

# StoSilent

## Planning manual

### Acoustics



StoSilent offers four different systems and a wide range of materials and surfaces to choose from.

Here, you'll find solutions for suspended panel systems, direct systems, acoustic plasters, as well as variable ceiling and wall elements.

Reference cover picture:  
**Museum "Casa das Histórias" Cascais, PT**  
Design: E. Souto de Moura, Porto, PT  
Execution: Stadt Cascais, PT  
Sto expertise: StoSilent Distance, StoSilent Top Finish

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. No precise dimensions are included. The applicator/customer is solely responsible for determining the suitability and completeness of the products used for the respective construction project. 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 product information included in the Technical Data Sheets and system descriptions/approvals must be observed.



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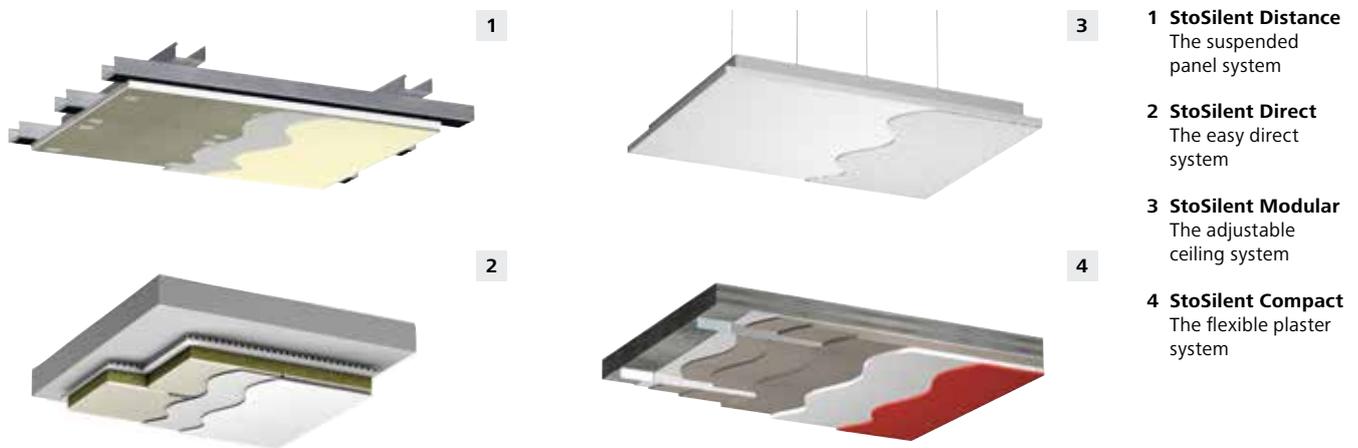
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# Always striking the right tone

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

**These planning aids define – clearly, quickly, and comprehensively – how they should go about using StoSilent acoustic systems to create the optimum “ambient interior climate” for a good listening experience.**

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

You can find valuable recommendations at:  
**[www.sto.com](http://www.sto.com)**

# The motivation behind good room acoustics

## Solid reasons for high standards

People use rooms in all kinds of ways – to chat and sing in, to work and be productive in, to seek relaxation and recuperation, and to enjoy some well-earned rest and sleep. In light of this, acoustics and acoustic quality are not just a matter of ambient sound, speech intelligibility, extraneous noise, reverberation time and sound distribution, damping, and noise reduction. Rather, they are equally about comfort, well-being, efficiency, architecture, and design.

### **So is it simply a question of following a standard?**

#### **Well yes – and no!**

The key criterion when acoustically designing rooms is not necessarily what you would expect it to be. Rather than prioritising a long list of technical characteristics, it is primarily a question of considering, firstly, how the room is going to be used and, secondly, the needs and demands of users. The characteristics will then follow on from this naturally.

Regardless of which rules and standards, laws, and regulations are involved, what we are talking about here is a set of physical relationships. If these are taken into account properly during the planning phase and are then structurally implemented, the resulting room acoustics will end up being appropriate for the planned use.

After all, the parameters that make a school classroom a classroom in terms of its acoustics rather than a concrete underground car park remain virtually the same worldwide irrespective of which national regulations apply. All the rules and standards (some of which are stipulated by law) take their specifications, characteristics, requirements, and tolerance ranges from the standard works of major acousticians, from numerous scientific research papers, the work undertaken by expert/standards committees, a wealth of experience that has been built up over many generations, and countless projects that have been successfully implemented in practice.

### **Health protection**

A multitude of studies have confirmed that poor room acoustics in the workplace are not good for your health. The excessive noise and poor speech intelligibility lead to stress, high blood pressure, an increased heart rate, extreme fatigue, and even illness. Tailored room acoustics create an atmosphere of calm, well-being, and comfort, thereby creating conditions



# StoSilent

## 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 bespoke 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.**

In this section of the manual, you will find out which aspects are of relevance to the different application ranges and which solutions are recommended. Remember to observe the applicable directives and laws and, if you have any questions, please contact the acoustics advisor.

### 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 call for modern room concepts that provide a comfortable and efficient work environment. Alongside lighting, climate, and fire protection, acoustics are also a key criterion.

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

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

### Open-plan office

Planners and acousticians face particular acoustic challenges in open-plan offices. Noise prevention is particularly important in this context, as office work involves two key

aspects – communication and concentration. In order to avoid problems in either of these areas, it is essential to find a good compromise between background noise and speech. When planning open-plan offices and combined-use areas, several aspects must therefore be considered at the same time:

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

It is even more difficult to plan acoustic designs for call centres, as they involve a large number of people working in close proximity to each other and all speaking on the phone at the same time. Call centre employees must be able to concentrate on what customers are saying and also provide them with information – all while disturbing their colleagues as little as possible. Confidentiality is particularly important: customers on the phone must not be able to hear what is being said at the next workstation.

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

### Individual office

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

### Multi-person office

As well as noise generated by other people, background noise from printers, air conditioning, or from outside can result in significant subjective noise pollution levels in multi-person offices, causing stress among employees. In this case,



**Unilever's Indonesia headquarters in Jakarta, ID**  
 Building owner: PT Unilever Indonesia Tbk, Jakarta, ID  
 Planning: Aedas, Singapur, SG  
 Execution: PT. Panutan Sejati, Jakarta, ID  
 Sto expertise: StoSilent Distance, StoVentec R  
 Photo: Owen Raggett, Singapore, SG

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. Experience has shown that noise damping via the ceiling surface areas is not generally sufficient on its own. Acoustic panels on the wall opposite the screen can help to prevent disruptive multiple reflections and flutter echoes in order to optimise speech intelligibility.

### Seminar room

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

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

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

### Conference room

Room-acoustic requirements are very high in large conference and meeting rooms, as it is especially important to ensure that speech can be heard clearly. As well as considering the human voice, criteria such as modern multimedia equipment and large projection surfaces also need to be taken into account. The rooms must also be well ventilated and kept at a comfortable temperature, while providing sufficient artificial or natural light. Conference rooms are used to announce important information and make key decisions. Optimised room acoustics with no disruptive noise will help to ensure comprehensibility.

### Reception area

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

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

### Acoustics outside of work

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

### Food and drink

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

### Retail

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



# StoSilent

## The right solution for every room

### Shopping centres

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

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

### Swimming pool/spa

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

### Theatre/concert

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

### Acoustics in educational institutions

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

### Schools

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

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

### Nursery schools

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



**Kärnten Therme,  
Villach, AT**  
 Planning: Architekten  
 Pernthaler ZT GmbH,  
 Graz, AT  
 Sto expertise: StoSilent  
 Distance, StoVentec R  
 Photo: Christian Schellander,  
 AT

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, in particular, children from noise, stress, and – in the worst-case scenario – illness.

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

#### **Living spaces**

The primary focus in private homes is often on achieving an appealing appearance, while acoustic considerations are neglected. Standards and directives do not apply in this case. But a living space is characterised as much by its acoustics as by its visual properties. Clear, modern architecture and acoustically effective room dampening with efficient absorbers need not 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

#### **Corridors**

Corridors – whether in office buildings, schools, administrative buildings, hotels, or banks – often require an atmosphere of peace, quiet, and discretion. As stated previously, 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.

More detailed information on the acoustic application areas and fields, their challenges and benefits, along with possible solutions and product suggestions can be found on pages 134 to 139.

# Sustainably tested

An indispensable part of all our products



Sustainable building is increasingly becoming standard practice – Sto has always committed itself to creating intelligent and durable products and systems for this very purpose. Here are some insights into how we make sure they are sustainable, and the product features that express this:

- Every single Sto product does its part to ensure sustainability, whether this comes in the form of energy saving, climate protection, or enhancement of health and well-being.
- All the raw materials in Sto products fulfil a function that is relevant to the product application – and we make sure to optimise the impact they have on the environment.
- Sto products are manufactured in a way that uses energy and resources efficiently. Renewable resources are used whenever this is a socially responsible, ecologically sound, and economically viable option.
- Where technology and economic conditions allow, Sto optimises the disposal and recycling potential of its products.
- As a technology leader in the sustainable design of living spaces tailored to human needs, Sto accepts its responsibility towards its customers, society, and the environment – worldwide.
- Sto regards sustainability as a process of continuous improvement, not one with an end result – and it believes that we have to travel on the path of sustainability together.

We use the Sto “sustainability compass” to control the dynamic and complex processes of our sustainability strategy more effectively. This encompasses four dimensions: ecology, economy, social aspects, and well-being. When applied to a building refurbishment project, this means considering things like cost factors (economy), demands for environmental and climate protection (ecology), working standards and economic costs (social aspects), as well as health aspects and living comfort (well-being) – and coordinating all of these factors effectively. In this way, we are expanding the classic definition quite deliberately to include the element of well-being, which in our view is of fundamental importance: human factors such as subjective perceptions, individual values, aesthetic appeal, and comfort play an essential role, particularly when it comes to designing facades and interiors. More specifically with regard to acoustic systems, this means that we use innovative,

harmless materials which also meet the highest architectural standards, from the acoustic panel right up to the finish.

### **Protecting health – boosting well-being**

We use our acoustic products and systems predominantly in situations where we have a responsibility to protect the health of users and ensure their well-being. This includes buildings such as schools, nurseries, and universities, leisure facilities such as museums, swimming pools, and restaurants, as well as open-plan offices and hotel lobbies.

More and more public buildings are now being constructed according to criteria which stipulate the need for healthy living and sustainability in building construction and use – for example, according to DGNB (Deutsche Gesellschaft für Nachhaltiges Bauen e. V. – the German Sustainable Building Council) or LEED (Leadership in Energy and Environmental Design) certification criteria. The requirements to be met by the products used include low emissions values and the absence of any hazardous materials or harmful substances in their application, use, and disposal. Our acoustic systems meet these requirements perfectly: by using materials which pose no risk to the local environment or to the health of applicators and users of a building, they help to achieve a high “green building standard”.

### **Sustainable conservation of resources**

The high proportion of recycled materials (up to 85 % recycled glass or PET fibre boards) in our acoustic panels and ceiling elements also helps to ensure that resources are conserved and the systems score LEED points under “MR Credit 4: Recycled Content” (one point for the use of 10 % recycled material or more, two points for 20 % or more, based on the entire building). The systems can also score points in the areas “EQ Credit: Acoustic Performance” and “ID Credit 1: Innovation in Design” as part of a Leadership in Energy and Environmental Design certification process.



