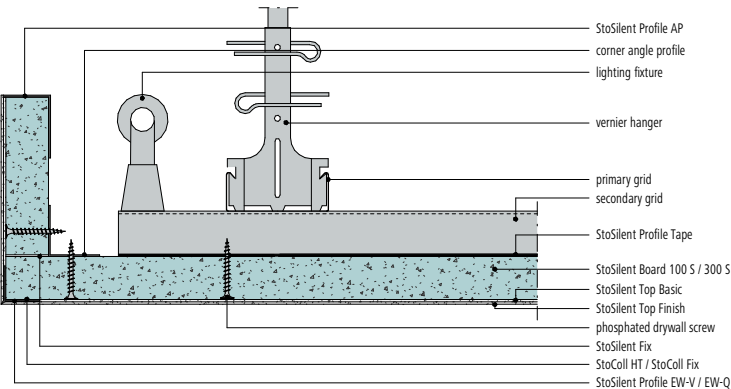
Sto-HQ-EN_SSDI S-BF-1502_2024-04-01



StoSilent Distance S construction details

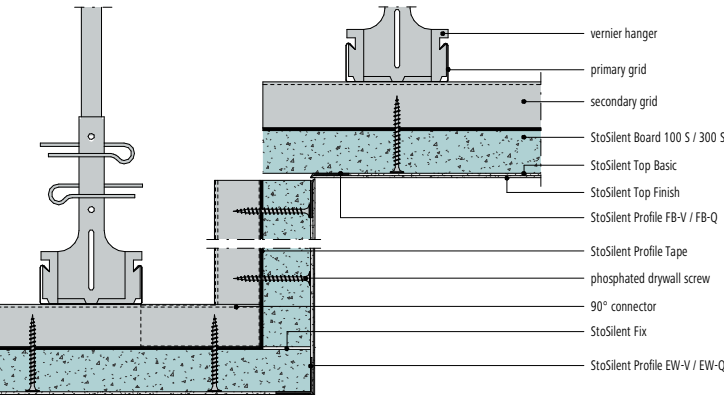
Ceiling (vertical section): upstanding edge with load

Sto-HQ-EN_SSDI S-BF-1601_2024-04-01



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

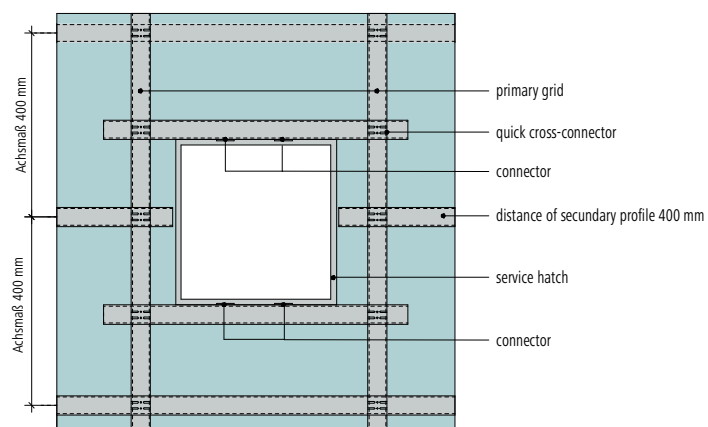
Sto-HQ-EN_SSDI S-BF-1602_2024-04-01



StoSilent Distance S construction details

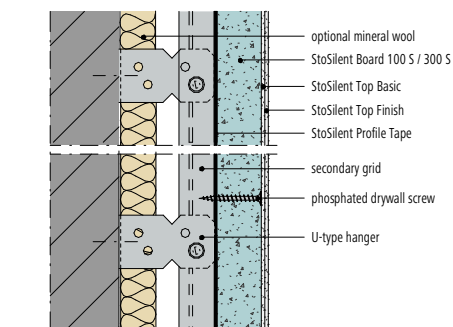
Ceiling (horizontal section): service hatch with recess framing in the sub-construction

Sto-HQ-EN_SSDI S-BF-1701_2024-04-01



Wall (vertical section): direct fixing with U-type hanger

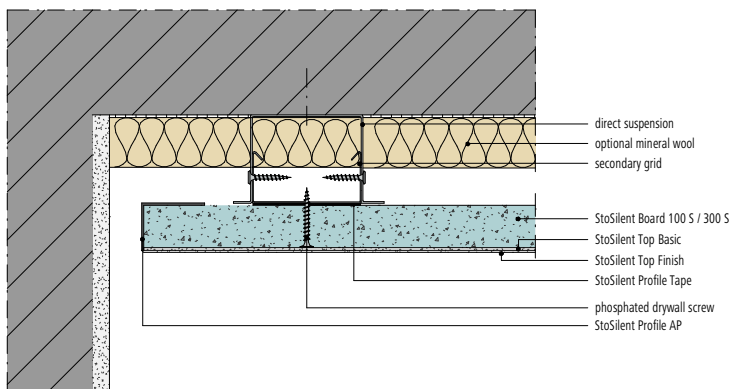
Sto-HQ-EN_SSDI S-BF-2102_2024-04-01



StoSilent Distance S construction details

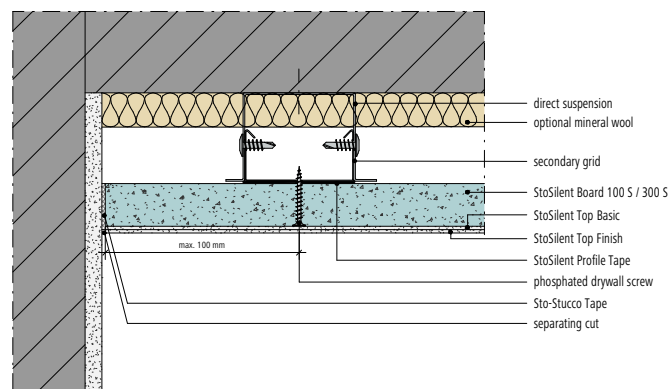
Wall (horizontal section): lateral connection to wall covering with shadow gap

Sto-HQ-EN_SSDI S-BF-2201_2024-04-01



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

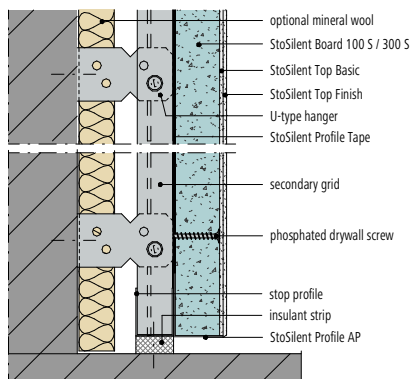
Sto-HQ-EN_SSDI S-BF-2202_2024-04-01



StoSilent Distance S construction details

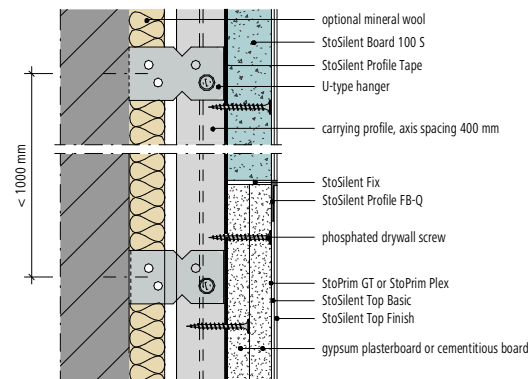
Wall (vertical section): base point of wall covering

Sto-HQ-EN_SSDI S-BF-2203_2024-04-01



Wall (vertical section): field demarcation with StoSilent Profile FB-Q

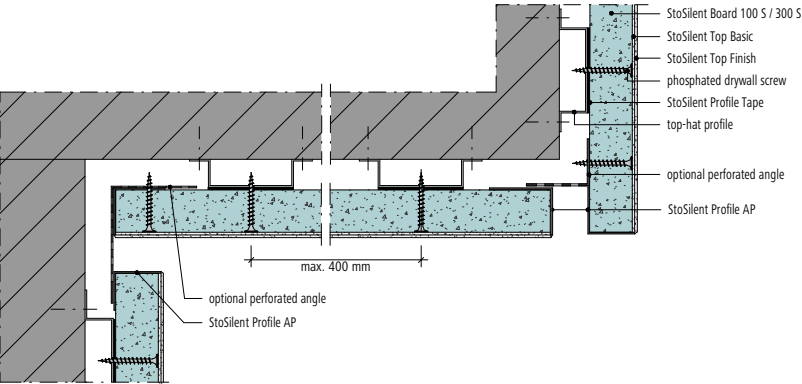
Sto-HQ-EN_SSDI S-BF-2501_2024-04-01



StoSilent Distance S construction details

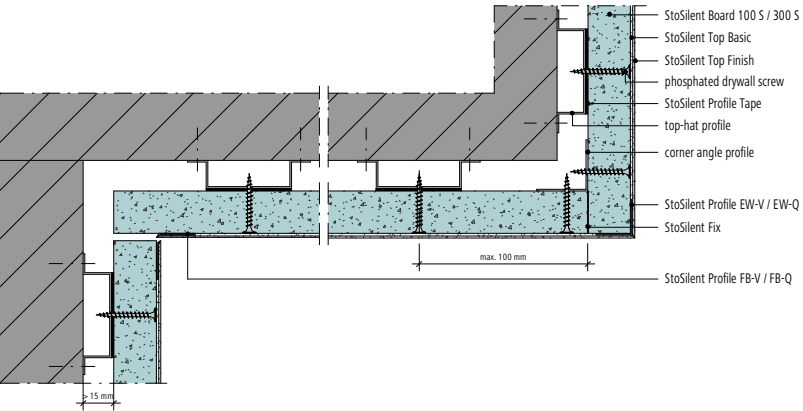
Wall (horizontal section): wall covering with top-hat profile

Sto-HQ-EN_SSDI S-BF-2601_2024-04-01



Wall (horizontal section): wall covering with top-hat profile

Sto-HQ-EN_SSDI S-BF-2602_2024-04-01

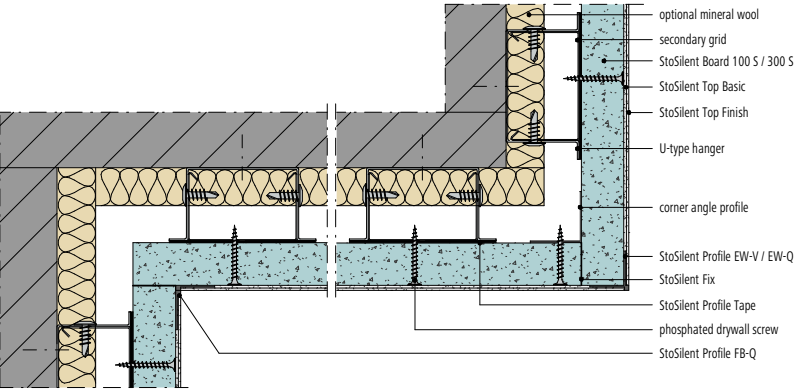




StoSilent Distance S construction details

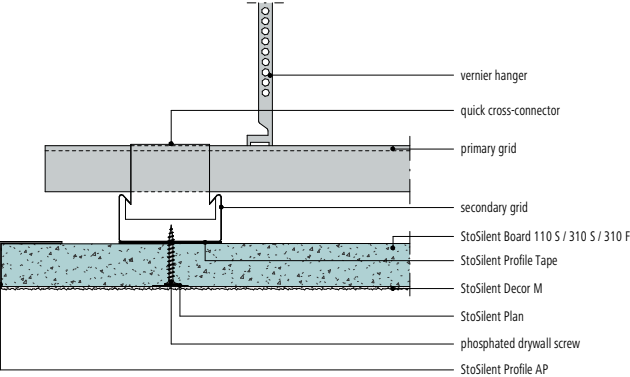
Wall (horizontal section): wall covering with U-type hanger

Sto-HQ-EN_SSDI S-BF-2604_2024-04-01



Ceiling (vertical section): projection without load

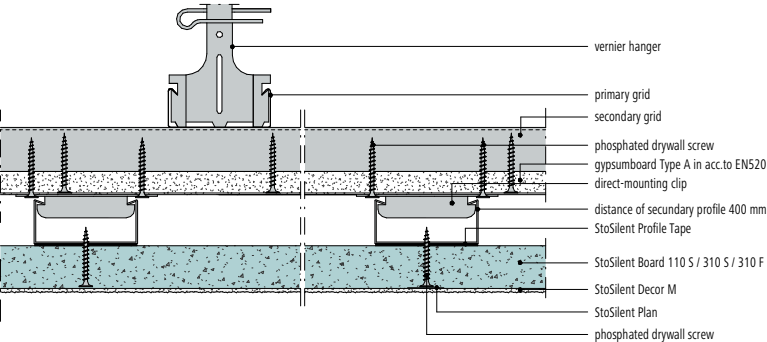
Sto-HQ-EN_SSDI S-D-1101_2024-04-01



StoSilent Distance S construction details

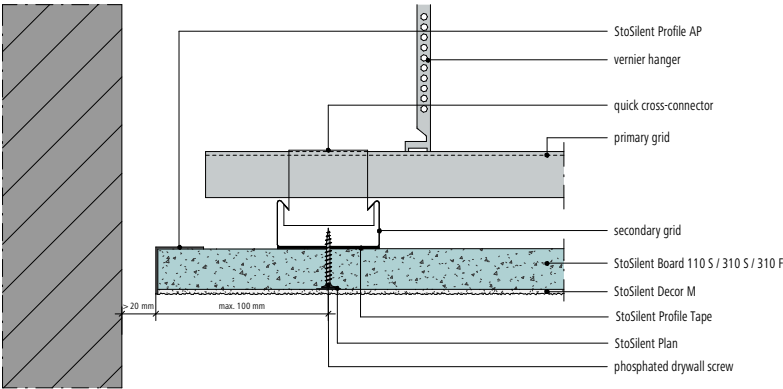
Ceiling (vertical section): acoustic ceiling under drywall ceiling

Sto-HQ-EN_SSDI S-D-1151_2024-04-01



Ceiling (vertical section): open wall junction

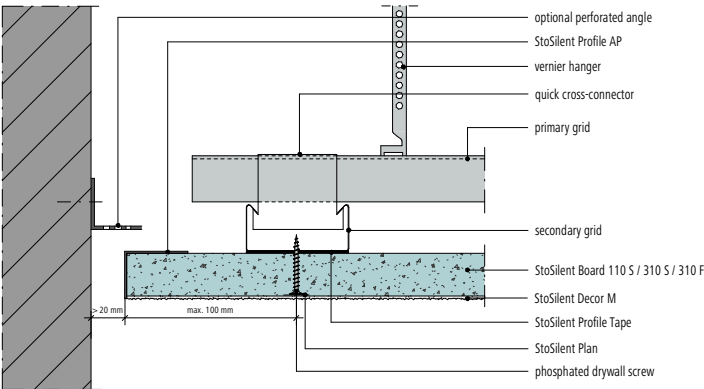
Sto-HQ-EN_SSDI S-D-1201_2024-04-01



StoSilent Distance S construction details

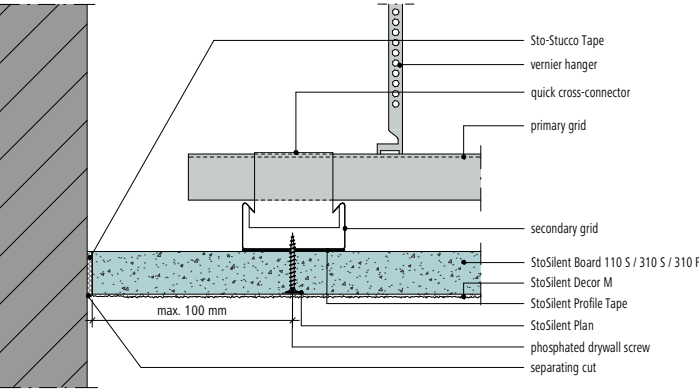
Ceiling (vertical section): wall junction with perforated angle bracket

Sto-HQ-EN_SSDI S-D-1202_2024-04-01



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

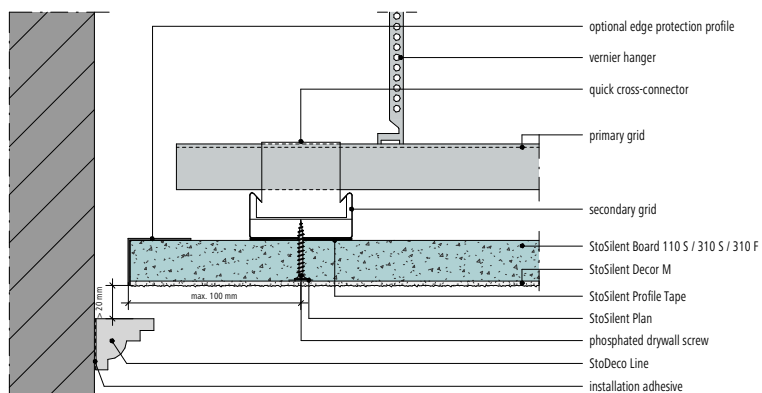
Sto-HQ-EN_SSDI S-D-1203_2024-04-01



StoSilent Distance S construction details

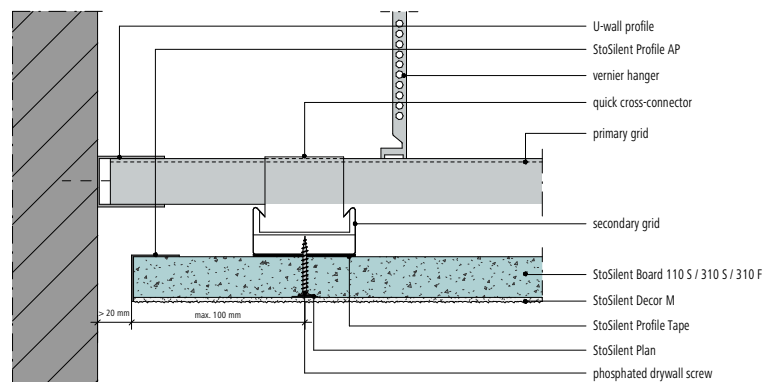
Ceiling (vertical section): wall junction with StoDeco Line

Sto-HQ-EN_SSDI S-D-1204_2024-04-01



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

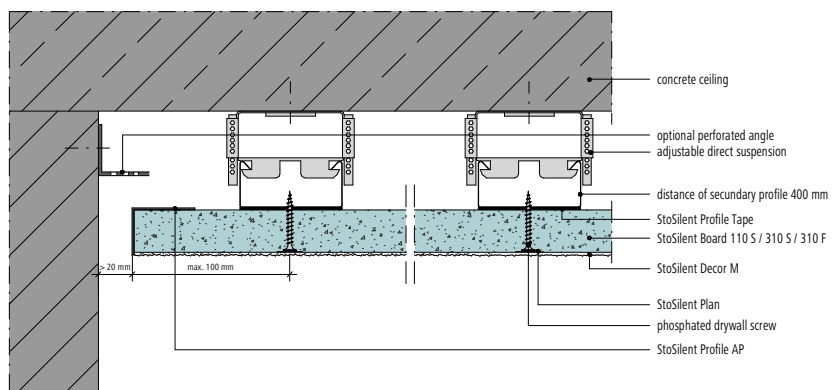
Sto-HQ-EN_SSDI S-D-1205_2024-04-01



StoSilent Distance S construction details

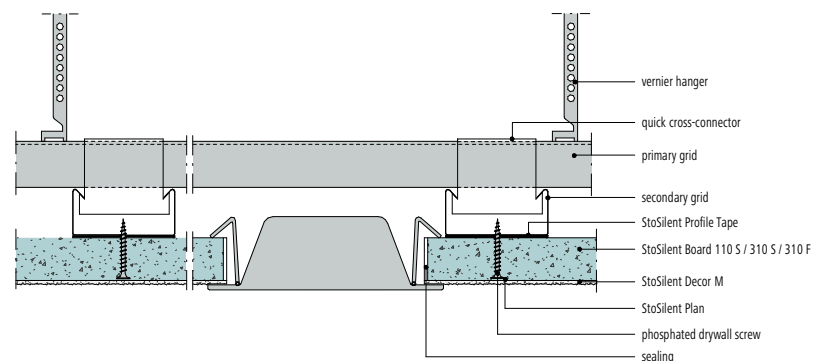
Ceiling (vertical section): system build-up with low suspension height

Sto-HQ-EN_SSDI S-D-1210_2024-04-01



Ceiling (vertical section): installation of lamps

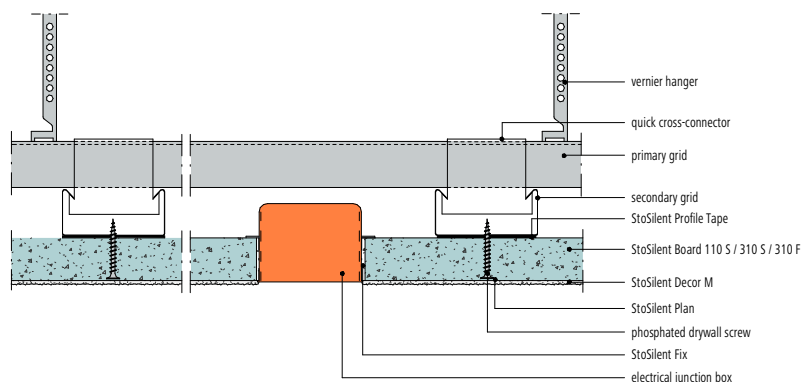
Sto-HQ-EN_SSDI S-D-1301_2024-04-01



StoSilent Distance S construction details

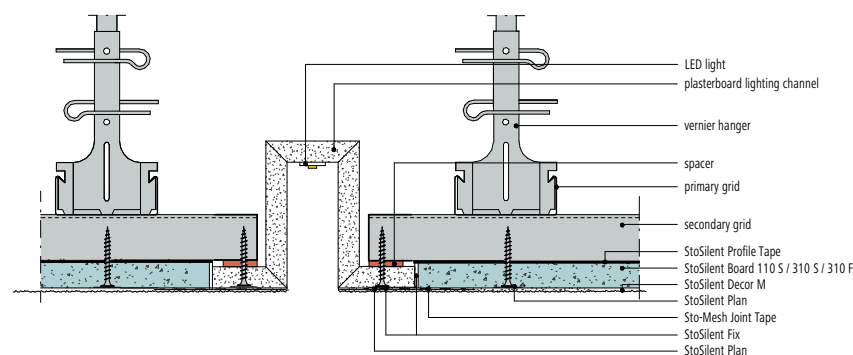
Ceiling (vertical section): installation of an airtight electrical junction box

Sto-HQ-EN_SSDI S-D-1303_2024-04-01



Ceiling (vertical section): installation of a gypsum plasterboard lighting channel

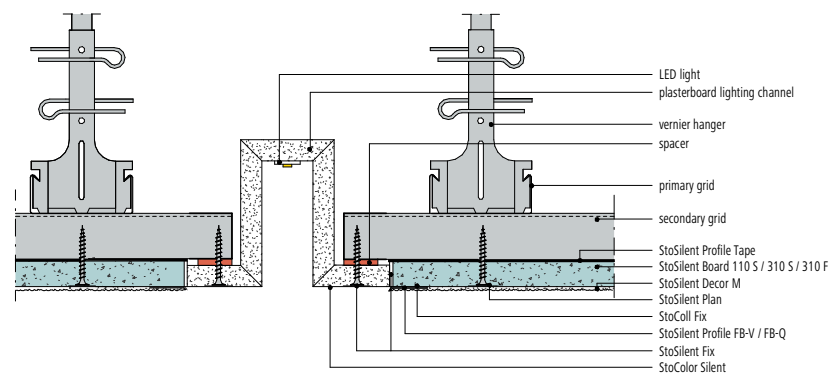
Sto-HQ-EN_SSDI S-D-1307_2024-04-01



StoSilent Distance S construction details

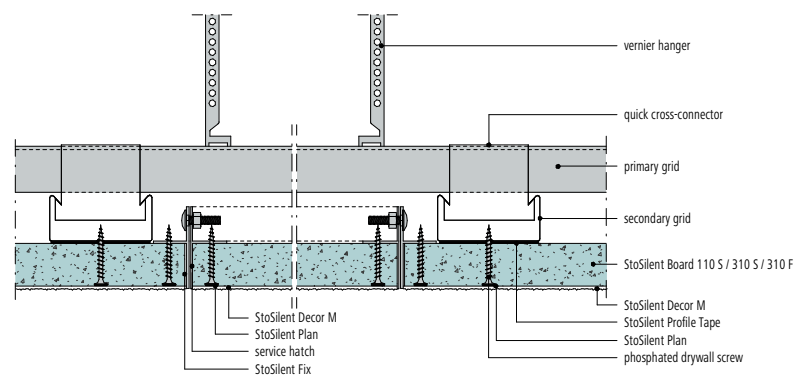
Ceiling (vertical section): installation of a gypsum plasterboard lighting channel with edging

Sto-HQ-EN_SSDI S-D-1308_2024-04-01



Ceiling (vertical section): installation of a service hatch

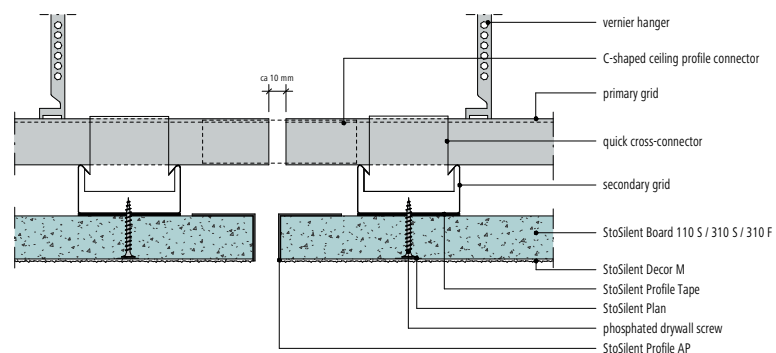
Sto-HQ-EN_SSDI S-D-1310_2024-04-01



StoSilent Distance S construction details

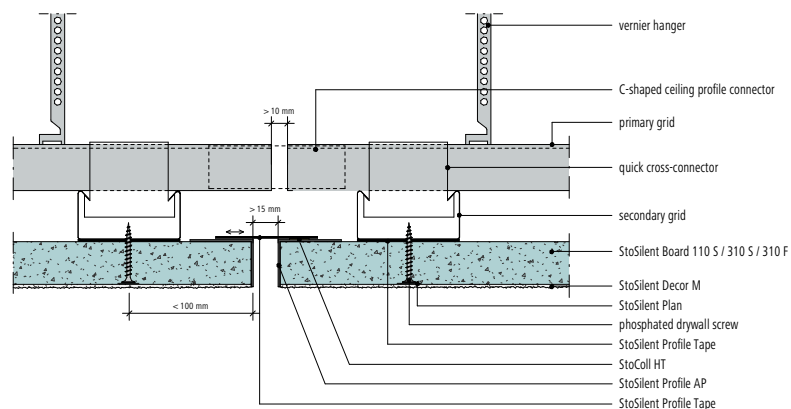
Ceiling (vertical section): expansion joint formation, open