# Sustainably tested

## StoSilent seals of approval and quality

Alongside recognised building certifications, many architects, investors, and public procurement bodies expect today's building products, particularly for interiors, to achieve high environmental and health standards. Sto therefore provides specific information in order to enable clear, transparent product evaluation. In addition to safety data sheets, Environmental Product Declarations (EPD) and our Sustainability Data Sheets contain all of the relevant facts and figures on the

subjects of health and the environment. This makes it easy to see, for example, whether the systems comply with the criteria of key environmental labels such as "natureplus®" or "OEKO-TEX®". The following overview shows which of our acoustic products have been tested and certified by external bodies and awarded the corresponding seals of quality:

### StoSilent – overview of sustainability and properties

Products and systems		Seals of approval and test procedures						Fire classification in accordance with EN 13501	CE
									
Products	StoSilent Coll MW	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)	Test standard TM-10 Emulsion-based plasters 06/09	–	–	–	–
	StoSilent Decor MF	A+	–	–	–	–	–	Fire classification dependent on use within system	–
	StoSilent Filler	A+	–	–	–	–	–		–
	StoSilent Fix	A+	–	–	–	–	–		EN 13963
	StoSilent Plan	A+	–	–	–	–	–		EN 15824
	StoSilent Prep Quarz	A+	–	–	–	–	–		–
	StoSilent Top Basic	A+	–	–	–	–	–		EN 15824
	StoSilent Top Finish	A+	–	–	–	–	–		EN 15824
	StoSilent Board 100	A+	–	–	–	–	–	A2-1, d0	EN 13964
	StoSilent Board 110	A+	–	–	–	–	–	A2-1, d0	EN 13964
	StoSilent Board 200	A+	–	–	–	–	–	A2-1, d0	EN 13964
	StoSilent Board 210	A+	–	–	–	–	–	A2-1, d0	EN 13964
	StoSilent Board 300	A+	–	–	–	–	–	B-1, d0	EN 13964
	StoSilent Board 310	A+	–	–	–	–	–	B-1, d0	EN 13964
StoSilent Board 310 F	A+	–	–	–	–	–	B-1, d0	EN 13964	
StoSilent Board MW 100	A+	–	–	–	–	–	A2-1, d0	–	

## StoSilent – overview of sustainability and properties

Products and systems		Seals of approval and test procedures							
								Fire classification in accordance with EN 13501	
Systems	StoSilent Distance	–	–	–	–	–	–	B-1, d0	EN 13964
	StoSilent Distance A2	–	–	–	–	–	–	A2-1, d0	EN 13964
	StoSilent Distance Flex	–	–	–	–	–	–	B-1, d0	EN 13964
	StoSilent Direct, all versions	–	–	–	–	–	–	A2-1, d0	–
		–	–	–	–	–	–	40 mm structure REI 60 (wood joist ceiling)	–
	StoSilent Compact Sil	–	–	–	–	–	–	C-1, d0	EN 15824
	StoSilent Compact Miral	–	–	–	–	–	–	A2-1, d0 (EN 13501-1), Class 1/A (ASTM E84)	–
	StoSilent Modular 100	–	–	–	–	OEKO-TEX® standard 100 product class I (PET board)	EC1 Plus very low-emission (adhesive)	B-1, d0 (PET board), E (adhesive)	EN 13964
	StoSilent Modular 230 (layer of PET fibre)	–	–	–	–	–	–	C-1, d0	EN 13964
	StoSilent Modular 230 (expanded glass granulate carrier board)	–	–	–	–	–	–	A2-1, d0 (with coating)	EN 13964
	StoSilent Modular 300 (depending on colour)	–	–	–	–	–	–	B-s2, d0 to D-s3, d0	EN 13964
	StoSilent Modular 400 (layer of PET fibre)	–	–	–	–	–	–	C-1, d0	EN 13964
	StoSilent Modular 400 (expanded glass granulate carrier board)	–	–	–	–	–	–	A2-1, d0	EN 13964



# Sustainably tested

## StoSilent seals of approval and quality

### 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 the product's toxic and environmentally relevant ingredients

TÜV seal of quality, "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 adverse effects are to be expected for applicators and users.



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

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



#### Quality mark for environmentally-friendly, non-harmful to health, and functional building products and furnishings in Europe.

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



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

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



#### EMICODE® GEV classification criteria

The EMICODE® seal is awarded to modern, solvent-free, and low-emission building products. The emissions are subject to extremely strict limiting value. 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 semivolatle organic compounds). This value is mandatory for the EMICODE® classification.



#### Fire classification

EN 13501: Fire classification of construction products and building elements

ASTME84: Standard Test Method for Surface Burning Characteristics of Building Materials

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



#### Conformity

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



Image on the right:  
**Öschberghof,**  
**Donaueschingen, DE**  
Building owner:  
Öschberghof,  
Donaueschingen, DE  
Planning: Allmann  
Sattler Wappner  
Architekten GmbH,  
Munich, DE  
Execution: Sauter  
GmbH Putz & Farbe,  
Singen, DE  
Sto expertise: StoSilent  
Direct with StoSilent  
Decor M  
Photo: Martin Baitinger,  
Böblingen, DE





# Application fields arranged by ambient interior climate

Our StoSilent acoustic systems are suitable for a wide range of acoustic applications and virtually all usage areas – primarily in interiors under normal climate conditions. The prerequisite for this is that thermal and moisture protection must always be

professionally planned from a structural perspective and in terms of building physics. It is essential to observe the specifications of EN 13964 “Suspended ceilings – Requirements and test methods”.

## StoSilent – application fields

Key: ✓ approved x not possible		Area of application			
		interior			
Use		indoors		Climate-controlled swimming bath, no rooms exposed to moisture	
<b>Building element</b>	<b>Requirements:</b> Sufficient structural thermal and moisture protection for the relevant building elements	<ul style="list-style-type: none"> <li>Interior wall</li> <li>Intermediate floor</li> </ul>	<ul style="list-style-type: none"> <li>External wall</li> <li>Ceiling towards the exterior</li> </ul>	<ul style="list-style-type: none"> <li>Interior wall and intermediate floor</li> <li>Not over ice-cold pools</li> <li>Not suitable for brine baths</li> <li>Not suitable for sauna exit areas</li> </ul>	<ul style="list-style-type: none"> <li>External wall</li> <li>Ceiling towards the exterior</li> <li>All other applications</li> <li>Not over ice-cold pools</li> <li>Not suitable for brine baths</li> <li>Not suitable for sauna exit areas</li> </ul>
<b>Stress during use</b>	Air temperature <sup>1)</sup>	≤30 °C	≤30 °C	≤30 °C <sup>3)</sup>	≤30 °C <sup>3)</sup>
	Humidity <sup>2)</sup>	≤90 %	≤90 %	≤70 %	≤70 %
	Stress class according to Table 8 from EN 13964	<b>B*</b>	<b>B*</b>		
	*) Class B includes class A if class A is not listed separately.				
	Condensation/precipitation/splash water	no	no	no	No
Wind load max. 1.0 kN/m <sup>2</sup>	no	no	no	No	
<b>System</b>	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	<ul style="list-style-type: none"> <li>Only on solid and concrete ceilings</li> <li>Only on gypsum plasterboard suspended ceilings</li> <li>Not with StoSilent Coll MW-G gypsum adhesive</li> </ul>	
	StoSilent Modular 100	✓	✓	✓	
	StoSilent Modular 230	✓	✓	Available as a custom variant with load-bearing construction protected from corrosion on request	
	StoSilent Modular 300	✓	✓	✓	
	StoSilent Compact Sil	✓	✓	✓	
	StoSilent Compact Miral	✓	✓	Only on solid and concrete ceilings	
<b>coating</b>	StoSilent Top Basic	✓	✓	✓	on request
	StoSilent Top Finish	✓	✓	✓	
	StoSilent Decor	✓	✓	✓	
	StoColor Silent	✓	✓	✓	
	StoColor Climasan	✓	✓	✓	

<sup>1)</sup> Fluctuating air temperature as defined by EN 13964 <sup>2)</sup> Fluctuating relative humidity as defined by EN 13964 4.8.2 <sup>3)</sup> Higher temperatures on request

In interiors, StoSilent systems are primarily used to regulate the room acoustics. Meanwhile, in areas such as shopping arcades and entrances to multi-storey and underground car parks, they dampen noise to create a more peaceful, comfortable

environment. The following overview shows which of the systems can be used for the different application fields in exterior and interior areas. StoSilent systems must never be used in ice rinks.

### StoSilent – application fields

Key: ✓ approved x not possible		Area of application			
		Exterior			
Use		General building structures			
Building element	Requirements: Sufficient structural thermal and moisture protection for the relevant building elements	Ceilings of: • Open arcades at ground level • Open shopping arcades  With connection to external air, protected from precipitation	Ceilings of: • Balcony • Access balconies • Loggias  Facades/external walls	Ceilings in underground car parks	Ceilings of: • Entrances to underground car parks • Multi-storey car parks • Underground stations
Stress during use	External air conditions	-20 °C to +40 °C and 20 % to 90 % All other conditions: approval on request			
	Condensation/precipitation/splash water	no	no	no	no
	Wind load max. 1.0 kN/m <sup>2</sup>	no	yes	no	yes
System	StoSilent Distance	✓ Adjust sub-construction to climatic stress and wind load	x	✓	✓ Adjust sub-construction to climatic stress and wind load
	StoSilent Direct	✓ • Only on solid and concrete ceilings • Only on gypsum plasterboard suspended ceilings • Not with StoSilent Coll MW-G gypsum adhesive	x	✓ • Only on solid and concrete ceilings • Only on gypsum plasterboard suspended ceilings • Not with StoSilent Coll MW-G gypsum adhesive	
	StoSilent Modular 100	x	x	x	x
	StoSilent Modular 230	x	x	x	x
	StoSilent Modular 300	x	x	x	x
	StoSilent Compact Sil	x	x	x	x
	StoSilent Compact Miral	✓	x	✓	✓
	coating	StoSilent Top Basic	✓	x	✓
StoSilent Top Finish		x	x	x	x
StoSilent Decor		✓	x	✓	✓
StoColor Silent		✓	x	✓	✓
StoColor Climasan					

# StoSilent overview



## StoSilent Distance The suspended panel system

As far as seamless acoustics are concerned, suspended acoustic systems form the largest market. We have been successful in this field for many years. We offer three different systems with different requirements for absorption and the fire classification rating.



## StoSilent Direct The easy direct system

The StoSilent Direct direct system is a new addition to our range of seamless absorber solutions. It can be installed on walls and ceilings without a sub-construction. The sandwich boards are made of mineral wool and expanded glass granulate, and therefore have outstanding sound-absorbing qualities.



## **StoSilent Compact** The flexible plaster system

Structural conditions often prevent direct or suspended acoustic systems from being installed, for example if curves or vaults are present. For these instances, we have developed acoustic plaster systems which can be applied directly to the ceiling and wall.



## **StoSilent Modular** The adjustable ceiling system

StoSilent Modular is recommended for quick and simple acoustic optimisation in rooms which are already in use. The modular ceiling elements are particularly suitable for buildings with concrete core cooling, where a loss of cooling would occur if an acoustic ceiling were to be installed across the full surface.



# The acoustic systems at a glance

## The acoustic systems at a glance

System	Version	acoustic panel	coating	Maximum sound absorption $\alpha_w$	Reaction to fire (class) EN 13501	Area of application		Formability
						Ceiling	wall	
StoSilent Distance	StoSilent Distance	StoSilent Board 300	StoSilent Top Basic StoSilent Top Finish	0.60 (25 mm board thickness) 0.45 (15 mm board thickness)	B-s1, d0	■ ■	■ ■	■
		StoSilent Board 310	StoSilent Decor M StoSilent Decor MF	0.55 (25 mm board thickness) 0.45 (15 mm board thickness)	B-s1, d0	■ ■	■	■
	StoSilent Distance A2	StoSilent Board 100	StoSilent Top Basic StoSilent Top Finish	0.80	A2-s1, d0	■ ■	■	
		StoSilent Board 110	StoSilent Decor M StoSilent Decor MF	0.80	A2-s1, d0	■ ■	■	
		StoSilent Board 200	StoSilent Top Basic StoSilent Top Finish	0.50	A2-s1, d0	■ ■	■	
		StoSilent Board 210	StoSilent Decor M StoSilent Decor MF	0.40	A2-s1, d0	■ ■	■	
StoSilent Distance Flex	StoSilent Board 310 F	StoSilent Decor M StoSilent Decor MF	0.45	B-s1, d0	■ ■	■	■ ■	
StoSilent Direct	StoSilent Direct	StoSilent Board MW 100	Without coating	1.00	A2-s1, d0	■ ■	■	■ ■
			StoColor Climasan StoColor Silent	0.95	A2-s1, d0	■ ■	■ ■	■ ■
			StoSilent Decor M StoSilent Decor MF	1.00	A2-s1, d0	■ ■	■	■ ■
			StoSilent Decor M StoSilent Decor MF	0.80	A2-s1, d0	■ ■	■	■ ■
			StoSilent Top Basic white on StoSilent Top Basic	0.65	A2-s1, d0	■ ■	■ ■	■
			StoSilent Top Finish on StoSilent Top Basic	0.65	A2-s1, d0	■ ■	■ ■	■
StoSilent Compact	StoSilent Compact Sil		StoSilent Decor M StoSilent Decor MF	0.45	C-s1, d0	■ ■	□	■ ■
	StoSilent Compact Miral		StoSilent Miral AP	0.30 (15 mm thickness) 0.50 (25 mm thickness)	A2-s1, d0	■ ■	□	■ ■
StoSilent Modular	StoSilent Modular 100	PET nonwoven fibre	nonwoven surface	Depending on suspension height, format, material, and coating	B-s1, d0	■ ■	■ ■	
	StoSilent Modular 230	Expanded glass granulate	Fine-textured colour coating		A2-s1, d0 (carrier board), C-s3, d0 (PET layer)	■ ■	on request	on request
	StoSilent Modular 300	Polyester fibres	nonwoven surface		B-s2, d0 (depending on colour)	■ ■	■ ■	
	StoSilent Modular 400	Individual, on-site solution; construction based on StoSilent Board, different coating systems possible						

## Acoustic system coatings

coating	Seal of approval	Colour range	Design options	Mechanical resistance of the surface
<b>StoColor Silent</b>		■ ■	Depending on substrate	Wet-scrub resistance class 3
<b>StoColor Climasan</b>		■	Depending on substrate	Wet-scrub resistance class 2
<b>StoSilent Decor M</b>		■	Acoustic spray plaster with textured surface and fine graining	■
<b>StoSilent Decor MF</b>		■ ■	Acoustic spray plaster with textured surface and fine graining	■
<b>StoSilent Top Basic</b>		■	Acoustic plaster with smooth surface and fine graining	■ ■
<b>StoSilent Top Finish</b>		■	Acoustic plaster with smooth surface and ultrafine graining	■ ■
<b>StoSilent Miral AP</b>		■	Acoustic spray plaster with rough surface and coarse graining	□

- ■ excellent
- good
- to a limited extent



# Technical characteristics

System	StoSilent Distance						
StoSilent carrier board	StoSilent Board 100	StoSilent Board 110	StoSilent Board 200	StoSilent Board 210	StoSilent Board 300	StoSilent Board 310	StoSilent Board 310 F
<b>Degree of absorption*</b>	$\alpha_w$ up to 0.80	$\alpha_w$ up to 0.80	$\alpha_w$ up to 0.50	$\alpha_w$ up to 0.40	$\alpha_w$ up to 0.60	$\alpha_w$ up to 0.55	$\alpha_w$ up to 0.45
<b>EN 13501 building material classification</b>	A2-s1, d0	A2-s1, d0	A2-s1, d0	A2-s1, d0	B-s1, d0	B-s1, d0	B-s1, d0
<b>coating Surface</b>	StoSilent Top	StoSilent Decor	StoSilent Top	StoSilent Decor	StoSilent Top	StoSilent Decor	StoSilent Decor
<b>Coating colour</b>	Limited tintability in accordance with the StoColor System, pastel colour shades	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	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
<b>Coating texture</b>	Smooth coating (with finest graining)	Spatterdash (fine texture)	Smooth coating (with finest graining)	Spatterdash (fine texture)	Smooth coating (with finest graining)	Spatterdash (fine texture)	Spatterdash (fine texture)
<b>Coating LRV</b>	77	83	77	83	77	83	83
<b>Whiteness of coating</b>	69 %	66 %	69 %	66 %	69 %	66 %	66 %
<b>Thermal conductivity</b>	0.087 W/(mK)	0.085 W/(mK)	0.084 W/(mK)	0.086 W/(mK)	0.089 W/(mK)	0.082 W/(mK)	0.082 W/(mK)
<b>sd value</b>	0.12 m	0.13 m	0.21 m	0.19 m	0.16 m	0.11 m	0.11 m
<b>pH value of coating/plaster</b>	8–9	11–12	8–9	11–12	8–9	11–12	11–12
<b>Minimum bending radius</b>	–	–	–	–	10 m	10 m	5 m
<b>System thickness***</b>	approx. 28 mm	approx. 27 mm	approx. 28 mm	approx. 27 mm	approx. 18 mm or approx. 28 mm with a board thickness of 25 mm	approx. 17 mm or approx. 27 mm with a board thickness of 25 mm	approx. 17 mm
<b>kg/m<sup>2</sup> board</b>	6.8	6.9	9.1	9.1	5.5/9.2	5.3/8.8	5.4
<b>kg/m<sup>2</sup> coating (wet)</b>	5.5	2.7–3.2	5.5	2.7	5.5	2.7	2.7
<b>kg/m<sup>2</sup> coating (dry)</b>	4.1	1.8–2.1	4.1	1.8	4.1	1.8	1.8
<b>kg/m<sup>2</sup> system without sub-construction (dry)</b>	10.9	8.7–9.2	13.2	10.9	9.6	7.1	7.2
<b>Board/formats/weight</b>	1200x625x25 mm	1200x625x25 mm	1200x800x25 mm	1200x800x25 mm	1200x800x15 mm 400x1200x15 mm 1200x800x25 mm	1200x800x15 mm 2400x1200x15 mm 1200x800x25 mm	2400x1200x15 mm

- \* Weighted sound absorption coefficient in accordance with EN ISO 11654
- \*\* Sound absorption area per test object – value dependent on format and suspension height
- \*\*\* Without sub-construction/suspension

StoSilent Direct			StoSilent Compact		StoSilent Modular		
StoSilent Board MW 100–36 mm	StoSilent Board MW 100–46 mm	StoSilent Board MW 100–66 mm	StoSilent Compact Sil	StoSilent Compact Miral	StoSilent Modular 100	StoSilent Modular 230	StoSilent Modular 300
$\alpha_w$ up to 0.85	$\alpha_w$ up to 1.00	$\alpha_w$ up to 1.00	$\alpha_w$ up to 0.45	$\alpha_w$ up to 0.50	**	**	**
A2-s1, d0	A2-s1, d0	A2-s1, d0	C-s1, d0	A2-s1, d0	B-s1, d0 (PET board)	A2-s1, d0 (carrier board) C-s3, d0 (PET nonwoven fibre)	B-s2, d0 up to D-s3, d0 (carrier board, depending on colour)
Seamless: • StoSilent Top • StoSilent Decor Visible joints: • StoSilent Decor • StoColor Climasan • Without coating	Seamless: • StoSilent Top • StoSilent Decor Visible joints: • StoSilent Decor • StoColor Climasan • Without coating	Seamless: • StoSilent Top • StoSilent Decor Visible joints: • StoSilent Decor • StoColor Climasan • Without coating	StoSilent Decor	–	PET nonwoven fibre	Fine-textured colour coating	Polyester fibres
Various	Various	Varioust	Tintable in accordance with the StoColor System	Limited tintability in accordance with the StoColor System	white	Tintable in accordance with the StoColor System	As per current collection
Various	Various	Various	Spatterdash (fine texture)	Heavily textured	Fine, unidirectional fibre structure	Finely textured	Fine, multi-directional fibre structure
Various	Various	Various	82	80	85	83	Depending on colour
Various	Various	Various	62 %	44 %	–	–	Depending on colour
0.040 W/(mK)	0.040 W/(mK)	0.040 W/(mK)	0.048 W/(mK)	0.10 W/(mK)	–	–	–
<0.2 m	<0.2 m	<0.2 m	0.05–0.06 m	0.01–0.03 m	–	–	–
8–12	8–12	8–12	11–12 (Decor M) 8–9 (Decor MF)	12	–	–	–
3.0 m, convex 2.5 m, concave	4.0 m, convex 3.0 m, concave	5.0 m, convex 4.0 m, concave	Depending on substrate	Depending on substrate	Not possible	Not possible	Not possible
approx. 40 mm	approx. 50 mm	approx. 70 mm	approx. 25 mm	approx. 15 mm	26 mm	approx. 19 mm	8 mm (PES board), 48 mm (total thickness)
4.7	6.0	7.9	–	–	–	–	–
5.2 (Decor), 5.0–5.5 (Top)	5.2 (Decor), 5.0–5.5 (Top)	5.2 (Decor), 5.0–5.5 (Top)	10.0	7.5	–	–	–
4.0 (Decor), 3.7–4.1 (Top)	4.0 (Decor), 3.7–4.1 (Top)	4.0 (Decor), 3.7–4.1 (Top)	3.75	4.0	–	–	–
12.0 (Decor M), 12.0–12.4 (Top)	13.3 (Decor M), 13.3–13.7 (Top)	15.2 (Decor M), 15.2–15.6 (Top)	–	–	–	–	–
800x600x36 mm	800x600x46 mm	800x600x66 mm	–	–	1150x750 mm/3.2 kg 1150x1150 mm/4.2 kg 1250x1250 mm/4.6 kg 2350x1150 mm/6.4 kg 3000x1250 mm/8.2 kg	Radius 575 mm/10.0 kg 1150x1150 mm/11.0 kg 2350x750 mm/16.0 kg 2350x1150/23.0 kg	1150x750 mm/7.2 kg 900x900 mm/6.8 kg 1150x1150 mm/9.2 kg 2350x1150 mm/17.6 kg



# Installation, colour shades, surface quality

## Good to know

**Our StoSilent Distance, StoSilent, and StoSilent Compact acoustic systems are created by specialist tradespeople on site using individual components such as sub-construction, boards/panels, and coating. The StoSilent Modular ceiling elements are delivered to the construction site fully assembled and are easy to install.**

The tradespeople are experienced in installing and applying the StoSilent systems, ensuring that the acoustic systems always meet the high standards expected of their visual and functional quality. Ultimately, the surface quality achieved serves as the applicator's "signature".