Sto-HQ-EN_SSDI S-D-1401_2024-04-01



Ceiling (vertical section): expansion joint formation, backed

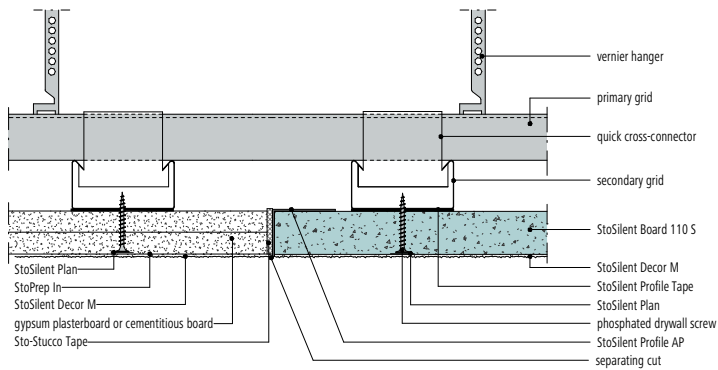
Sto-HQ-EN_SSDI S-D-1402_2024-04-01



StoSilent Distance S construction details

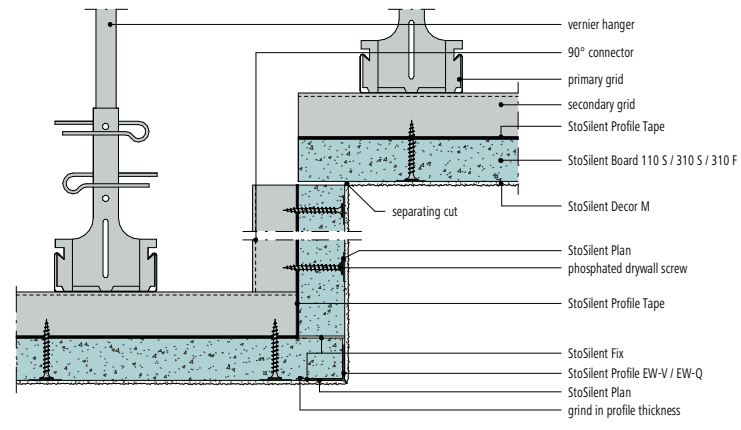
Ceiling (vertical section): transition between gypsum plasterboard ceiling and StoSilent Distance with StoSilent Profile AP and Sto-Stucco Tape

Sto-HQ-EN_SSDI S-D-1501_2024-04-01



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

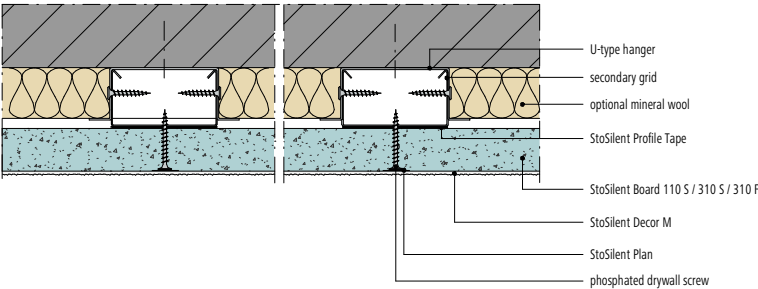
Sto-HQ-EN_SSDI S-D-1602_2024-04-01



StoSilent Distance S construction details

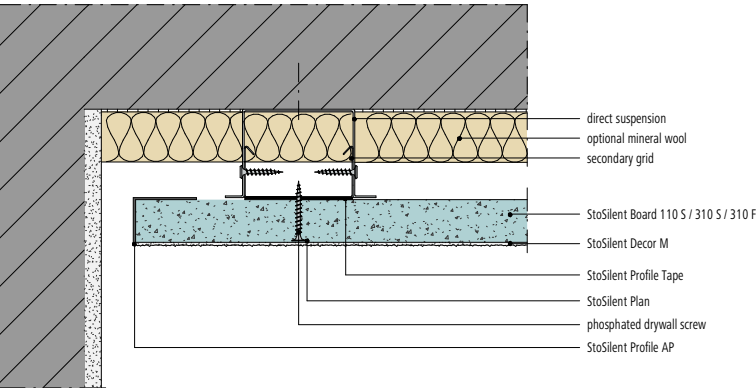
Wall (horizontal section): direct fixing with U-type hanger

Sto-HQ-EN_SSDI S-D-2101_2024-04-01



Wall (horizontal section): lateral connection to wall covering with shadow gap

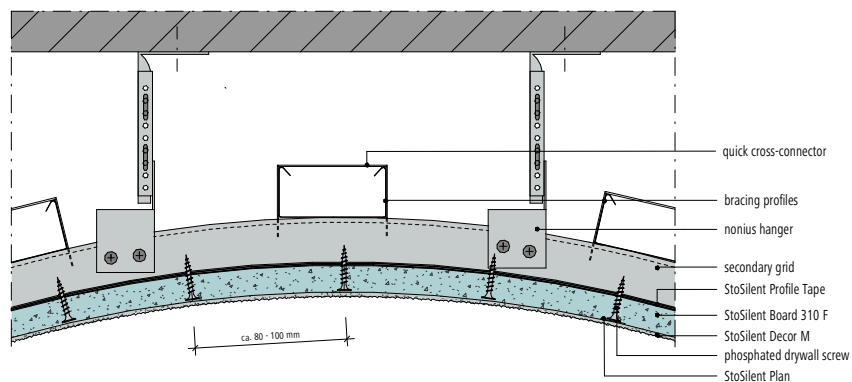
Sto-HQ-EN_SSDI S-D-2201_2024-04-01



StoSilent Distance F construction details

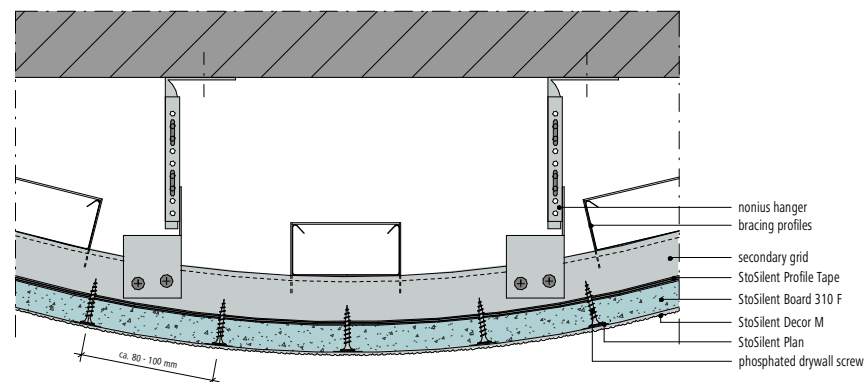
Ceiling (vertical section): concave curved ceilings and wall areas for $R \geq 5\text{ m}$

Sto-HQ-EN_SSDI F-D-1101_2024-04-01



Ceiling (vertical section): convex curved ceilings and wall areas for $R \geq 5\text{ m}$

Sto-HQ-EN_SSDI F-D-1102_2024-04-01



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

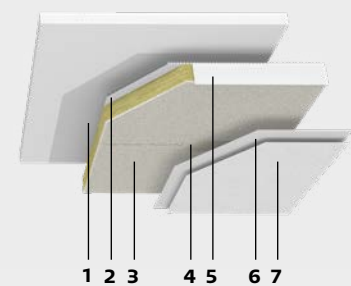
- Direct bonding to walls/ceilings
- Simple application
- For smooth surfaces and curved surfaces (convex, concave, not spherical)

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

To surfaces
To absorption values
To construction details
To references

The system

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



- Carrier layer**
1 — Priming coat
2 — Bonding
- Absorber layer**
3 — Acoustic panel
4 — Levelling coat
5 — Edge finish
- Material layer**
6 — Intermediate coat
7 — Finishing coat

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 (requires approval)
 - 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
- Application**
- Bonded directly to substrate
 - By trained specialists

Material layer options

Silicate acoustic plaster

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

Organic acoustic plaster

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

Mineral acoustic spray plaster

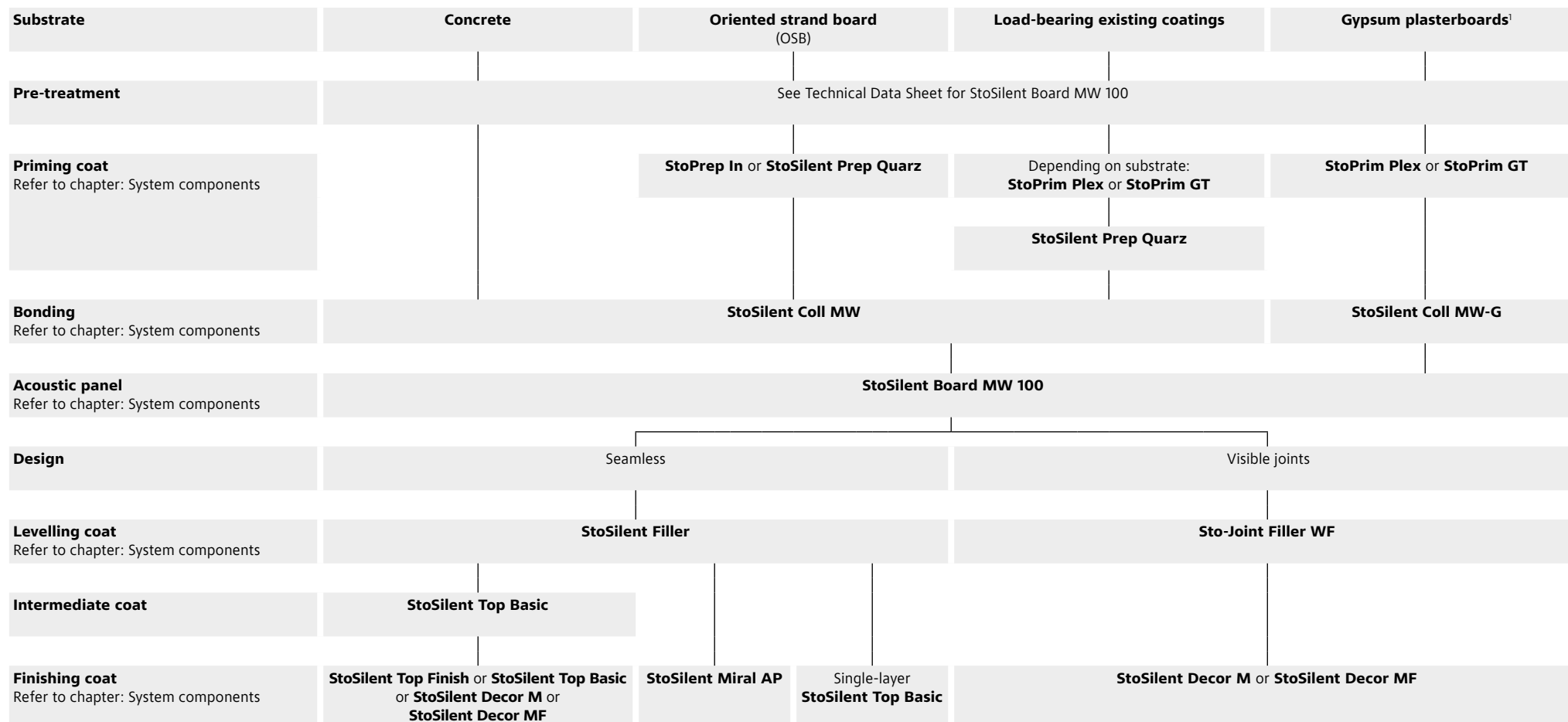
- StoSilent Miral AP
- Rough surface
- Limited tintability with StoTint Aqua, optionally with StoColor Silent

	Panel thickness		
	36 mm	46 mm	66 mm
System thickness	40 mm	50 mm	70 mm
Application	In the case of low construction height	All-purpose	For high absorption
Minimum convex radius*	3 m	4 m	5 m
Minimum concave radius*	2.5 m	3 m	4 m
Maximum cutting depth	10 mm	20 mm	40 mm

* For narrow radii, the panels can be cut on the rear side. The maximum cutting depth must be observed in such cases.



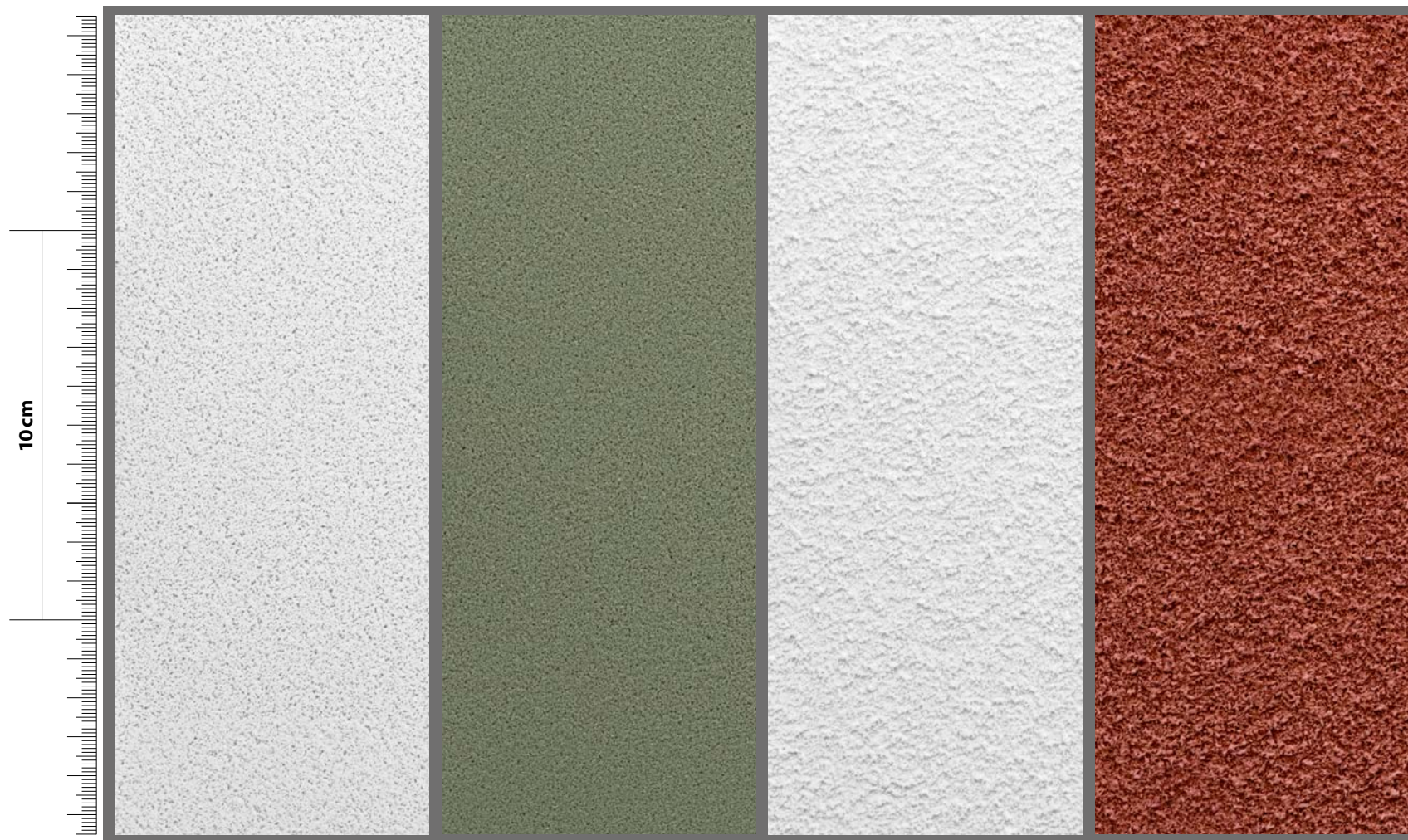
System versions



¹⁾ Gypsum plasterboards, type A, in accordance with EN 520 or gypsum fibreboards, type GF, in accordance with EN 15283-2 or glass-reinforced gypsum plasterboards GRG

Surfaces

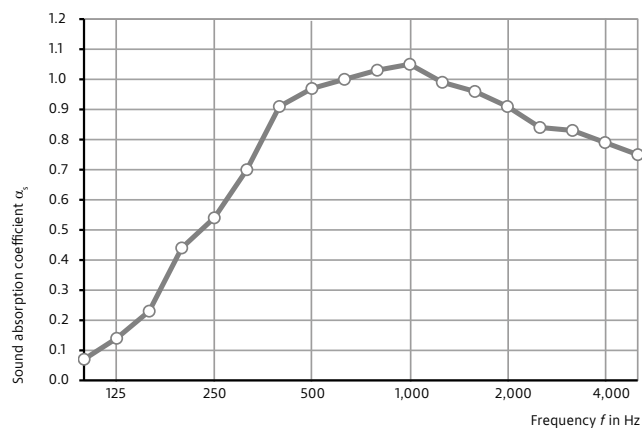
- 1 StoSilent Top Basic
- 2 StoSilent Top Finish
- 3 StoSilent Decor M
- 4 StoSilent Decor MF



StoSilent Direct – seals of approval and quality

Products and systems		Seals of approval and test procedures						
				Reaction to fire (class) in accordance with EN 13501			EPD	Notes
Sys- tems	StoSilent Direct, all versions	–	–	A2-1, d0	–	–	–	–
	–	–	–	–	–	–	√	–
Products	StoSilent Board MW 100	A+	–	A2-1, d0	–	√	√	–
	StoSilent Coll MW	A+	–	Fire classification dependent on use within system	EN 12004	–	√	–
	StoSilent Coll MW-G	A+	–	Fire classification dependent on use within system	EN 12004	√	–	–
	StoSilent Decor M	A+	Test standard TM-10 Emulsion-based plasters 06/09	–	–	–	√	Preservative-free (untinted versions: white and Sto white shades)
	StoSilent Decor MF	A+	–	Fire classification dependent on use within system	–	–	√	–
	StoSilent Filler	A+	–	Fire classification dependent on use within system	–	–	√	–
	StoSilent Plan	A+	–	Fire classification dependent on use within system	EN 15824	–	√	–
	StoSilent Prep Quarz	A+	–		–	–	√	–
	StoSilent Top Basic	A+	–		EN 15824	–	√	–
	StoSilent Top Finish	A+	–		EN 15824	–	√	–

Sound characteristics

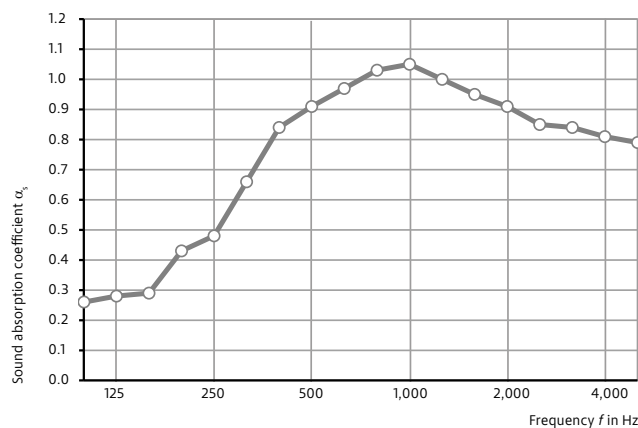


System: StoSilent Direct
Build-up: StoSilent Board MW 100, 36 mm
Coating: StoSilent Decor (visible joints)
Thickness: 36 mm

Structural height: approx. 40 mm (type A)
 α_w : 0.85
NRC: 0.85
Absorber cl.: B

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
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
α_p	0.15	0.55	0.95	1.00	0.90	0.80

Test certificate: 100960_2017-03-20_2



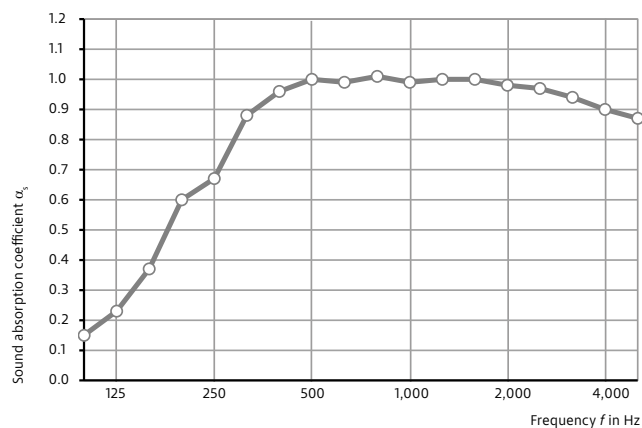
System: StoSilent Direct
Build-up: StoSilent Board MW 100, 36 mm
Coating: StoSilent Decor (visible joints)
Thickness: 36 mm

Structural height: 200 mm
 α_w : 0.80
NRC: 0.85
Absorber cl.: B

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
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
α_p	0.30	0.50	0.90	1.00	0.90	0.80

Test certificate: 100960_2017-03-20_6

Sound characteristics

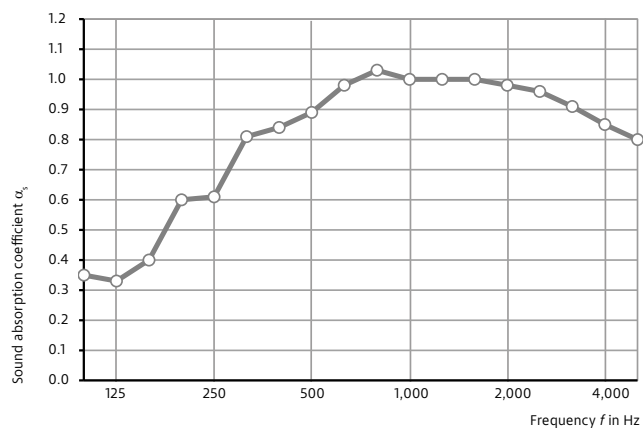


System: StoSilent Direct
Build-up: StoSilent Board MW 100, 46 mm
Coating: StoSilent Decor (visible joints)
Thickness: 46 mm

Structural height: approx. 50 mm (type A)
 α_w : 1.00
 NRC: 0.90
Absorber cl.: A

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
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
α_p	0.25	0.70	1.00	1.00	1.00	0.90

Test certificate: 100960_2015-04-21_7

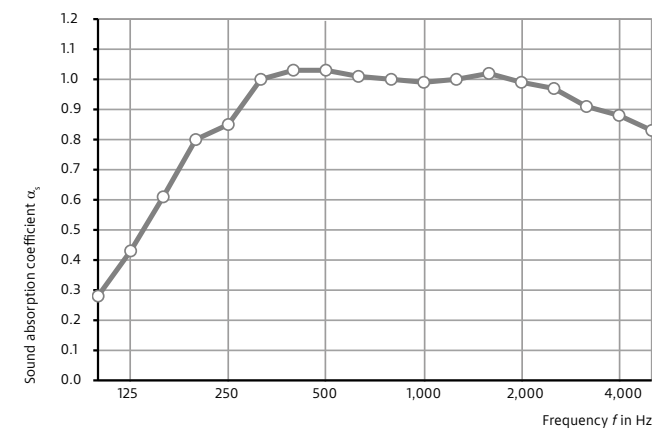


System: StoSilent Direct
Build-up: StoSilent Board MW 100, 46 mm
Coating: StoSilent Decor (visible joints)
Thickness: 46 mm

Structural height: 200 mm
 α_w : 0.90
 NRC: 0.85
Absorber cl.: A

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
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
α_p	0.35	0.65	0.90	1.00	1.00	0.85

Test certificate: 100960_2015-04-21_2



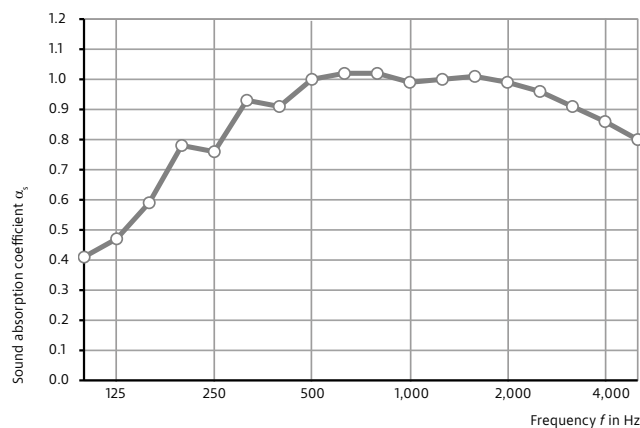
System: StoSilent Direct
Build-up: StoSilent Board MW 100, 66 mm
Coating: StoSilent Decor (visible joints)
Thickness: 66 mm

Structural height: approx. 70 mm (type A)
 α_w : 1.00
 NRC: 0.95
Absorber cl.: A

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
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
α_p	0.45	0.90	1.00	1.00	1.00	0.85

Test certificate: 100960_2015-04-21_5

Sound characteristics

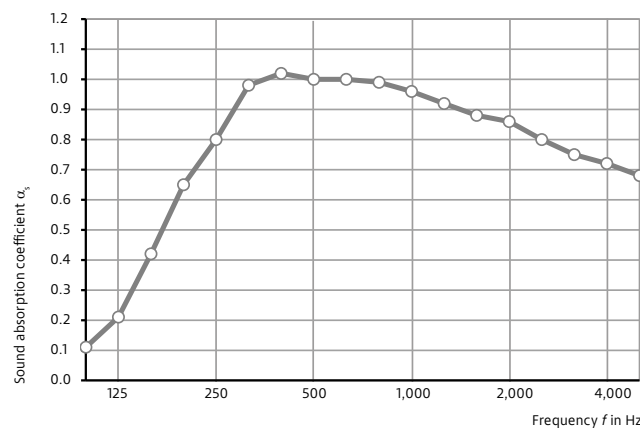


System: StoSilent Direct
Build-up: StoSilent Board MW 100, 66 mm
Coating: StoSilent Decor (visible joints)
Thickness: 66 mm

Structural height: 200 mm
 α_w : 1.00
NRC: 0.95
Absorber cl.: A

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
Third-octave band	0.41	0.78	0.91	1.02	1.01	0.91
Octave band	0.47	0.76	1.00	0.99	0.99	0.86
Third-octave band	0.59	0.93	1.02	1.00	0.96	0.80
α_p	0.50	0.80	1.00	1.00	1.00	0.85

Test certificate: 100960_2015-04-21_4

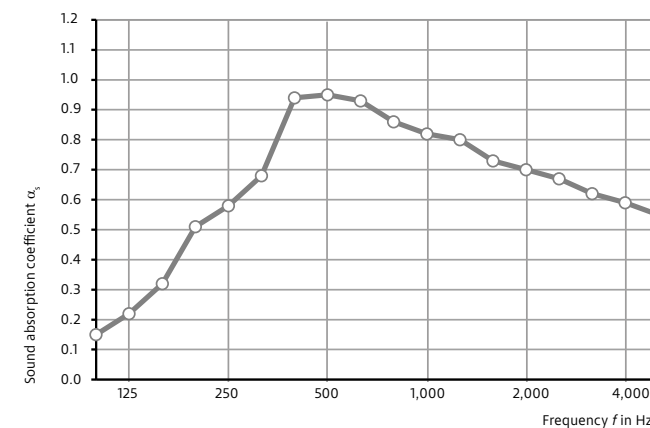


System: StoSilent Direct
Build-up: StoSilent Board MW 100, 46 mm
Coating: StoSilent Miral AP, sprayed
Thickness: 46 mm

Structural height: approx. 53 mm (type A)
 α_w : 0.85
NRC: 0.90
Absorber cl.: B

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
Third-octave band	0.11	0.65	1.02	0.99	0.88	0.75
Octave band	0.21	0.80	1.00	0.96	0.86	0.72
Third-octave band	0.42	0.98	1.00	0.92	0.80	0.68
α_p	0.25	0.80	1.00	0.95	0.85	0.70

Test certificate: 100960-2021-05 HR_2



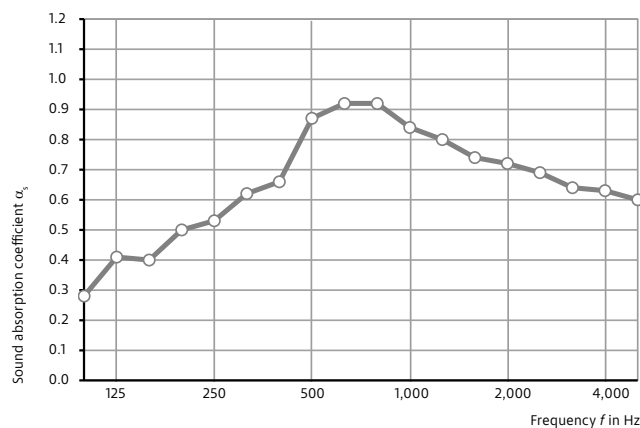
System: StoSilent Direct
Build-up: StoSilent Board MW 100, 36 mm
Coating: StoSilent Top Basic white, single-layer
Thickness: 36 mm

Structural height: approx. 41 mm (type A)
 α_w : 0.75
NRC: 0.75
Absorber cl.: C

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
Third-octave band	0.15	0.51	0.94	0.86	0.73	0.62
Octave band	0.22	0.58	0.95	0.82	0.70	0.59
Third-octave band	0.32	0.68	0.93	0.80	0.67	0.55
α_p	0.25	0.60	0.95	0.85	0.70	0.60

Test certificate: 100960_2019-09-19_4

Sound characteristics

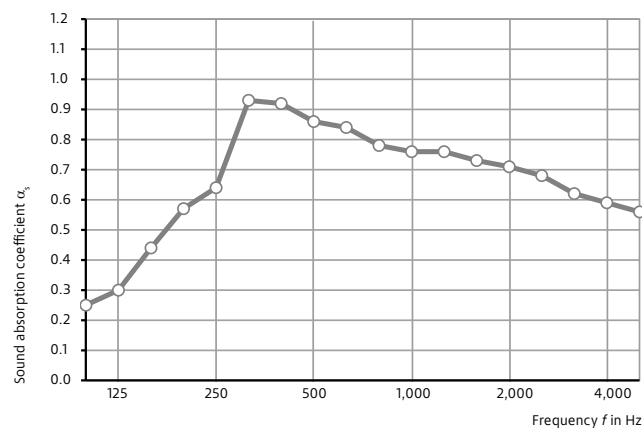


System: StoSilent Direct
Build-up: StoSilent Board MW 100, 36 mm
Coating: StoSilent Top Basic white, single-layer
Thickness: 36 mm

Structural height: 200 mm
 α_w : 0.75
NRC: 0.75
Absorber cl.: C

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
Third-octave band	0.28	0.50	0.66	0.92	0.74	0.64
Octave band	0.41	0.53	0.87	0.84	0.72	0.63
Third-octave band	0.40	0.62	0.92	0.80	0.69	0.60
α_p	0.35	0.55	0.80	0.85	0.70	0.60

Test certificate: 100960_2019-09-19_7

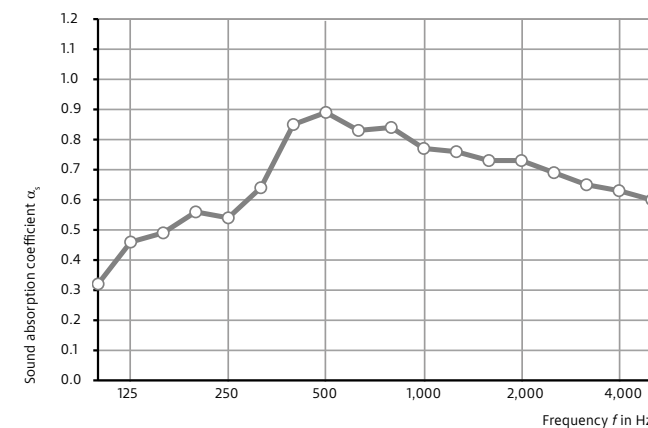


System: StoSilent Direct
Build-up: StoSilent Board MW 100, 46 mm
Coating: StoSilent Top Basic white, single-layer
Thickness: 46 mm

Structural height: approx. 51 mm (type A)
 α_w : 0.75
NRC: 0.75
Absorber cl.: C

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
Third-octave band	0.25	0.57	0.92	0.78	0.73	0.62
Octave band	0.30	0.64	0.86	0.76	0.71	0.59
Third-octave band	0.44	0.93	0.84	0.76	0.68	0.56
α_p	0.35	0.70	0.85	0.75	0.70	0.60

Test certificate: 100960_2019-09-19_2



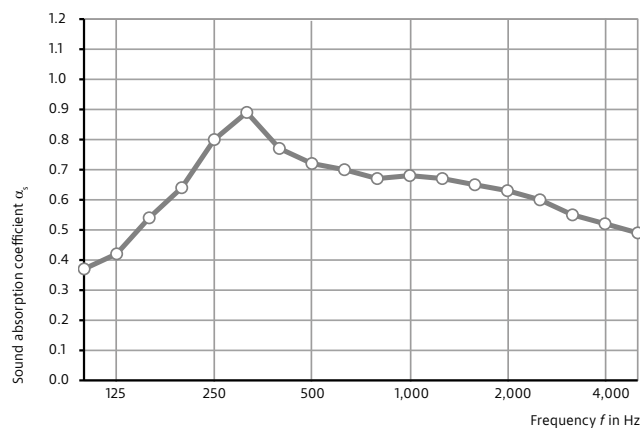
System: StoSilent Direct
Build-up: StoSilent Board MW 100, 46 mm
Coating: StoSilent Top Basic white, single-layer
Thickness: 46 mm

Structural height: 200 mm
 α_w : 0.75
NRC: 0.75
Absorber cl.: C

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
Third-octave band	0.32	0.56	0.85	0.84	0.73	0.65
Octave band	0.46	0.54	0.89	0.77	0.73	0.63
Third-octave band	0.49	0.64	0.83	0.76	0.69	0.60
α_p	0.40	0.60	0.85	0.80	0.70	0.65

Test certificate: 100960_2019-09-19_9

Sound characteristics

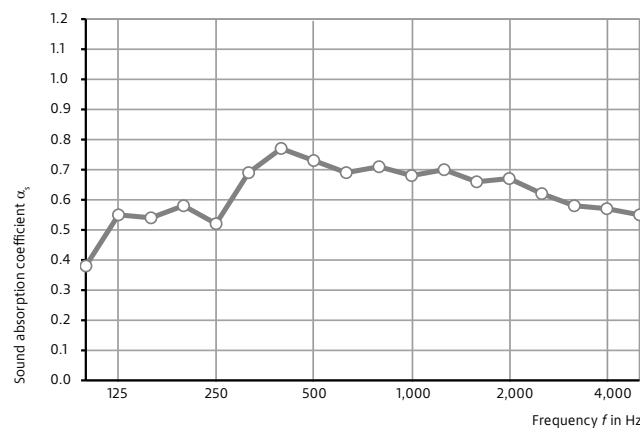


System: StoSilent Direct
Build-up: StoSilent Board MW 100, 66 mm
Coating: StoSilent Top Basic white, single-layer
Thickness: 66 mm

Structural height: approx. 71 mm (type A)
 α_w : 0.65 (L)
 NRC: 0.70
Absorber cl.: C

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
Third-octave band	0.37	0.64	0.77	0.67	0.65	0.55
Octave band	0.42	0.80	0.72	0.68	0.63	0.52
Third-octave band	0.54	0.89	0.70	0.67	0.60	0.49
α_p	0.45	0.80	0.75	0.65	0.65	0.50

Test certificate: 100960_2019-09-19_1

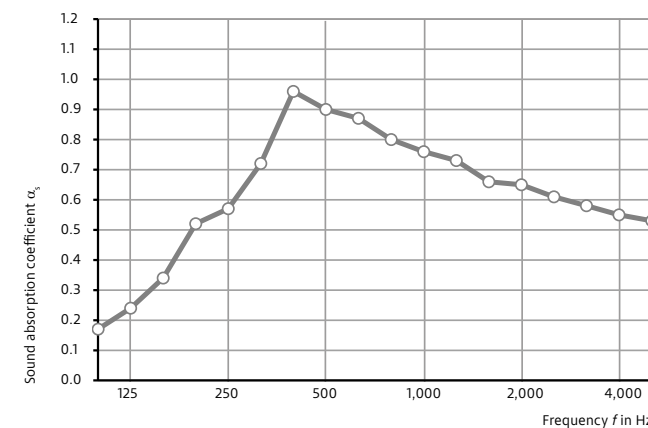


System: StoSilent Direct
Build-up: StoSilent Board MW 100, 66 mm
Coating: StoSilent Top Basic white, single-layer
Thickness: 66 mm

Structural height: 200 mm
 α_w : 0.70
 NRC: 0.65
Absorber cl.: C

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
Third-octave band	0.38	0.58	0.77	0.71	0.66	0.58
Octave band	0.55	0.52	0.73	0.68	0.67	0.57
Third-octave band	0.54	0.69	0.69	0.70	0.62	0.55
α_p	0.50	0.60	0.75	0.70	0.65	0.55

Test certificate: 100960_2019-09-19_10



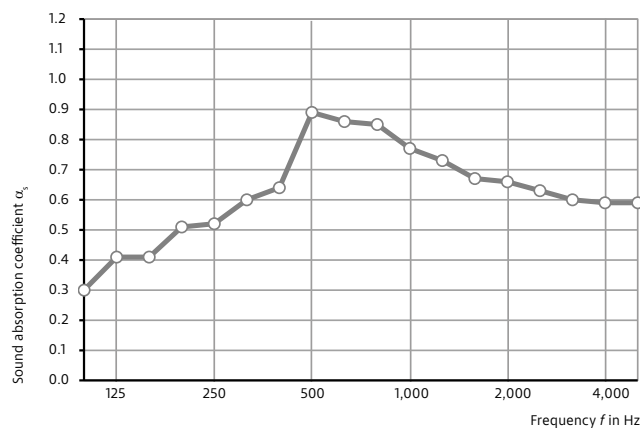
System: StoSilent Direct
Build-up: StoSilent Board MW 100, 36 mm
Coating: StoSilent Top Basic and StoSilent Decor M
Thickness: 36 mm

Structural height: approx. 42 mm (type A)
 α_w : 0.70
 NRC: 0.70
Absorber cl.: C

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
Third-octave band	0.17	0.52	0.96	0.80	0.66	0.58
Octave band	0.24	0.57	0.90	0.76	0.65	0.55
Third-octave band	0.34	0.72	0.87	0.73	0.61	0.53
α_p	0.25	0.60	0.90	0.75	0.65	0.55

Test certificate: 100960_2019-09-19_5

Sound characteristics

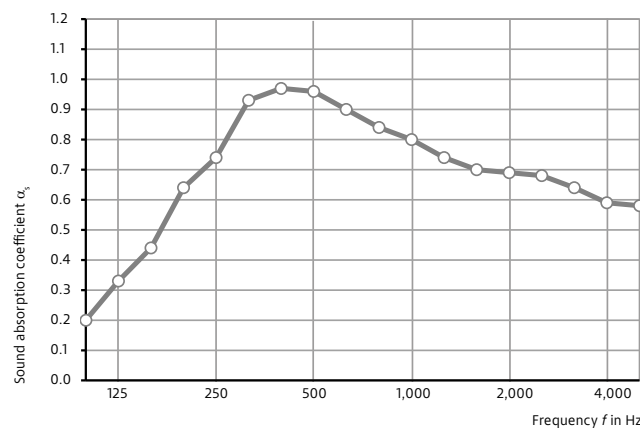


System: StoSilent Direct
Build-up: StoSilent Board MW 100, 36 mm
Coating: StoSilent Top Basic and StoSilent Decor M
Thickness: 36 mm

Structural height: 200 mm
 α_w : 0.70
NRC: 0.70
Absorber cl.: C

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
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
α_p	0.35	0.55	0.80	0.80	0.65	0.60

Test certificate: 100960_2019-09-19_6

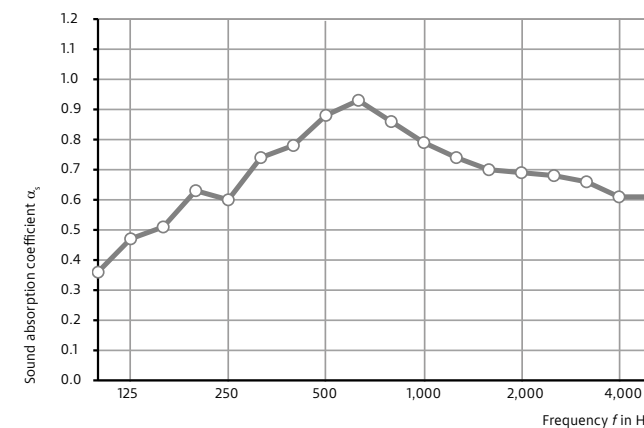


System: StoSilent Direct
Build-up: StoSilent Board MW 100, 46 mm
Coating: StoSilent Top Basic and StoSilent Decor M
Thickness: 46 mm

Structural height: approx. 52 mm (type A)
 α_w : 0.75
NRC: 0.80
Absorber cl.: C

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
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
α_p	0.30	0.75	0.95	0.80	0.70	0.60

Test certificate: 100960_2015-01-07_6



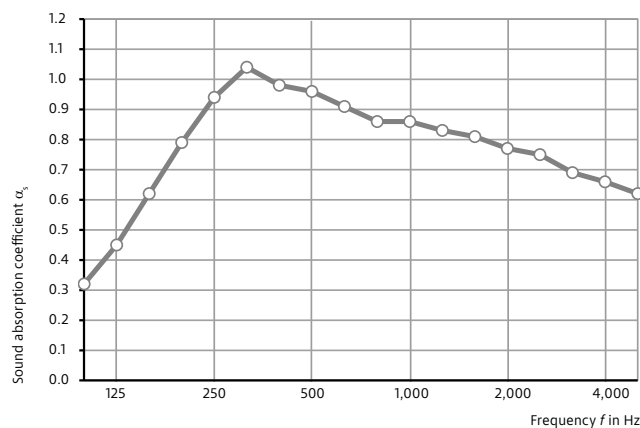
System: StoSilent Direct
Build-up: StoSilent Board MW 100, 46 mm
Coating: StoSilent Top Basic and StoSilent Decor M
Thickness: 46 mm

Structural height: 200 mm
 α_w : 0.75
NRC: 0.75
Absorber cl.: C

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
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
α_p	0.45	0.65	0.85	0.80	0.70	0.65

Test certificate: 100960_2015-01-07_3

Sound characteristics

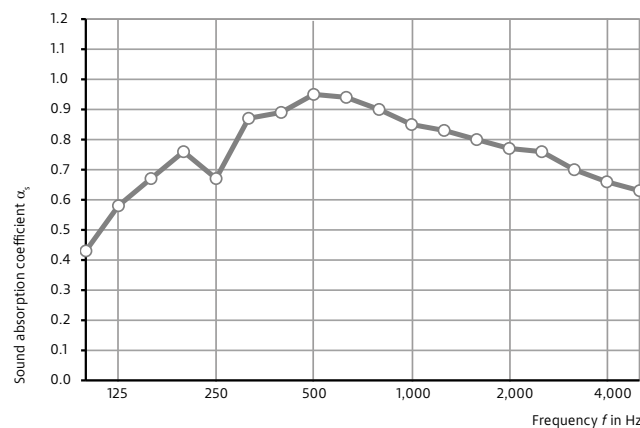


System: StoSilent Direct
Build-up: StoSilent Board MW 100, 66 mm
Coating: StoSilent Top Basic and StoSilent Decor M
Thickness: 66 mm

Structural height: approx. 72 mm (type A)
 α_w : 0.80 (L)
 NRC: 0.90
Absorber cl.: B

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
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
α_p	0.45	0.90	0.95	0.85	0.80	0.65

Test certificate: 100960_2015-01-07_8

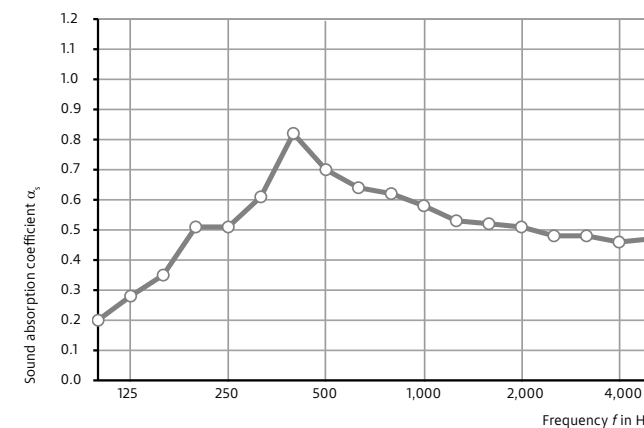


System: StoSilent Direct
Build-up: StoSilent Board MW 100, 66 mm
Coating: StoSilent Top Basic and StoSilent Decor M
Thickness: 66 mm

Structural height: 200 mm
 α_w : 0.80
 NRC: 0.80
Absorber cl.: B

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
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
α_p	0.55	0.75	0.95	0.85	0.80	0.65

Test certificate: 100960_2015-01-07_2



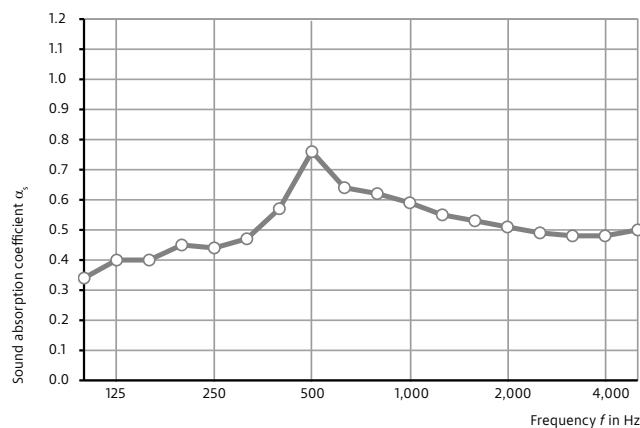
System: StoSilent Direct
Build-up: StoSilent Board MW 100, 36 mm
Coating: StoSilent Top Basic and Top Basic white
Thickness: 36 mm

Structural height: approx. 41 mm (type A)
 α_w : 0.55
 NRC: 0.60
Absorber cl.: D

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
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
α_p	0.30	0.55	0.70	0.60	0.50	0.45

Test certificate: 100960_2017-12-12_4

Sound characteristics

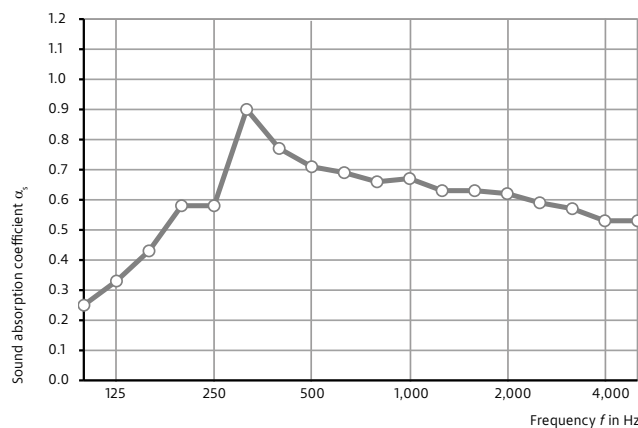


System: StoSilent Direct
Build-up: StoSilent Board MW 100, 36 mm
Coating: StoSilent Top Basic and Top Basic white
Thickness: 36 mm

Structural height: 200 mm
 α_w : 0.60
NRC: 0.60
Absorber cl.: C

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
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
α_p	0.40	0.45	0.65	0.60	0.50	0.50

Test certificate: 100960_2017-12-12_9

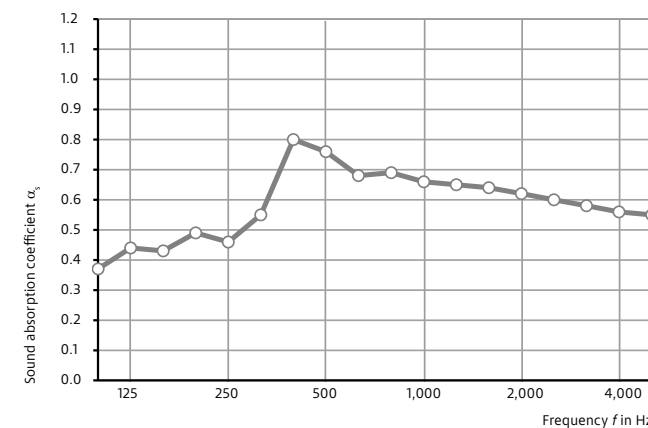


System: StoSilent Direct
Build-up: StoSilent Board MW 100, 46 mm
Coating: StoSilent Top Basic and Top Basic white
Thickness: 46 mm

Structural height: approx. 51 mm (type A)
 α_w : 0.65 (L)
NRC: 0.65
Absorber cl.: C

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
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
α_p	0.35	0.70	0.70	0.65	0.60	0.55

Test certificate: 100960_2017-12-12_3



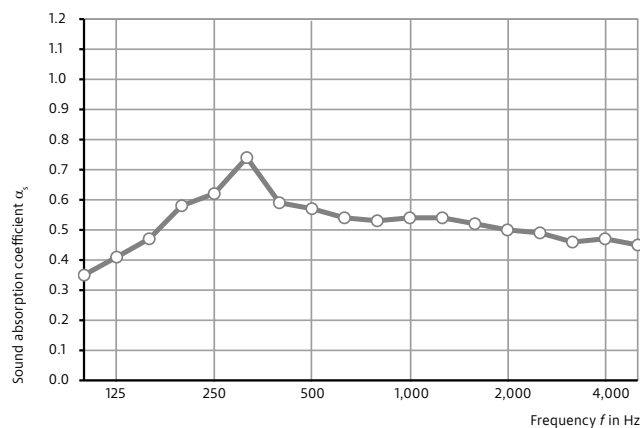
System: StoSilent Direct
Build-up: StoSilent Board MW 100, 46 mm
Coating: StoSilent Top Basic and Top Basic white
Thickness: 46 mm

Structural height: 200 mm
 α_w : 0.65
NRC: 0.65
Absorber cl.: C

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
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
α_p	0.40	0.50	0.75	0.65	0.60	0.55

Test certificate: 100960_2017-12-12_8

Sound characteristics

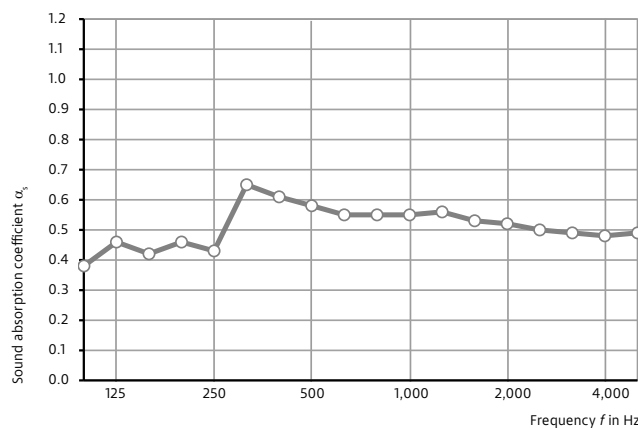


System: StoSilent Direct
Build-up: StoSilent Board MW 100, 66 mm
Coating: StoSilent Top Basic and Top Basic white
Thickness: 66 mm