### Requirements on site at the construction site

- Observe the lowest substrate and application temperature of the respective system products in accordance with the Technical Data Sheet.
- The highest substrate and application temperature for all system products is 30 °C.
- The maximum permissible relative humidity is 70 %.
- Quick heating or cooling during installation and drying can cause cracks.

### Additional requirements for acoustic panels

- Ensure that the panels are protected from humidity and effects of the weather
- Always store the acoustic panels on a level surface
- Adapt the storage of the panels to suit installation conditions – no later than 24 hours before final application
- Only to be installed after setting the right temperature and achieving equilibrium humidity in the room
- Protect acoustic panels against mechanical or transport damage
- In order to remove the panels from the pallet, the PE film hood and the edge protection profile must be completely removed

### Colour shades

We offer matching coatings in a wide range of colours for all our acoustic solutions. A sample ceiling area measuring at least 5 m<sup>2</sup> must be produced, which must then be accepted by the planner or building owner and/or investor before work commences. This sample surface area should remain in place until formal acceptance (as a comparison surface).

### Surface quality

The coatings are manually sprayed onto our acoustic systems or applied and smoothed using a plastering trowel. The structural base must be prepared meticulously in order to ensure an outstanding result with smooth surfaces.

The skills and abilities of the tradesperson and applicator have a major role to play in the visual and functional quality of the surface finish.

Specifically in rooms with glancing light of the kind that typically occurs in rooms with floor-to-ceiling windows or with lighting that emits its light parallel to the ceiling and wall surface, it is vitally important to draw attention to this issue in the tender. This is because surfaces that need to remain largely free of cast shadows under glancing light conditions are subject to more stringent requirements.

## Colour shade design and coatings

	white	Limited tintability in accordance with the StoColor System	Tintable in accordance with the StoColor System	Colour range
StoSilent Distance with StoSilent Top Basic coating	√	√	√	
StoSilent Distance with StoSilent Top Finish coating	√	√		
StoSilent Distance with StoSilent Decor M coating	√	√		
StoSilent Distance with StoSilent Decor MF coating	√		√	
StoSilent Direct with StoSilent Top Basic coating	√	√		
StoSilent Direct with StoSilent Top Finish coating	√	√		
StoSilent Direct with StoSilent Decor M coating	√	√		
StoSilent Direct with StoSilent Decor MF coating	√		√	
StoSilent Direct with StoColor Silent coating	√			
StoSilent Direct with StoColor Climasan coating	√	√		
StoSilent Direct without coating	√			
StoSilent Compact Miral with StoSilent Miral AP coating	√	√		
StoSilent Compact Miral with StoColor Silent coating	√		√	
StoSilent Compact Sil with StoSilent Decor M coating	√	√		
StoSilent Compact Sil with StoSilent Decor MF coating	√		√	
StoSilent Modular 100 (PET nonwoven fibre)	√			
StoSilent Modular 230 (fine-textured colour coating)	√		√	
StoSilent Modular 300 (polyester fibres)	√			√
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	√		√	

### StoColor System

The StoColor System is a classic. The system is based on visual human perception, harnessing the natural power of colour to evoke powerful emotions. This is the key to the StoColor System and its intuitive application. The basic colours, system build-up, and colour rows on the colour charts are intuitive and easy to comprehend. The colorimetric catalogue reference always remains discreetly in the background without imposing any conditions or restrictions on your colour choice. This minimum amount of abstraction plus maximum practicality is the hallmark of the StoColor System, making it extremely user-friendly in day-to-day scenarios.

### Colour shades of the StoSilent coating systems

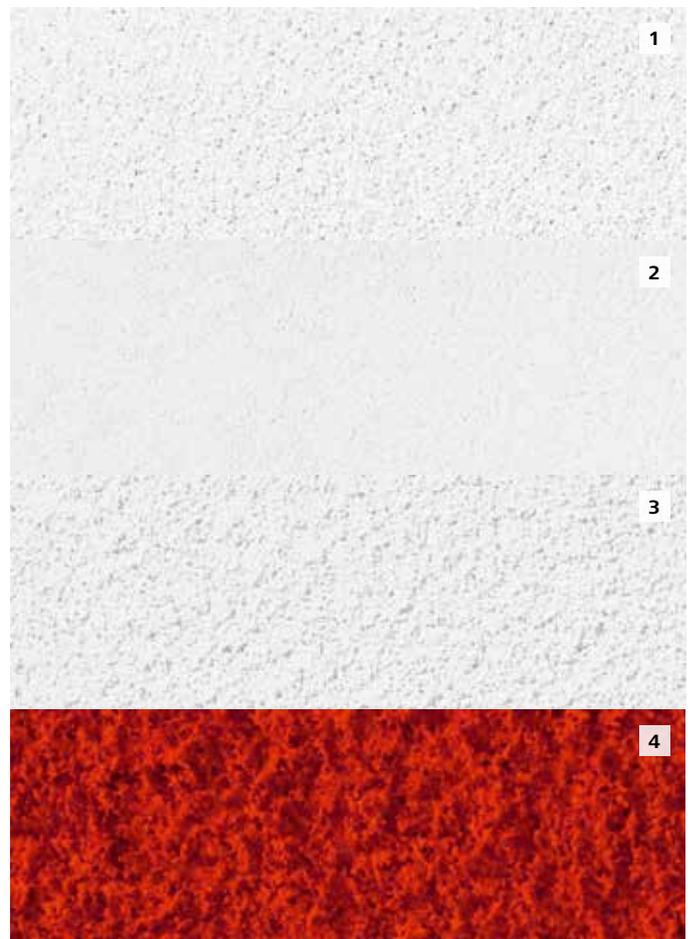
StoSilent offers a wide range of colour shades in conjunction with its StoSilent Decor and StoSilent Top coating systems. Depending on the coating product involved and its associated binding agent base, we can either offer the entire range of colour shades from the StoColor System (e.g. with the StoSilent Decor MF coating) or a more limited colour choice (e.g. with the StoSilent Top Finish, StoSilent Top Basic, and StoSilent Decor M coatings). The colour fans of the StoColor System indicate which products are compatible with the desired colour. If you wish to use shades from other colour systems (such as RAL or NCS), Sto will check the technical feasibility on an individual basis and confirm whether the desired colour shade is possible for the respective sales order.

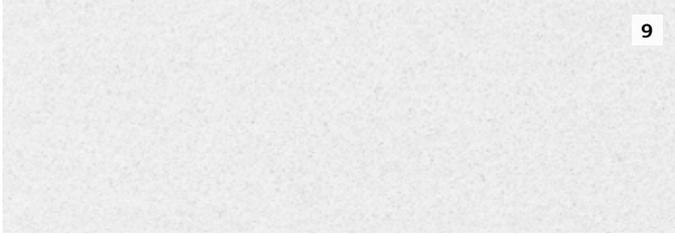
# Complete design freedom

## StoSilent colours and surfaces

The StoSilent acoustic systems are supplemented by extensive options for surface design and the wide colour range of the StoColor System. The variety of designs means we really stand out from the competition.

- 1 StoSilent Top Basic, white
- 2 StoSilent Top Finish
- 3 StoSilent Decor M
- 4 StoSilent Decor MF
- 5 StoSilent Top Basic with StoEffect Vetro
- 6 StoSilent Sil AP
- 7 StoSilent Miral AP
- 8 PET fibres
- 9 Polyester fibres





# StoSilent coating systems

## Allocation of the StoSilent coatings to the systems

### StoSilent Decor

Porous, thin-layer spatterdash for matt, textured surfaces with fine graining. Depending on the system, StoSilent Decor enables seamless surfaces of up to 700m<sup>2</sup>.

- StoSilent Decor M: silicate-bound finish, low-emission, eco-certified (natureplus® and TÜV), limited tintability in accordance with the StoColor System
- StoSilent Decor MF: finish 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 Compact Sil**

### StoSilent Top

This porous finish on a dispersion base makes for the finest possible matt surfaces. Depending on the system, StoSilent Top enables seamless surfaces of up to 200m<sup>2</sup>.

- StoSilent Top Basic: intermediate coat and finish with a smooth surface and fine graining, limited tintability in accordance with the StoColor System
- StoSilent Top Finish: finish 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
- Can be coloured with StoTint Aqua and/or when using the StoColor Silent finish, which can be tinted in accordance with the StoColor System

**Suitable for the following StoSilent acoustic system:**

- **StoSilent Compact Miral**

### StoSilent Sil AP

Thanks to its fine graining, the multi-layer, porous silicate acoustic plaster enables the creation of fine-textured surfaces.

- Unlimited seamless application
- Not tintable, colouring in accordance with the StoColor System is applied with the StoSilent Decor finish

**Suitable for the following StoSilent acoustic system:**

- **StoSilent Compact Sil**

### 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**
- **StoSilent Compact Miral**

### StoColor Silent N

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

**Suitable for the following StoSilent acoustic systems:**

- **StoSilent Direct**
- **StoSilent Compact Miral**

### **StoColor Climasan**

This dead-matt interior emulsion paint has been tested for harmful substances and degrades organic odours and harmful substances. It is the only interior paint that manages this without UV light.

- Low-emission, tested for harmful substances (TÜV)
- Noticeably better air, even in highly utilised rooms
- Tintable in pastel colour shades from the StoColor System

**Suitable for the following StoSilent acoustic system:**

- **StoSilent Direct**

### **StoSilent Modular surfaces**

- PET fibre nonwoven surface: fine, unidirectional fibre structure, white
- Nonwoven surface polyester fibres: fine, multi-directional fibre structure, colours according to current collection
- Fine-textured colour coating: fully tintable

**Suitable for the following StoSilent acoustic systems:**

- **StoSilent Modular 100 (PET fibres)**
- **StoSilent Modular 300 (polyester fibres)**
- **StoSilent Modular 230 (colour coating)**

### **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
- StoSilent Prim
- StoSilent Fix
- Perforated gypsum plasterboard

# StoSilent Distance

## The suspended panel system

It's hard to imagine modern architecture without large, even, white surfaces. The StoSilent Distance system is perfect for this because it can be installed seamlessly over large areas as a suspended ceiling or wall covering with a cavity behind it. The sub-construction is made of metal profiles and the acoustic panel consists of expanded glass granulate. The advantages of this material: it is light, absorbs sound, and can be adjusted to any shape of room to form a homogeneous, seamless surface. The high-quality StoSilent Top and StoSilent Decor coating systems have a proven track record and are able to satisfy the most stringent of demands – offering design freedom for all kinds of applications.