Structural height: approx. 71 mm (type A)
 α_w : 0.55 (L)
NRC: 0.55
Absorber cl.: D

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
Third-octave band	0.35	0.58	0.59	0.53	0.52	0.46
Octave band	0.41	0.62	0.57	0.54	0.50	0.47
Third-octave band	0.47	0.74	0.54	0.54	0.49	0.45
α_p	0.40	0.65	0.55	0.55	0.50	0.45

Test certificate: 100960_2017-12-12_1

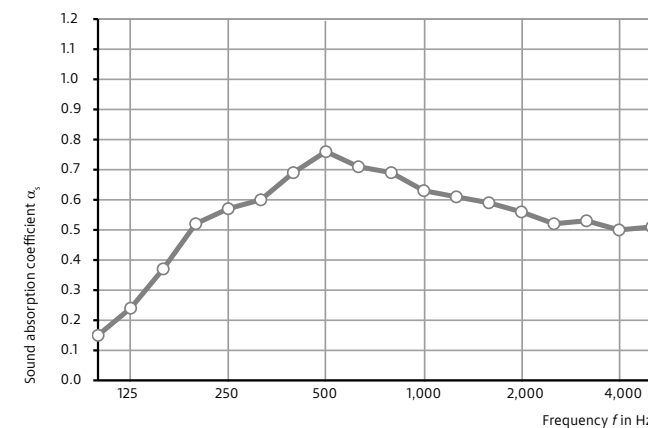


System: StoSilent Direct
Build-up: StoSilent Board MW 100, 66 mm
Coating: StoSilent Top Basic and Top Basic white
Thickness: 66 mm

Structural height: 200 mm
 α_w : 0.55
NRC: 0.50
Absorber cl.: D

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
Third-octave band	0.38	0.46	0.61	0.55	0.53	0.49
Octave band	0.46	0.43	0.58	0.55	0.52	0.48
Third-octave band	0.42	0.65	0.55	0.56	0.50	0.49
α_p	0.40	0.50	0.60	0.55	0.50	0.50

Test certificate: 100960_2017-12-12_7



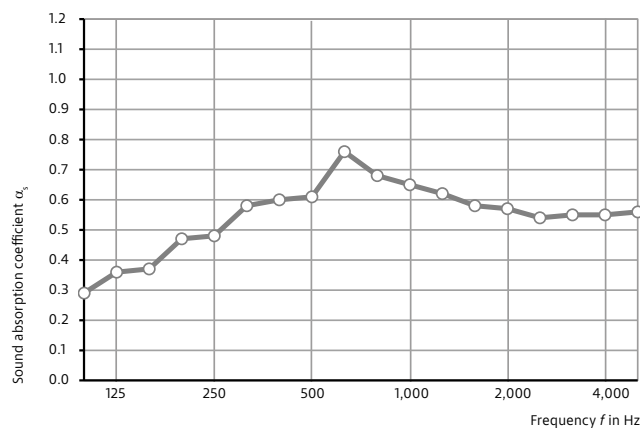
System: StoSilent Direct
Build-up: StoSilent Board MW 100, 36 mm
Coating: StoSilent Top Basic and Top Finish
Thickness: 36 mm

Structural height: approx. 41 mm (type A)
 α_w : 0.60
 $\alpha_{p, 125}$: 0.25
NRC: 0.65
Absorber cl.: C

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
Third-octave band	0.15	0.52	0.69	0.69	0.59	0.53
Octave band	0.24	0.57	0.76	0.63	0.56	0.50
Third-octave band	0.37	0.60	0.71	0.61	0.52	0.51
α_p	0.25	0.55	0.70	0.65	0.55	0.50

Test certificate: 100960_2017-03-20_4

Sound characteristics

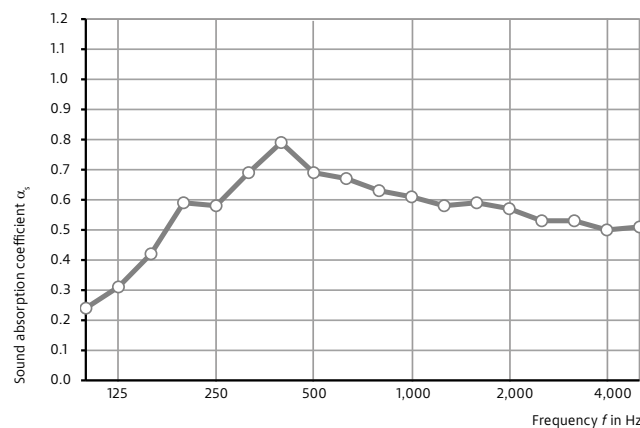


System: StoSilent Direct
Build-up: StoSilent Board MW 100, 36 mm
Coating: StoSilent Top Basic and Top Finish
Thickness: 36 mm

Structural height: 200 mm
 α_w : 0.65
NRC: 0.60
Absorber cl.: C

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
Third-octave band	0.29	0.47	0.60	0.68	0.58	0.55
Octave band	0.36	0.48	0.61	0.65	0.57	0.55
Third-octave band	0.37	0.58	0.76	0.62	0.54	0.56
α_p	0.35	0.50	0.65	0.65	0.55	0.55

Test certificate: 100960_2017-03-20_8

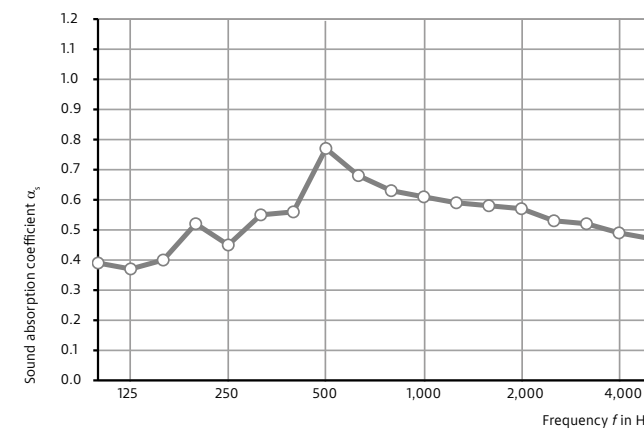


System: StoSilent Direct
Build-up: StoSilent Board MW 100, 46 mm
Coating: StoSilent Top Basic and Top Finish
Thickness: 46 mm

Structural height: approx. 51 mm (type A)
 α_w : 0.60
NRC: 0.60
Absorber cl.: C

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
Third-octave band	0.24	0.59	0.79	0.63	0.59	0.53
Octave band	0.31	0.58	0.69	0.61	0.57	0.50
Third-octave band	0.42	0.69	0.67	0.58	0.53	0.51
α_p	0.30	0.60	0.70	0.60	0.55	0.50

Test certificate: 100960_2015-04-21_8



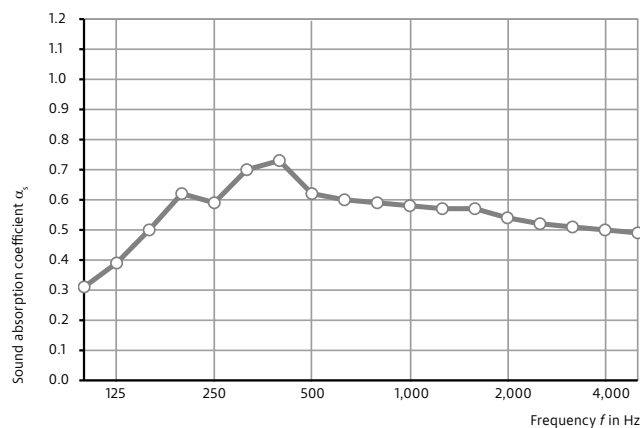
System: StoSilent Direct
Build-up: StoSilent Board MW 100, 46 mm
Coating: StoSilent Top Basic and Top Finish
Thickness: 46 mm

Structural height: 200 mm
 α_w : 0.60
NRC: 0.60
Absorber cl.: C

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
Third-octave band	0.39	0.52	0.56	0.63	0.58	0.52
Octave band	0.37	0.45	0.77	0.61	0.57	0.49
Third-octave band	0.40	0.55	0.68	0.59	0.53	0.47
α_p	0.40	0.50	0.65	0.60	0.55	0.50

Test certificate: 100960_2015-04-21_1

Sound characteristics

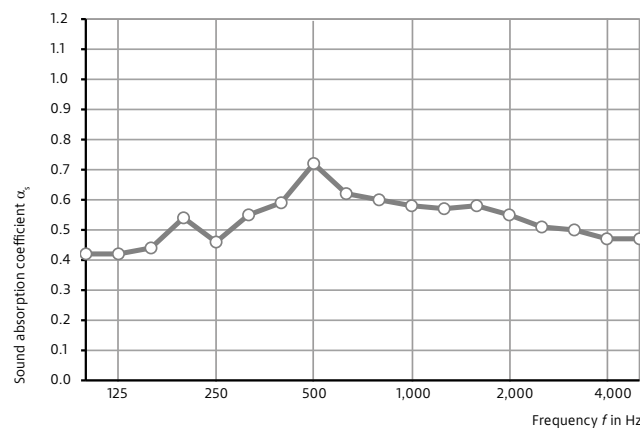


System: StoSilent Direct
Build-up: StoSilent Board MW 100, 66 mm
Coating: StoSilent Top Basic and Top Finish
Thickness: 66 mm

Structural height: approx. 71 mm (type A)
 α_w : 0.60 (L)
NRC: 0.60
Absorber cl.: C

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
Third-octave band	0.31	0.62	0.73	0.59	0.57	0.51
Octave band	0.39	0.59	0.62	0.58	0.54	0.50
Third-octave band	0.50	0.70	0.60	0.57	0.52	0.49
α_p	0.40	0.65	0.65	0.60	0.55	0.50

Test certificate: 100960_2015-04-21_6



System: StoSilent Direct
Build-up: StoSilent Board MW 100, 66 mm
Coating: StoSilent Top Basic and Top Finish
Thickness: 66 mm

Structural height: 200 mm
 α_w : 0.60
NRC: 0.60
Absorber cl.: C

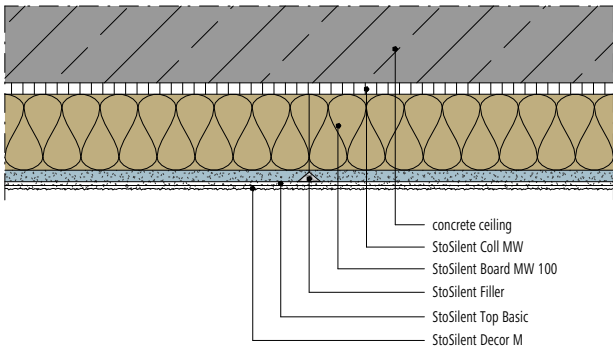
Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
Third-octave band	0.42	0.54	0.59	0.60	0.58	0.50
Octave band	0.42	0.46	0.72	0.58	0.55	0.47
Third-octave band	0.44	0.55	0.62	0.57	0.51	0.47
α_p	0.45	0.50	0.65	0.60	0.55	0.50

Test certificate: 100960_2015-04-21_3

Construction details

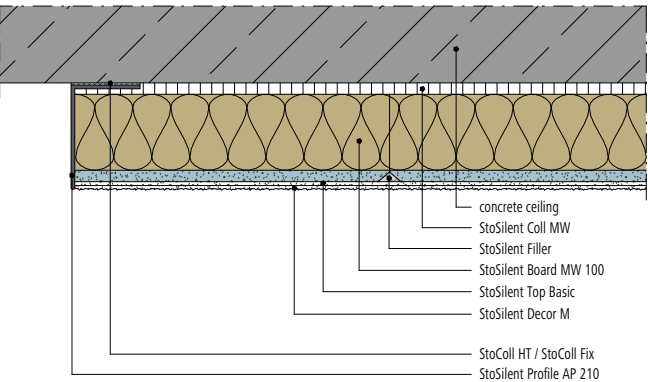
Ceiling (section): system build-up with bonding on concrete ceiling

Sto-HQ-EN_SSDR-BD-1101_2024-04-01



Ceiling (section): field demarcation with StoSilent Profile AP 210

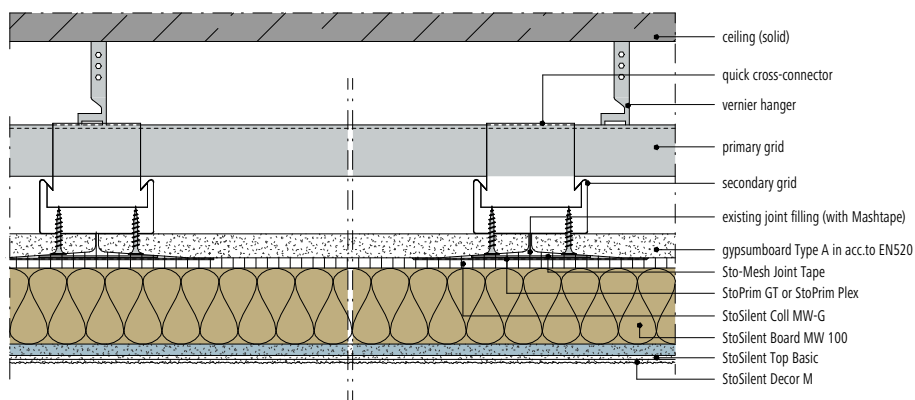
Sto-HQ-EN_SSDR-BD-1102_2024-04-01



Construction details

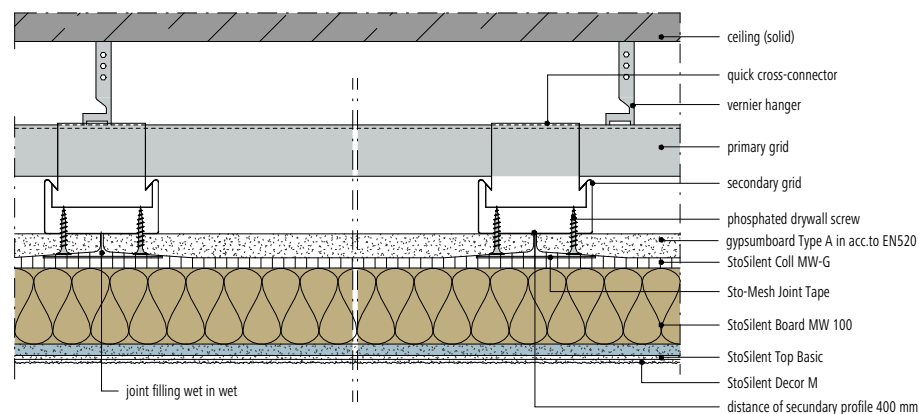
Ceiling (section): system build-up on existing joint filler and levelling coat

Sto-HQ-EN_SSDR-BD-1151_2024-04-01



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

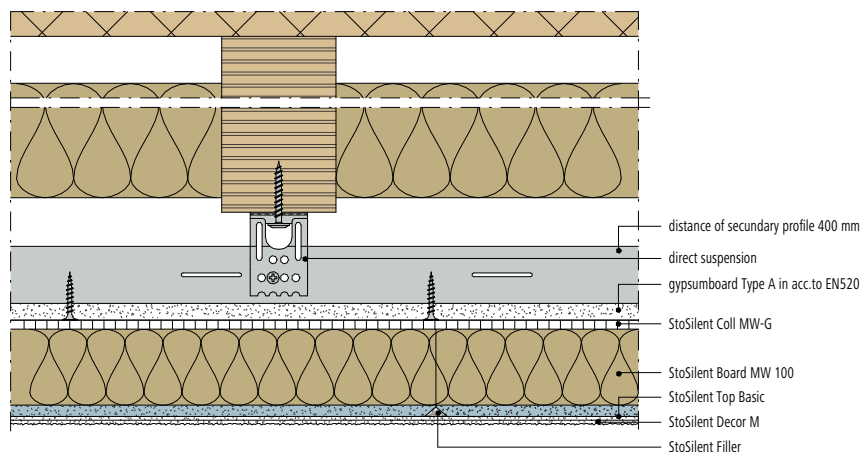
Sto-HQ-EN_SSDR-BD-1152_2024-04-01



Construction details

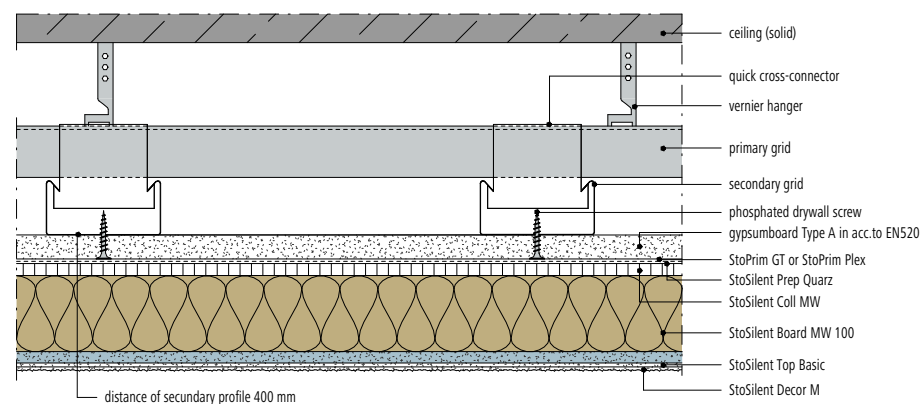
Ceiling (section): wooden beam ceiling with direct suspension

Sto-HQ-EN_SSDR-BD-1153_2024-04-01



Ceiling (section): system build-up for a suspended ceiling with StoSilent Coll MW system adhesive

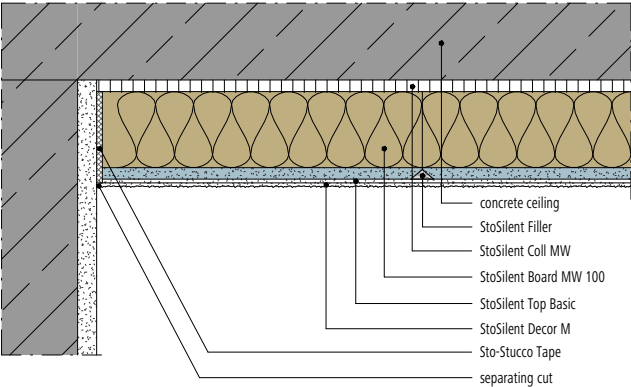
Sto-HQ-EN_SSDR-BD-1154_2024-04-01



Construction details

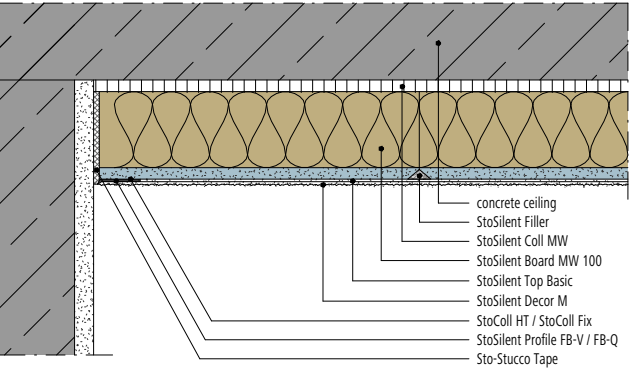
Ceiling (section): wall junction with separating cut

Sto-HQ-EN_SSDR-BD-1201_2024-04-01



Ceiling (section): wall junction with StoSilent Profile FB

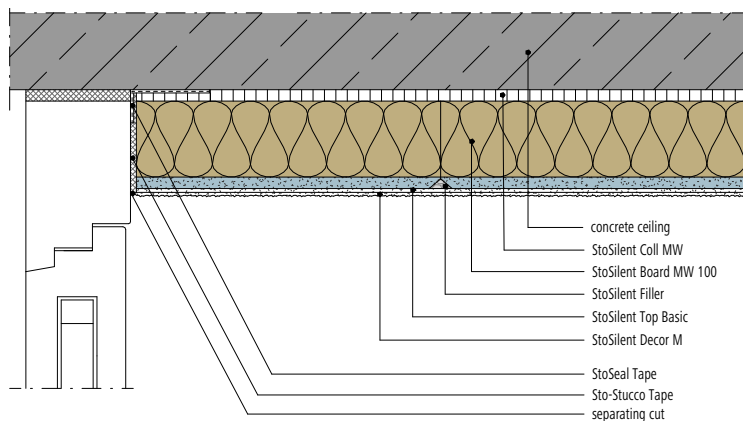
Sto-HQ-EN_SSDR-BD-1202_2024-04-01



Construction details

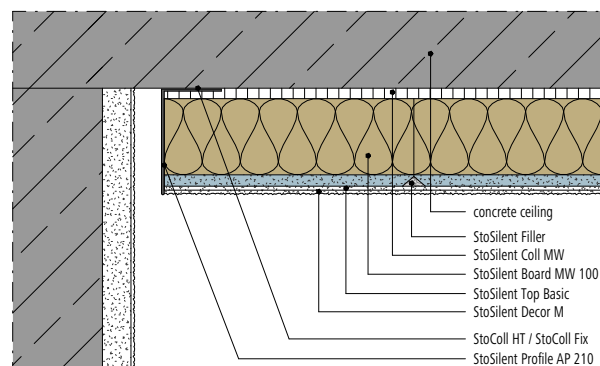
Ceiling (section): connection to a window

Sto-HQ-EN_SSDR-BD-1203_2024-04-01



Ceiling (section): wall junction with shadow gap and StoSilent Profile AP 210

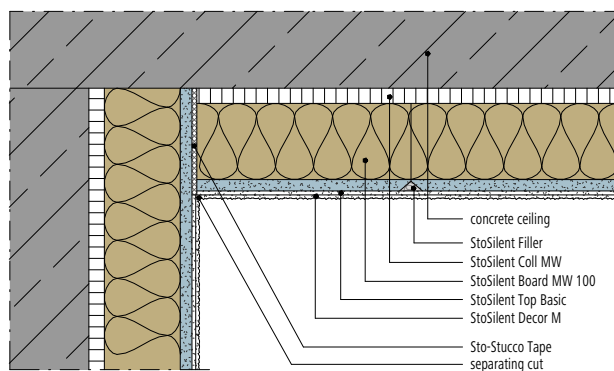
Sto-HQ-EN_SSDR-BD-1204_2024-04-01



Construction details

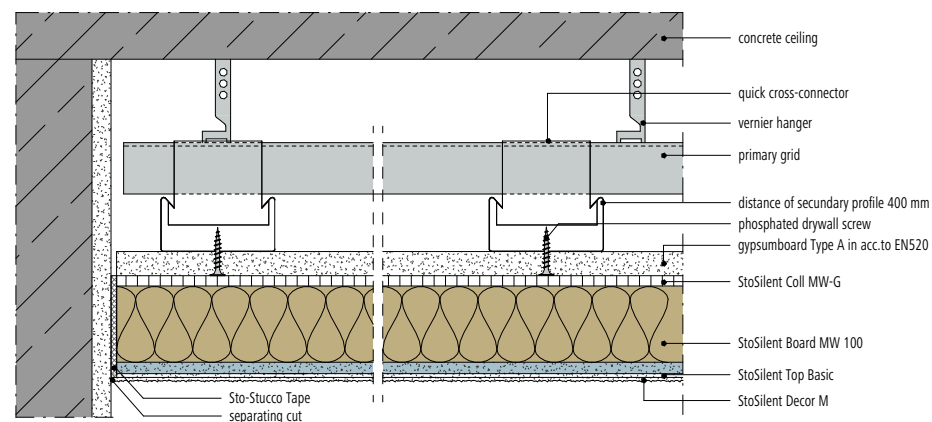
Ceiling (section): connection to a wall covering with StoSilent Direct

Sto-HQ-EN_SSDR-BD-1205_2024-04-01



Ceiling (section): wall junction for a suspended ceiling under a solid ceiling

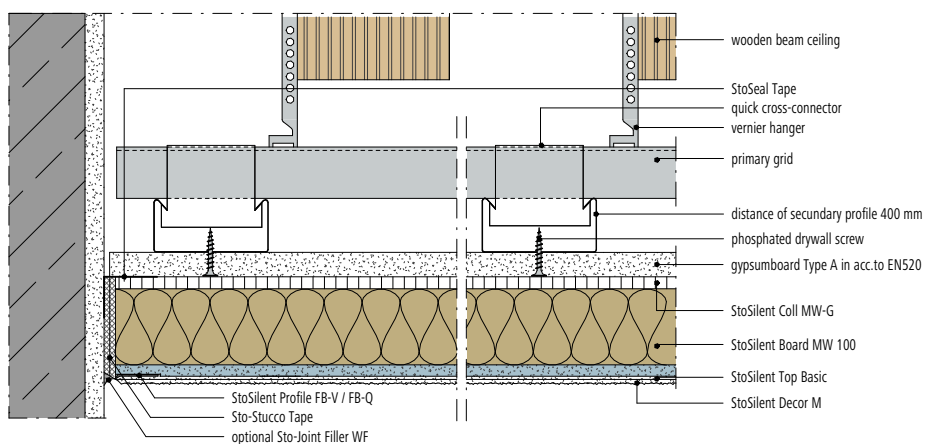
Sto-HQ-EN_SSDR-BD-1251_2024-04-01



Construction details

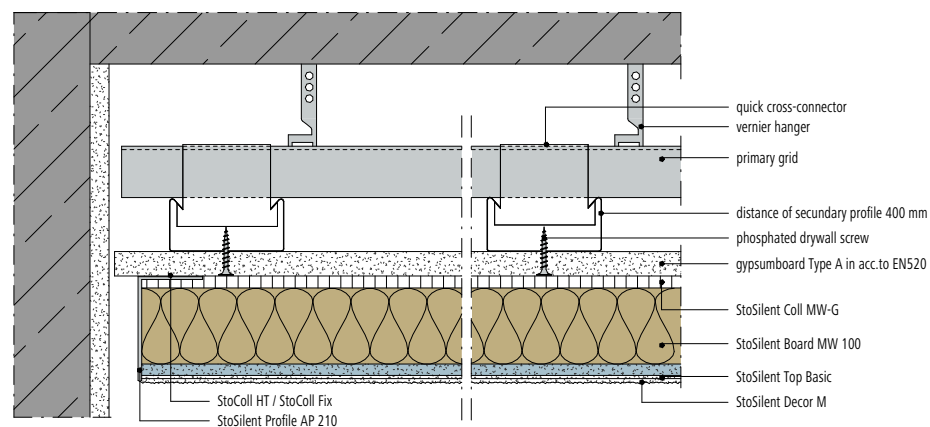
Ceiling (section): wall junction for a suspended ceiling under a wooden beam ceiling

Sto-HQ-EN_SSDR-BD-1252_2024-04-01



Ceiling (section): wall junction for a suspended ceiling with shadow gap

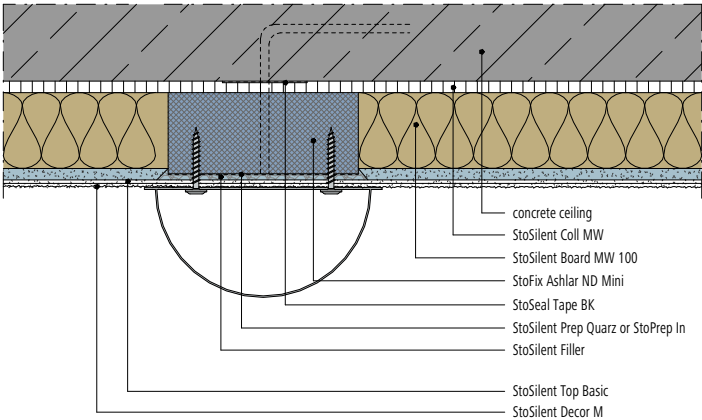
Sto-HQ-EN_SSDR-BD-1253_2024-04-01



Construction details

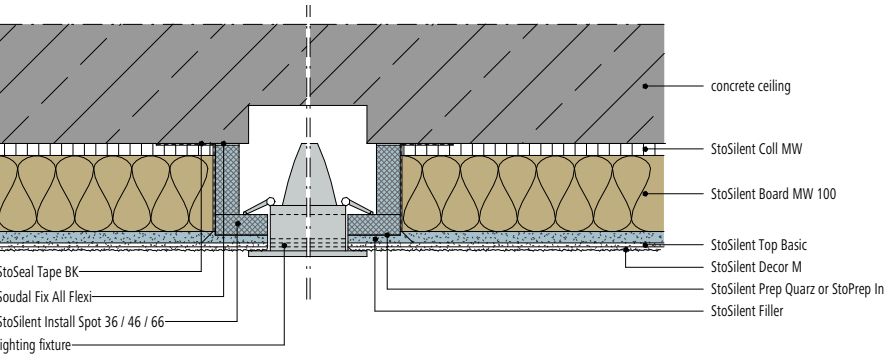
Ceiling (section): fixing of lamps in StoFix Ashlar

Sto-HQ-EN_SSDR-BD-1301_2024-04-01



Ceiling (section): installation of lamps with StoSilent Install Spot

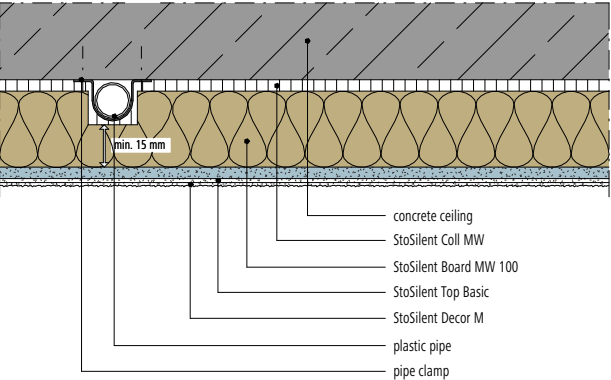
Sto-HQ-EN_SSDR-BD-1302_2024-04-01



Construction details

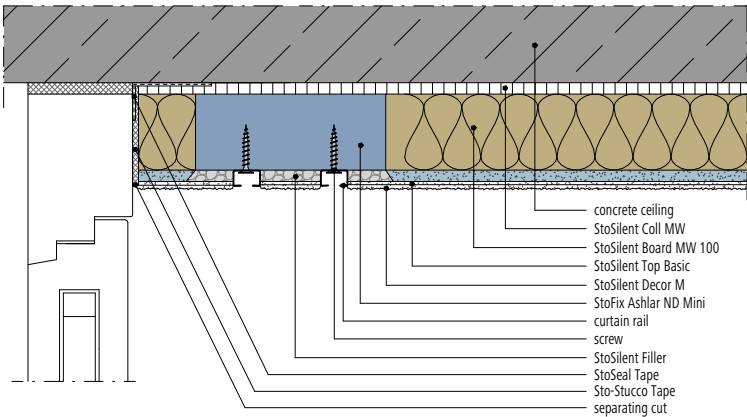
Ceiling (section): integration of a duct for installations

Sto-HQ-EN_SSDR-BD-1303_2024-04-01



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

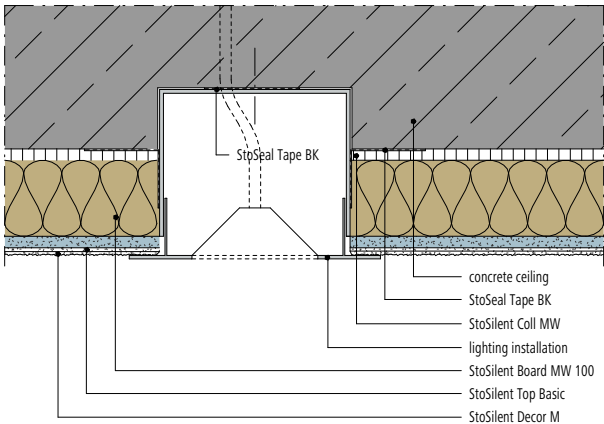
Sto-HQ-EN_SSDR-BD-1304_2024-04-01



Construction details

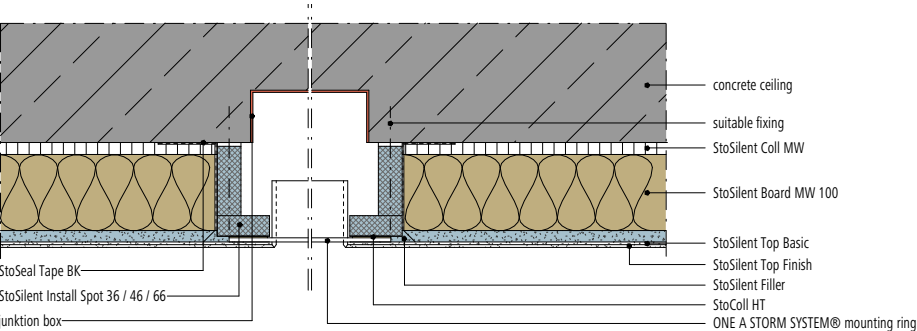
Ceiling (section): installation of lamps

Sto-HQ-EN_SSDR-BD-1305_2024-04-01



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

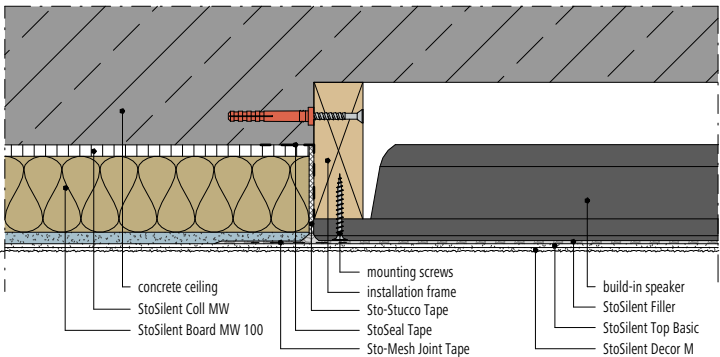
Sto-HQ-EN_SSDR-BD-1306_2024-04-01



Construction details

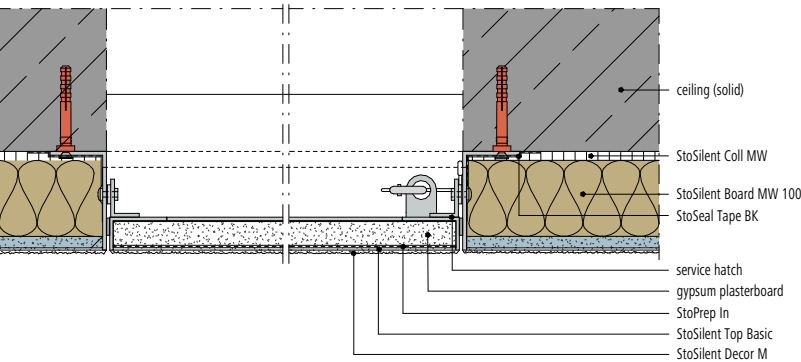
Ceiling (section): installation of an invisible built-in speaker

Sto-HQ-EN_SSDR-BD-1307_2024-04-01



Ceiling (section): installation of a service hatch

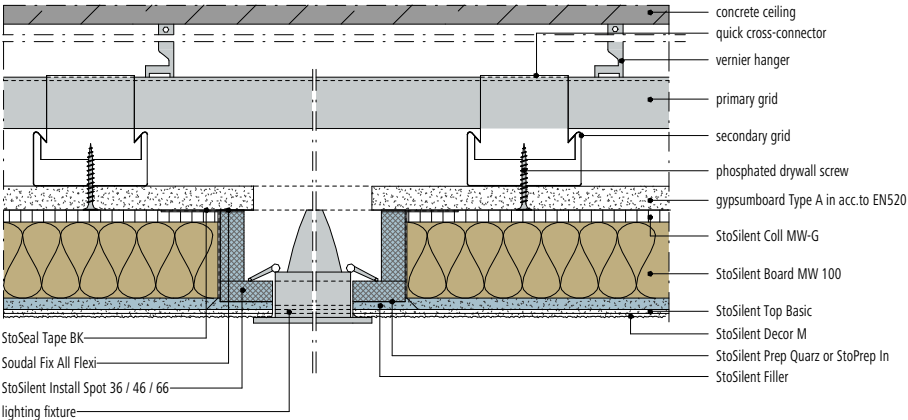
Sto-HQ-EN_SSDR-BD-1310_2024-04-01



Construction details

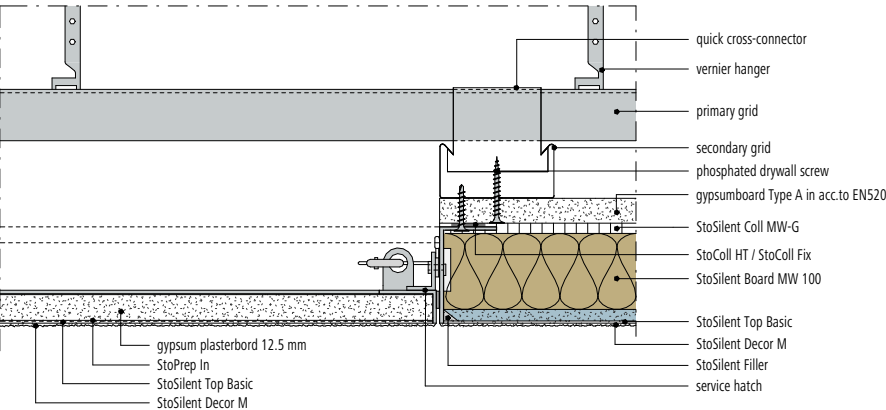
Ceiling (section): installation of lamps with StoSilent Install Spot

Sto-HQ-EN_SSDR-BD-1351_2024-04-01



Ceiling (section): installation of a service hatch in a suspended ceiling

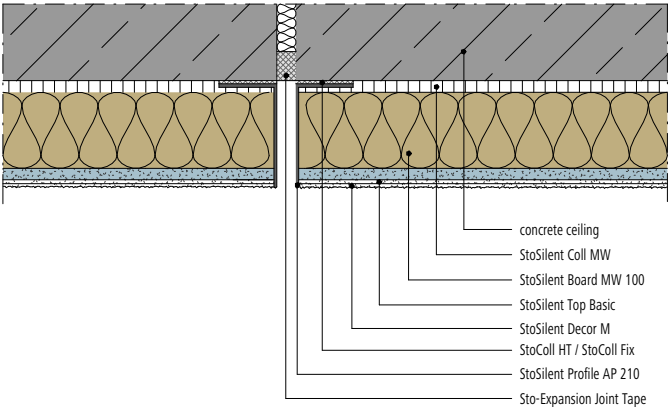
Sto-HQ-EN_SSDR-BD-1353_2024-04-01



Construction details

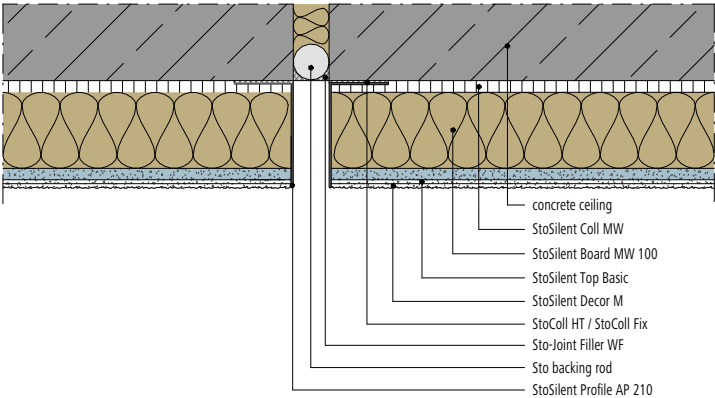
Ceiling (section): structural expansion joint with Sto-Expansion Joint Tape

Sto-HQ-EN_SSDR-BD-1401_2024-04-01



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

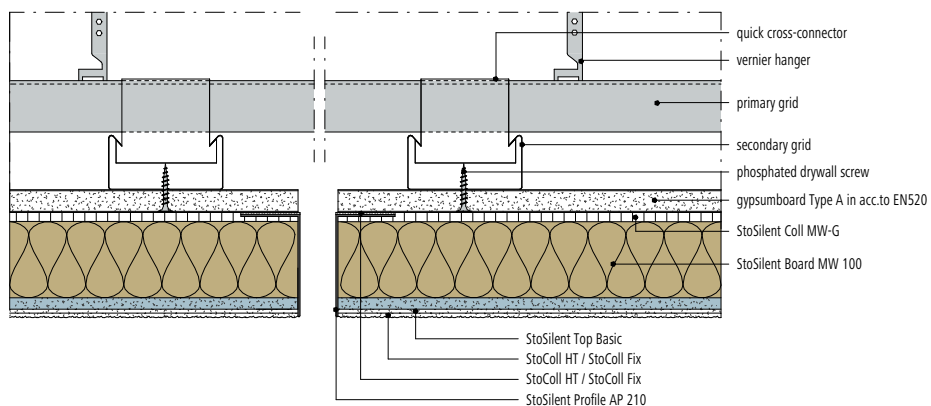
Sto-HQ-EN_SSDR-BD-1402_2024-04-01



Construction details

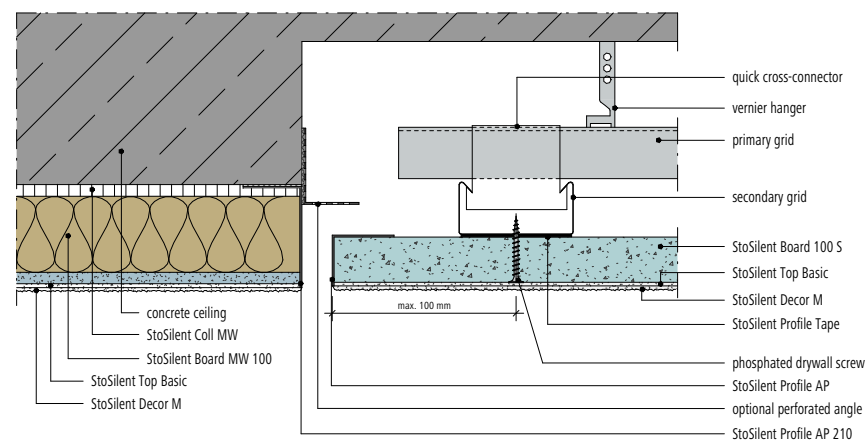
Ceiling (section): system build-up on suspended ceiling with expansion joint

Sto-HQ-EN_SSDR-BD-1451_2024-04-01



Ceiling (section): system transition from StoSilent Direct to StoSilent Distance

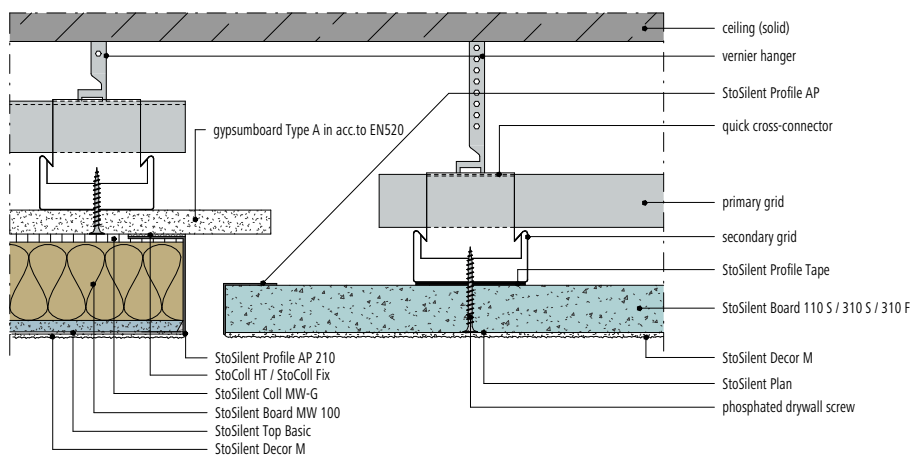
Sto-HQ-EN_SSDR-BD-1501_2024-04-01



Construction details

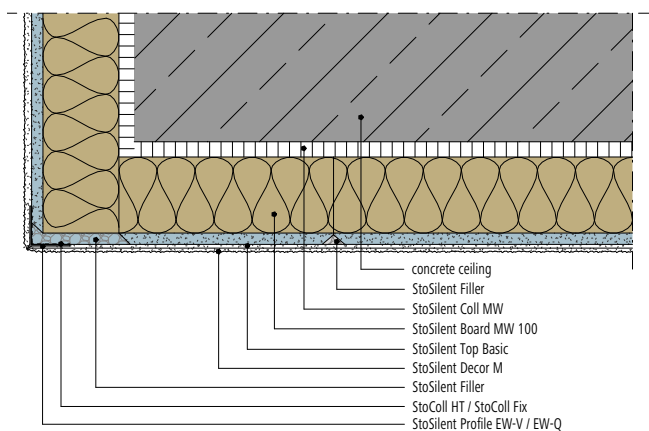
Ceiling (section): system transition from StoSilent Direct to StoSilent Distance

Sto-HQ-EN_SSDR-BD-1551_2024-04-01



Ceiling (section): corner formation in the case of an offset ceiling with optional corner profile

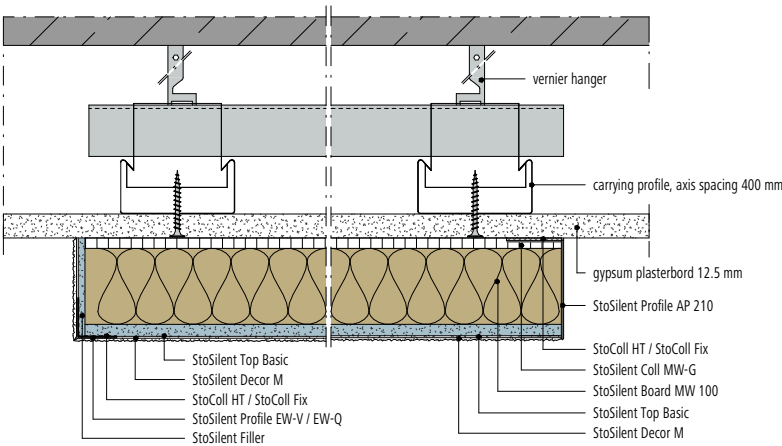
Sto-HQ-EN_SSDR-BD-1601_2024-04-01



Construction details

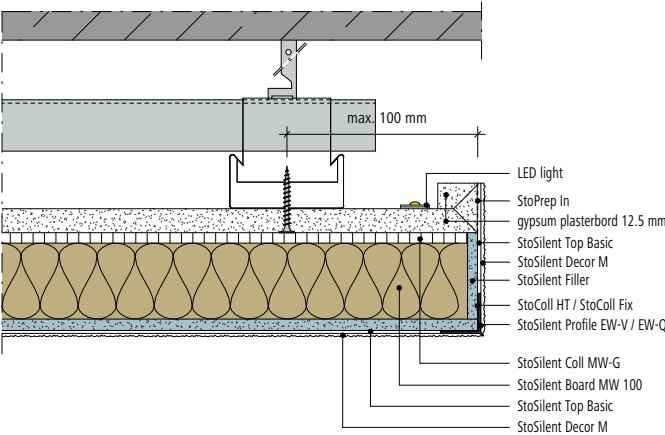
Ceiling (section): finish of partially insulated ceiling with and without StoSilent Profile AP 210

Sto-HQ-EN_SSDR-BD-1651_2024-04-01



Ceiling (section): edge finish with indirect lighting

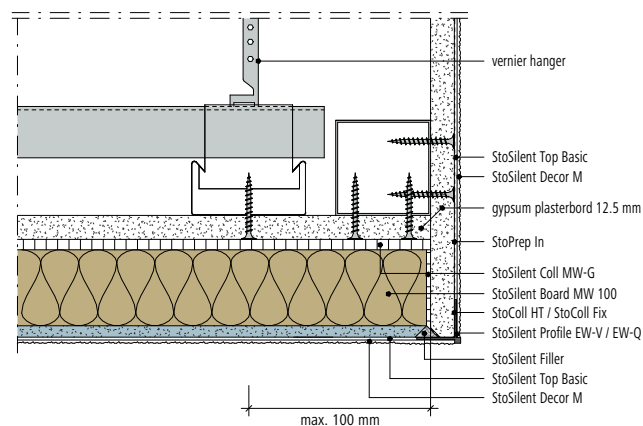
Sto-HQ-EN_SSDR-BD-1652_2024-04-01



Construction details

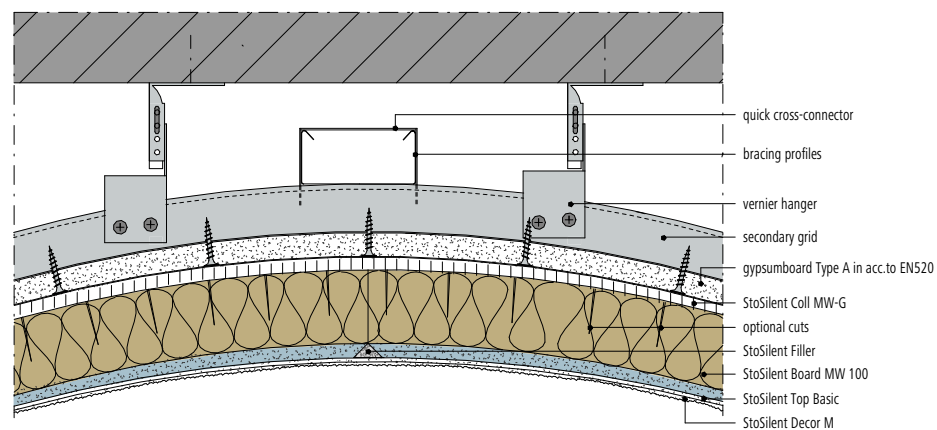
Ceiling (section): edge finish with upstanding edge

Sto-HQ-EN_SSDR-BD-1653_2024-04-01



Ceiling (vertical section): concave curved ceiling and wall areas

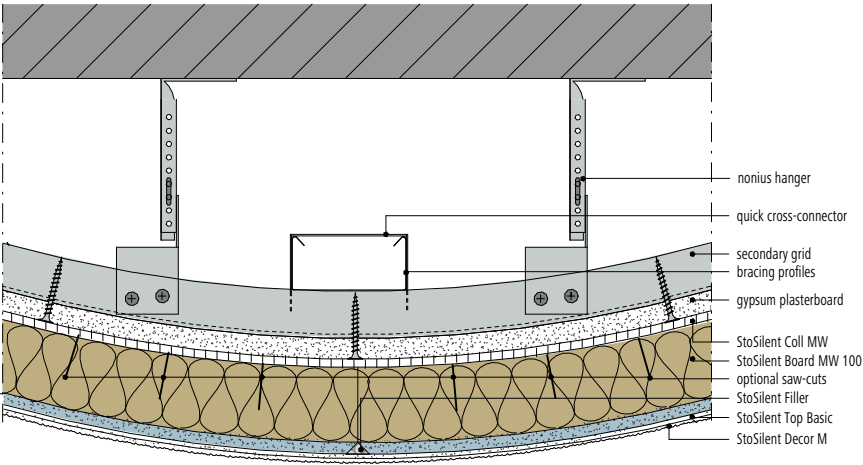
Sto-HQ-EN_SSDR-BD-1801_2024-04-01



Construction details

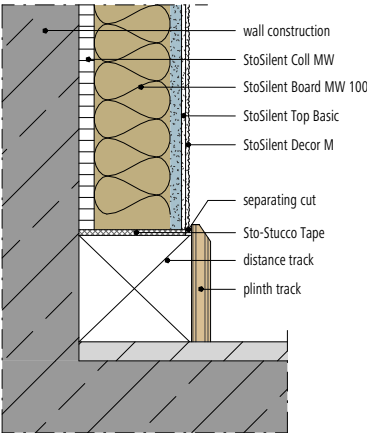
Ceiling (vertical section): convex curved ceiling and wall areas