### Overview of system versions

#### StoSilent Distance

Standard system with a wide spectrum of applications. Depending on the suspension height, there are different sound absorption values, e.g.  $\alpha_w = 0.60$  for a board thickness of 25 mm, fire classification B-s1, d0, according to EN 13501-1

#### StoSilent Distance A2

Achieves sound absorption values of up to  $\alpha_w = 0.80$ . Fire classification A2-s1, d0, according to EN 13501-1

#### StoSilent Distance Flex

Flexible ceiling system. Flexible with a minimum radius of 5 metres, sound absorption values up to  $\alpha_w = 0.45$ . Fire classification B-s1, d0, according to EN 13501-1



### StoSilent Distance system description

Sub-construction	Metal sub-construction in accordance with EN 13964 with vernier hangers, Adjusting rod, CD profiles, Sto-Ventilation Profile			
Waterproofing	StoSilent Profile Tape			
acoustic panel	StoSilent Board 300		StoSilent Board 310	
Fixing	Sto-Drywall Screw			
Adhesive	StoSilent Fix			
Filler and levelling coat			StoSilent Plan	
Edge finish	StoSilent Profile AP Soudal Fix All® Flexi, StoColl Fix, or Sto-Stone Paste			
Intermediate coat	StoSilent Top Basic		StoSilent Decor M	
Finish	StoSilent Top Basic	StoSilent Top Finish	StoSilent Decor M	StoSilent Decor MF
Accessories	StoSilent Profile FB, StoSilent Profile EW, Soudal Fix All® Flexi, StoColl Fix, Sto-Stone Paste			



### StoSilent Distance A2 system description

Metal sub-construction in accordance with EN 13964 with vernier hangers, CD profiles, Adjusting rod, Sto-Ventilation Profile

StoSilent Profile Tape

StoSilent Board 100 or StoSilent Board 200

StoSilent Board 110 or StoSilent Board 210

Sto-Drywall Screw

StoSilent Fix

StoSilent Plan

StoSilent Profile AP  
Soudal Fix All® Flexi, StoColl Fix, or Sto-Stone Paste

StoSilent Top Basic

StoSilent Decor M

StoSilent Top Basic

StoSilent Top Finish

StoSilent Decor M

StoSilent Decor MF

StoSilent Profile FB, StoSilent Profile EW, Soudal Fix All® Flexi, StoColl Fix, Sto-Stone Paste



### StoSilent Distance Flex system description

Metal sub-construction in accordance with EN 13964 with vernier hangers, CD profiles, Adjusting rod, Sto-Ventilation Profile

StoSilent Profile Tape

StoSilent Board 310 F

Sto-Drywall Screw

StoSilent Fix

StoSilent Plan

StoSilent Profile AP  
Soudal Fix All® Flexi, StoColl Fix, or Sto-Stone Paste

StoSilent Decor M

StoSilent Decor M

StoSilent Decor MF



# StoSilent Distance

## The suspended panel system

### Important system instructions for StoSilent Distance:

The developers, product managers, and advisors at Sto have many years of experience and extensive expertise in the manufacture and application of seamless acoustic panel systems. This knowledge is continuously being brought to bear on daily practical applications. When planning and carrying out building projects with our Sto seamless acoustic panel systems, there are important notes, tips, and guide values which must be taken into account:

- Primarily suited to interior ceilings and walls (see table in "Application fields arranged by ambient interior climate" section)
- Recommendation: installation at a height of above 2 m on walls outside areas subject to a risk of impacts
- To avoid uncontrolled low-pressure areas, cavities in neighbouring walls must be sealed
- The pressure between the ceiling cavity and the room must be equalised. Ensure back ventilation either through an open joint all the way around or corresponding openings in the ceiling. The proportion of the ceiling openings should account for at least 0.8% of the ceiling surface area. In most cases, this is achieved by having an open all-round joint measuring at least 2 cm
- Installation only after adjusting the equilibrium humidity in the room
- Prior to bonding, dust must be removed from edges cut on site and the edges must be sealed or re-coated with StoSilent Fix or StoColor Opticryl Matt
- If the fine grid (e.g. when retrofitting ceiling installations) is cut through, additional trimmers must be created
- For acoustic irradiation, hidden flat-panel loudspeakers can be built into the ceiling construction
- Installation in brine pools or seawater swimming baths strictly only on request
- Not suitable for splash water zones
- Force-transmitting connections to adjacent building elements are not permitted.
- To allow for inspection of the sub-construction and installations in the ceiling cavity, it is advisable to fit service hatches, e.g. Knauf alutop® service hatch D171

### Important system notes for coating with StoSilent Top:

- StoSilent Top Finish is available in white and can also be tinted in more than 250 colours from the StoColor System, with special colour options available on request
- StoSilent Top Basic can also be used as a finish; other decorative surfaces are possible in the wall area as partial surfaces (on request)
- Radii in excess of 5 m can be implemented using the StoSilent Board 310 F acoustic panel. Radii in excess of 10 m are possible using the StoSilent Board 200/210 and StoSilent Board 300/310

### Important system notes for coating with StoSilent Decor:

- The StoSilent Decor MF finish is fully tintable in accordance with the StoColor System. This means that practically any colour shade is available in the StoSilent Decor coating system
- The StoSilent Decor M finish is tintable in white and in more than 450 colour shades from the StoColor System (all colour shades in silicate range acc. to colour fan); special colour shades available on request

## System overview

### StoSilent Distance

**Suspended acoustic system made of expanded glass granulate boards, reaction to fire B-s1, d0, in accordance with EN 3501**

#### System advantages

- Low weight
- Easy application due to homogeneous board structure
- High degree of stiffness
- Low moisture-induced and thermal expansion
- Airtight facing on the back of the board
- Seamless installation possible across areas of up to 200 m<sup>2</sup>
- Bendable from radii of 10 m

#### Area of application

- interior
- for suspended ceiling and wall constructions
- Recommendation: installation at a height of above 2 m on walls outside areas subject to a risk of impacts
- not suitable for splash zones

#### Fixing

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

#### Reaction to fire

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

#### Sound absorption

- StoSilent Top coating:  $\alpha_w$  in accordance with EN 11654 max. 0.60, NRC in accordance with ASTM C423 max. 0.60, values depend on the thickness of the system
- StoSilent Decor coating:  $\alpha_w$  in accordance with EN 11654 max. 0.55, NRC in accordance with ASTM C423 max. 0.60, values depend on the thickness of the system

#### Design options

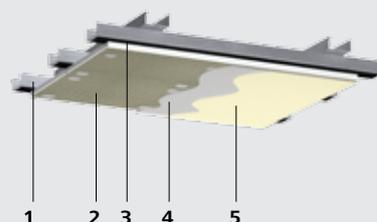
- smooth surface with fine or finest grain size
- textured surface with fine grain size

#### Application

- By trained specialists

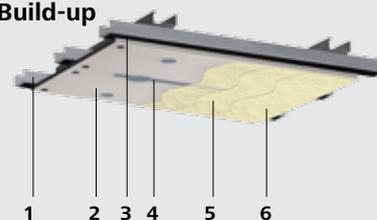
## Systems

### Build-up



- 1 — Sub-construction with StoSilent Profile Tape
- 2 — StoSilent Board 300 acoustic panel
- 3 — StoSilent Fix adhesive
- 4 — StoSilent Top Basic intermediate coat
- 5 — StoSilent Top finish

### Build-up



- 1 — Sub-construction with StoSilent Profile Tape
- 2 — StoSilent Board 310 acoustic panel
- 3 — StoSilent Fix adhesive
- 4 — StoSilent Plan filler and levelling coat
- 5 — StoSilent Decor M intermediate coat
- 6 — StoSilent Decor finish



# StoSilent Distance A2

## System overview

### StoSilent Distance A2

**Suspended, non-combustible acoustic system made of expanded glass granulate boards**

#### System advantages

- Low weight
- Easy application due to homogeneous board structure
- Low moisture-induced and thermal expansion
- With non-air-permeable facing
- Seamless installation possible across areas of up to 200 m<sup>2</sup>
- Non-combustible, class A2-s1, d0 in accordance with EN 13501-1

#### Area of application

- interior
- For suspended ceiling constructions
- Recommendation: installation at a height of above 2 m on walls outside areas subject to a risk of impacts
- Especially suitable for ceilings and upper wall areas of escape routes, corridors, staircases, or meeting places
- StoSilent Board 100/110 acoustic panels are not bendable
- StoSilent Board 200/210 acoustic panels are bendable from radii of 10 m
- not suitable for splash zones

#### Fixing

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

#### Reaction to fire

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

#### Sound absorption

StoSilent Top coating:

- StoSilent Board 100:  $\alpha_w$  in accordance with EN 11654 max. 0.80, NRC in accordance with ASTM C423 max. 0.75
- StoSilent Board 200:  $\alpha_w$  in accordance with EN 11654 max. 0.55, NRC in accordance with ASTM C423 max. 0.55

values depending on height of construction

StoSilent Decor coating:

- StoSilent Board 110:  $\alpha_w$  in accordance with EN 11654 max. 0.80, NRC in accordance with ASTM C423 max. 0.80
- StoSilent Board 210:  $\alpha_w$  in accordance with EN 11654 max. 0.55, NRC in accordance with ASTM C423 max. 0.60

values depending on height of construction

#### Design options

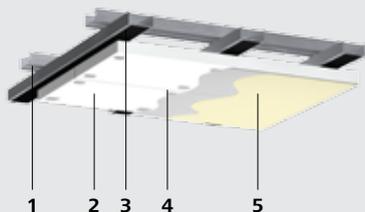
- smooth surface with fine or finest grain size
- textured surface with fine grain size

#### Application

- By trained specialists

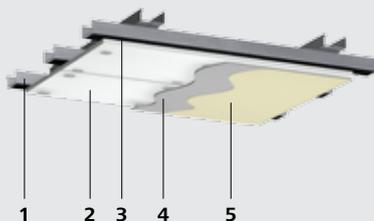
## Systems

### Build-up



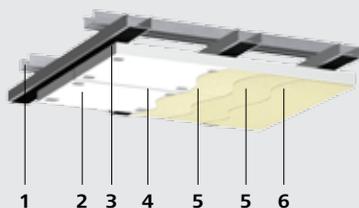
- 1 — Sub-construction with StoSilent Profile Tape
- 2 — StoSilent Board 100 acoustic panel
- 3 — StoSilent Fix adhesive
- 4 — StoSilent Top Basic intermediate coat
- 5 — StoSilent Top finish

### Build-up



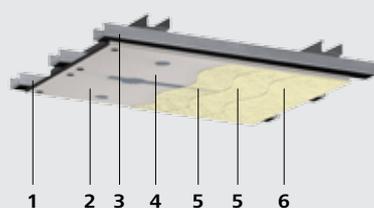
- 1 — Sub-construction with StoSilent Profile Tape
- 2 — StoSilent Board 200 acoustic panel
- 3 — StoSilent Fix adhesive
- 4 — StoSilent Top Basic intermediate coat
- 5 — StoSilent Top finish

### Build-up



- 1 — Sub-construction with StoSilent Profile Tape
- 2 — StoSilent Board 110 acoustic panel
- 3 — StoSilent Fix adhesive
- 4 — StoSilent Plan filler and levelling coat
- 5 — StoSilent Decor M intermediate coat
- 6 — StoSilent Decor finish

### Build-up



- 1 — Sub-construction with StoSilent Profile Tape
- 2 — StoSilent Board 210 acoustic panel
- 3 — StoSilent Fix adhesive
- 4 — StoSilent Plan filler and levelling coat
- 5 — StoSilent Decor M intermediate coat
- 6 — StoSilent Decor finish

# StoSilent Distance Flex

## System overview

**StoSilent Distance Flex**  
Suspended, bendable acoustic system made of expanded glass granulate boards

### System advantages

- Low weight
- Easy application due to homogeneous board structure
- Bendable from radii of 5 m
- Low moisture-induced and thermal expansion
- Airtight facing on the back of the board
- Seamless installation possible across areas of up to 200 m<sup>2</sup>

### Area of application

- interior
- for suspended ceiling and wall constructions
- Recommendation: installation at a height of above 2 m on walls outside areas subject to a risk of impacts
- not suitable for splash zones

### Fixing

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

### Reaction to fire

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

### Sound absorption

- $\alpha_w$  in accordance with EN 11654: max. 0.45
- NRC in accordance with ASTM C423: max. 0.50
- values depending on height of construction

### Design options

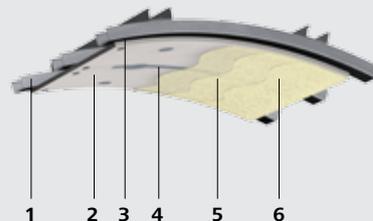
- Textured surface with fine graining

### Application

- By trained specialists

## System

### Build-up



- 1 — Sub-construction with StoSilent Profile Tape
- 2 — StoSilent Board 310 F acoustic panel
- 3 — StoSilent Fix adhesive
- 4 — StoSilent Plan filler and levelling coat
- 5 — StoSilent Decor M intermediate coat
- 6 — StoSilent Decor finish

# StoSilent Distance

## Suspension and sub-construction

The **StoSilent Distance**, **StoSilent Distance A2**, and **StoSilent Distance Flex seamless acoustic panel systems** are always mounted onto a compression-proof metal sub-construction and are anchored in the ceiling substrate.

### Suspension

- Commercially available vernier hangers and compression-proof direct hangers are to be used for the installation of the sub-construction. The suspension heights range from approx. 15 mm to several metres
- If the load-bearing capacity of the ceiling on site (e.g. in old buildings) is not sufficient to support the suspended loads, long-span hangers need to be employed. When professionally planned and installed, these hangers will bear the loads from the sub-construction
- Due to their high level of dimensional stability, grid supports should be used along with, preferably, long-span hangers with double-T cross section
- Long-span hangers are also installed in the event of excess spacing between load-bearing structural members

- Long-span hangers can also be employed whenever acoustic protection requirements necessitate the separation of structural members

### Sub-construction

In all seamless StoSilent Distance acoustic panel systems, a compression-proof metal sub-construction must be installed in accordance with EN 13964 "Suspended ceilings – Requirements and test methods". Anchoring of the sub-construction in the ceiling substrate is dictated by the structural requirements of the construction situation on site. Anchors and screws must be selected in accordance with the material and substrate used as well as the loads to be expected. It is not permissible to use hangers with quick-clamping springs or wire suspension. The acoustic panels are fixed to the sub-construction directly using drywall screws.

The individual sub-construction components must all be purchased and installed as part of a system from a single manufacturer.

### Fixing techniques for different suspension heights

Fixing techniques	top-hat profile	vernier hanger	Vernier extension	direct-mounting clip	Vernier direct hanger	Direct suspension (U-type hanger)
<b>Suspension height <sup>1)</sup> (mm)</b>	16.5 mm	Approx. 135–2000 mm	To further extend the vernier hanger	30 mm	59–108 mm	30–200 mm

<sup>1)</sup> Suspension height to upper edge of acoustic panel (air gap), i.e. the panel thickness and coating thickness always need to be added to the final figure for the thickness of the suspended ceiling.

# StoSilent Distance

## Suspension and sub-construction

The StoSilent Distance systems are suitable for use in various climate conditions. These range from offices to climate-controlled swimming pools. The prerequisite is a suitable sub-construction, which must be selected according to the stress classes defined in EN 13964. In general, screwing the acoustic panels to sub-constructions made from other materials, such as timber, is not advisable. In contrast to expanded glass granulate, wood has very different physical characteristics. The thermal and hygric dimensional changes of timber are many times greater than the changes affecting acoustic panels. If these panels are ever screwed to anything other than a compression-proof metal sub-construction, this automatically voids the warranty.

### Rooms exposed to moisture and swimming baths

Special requirements apply to rooms exposed to moisture and to swimming baths. According to EN 13964 "Suspended

ceilings - requirements and test methods", additional protection against corrosion measures are vital for the steel sub-construction. The recommended sub-constructions are itemised in Tables 8 and 9 of EN 13964.

The table on the right gives an overview of the stress classes and the necessary measures.

#### Notes

Always fit acoustic panel systems to a compression-proof metal sub-construction in accordance with EN 13964

Fixing of sub-construction to ceiling substrate with hangers and nail anchors

The use of timber sub-constructions automatically voids the warranty.

Stress classes of suspended ceilings in accordance with EN 13964 2014-08, Table 8		Corrosion protection classes of metal sub-construction building elements in accordance with EN 13964 2014-08, Table 9
Class	Conditions	Profiles, hangers, connecting elements as building elements made from steel
A	Structural members exposed to a fluctuating relative humidity of up to 70 % and a fluctuating temperature of up to 25 °C but not exposed to corrosive contamination	Products with a cladding made from hot-dip coated metal [...] or with a cladding made from electrolytically galvanised flat products [...] or continually organically coated (coil-coated) products in corrosion protection class (interior) CPI2 for the side under stress [...]
b	Structural members exposed to a fluctuating relative humidity of up to 90 % and a fluctuating temperature of up to 30 °C but not exposed to corrosive contamination	Products with a cladding made from hot-dip coated metal [...] or with a cladding made from electrolytically galvanised flat products in accordance with EN 10152 with or without an additional organic coating [...] or continually organically coated (coil-coated) products in corrosion protection class (interior) CPI2 for the side under stress [...]
C	Structural members exposed to a fluctuating relative humidity of up to 95 % and a fluctuating temperature of up to 30 °C as well as potential condensation, but not exposed to corrosive contamination	Products with a cladding made from hot-dip coated metal [...] with an additional organic coating of 20 µm per front side or with a cladding made from electrolytically galvanised flat products in accordance with EN 10152 with an additional organic coating on the front side (60 µm or 40 µm, depending on type)
D	Conditions more stringent than those listed above	Special measures depending on the use and exposure to corrosion; minimum corrosion protection according to class C; additional measures as required; systems that have been subsequently powder-coated; products that can be classified as class C4 and C5 in accordance with EN ISO 12944

For more information and detailed requirements, see EN 13964: 2014-08 "Suspended ceilings – Requirements and test methods".

## Surfaces and installations

With its three different versions, the StoSilent Distance system is perfect for designing seamless, sound-absorbing walls and ceilings with surfaces of up to 200 m<sup>2</sup>. Its technical and visual functions are guaranteed if the following specifications are adhered to.

### Seamless surfaces

Our acoustic panel systems must have an open, all-round joint with adjacent building elements. The open cross section of the joint must be at least 0.8% of the total ceiling surface area. This ensures that there are similar climate conditions inside the room and in the ceiling cavity above it.

This reduces strong airflows and the surface stains associated with this phenomenon, resulting in longer renovation cycles than with other systems on the market. Different joint widths are produced depending on the size and geometry of the room. If the open shadow gap cannot be implemented with the required width – in particular when creating small ceiling surface areas – additional openings must be installed in the ceiling until the necessary open cross section of 0.8% of the total ceiling surface area has been achieved. These openings can be covered with empty speaker covers, ventilation covers, or similar items, for example.

### Installations

Installations in wall and ceiling coverings, such as loud-speakers, lights, service hatches, etc., can be implemented in all versions of the StoSilent Distance system.

Perfect functioning of the system is guaranteed under the following conditions:

- Please observe the system drawings during planning and execution
- Please observe the Technical Data Sheets for the products in the system
- Please include installations in the plans for flat-surfaced ceilings and wall coverings in advance
- If necessary, all requisite trimmers and additional hangers must be provided in the metal sub-construction in accordance with the Sto planning details
- Please adapt the load-bearing capacity of the sub-construction (hanger spacing, centre to centre distance of the profiles, etc.) to the applicable load-carrying points

### Guide values for seamless Sto acoustic panel systems

Max. surface area	200 m <sup>2</sup>
Max. projection length	20 m
Surface ≤ 100 m <sup>2</sup>	All-round joint, b = 20 mm*
Surface > 100 m <sup>2</sup>	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 surface area.

### Specifications for ceiling installations

Loading conditions	fixing	Notes
Loads ≤ 2.0 kg point load	Cavity fixing	Max. 2 units/m <sup>2</sup>
Loads ≤ 10 kg/m <sup>2</sup>	Direct fixing	Fix directly into the metal sub-construction or convert into distributed load, e. g. by backing with a wood veneer board.
Loads > 10 kg/m <sup>2</sup>	Direct fixing	Fix directly to the bare ceiling.

#### Notes

For the purpose of pressure equalisation, seamless acoustic panel systems need to have open, all-round joints and/or ceiling apertures (min. 0.8% of the ceiling surface area).

Existing structural expansion joints must always be incorporated.

With 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 system 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.



# StoSilent Distance

It's all about the right sound absorption

## Systems built over an area (seamless)

System	Board/product	coating	Build-up in accordance with ISO 354	Structural height in mm
StoSilent Distance	StoSilent Board 300	StoSilent Top Finish	E-45	45
	StoSilent Board 300 + mineral wool*	StoSilent Top Finish	E-45	45
	StoSilent Board 300	StoSilent Top Finish	E-115	115
	StoSilent Board 300	StoSilent Top Finish	E-260	260
	StoSilent Board 310	StoSilent Decor M	E-45	45
	StoSilent Board 310	StoSilent Decor M	E-260	260
	StoSilent Board 315 (filled, reflective)	StoSilent Decor M	E-260	260
	StoSilent Board 300, 25 mm	StoSilent Top Finish	E-55	55
	StoSilent Board 300, 25 mm + mineral wool*	StoSilent Top Finish	E-55	55
	StoSilent Board 300, 25 mm	StoSilent Top Finish	E-125	125
	StoSilent Board 300, 25 mm	StoSilent Top Finish	E-270	270
	StoSilent Board 300, 25 mm	StoSilent Top basic, white	E-55	55
	StoSilent Board 300, 25 mm + mineral wool**	StoSilent Top basic, white	E-55	55
	StoSilent Board 300, 25 mm	StoSilent Top basic, white	E-125	125
	StoSilent Board 300, 25 mm	StoSilent Top basic, white	E-270	270
	StoSilent Board 300, 25 mm	StoSilent Top basic, tinted (blue)	E-125	125
	StoSilent Board 310, 25 mm	StoSilent Decor M	E-55	55
	StoSilent Board 310, 25 mm + mineral wool**	StoSilent Decor M	E-55	55
	StoSilent Board 310, 25 mm	StoSilent Decor M	E-125	125
	StoSilent Board 310, 25 mm	StoSilent Decor M	E-270	270