Sto-HQ-EN_SSDR-BD-1802_2024-04-01



Wall (section): connection of base point

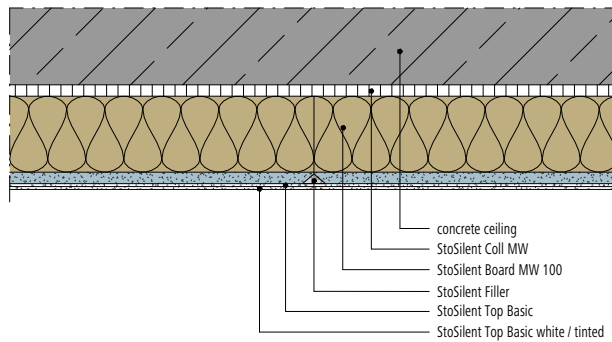
Sto-HQ-EN_SSDR-BD-2201_2024-04-01



Construction details

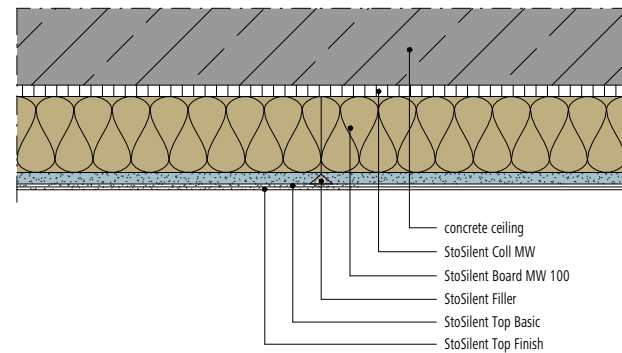
Ceiling (section): system build-up with bonding and StoSilent Top Basic as finishing coat

Sto-HQ-EN_SSDR-BB-1101_2024-04-01



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

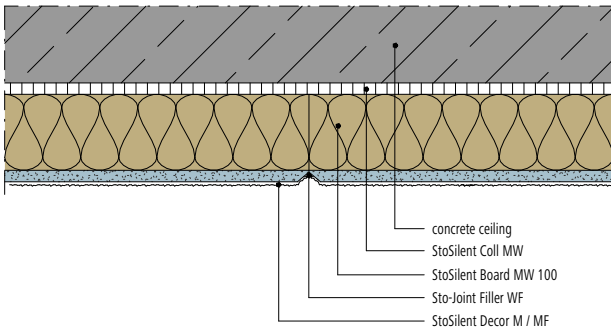
Sto-HQ-EN_SSDR-BF-1101_2024-04-01



Construction details

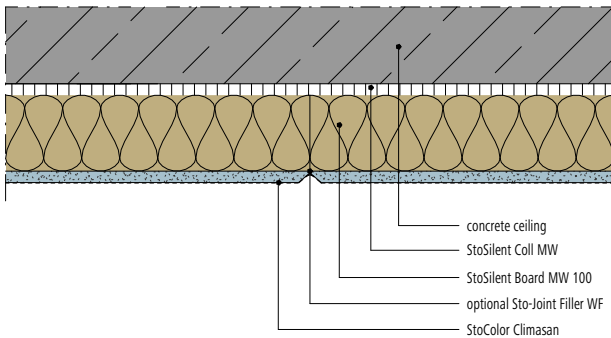
Ceiling (section): system build-up with accentuated joints with StoSilent Decor M/MF as coating

Sto-HQ-EN_SSDR-D-1101_2024-04-01



Ceiling (section): system build-up with accentuated joints with StoColor Climasan as coating

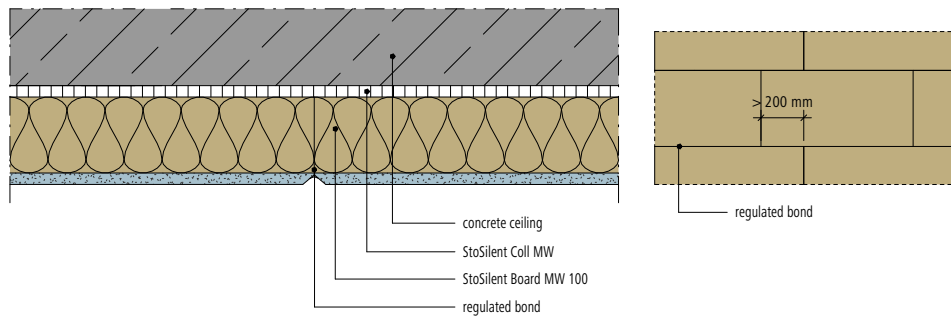
Sto-HQ-EN_SSDR-C-1101_2024-04-01



Construction details

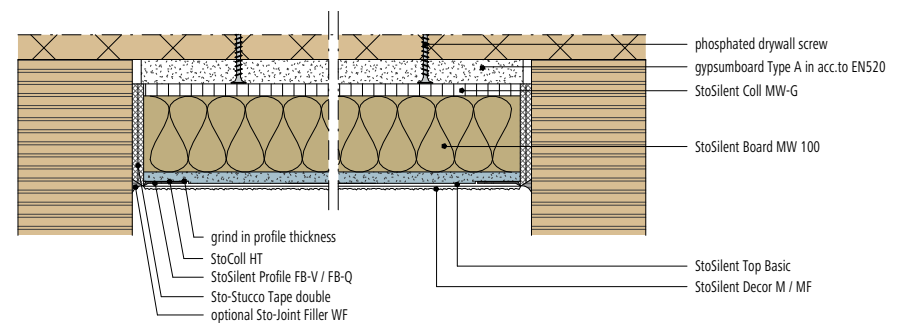
Ceiling (section): system build-up with connection to timber beam

Sto-HQ-EN_SSDR-O-1101_2025-06-01



Ceiling (section): connection to ridge pole in the case of system build-up under a roof slope

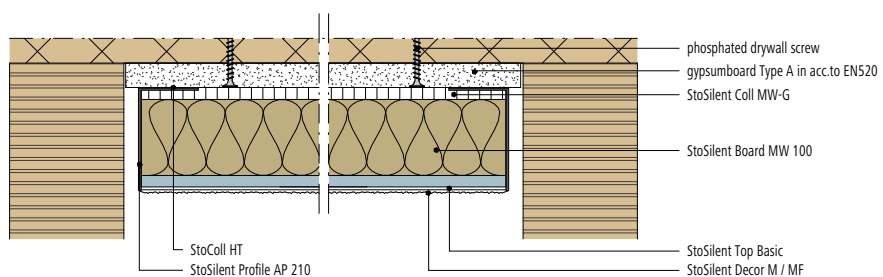
Sto-HQ-EN_SSDR-BD-1155_2025-06-01



Construction details

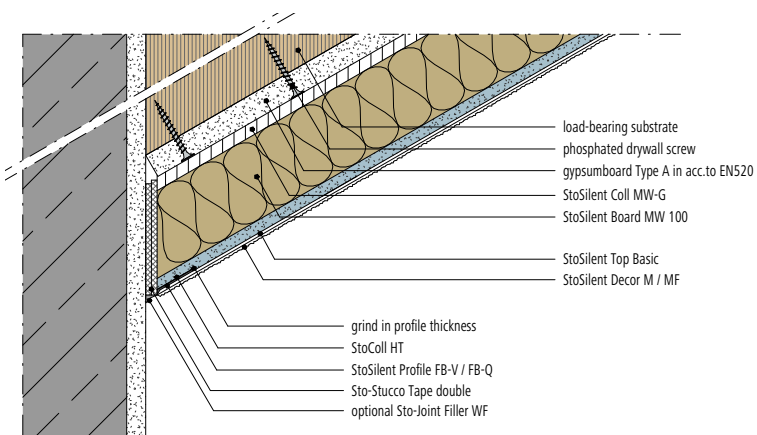
Ceiling (section): system build-up with connection to timber beam with shadow gap

Sto-HQ-EN_SSDR-BD-1156_2025-06-01



Ceiling (section): wall junction in the case of system build-up under a roof slope

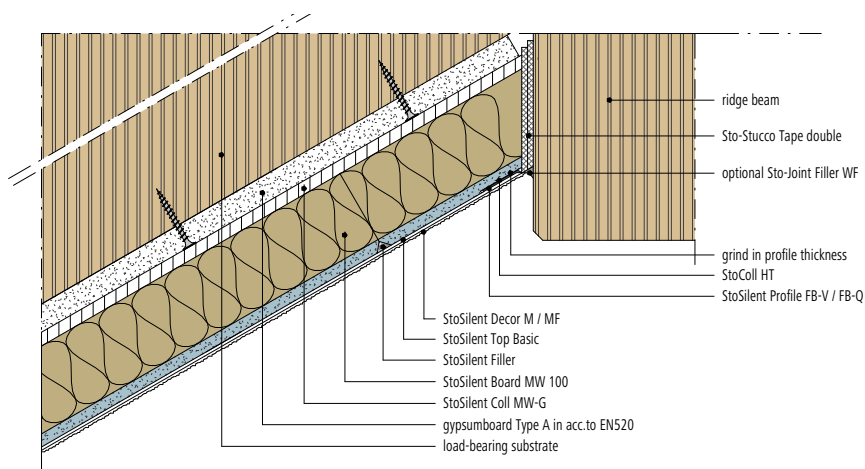
Sto-HQ-EN_SSDR-BD-1254_2025-06-01



Construction details

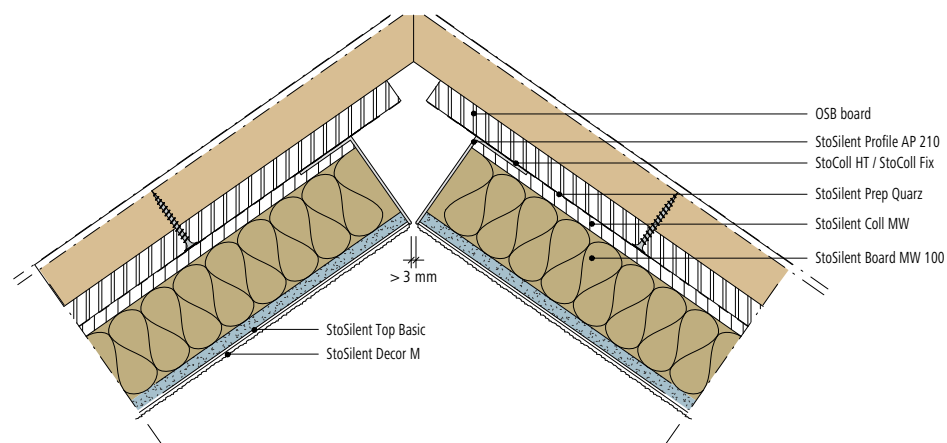
Ceiling (section): connection to a ridge beam for a system build-up under a sloping roof

Sto-HQ-EN_SSDR-BD-1255_2025-10-01



Ceiling (section): system build-up under a roof slope with expansion joint at the roof apex

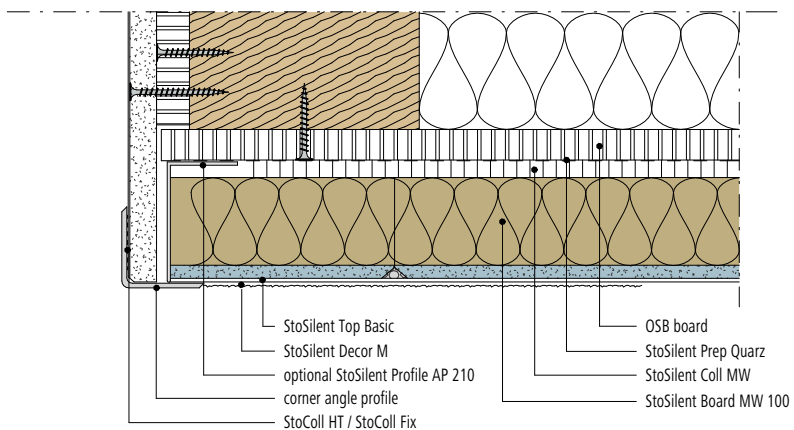
Sto-HQ-EN_SSDR-BD-1410_2025-10-01



Construction details

Ceiling (vertical section): sliding corner formation for a dormer cheek wall

Sto-HQ-EN_SSDR-BD-1605_2025-10-01



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 panel is preservative-free and low-emission.
- Hard-wearing and hygienic absorber material
- Quick and simple application

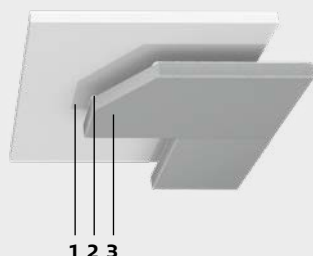
To absorption values

To construction details

To references

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 spectrum

- Colour shades in accordance with RAL colour fan

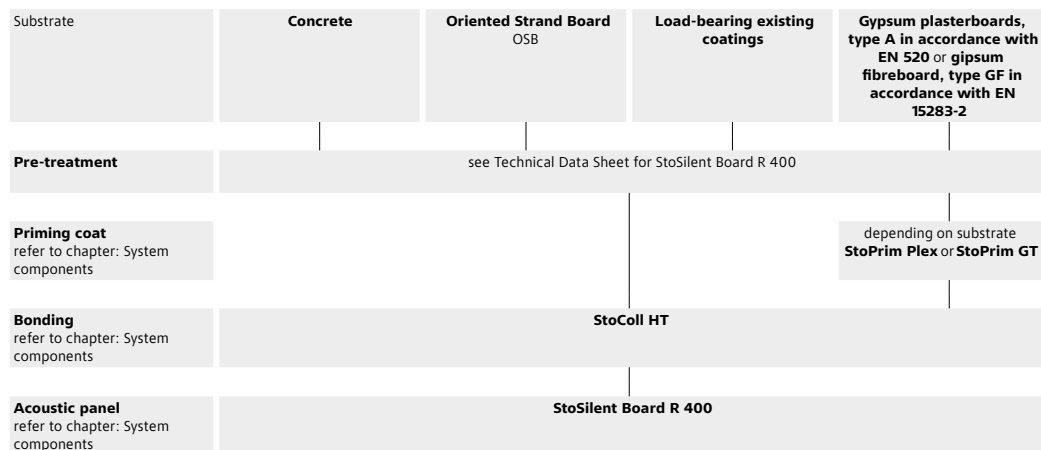
Application

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

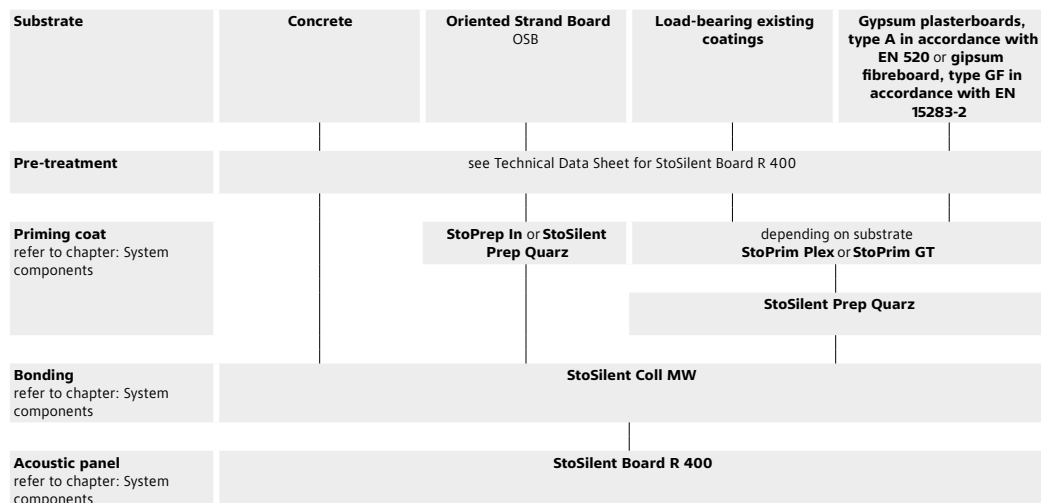


System versions

System description of StoSilent Frame with StoColl HT



System description of StoSilent Frame with StoSilent Coll MW





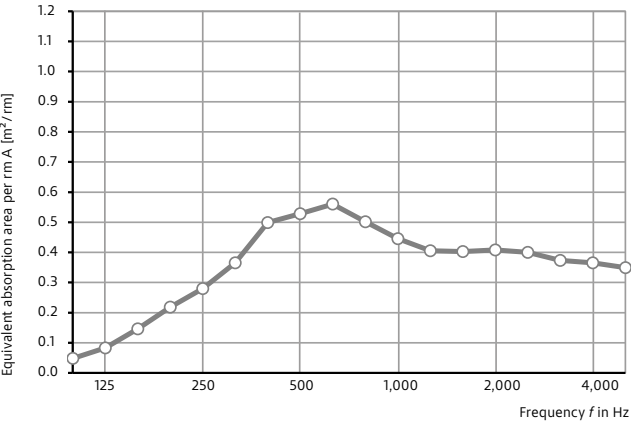
StoSilent Frame – seals of approval and quality

Products and systems		Seals of approval and test procedures				
				Reaction to fire (class) in accordance with EN 13501		Notes
Products	StoColl HT	A+	EC1 Plus	Depending on the system	EN 12004	Preservative-free
	StoSilent Board R 400	A+	–	Depending on the system	–	Preservative-free





Sound characteristics



System: StoSilent Frame
Build-up: StoSilent Board R 400
Coating: colour coating

Thickness: 50 mm
Structural height: approx. 50 mm

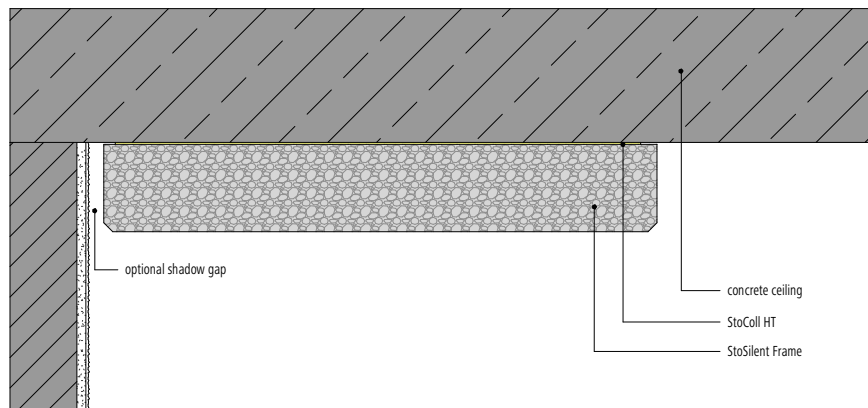
Frequency f in Hz	Equivalent absorption area per rm A [m²/rm]					
	125	250	500	1,000	2,000	4,000
Third-octave band	0.05	0.22	0.50	0.50	0.40	0.37
Octave band	0.08	0.28	0.53	0.45	0.41	0.37
Third-octave band	0.15	0.37	0.56	0.41	0.40	0.35

Test certificate: 100960_2021-05 HR_3 (analysis)

Construction details

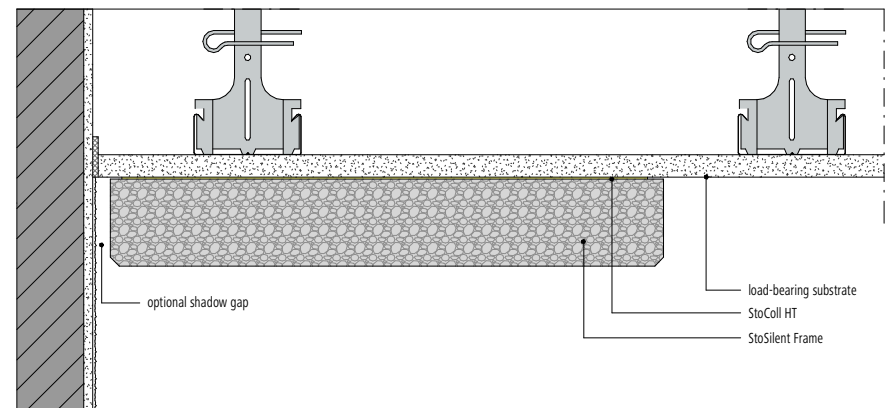
Ceiling (vertical section): wall junction with optional shadow gap

Sto-HQ-EN_SSFR-0100_2022-10-01



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

Sto-HQ-EN_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. The acoustic plaster provides a quick solution for seamless, homogeneous surfaces and is just as easy to apply as conventional spray 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)

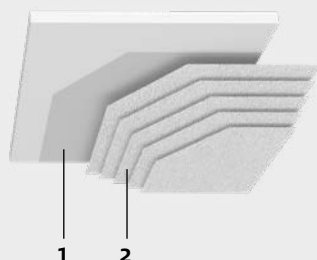
To surfaces

To absorption values

To references

The system

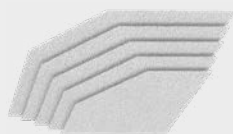
Build-up: StoSilent Compact with StoSilent Miral AP



Carrier layer
1 — Priming coat

Acoustic layer
2 — Finishing coat

Material layer options



StoColor Silent, StoColor Climasan

System properties

Application

- Interior
- For ceilings and upper wall areas
- For even surfaces and barrel vaults
- Do not use in brine baths, steam baths
- Do not use on gypsum fibreboards

Reaction to fire

- Reaction to fire (class) in accordance with EN 13501-1: A2-s1, d0

Application

- Multi-layer
- Thickness: 15 mm or 25 mm
- By trained specialists



System versions

StoSilent Compact system description

System profile Refer to chapter: System components	StoSilent Profile AS StoColl HT or Soudal Fix ALL Flexi
Priming coat Refer to chapter: System components	StoPrim Plex or StoPrim GT or StoPrep Vapor StoSilent Prep Quarz
Finishing coat Refer to chapter: System components	5x StoSilent Miral AP optional StoColor Silent or StoColor Climasan

Surfaces

- 1 StoSilent Miral AP
- 2 StoSilent Miral AP
with colour coating

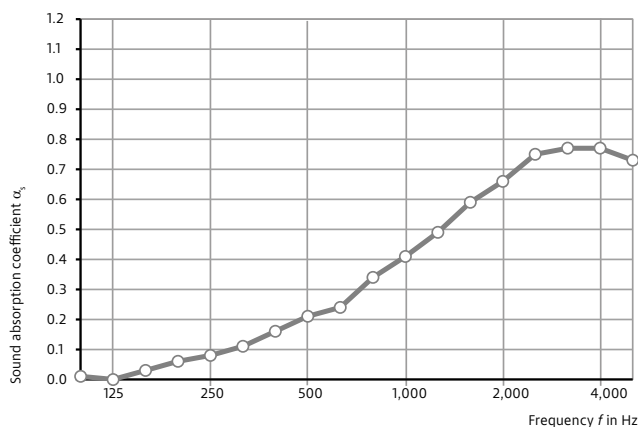




StoSilent Compact – seals of approval and quality

Products and systems		Seals of approval and test procedures	
			Reaction to fire (class) in accordance with EN 13501
Products	StoSilent Miral AP	–	A2-s1, d0 (EN 13501-1), Class 1/A (ASTM E84)
	StoSilent Prep Quarz	A+	Fire classification dependent on use within system

Sound characteristics

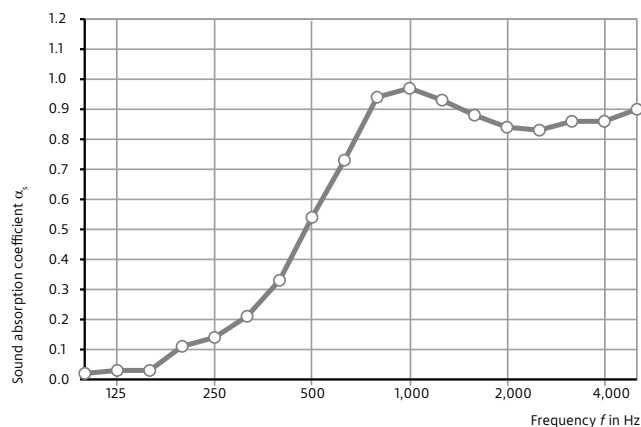


System: StoSilent Compact
Build-up: StoSilent Miral AP, 15 mm, machine application with screw pump
Coating: none
Thickness: 15 mm

Structural height: approx. 15 mm (type A)
 α_w : 0.30 (H)
 NRC: 0.35
Absorber cl.: D

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
Third-octave band	0.01	0.06	0.16	0.34	0.59	0.77
Octave band	0.00	0.08	0.21	0.41	0.66	0.77
Third-octave band	0.03	0.11	0.24	0.49	0.75	0.73
α_p	0.00	0.10	0.20	0.40	0.65	0.75

Test certificate: 100960_2014-09-11_3

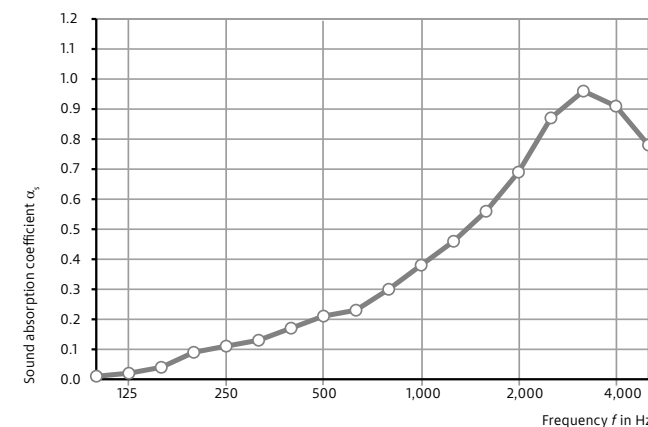


System: StoSilent Compact
Build-up: StoSilent Miral AP, 25 mm, machine application with screw pump
Coating: none
Thickness: 25 mm