\* Mineral wool, 30 mm thick, Knauf TP 120 A, 30 mm

\*\* Mineral wool, 30 mm thick, Isover Akustic SSP 1

	Board thickness in mm	$\alpha_w$ EN ISO 11654	NRC ASTM C423	SAA ASTM C423	Absorber class in accordance with EN ISO 11654	Test report
	15	0.45 (H)	0.45	0.47	D	M35 120/108
	15	0.40 (H)	0.45	0.43	D	M35 120/108
	15	0.40 (H)	0.45	0.43	D	M35 120/108
	15	0.35 (H)	0.40	0.41	D	M35 120/108
	15	0.45 (H)	0.50	0.50	D	M35 120/49
	15	0.40 (H)	0.50	0.49	D	M35 120/49
	15	0.10	0.05	0.07	–	M35 120/97
	25	0.60	0.55	0.56	C	M35 120/109
	25	0.55	0.55	0.54	D	M35 120/109
	25	0.55	0.55	0.53	D	M35 120/109
	25	0.50	0.50	0.52	D	M35 120/109
	25	0.50	0.45	0.45	D	M35 120/117
	25	0.50	0.45	0.43	D	M35 120/117
	25	0.50	0.45	0.43	D	M35 120/117
	25	0.45	0.40	0.42	D	M35 120/117
	25	0.50 (M)	0.55	0.55	D	M35 120/110
	25	0.50 (MH)	0.60	0.61	D	M35 120/114
	25	0.50 (MH)	0.60	0.59	D	M35 120/114
	25	0.50 (MH)	0.60	0.58	D	M35 120/114
	25	0.55 (MH)	0.60	0.61	D	M35 120/57



# StoSilent Distance

It's all about the right sound absorption

## Systems built over an area (seamless)

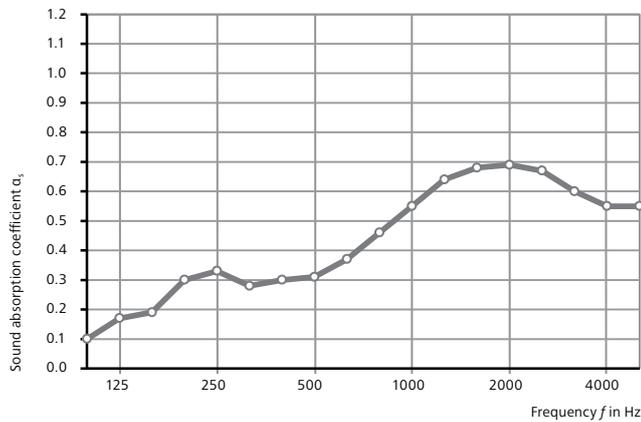
System	Board/product	coating	Build-up in accordance with ISO 354	Structural height in mm
StoSilent Distance A2	StoSilent Board 100	StoSilent Top Finish	E-55	55
	StoSilent Board 100 + mineral wool*	StoSilent Top Finish	E-55	55
	StoSilent Board 100	StoSilent Top Finish	E-125	125
	StoSilent Board 100	StoSilent Top Finish	E-270	270
	StoSilent Board 100	StoSilent Top Finish, tinted (black)	E-200	200
	StoSilent Board 100	StoSilent Top Finish – renovation, StoSilent Decor M in addition	E-200	200
	StoSilent Board 100	StoSilent Top Finish – renovation (removed and reapplied)	E-200	200
	StoSilent Board 110	StoSilent Decor M	E-55	55
	StoSilent Board 110 + mineral wool*	StoSilent Decor M	E-55	55
	StoSilent Board 110	StoSilent Decor M	E-125	125
	StoSilent Board 110 + mineral wool*	StoSilent Decor M	E-125	125
	StoSilent Board 110	StoSilent Decor M	E-270	270
	StoSilent Board 110, filled (reflective)	StoSilent Decor M	E-270	270
	StoSilent Board 200	StoSilent Top Finish	E-200	200
	StoSilent Board 200, with open shadow gap	StoSilent Top Finish	E-200 (variant)	200
	StoSilent Board 200, with open shadow gap + mineral wool**	StoSilent Top Finish	E-200 (variant)	200
	StoSilent Board 210	StoSilent Decor M	E-200	200
	StoSilent Board 210, with open shadow gap	StoSilent Decor M	E-200 (variant)	200
	StoSilent Board 210, with open shadow gap + mineral wool**	StoSilent Decor M	E-200 (variant)	200

\* Mineral wool, 30 mm thick, Isover Akustic SSP 1

\*\* Stone wool strips with W x H = 100 x 145 mm, 51 kg/m<sup>3</sup>

	Board thickness in mm	$\alpha_w$ EN ISO 11654	NRC ASTM C423	SAA ASTM C423	Absorber class EN ISO 11654	Test report
	25	0.80	0.75	0.76	b	M35 120/73
	25	0.70	0.65	0.66	C	M35 120/112
	25	0.70	0.65	0.64	C	M35 120/112
	25	0.70 (M)	0.70	0.71	C	M35 120/73
	25	0.70	0.70	0.69	C	M100960/25
	25	0.75	0.70	0.70	C	M100960/25
	25	0.50	0.45	0.46	D	M100960/25
	25	0.80	0.75	0.77	b	M35 120/81
	25	0.75 (MH)	0.80	0.78	C	M35 120/101
	25	0.75	0.75	0.74	C	M35 120/81
	25	0.75 (M)	0.75	0.75	C	M35 120/101
	25	0.75	0.75	0.72	C	M35 120/81
	25	0.10	0.10	0.08	–	M35 120/98
	25	0.50 (MH)	0.55	0.54	D	M10 0960/6
	25	0.50	0.55	0.55	D	M10 0960/6
	25	0.55	0.55	0.57	D	M10 0960/6
	25	0.40 (MH)	0.55	0.56	D	M10 0960/5
	25	0.50 (H)	0.55	0.55	D	M10 0960/5
	25	0.55 (H)	0.60	0.58	D	M10 0960/5

# Sound characteristics



Graphic depiction of the sound absorption spectrum over frequency

- As a sound absorption coefficient for build-ups across large areas such as StoSilent Direct, StoSilent Distance, StoSilent Compact
- As a sound absorption area per object in  $m^2$  for individual absorbers such as StoSilent Modular ceiling elements

**System:** StoSilent Distance  
**Build-up:** StoSilent Board 300  
**Coating:** StoSilent Top Basic and Finish  
**Thickness:** 15 mm  
**Structural height:** 45 mm  
 $\alpha_w$ : 0.45 (H)  
 $\alpha_{p, 125}$ : 0.15  
**NRC:** 0.45

System designations and descriptions of the test structure

Single-number value for sound absorption for build-ups across large areas such as StoSilent Direct, StoSilent Distance, StoSilent Compact

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.10	0.30	0.30	0.46	0.68	0.60
Octave band	<b>0.17</b>	<b>0.33</b>	<b>0.31</b>	<b>0.55</b>	<b>0.69</b>	<b>0.55</b>
Third-octave band	0.19	0.28	0.37	0.64	0.67	0.55
$\alpha_p$	0.15	0.30	0.35	0.55	0.70	0.55

Sound absorption for the one-third octave band centre frequencies, in accordance with the graphic depiction

Practical sound absorption coefficient  $\alpha_p$

Allocation of frequencies to the degrees of absorption

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.10	0.30	0.30	0.46	0.68	0.60
Octave band	<b>0.17</b>	<b>0.33</b>	<b>0.31</b>	<b>0.55</b>	<b>0.69</b>	<b>0.55</b>
Third-octave band	0.19	0.28	0.37	0.64	0.67	0.55
$\alpha_p$	0.15	0.30	0.35	0.55	0.70	0.55

Allocation of the octave band centre frequencies

Allocation of the one-third octave band centre frequencies

Allocation of the octave band centre frequencies

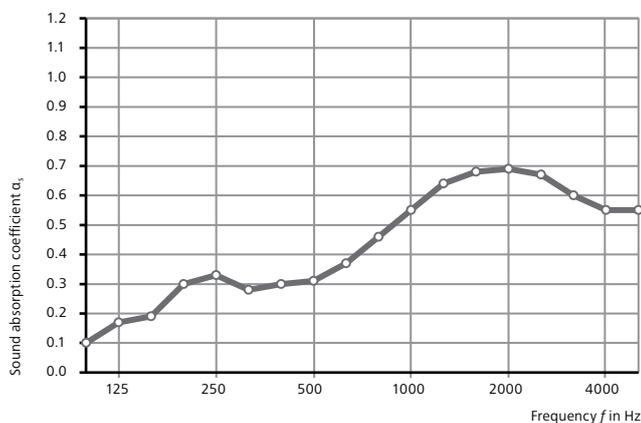
Explanation of the single-number values for sound absorption

Key	
$\alpha_s$	Sound absorption in accordance with EN ISO 354
$\alpha_p$	Practical sound absorption coefficient in accordance with EN ISO 11654
$\alpha_{p125}$	Practical sound absorption coefficient at 125 Hz, in accordance with EN ISO 11654
$\alpha_w$	Weighted sound absorption coefficient in accordance with EN ISO 11654
NRC	Noise Reduction Coefficient in accordance with ASTM C423

Single-number value for sound absorption and reference to the relevant standard, for build-ups across large areas such as StoSilent Direct, StoSilent Distance, StoSilent Compact

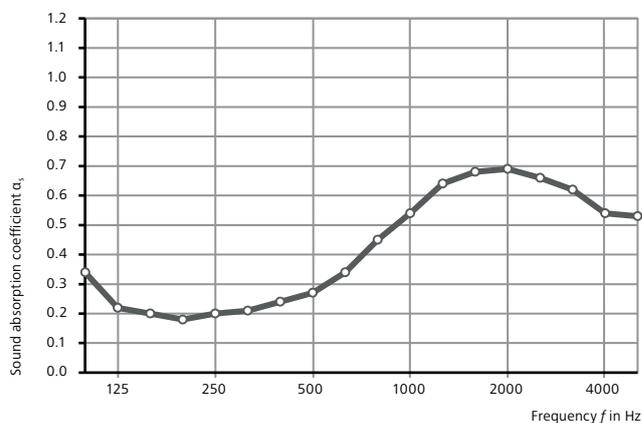
# StoSilent Distance

## Sound absorption in detail



**System:** StoSilent Distance  
**Build-up:** StoSilent Board 300  
**Coating:** StoSilent Top Basic & Finish  
**Thickness:** 15 mm

**Structural height:** 45 mm  
 $\alpha_w$ : 0.45 (H)  
 $\alpha_{p, 125}$ : 0.15  
**NRC:** 0.45

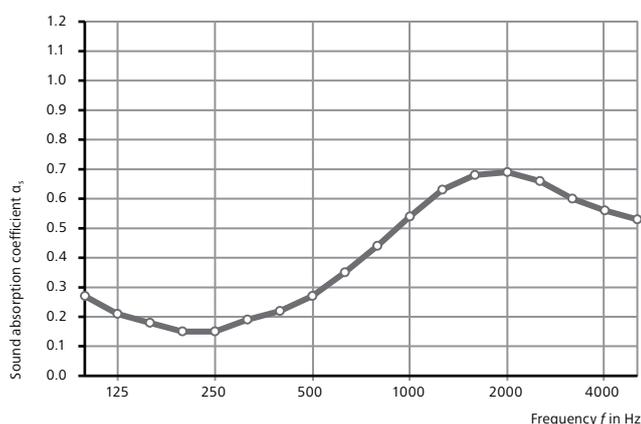


**System:** StoSilent Distance  
**Build-up:** StoSilent Board 300  
**Coating:** StoSilent Top Basic & Finish  
**Thickness:** 15 mm