Structural height: approx. 25 mm (type A)
 α_w : 0.45 (MH)
 NRC: 0.60
Absorber cl.: D

Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
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
α_p	0.05	0.15	0.55	0.95	0.85	0.85

Test certificate: 100960_2015-08-31_18



System: StoSilent Direct
Build-up: StoSilent Miral AP, 15 mm, machine application with hopper gun
Coating: none
Thickness: 15 mm

Structural height: approx. 21 mm (type A)
 α_w : 0.30 (MH)
 NRC: 0.35
Absorber cl.: D

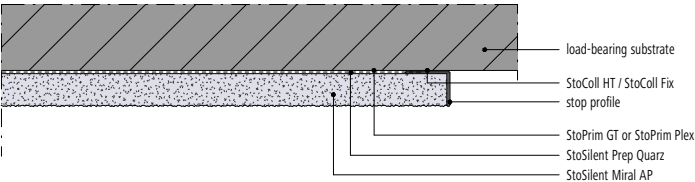
Frequency f in Hz	Sound absorption coefficient α_s					
	125	250	500	1,000	2,000	4,000
Third-octave band	0.01	0.09	0.17	0.30	0.56	0.96
Octave band	0.02	0.11	0.21	0.38	0.69	0.91
Third-octave band	0.04	0.13	0.23	0.46	0.87	0.78
α_p	0.00	0.10	0.20	0.40	0.70	0.90

Test certificate: 100960_2014-09-11_4

Construction details

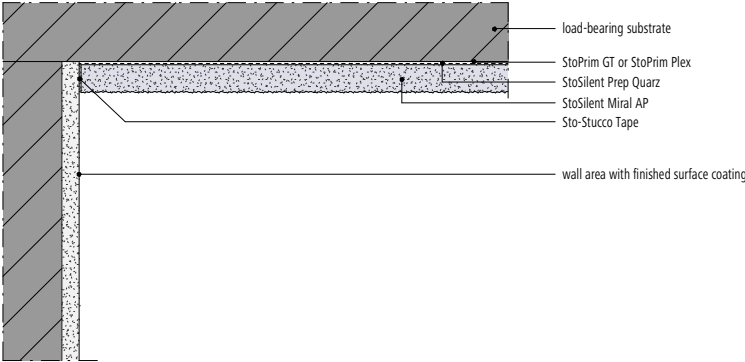
Ceiling (vertical section): field demarcation

Sto-HQ-EN_SSCM-1101_2024-04-01



Ceiling (vertical section): wall junction with stucco tape

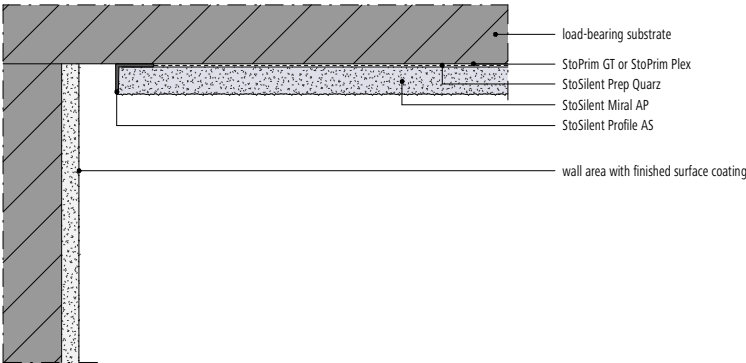
Sto-HQ-EN_SSCM-1201_2024-04-01



Construction details

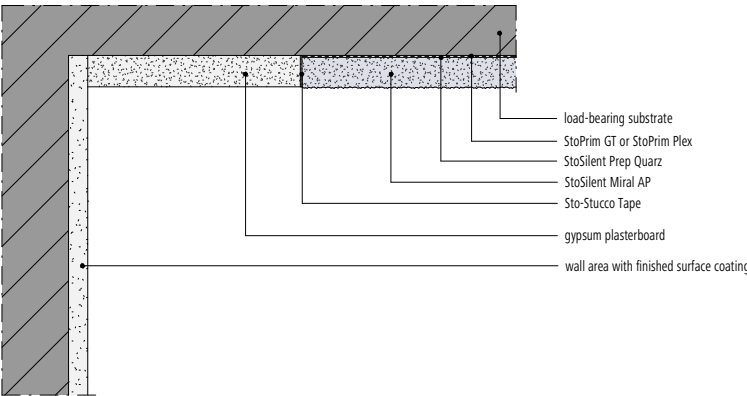
Ceiling (vertical section): wall junction with shadow gap

Sto-HQ-EN_SSCM-1202_2024-04-01



Ceiling (vertical section): levelling frieze

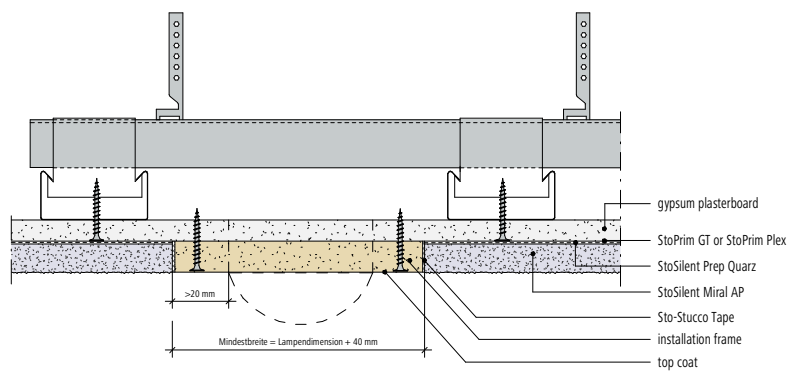
Sto-HQ-EN_SSCM-1203_2024-04-01



Construction details

Ceiling (vertical section): installation frame for ceiling lighting

Sto-HQ-EN_SSCM-1301_2024-04-01



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

To surfaces

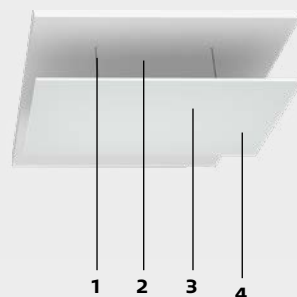
To detail drawings

To absorption values

To references

The system

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

Format

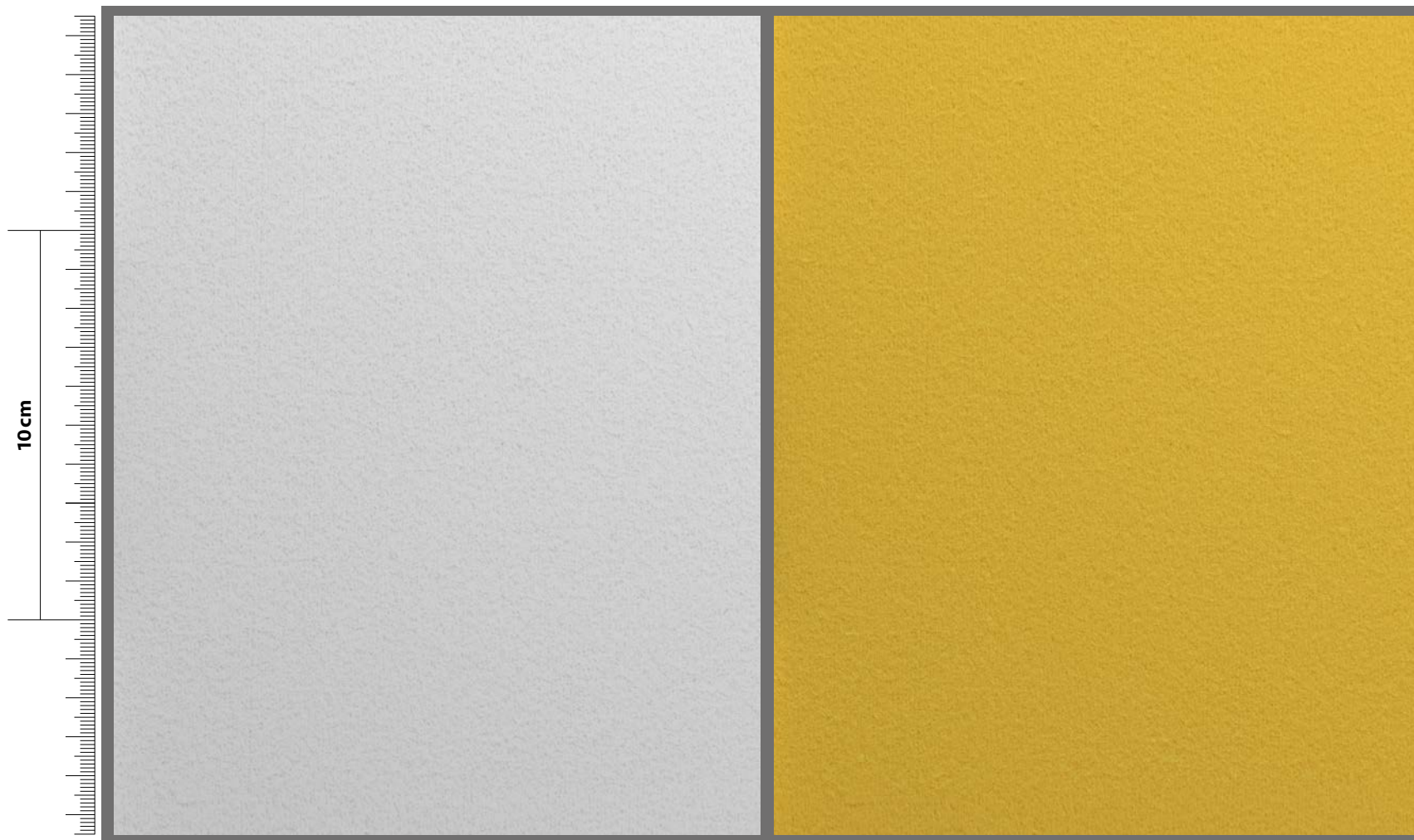
- Thickness: 19 mm
- Length x width: 1,150 x 1,150 mm, 2,350 x 750 mm, 2,350 x 1,150 mm, 1,150 mm circular
- Custom variants (polygons and free-form shapes) on request

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

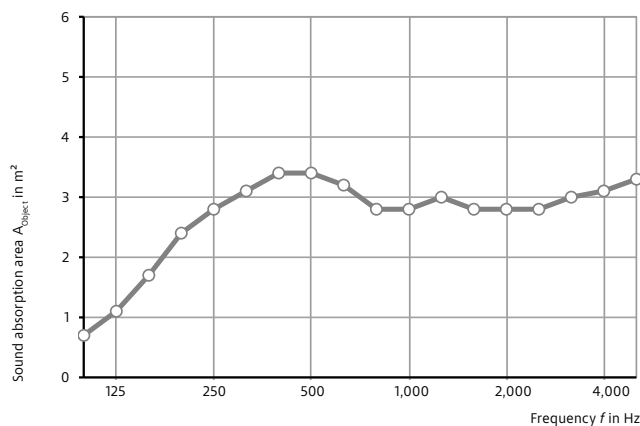
- 1 StoSilent Modular 230
- 2 StoSilent Modular 230
with colour coating



StoSilent Modular – seals of approval and quality

Products and systems		Seals of approval and test procedures		
			Reaction to fire (class) in accordance with EN 13501	
Systems	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

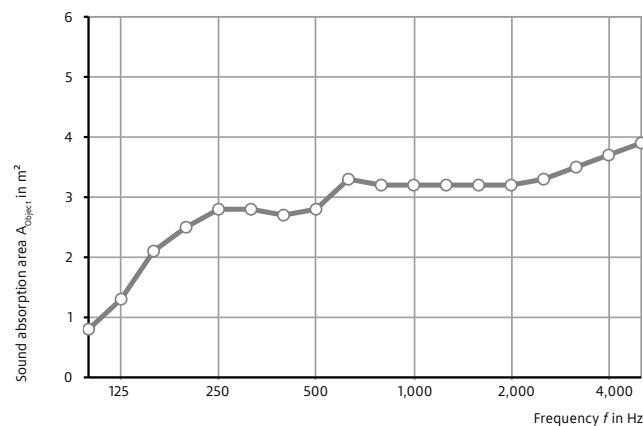


System: StoSilent Modular 230 + PET
Format: 2.35 m x 1.15 m
Coating: fine-textured colour coating, white

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

Frequency f in Hz	Sound absorption area A_{Object} in m^2					
	125	250	500	1,000	2,000	4,000
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

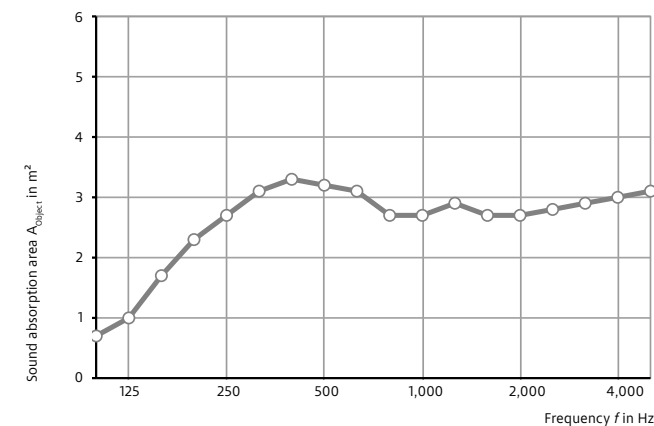


System: StoSilent Modular 230 + PET
Format: 2.35 m x 1.15 m
Coating: fine-textured colour coating, white

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

Frequency f in Hz	Sound absorption area A_{Object} in m^2					
	125	250	500	1,000	2,000	4,000
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



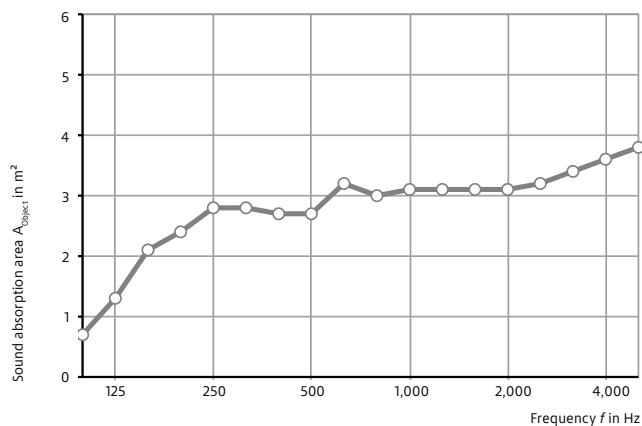
System: StoSilent Modular 230 + PET
Format: 2.35 m x 1.15 m
Coating: fine-textured colour coating, tinted (dark blue)

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

Frequency f in Hz	Sound absorption area A_{Object} in m^2					
	125	250	500	1,000	2,000	4,000
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

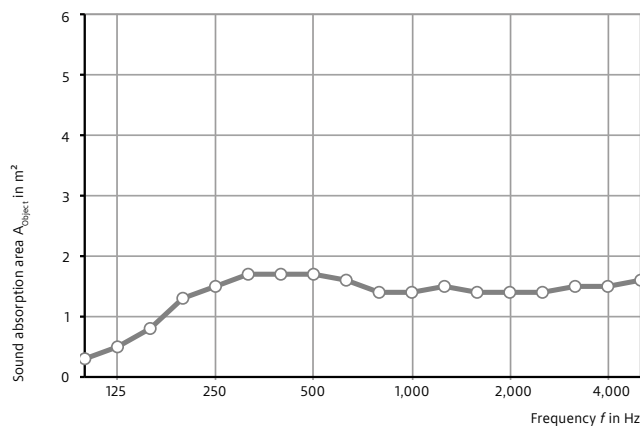


System: StoSilent Modular 230 + PET
Format: 2.35 m x 1.15 m
Coating: fine-textured colour coating, tinted (dark blue)

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

Frequency f in Hz	Sound absorption area A_{Object} in m^2					
	125	250	500	1,000	2,000	4,000
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

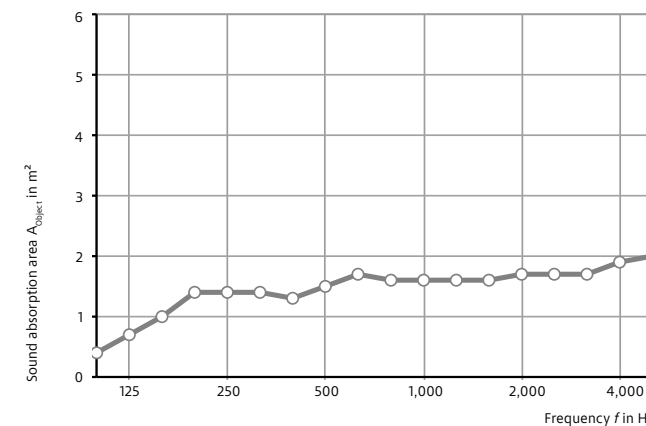


System: StoSilent Modular 230 + PET
Format: 1.15 m x 1.15 m
Coating: fine-textured colour coating, white

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

Frequency f in Hz	Sound absorption area A_{Object} in m^2					
	125	250	500	1,000	2,000	4,000
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



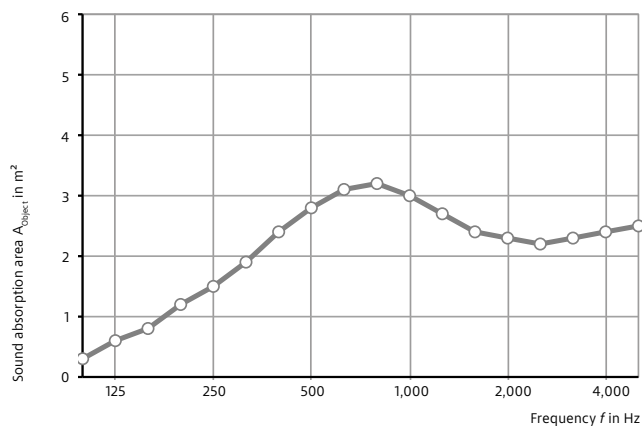
System: StoSilent Modular 230 + PET
Format: 1.15 m x 1.15 m
Coating: fine-textured colour coating, white

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

Frequency f in Hz	Sound absorption area A_{Object} in m^2					
	125	250	500	1,000	2,000	4,000
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

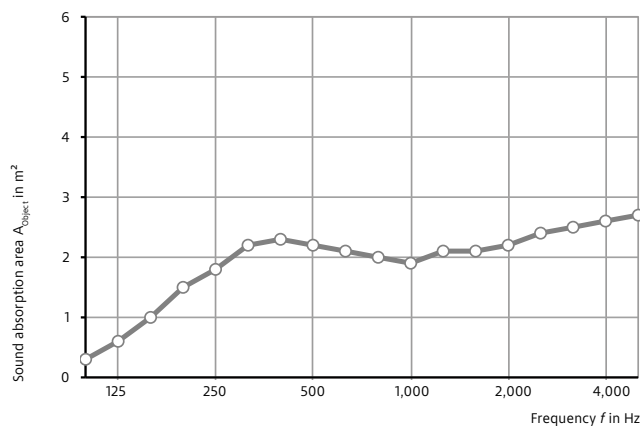
Sound characteristics



System: StoSilent Modular 230 as wall element + PET
Thickness: 19 mm (without PET)
Format: 2.35 m x 1.15 m
Structural height: 51 mm
Coating: fine-textured colour coating, white

Frequency <i>f</i> in Hz	Sound absorption area <i>A</i> _{Object} in m²					
	125	250	500	1,000	2,000	4,000
Third-octave band	0.30	1.20	2.40	3.20	2.40	2.30
Octave band	0.60	1.50	2.80	3.00	2.30	2.40
Third-octave band	0.80	1.90	3.10	2.70	2.20	2.50

Test certificate: 100960-2019-12-17_1



System: StoSilent Modular 230
Thickness: 19 mm
Format: 2.35 m x 1.15 m
Structural height: 200 mm
Coating: fine-textured colour coating, white

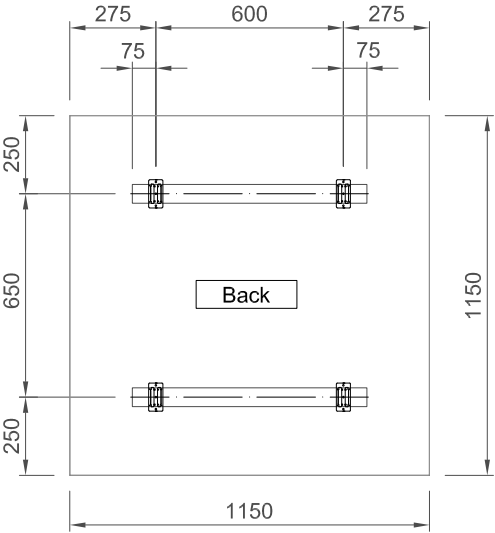
Frequency <i>f</i> in Hz	Sound absorption area <i>A</i> _{Object} in m²					
	125	250	500	1,000	2,000	4,000
Third-octave band	0.30	1.50	2.30	2.00	2.10	2.50
Octave band	0.60	1.80	2.20	1.90	2.20	2.60
Third-octave band	1.00	2.20	2.10	2.10	2.40	2.70

Test certificate: 100960_2021-05 HR_16

Construction details

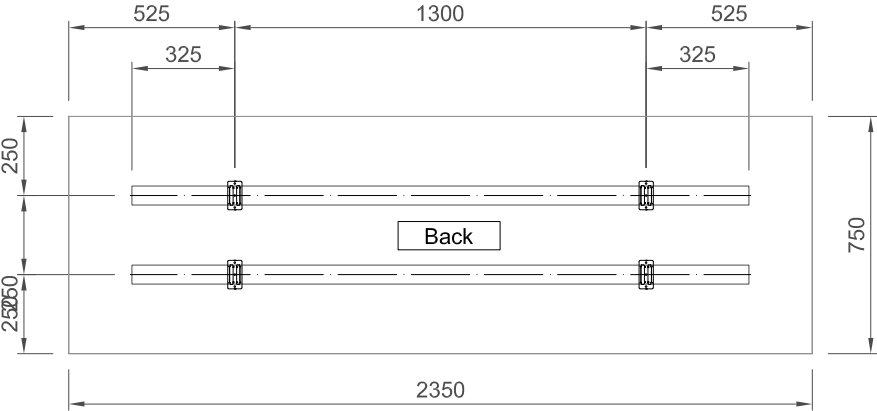
Ceiling element: StoSilent Modular 230

Sto-HQ-EN_SSMO 230_1150x1150_2024-04-01



Ceiling element: StoSilent Modular 230

Sto-HQ-EN_SSMO 230_2350x750_2024-04-01



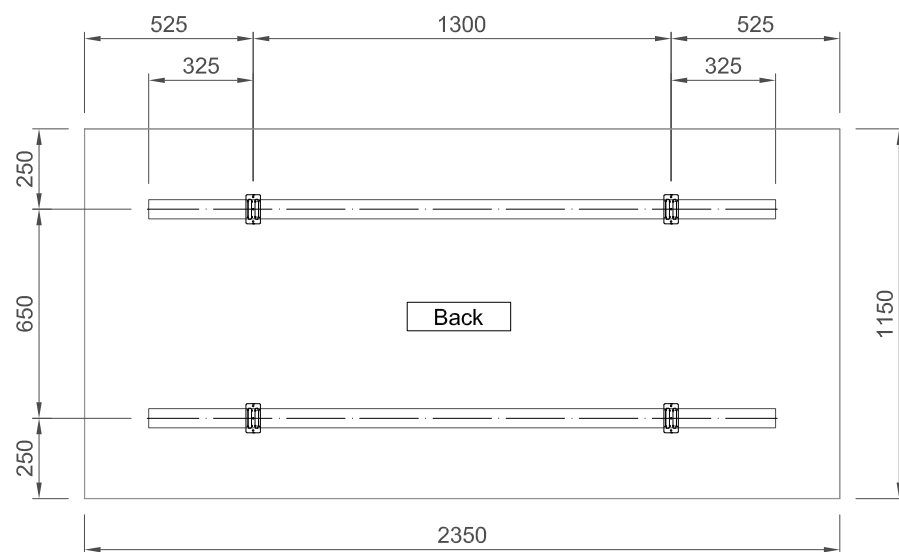
To absorption values

To references

Construction details

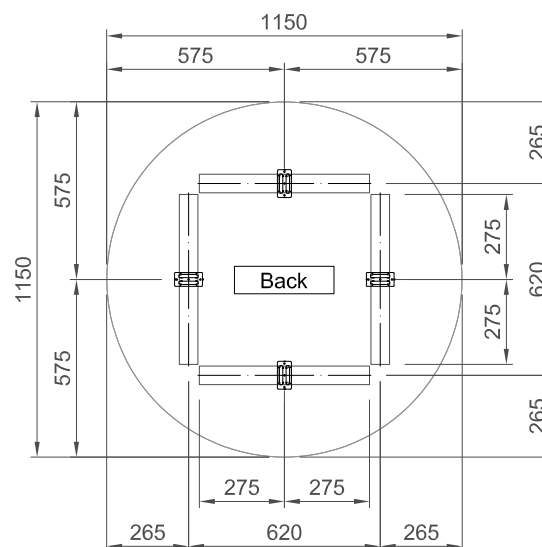
Ceiling element: StoSilent Modular 230

Sto-HQ-EN_SSMO 230_2350x1150_2024-04-01



Ceiling element: StoSilent Modular 230

Sto-HQ-EN_SSMO 230_R57.5_2024-04-01



To absorption values

To references

Reference overview



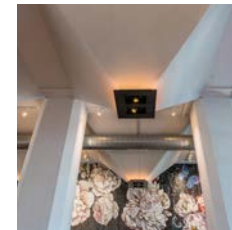
MOAE – Huamao Museum of Art Education, Ningbo, CN



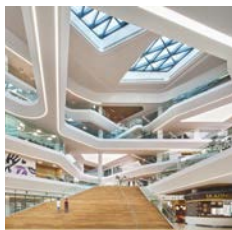
Harbitz Torg, Oslo, NO



Haus der Bayerischen Geschichte, Regensburg, DE



Café Giuseppe × Kunstmühle, Rosenheim, DE



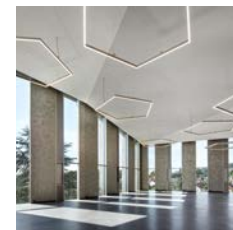
Unilever's Indonesia headquarters in Jakarta, ID



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



MAC II Museum Art & Cars 2, Singen, DE



Arter, Istanbul, TR



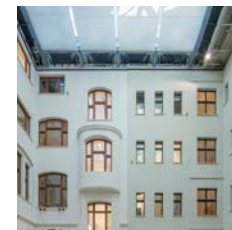
Operation Smile Centre, Oujda, MAR



Vocational schools, Donaueschingen, DE



Der Öschberghof, Donaueschingen, DE



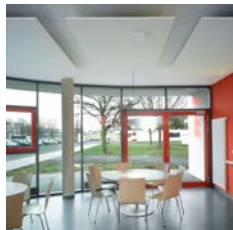
IHK for Munich and Upper Bavaria (IHK für München und Oberbayern), headquarters, Munich, DE



Reference overview



Casino Milupa, Fulda, DE



Das Spittelberg, Vienna, AT



Safran organic catering, Radolfzell, DE



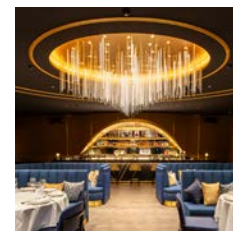
Kirnbacher Hof, Wolfach-Kirnbach, DE



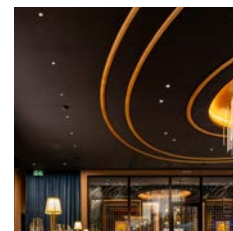
St. Gallus day-care centre, Merzhausen, DE



Office, Niederglatt, CH



Billionaire, St. Moritz, CH



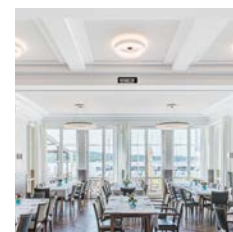
Statsgymnasium, Aarhus, DK



MEG Saline, Bad Zurzach, CH



Thurgau Lake Constance, Thurgau, CH



Bayrischer Yachtclub, Starnberg, DE



MOAE – Huamao Museum of Art Education Ningbo, CN

Architecture: Carlos Castanheira
and Álvaro Siza Vieira, Porto, PT
Sto proficiency: StoSilent Distance
S, StoSilent Decor M
Photo: HouPictures, CN



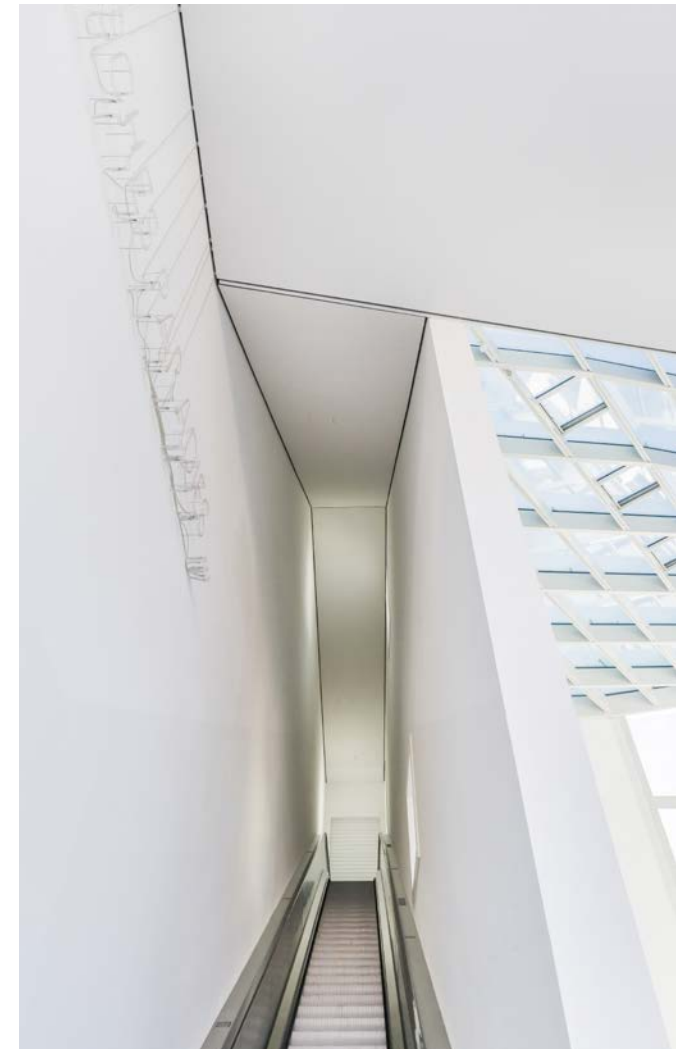
Harbitz Torg Oslo, NO

Building owner: Møller Eiendom Holding AS, Oslo, NO
Architecture: LPO arkitekter A/S, Oslo, NO
Specialised trade: Byggimpuls as, Oslo, NO
Sto proficiency: StoSilent Distance S, StoSilent, StoSilent Decor M
Photo: Tove Lauluten, Oslo, NO



Haus der Bayerischen Geschichte Regensburg, DE

Building owner: Staatliches Bauamt
Regensburg, Regensburg, DE
Architecture: wörner traxler richter
planungsgesellschaft mbh,
Frankfurt, DE
Specialised trade: Akustik-,
Stuck- und Trockenbau Sommer
GmbH, Kirchdorf, DE, Reiner Pock
Malereibetrieb, Langenaltheim, DE
Sto proficiency: StoSilent Distance
S, StoSilent Top Finish
Photo: Boris Storz, Munich, DE



Café Giuseppe × Kunstmühle Rosenheim, DE

Building owner: Quest AG,
Kolbermoor, DE
Architecture: Guggenbichler +
Wagenstaller GbR, Rosenheim, DE
Specialised trade: Malerbetrieb
Hübsch, Rosenheim, DE
Sto proficiency: StoSilent Distance
S, StoSilent Top Basic
Photo: Boris Storz, Munich, DE



Unilever's Indonesia headquarters Jakarta, ID

Building owner: PT Unilever Indonesia, Tbk, Banten, ID
Architecture: Aedas, Singapore, SG
Specialised trade: PT Panutan Sejati, Jakarta, ID
Sto proficiency: StoSilent Distance S, StoSilent Board 110 S, StoSilent Decor M
Photo: Sasja van Vechgel, Architenthis Asia Pte, Ltd, Singapore, SG



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

Building owner: Dr. Jean Bausch GmbH & Co. KG, Cologne, DE
Architecture: Thea Löhr Architektin, Cologne, DE
Specialised trade: Grahovic Bau, Leverkusen, DE
Sto proficiency: StoSilent Distance S, StoSilent Board 110 S, StoSilent Decor M
Photo: Guido Erbring, Cologne, DE



MAC II Museum Art & Cars 2 Singen, DE

Building owner: Hermann Maier
and Gabriela Unbehaun-Maier,
Singen, DE
Architecture: Daniel Binder,
Gottmadingen, DE
Specialised trade: Tip-Top-Bau
GmbH, Hilzingen, DE
Sto proficiency: StoSilent Distance S,
StoSilent Decor M, StoSilent Decor MF
Photo: Martin Baltinger, Böblingen, DE



Arter Istanbul, TR

Building owner: Vehbi Koç
Foundation, Istanbul, TR
Architecture: Grimshaw Architects,
London, UK
Specialised trade: Baf Control,
Istanbul, TR
Sto proficiency: 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

Architecture: Bea Sennewald,
London, UK

Specialised trade: Webb Yates
Engineers Ltd., London, UK,
Max Fordham, London, UK

Sto proficiency: StoTherm Classic,
StoSignature, StoSilent Distance S,
StoSilent Decor M



Vocational schools Donaueschingen, DE

Building owner: district office,
Villingen-Schwenningen, DE

Architecture: Formgewand,
Stühlingen, DE

Specialised trade: Stuckateurbetrieb
Gemeinder, Donaueschingen, DE

Sto proficiency: StoSilent Distance S,
StoSilent Decor M

Photo: Martin Baitinger, Böblingen, DE



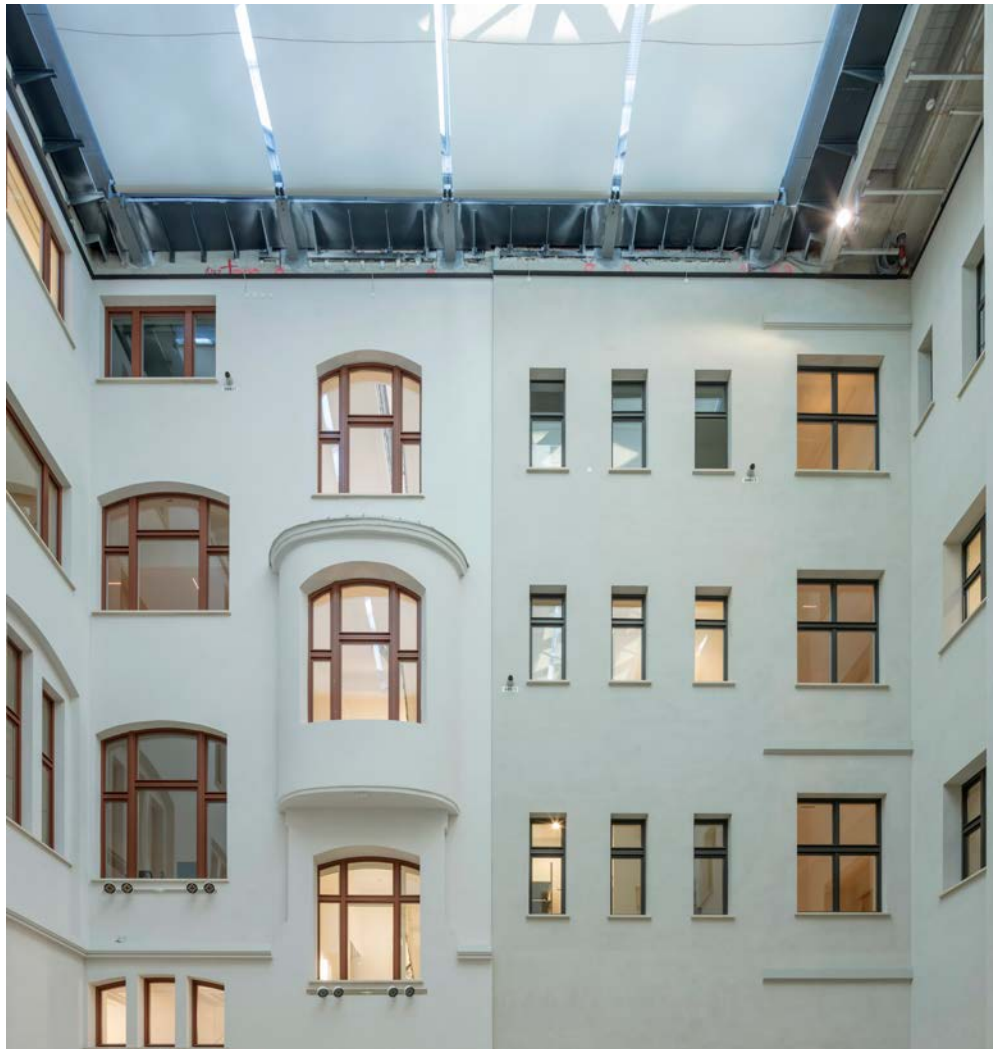
Öschberghof Donaueschingen, DE

Building owner: Carolin Becker
Architecture: Allmann Sattler
Wappner Architekten GmbH,
Munich, DE
Specialised trade: Hauch GmbH,
Villingen-Schwenningen, DE, Sauter
GmbH Putz & Farbe, Singen, DE
Sto proficiency: StoSilent Direct,
StoSilent Decor M
Photo: Martin Baltinger, 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
Architecture: Anderhalten Architekten GmbH, Berlin, DE
Specialised trade: BS Verputz GmbH, Munich, DE
Sto proficiency: StoSilent Direct, StoSilent Top Basic
Photo: Gerhard Hagen Fotografie, Bamberg, DE



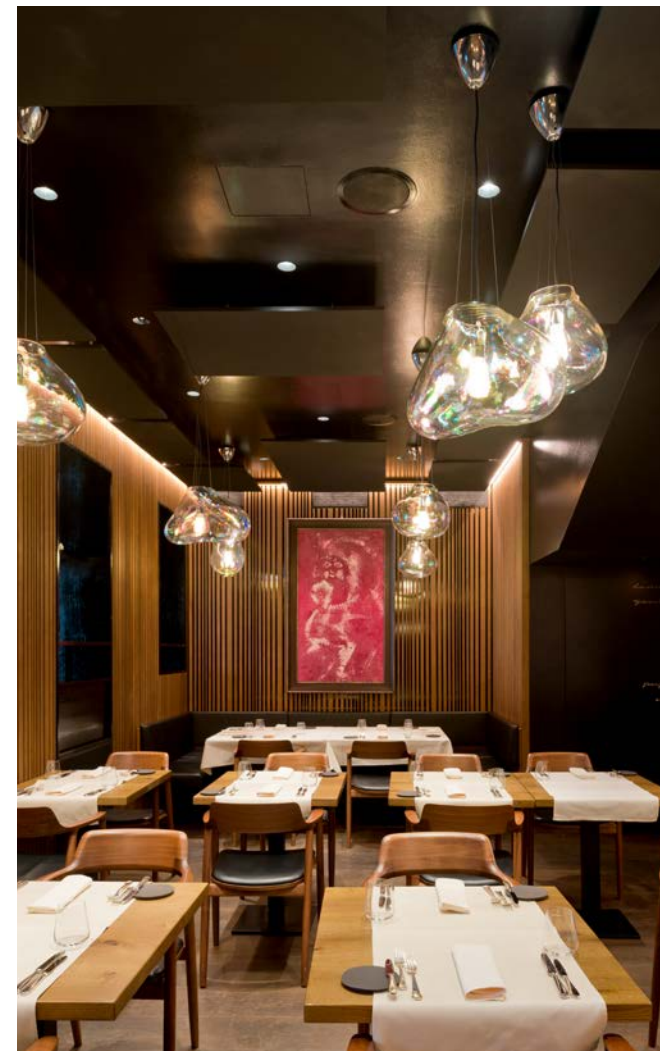
Casino Milupa Fulda, DE

Building owner: Casino Milupa,
Fulda, DE
Specialised trade: Klüber Putz
GmbH, Künzell, DE
Sto proficiency: StoSilent Modular
230
Photo: Gerhard Hagen



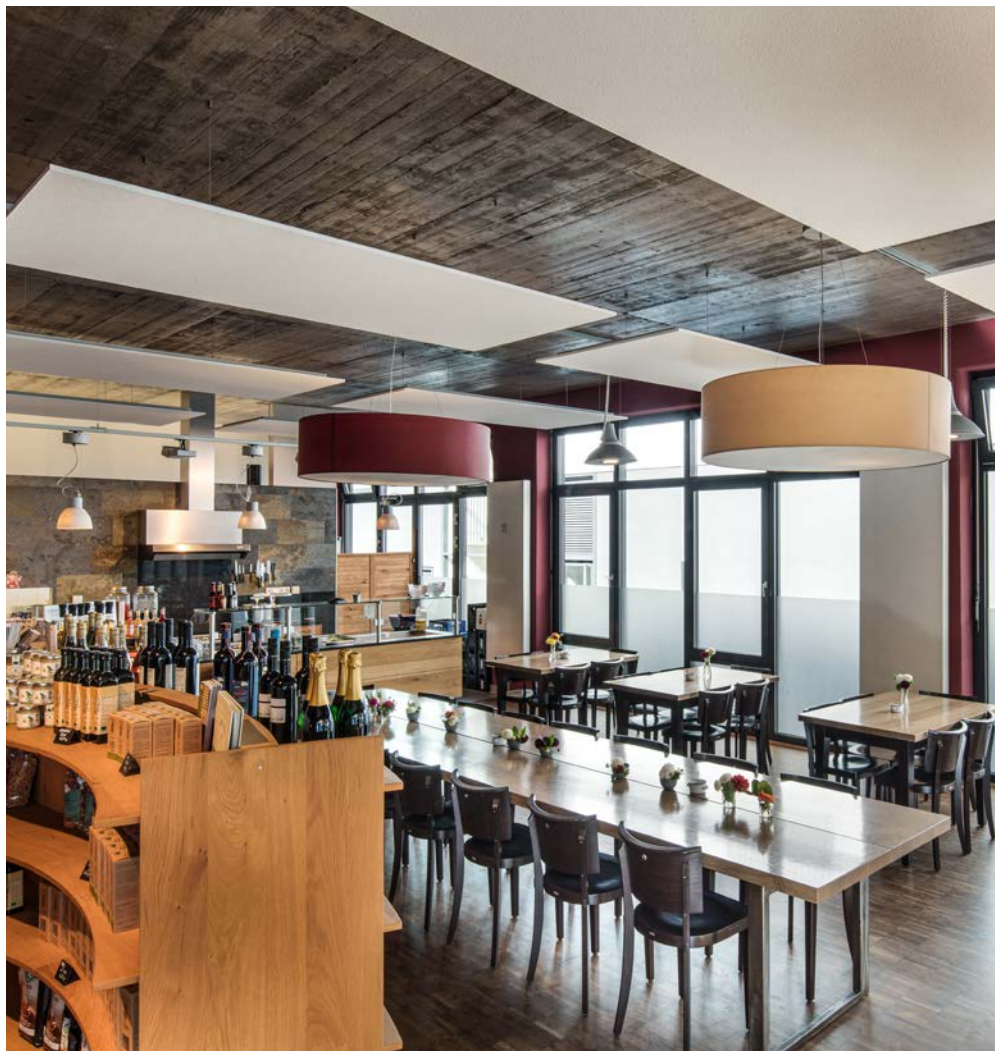
Das Spittelberg Vienna, AT

Specialised trade: Fenz GmbH,
Laa an der Thaya, AT
Sto proficiency: StoSilent Modular
230
Photo: Christian Schellander, Villach, AT



Safran organic catering Radolfzell, DE

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



Kirnbacher Hof Wolfach-Kirnbach, DE

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



St. Gallus day-care centre Merzhausen, DE

Building owner: Catholic church,
Merzhausen, DE
Architecture: Werkgruppe Freiburg,
Freiburg, DE
Specialised trade: Hermann Emter
GmbH, Freiburg, DE
Sto proficiency: StoSilent Modular
230
Photo: Oliver Kern, Freiburg, DE



Office Niederglatt, CH

Building owner: Sto AG,
Niederglatt, CH
Sto proficiency: StoSilent Frame



Billionaire St. Moritz, CH

Building owner: St. Moritz Bäder
AG, St. Moritz, CH
Architecture: von Meiss Architekten,
St. Moritz, CH
Specialised trade: Nicol. Hartmann
& Cie. AG, St. Moritz, CH
Sto proficiency: StoSilent Distance S
Photo: St. Moritz Bäder AG, St. Moritz, CH



Statsgymnasium Aarhus, DK

Building owner: Statsgymnasium,
Aarhus, DK

Specialised trade: Carl Nielsen
Akustikpuds ApS, Kongerslev, DK

Sto proficiency: StoSilent Direct,
StoSilent Top Finish

Photo: Michael Ellehammer, Frederiksberg, DK



MEG Saline Bad Zurzach, CH

Building owner: Immobilien House
Gossweiler, Lenzburg, CH
Specialised trade: kbmalder GmbH,
Koblentz, CH
Sto proficiency: StoSilent Frame,
StoSilent Board R 400
Photo: Fotowerder, Untersiggenthal, CH



Thurgau Lake Constance Thurgau, CH

Architecture: Studio Schwarz
GmbH, Zurich, CH

Specialised trade: StoFloor Creativ:
Widmer Bodenkunst GmbH,
Altstätten CH

Sto proficiency: StoSilent Direct,
StoSilent Distance with StoSilent
Board 205 C, StoTop Basic, StoTop
Finish

Photo: Fotowerder, Untersiggenthal, CH



Bayrischer Yachtclub Starnberg, DE

Building owner: Bayerischer Yacht-Club e.V., Starnberg, DE
Architecture: Marco Götz Architekt GmbH, Starnberg, DE
Specialised trade: Maler Leierer GmbH, Landsberied, DE
Sto proficiency: StoSilent Direct, StoSilent Levell, StoSilent Decor M, StoSilent Top Finish
Photo: Boris Storz, Munich, DE





StoSilent Decor

General information

The StoSilent Decor coating build-up featuring the StoSilent Decor M and StoSilent Decor MF 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 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.

Removing soiling

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.



StoSilent Decor

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.

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 coatings in a criss-cross pattern until a visually even surface appearance is achieved. More than two spray coatings 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.

Removing soiling

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 m². 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.





StoSilent Top Basic

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.

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. 5x10 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. ten 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 m². 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





StoSilent Top Finish

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

- For damage up to a maximum of approx. 5x10 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. ten 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 texture 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 and surface. 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/m²) 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. 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 m². 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.





StoColor Climasan / StoColor Silent

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 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/m²) 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 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 soiling

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/m²) 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

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 build-up featuring the StoSilent Compact Miral 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.

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 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).





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.

A-weighting/A-weighted sound pressure level

Internationally used, frequency-weighted sound level. Takes into account the basic facts of the sensitivity of the human ear and hearing ability. Includes all frequency components within the human hearing range. Measured with sound level meters using the A-filter and the A-filter curve. Represents approximately the inverse of the equal-loudness contour of human hearing at a sound pressure level of $L_p = 30$ dB and a frequency of $f = 1$ kHz.

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, mechanical vibrations, and waves, their generation, propagation, and measurement, as well as their perception.

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

Acoustic planning

Takes into account interior architecture, architecture, materials and systems, fire protection, and lighting planning, as well as the requirements of the building owner and those arising from standards, directives, and laws.

Serves to ensure serviceability appropriate to the intended purpose, safety and health protection, efficiency, and all-round comfort.

Effective structural and architectural planning begins with the fundamental planning of the function and use of buildings and spaces, including the functional division of usage areas and zones. Takes into account loud and quiet areas, separates them structurally or through specific measures, and takes into account separating elements, walls, buffer zones, and areas with low and high noise sensitivity. Particularly necessary in open-plan offices.

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 α 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 $100 m^2$ concrete area with a sound absorption coefficient of 0.01 has

an equivalent sound absorption area of $1 m^2$, which is exactly the same as for a $1 m^2$ 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 $1 m^2$ is defined as 1 metric sabin.

Equivalent sound absorption area per A_{obj}

Specified in m^2 in the same way as the equivalent sound absorption area A_{eq} for individual objects such as ceiling elements and wall panels, but also furniture and people, 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 α_p .

Decibel

Logarithmic auxiliary measurement unit used to denote the decimal logarithm of the ratio between two quantities. Decibel (dB) is one-tenth of a bel. Used in acoustics for parameters such as sound power and sound pressure, which are then referred to as sound power level L_w and sound pressure level L_p . In the case of the sound pressure level, the reference value is $p_0 = 20 \mu Pa$, corresponding to the human hearing threshold, whereby the sound pressure level at the hearing threshold is $L_p = 0$ dB.

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



Glossary

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 diffuser dimensions and the profiling of 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.

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 α_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 1,000 Hz, (H) at 2,000 Hz and 4,000 Hz. Combinations of shape indicators are possible.

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 $L_{p,B}$ 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 for the frequency f 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 defined 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 α_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.

Background noise (see Extraneous noise)

See Extraneous noise.

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 is still tolerable for the human ear is approx. $L_p = 140$ 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 covering 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.



Glossary

Noise reduction coefficient (NRC)

In accordance with ASTM C423, the *noise reduction coefficient (NRC)* is averaged from the third-octave values of the sound absorption coefficient α_s at 250, 500, 1,000, and 2,000 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 dependence. Thick absorbers will routinely absorb more sound than thin ones made from the same material.

Practical sound absorption coefficient α_p

Determined in accordance with EN ISO 11654. As a basis, the third-octave values of the sound absorption coefficient α_s are averaged for the octaves from 125 Hz to 4,000 Hz and rounded to 0.05. These values provide the basis for determining the weighted sound absorption coefficient α_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.

Reflection

When a sound wave bounces off a sound-reflecting obstacle of sufficient size (large in relation to wavelength).

Sabin, Sabine

Designates 1m^2 sound absorption area; see also Equivalent sound absorption area A_{eq} . Named after American physicist Wallace Clement Sabine (1868–1919).

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 m^3 , and A is the sound absorption area of the room in 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 α_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 α_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 α_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 α .

Sound absorption coefficient α_s

The sound absorption coefficient α_s (Sabine's sound absorption coefficient) 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. α_s is dependent on frequency. The sound absorption coefficient α_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 $f = 1,000\text{ Hz}$, 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.

Attenuation of speech

Applies primarily to open-plan offices that combine various functions and areas of work within a single space in an activity-based manner. Characterises the acoustic conditions. The in situ attenuation of speech $D_{A,s}$ is defined as the difference between the A-weighted sound pressure level of a speech source at a distance of 1 m in the free field ($L_{p,A,s,1m} = 54.7\text{ dB}$) and the corresponding level at the reception point. Definition in ISO 22955. The lowest recommended value between acoustically active areas (e.g. meeting zones and circulation areas in open-plan offices) is $D_{A,s} = 12\text{ dB}$, and the highest recommended value (for areas of concentrated work and highly frequented social zones) is $D_{A,s} = 32\text{ dB}$.

Speech transmission index (STI)

The speech transmission index is 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.



Glossary

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.

Noise level

See Extraneous noise.

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 wavelengths are long; in the case of high frequencies, the wavelengths are short.



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