**Structural height:** 115 mm  
 $\alpha_w$ : 0.40 (H)  
 $\alpha_{p, 125}$ : 0.25  
**NRC:** 0.45

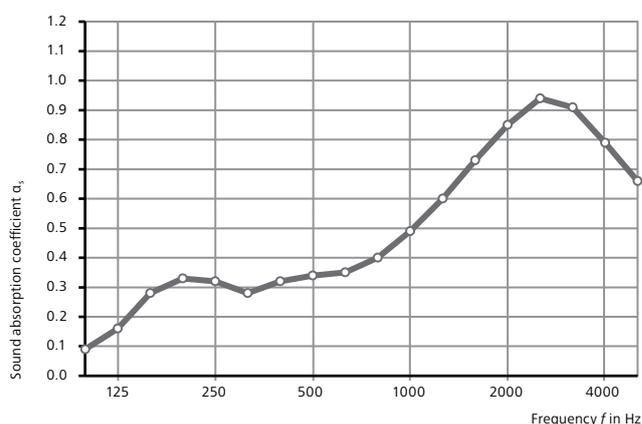
Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.10	0.30	0.30	0.46	0.68	0.60
Octave band	0.17	0.33	0.31	0.55	0.69	0.55
Third-octave band	0.19	0.28	0.37	0.64	0.67	0.55
$\alpha_p$	0.15	0.30	0.35	0.55	0.70	0.55

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.34	0.18	0.24	0.45	0.68	0.62
Octave band	0.22	0.20	0.27	0.54	0.69	0.54
Third-octave band	0.20	0.21	0.34	0.64	0.66	0.53
$\alpha_p$	0.25	0.20	0.30	0.55	0.70	0.55



**System:** StoSilent Distance  
**Build-up:** StoSilent Board 300  
**Coating:** StoSilent Top Basic & Finish  
**Thickness:** 15 mm

**Structural height:** 260 mm  
 $\alpha_w$ : 0.35 (H)  
 $\alpha_{p, 125}$ : 0.20  
**NRC:** 0.40



**System:** StoSilent Distance  
**Build-up:** StoSilent Board 310  
**Coating:** StoSilent Decor M  
**Thickness:** 15 mm

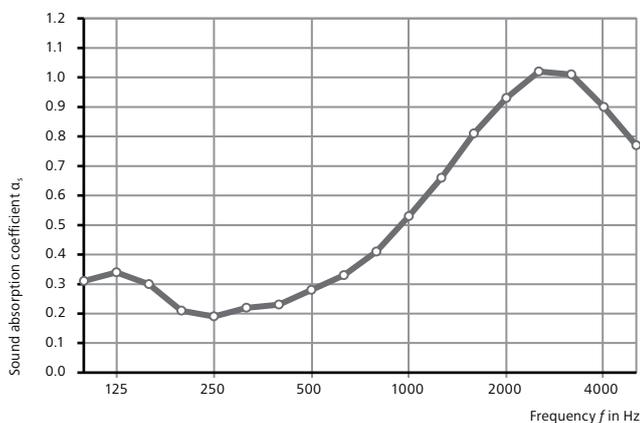
**Structural height:** 45 mm  
 $\alpha_w$ : 0.45 (H)  
 $\alpha_{p, 125}$ : 0.20  
**NRC:** 0.50

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.27	0.15	0.22	0.44	0.68	0.60
Octave band	0.21	0.15	0.27	0.54	0.69	0.56
Third-octave band	0.18	0.19	0.35	0.63	0.66	0.53
$\alpha_p$	0.20	0.15	0.30	0.55	0.70	0.55

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.09	0.33	0.32	0.40	0.73	0.91
Octave band	0.16	0.32	0.34	0.49	0.85	0.79
Third-octave band	0.28	0.28	0.35	0.60	0.94	0.66
$\alpha_p$	0.20	0.30	0.35	0.50	0.85	0.80

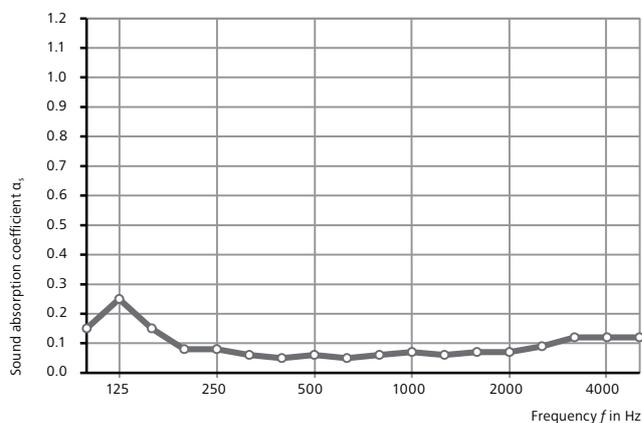
# StoSilent Distance

## Sound absorption in detail



**System:** StoSilent Distance  
**Build-up:** StoSilent Board 310  
**Coating:** StoSilent Decor M  
**Thickness:** 15 mm

**Structural height:** 260 mm  
 **$\alpha_w$ :** 0.40 (H)  
 **$\alpha_{p, 125}$ :** 0.30  
**NRC:** 0.50

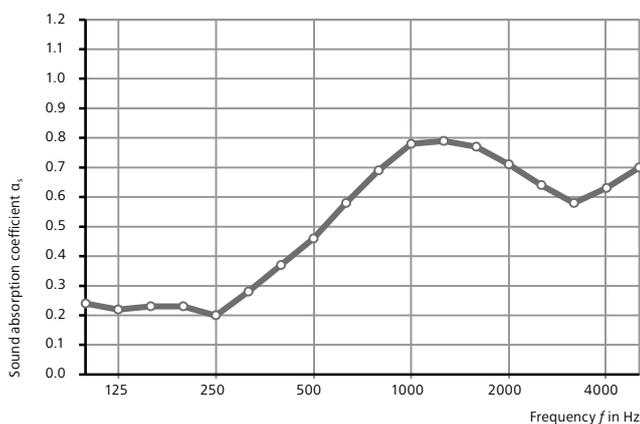


**System:** StoSilent Distance  
**Build-up:** StoSilent Board 315, filled (reflective)  
**Coating:** StoSilent Decor M  
**Thickness:** 15 mm

**Structural height:** 260 mm  
 **$\alpha_w$ :** 0.10  
 **$\alpha_{p, 125}$ :** 0.20  
**NRC:** 0.05

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.31	0.21	0.23	0.41	0.81	1.01
Octave band	<b>0.34</b>	<b>0.19</b>	<b>0.28</b>	<b>0.53</b>	<b>0.93</b>	<b>0.90</b>
Third-octave band	0.30	0.22	0.33	0.66	1.02	0.77
$\alpha_p$	0.30	0.20	0.30	0.55	0.90	0.90

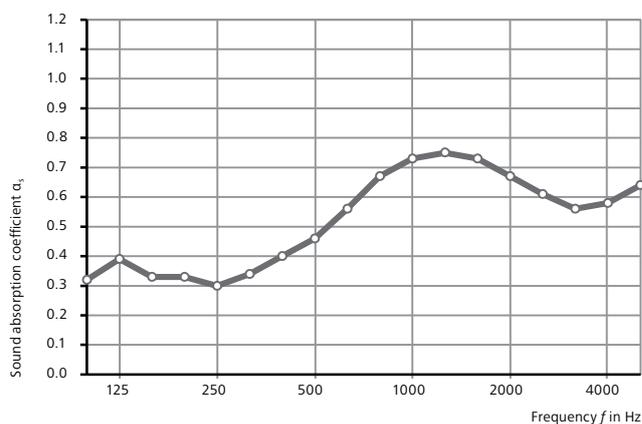
Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.15	0.08	0.05	0.06	0.07	0.12
Octave band	<b>0.25</b>	<b>0.08</b>	<b>0.06</b>	<b>0.07</b>	<b>0.07</b>	<b>0.12</b>
Third-octave band	0.15	0.06	0.05	0.06	0.09	0.12
$\alpha_p$	0.20	0.05	0.05	0.05	0.10	0.10



**System:** StoSilent Distance A2  
**Build-up:** StoSilent Board 200  
**Coating:** StoSilent Top Basic & Finish

**Thickness:** 25 mm  
**Structural height:** 200 mm  
 **$\alpha_w$ :** 0.50 (MH)  
 **$\alpha_{p, 125}$ :** 0.25  
**NRC:** 0.55

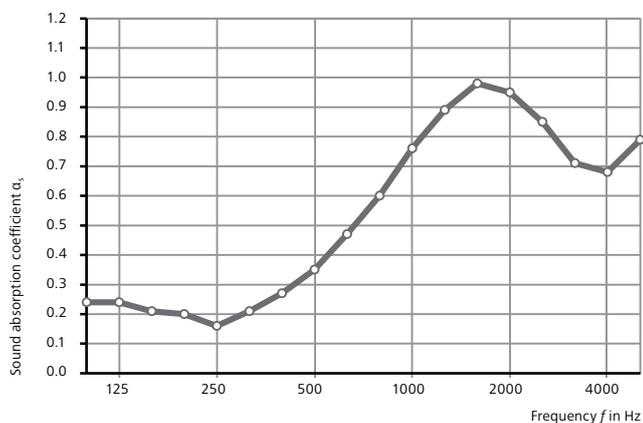
Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.24	0.23	0.37	0.69	0.77	0.58
Octave band	<b>0.22</b>	<b>0.20</b>	<b>0.46</b>	<b>0.78</b>	<b>0.71</b>	<b>0.63</b>
Third-octave band	0.23	0.28	0.58	0.79	0.64	0.70
$\alpha_p$	0.25	0.25	0.45	0.75	0.70	0.65



**System:** StoSilent Distance A2  
**Build-up:** StoSilent Board 200, with open shadow gap  
**Coating:** StoSilent Top Basic & Finish

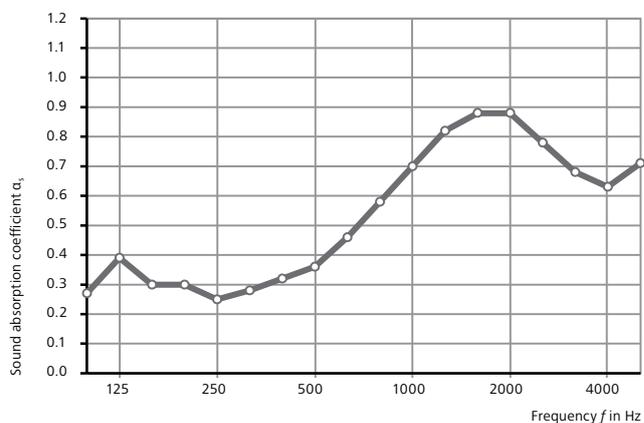
**Thickness:** 25 mm  
**Structural height:** 200 mm  
 **$\alpha_w$ :** 0.50  
 **$\alpha_{p, 125}$ :** 0.35  
**NRC:** 0.55

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.32	0.33	0.40	0.67	0.73	0.56
Octave band	<b>0.39</b>	<b>0.30</b>	<b>0.46</b>	<b>0.73</b>	<b>0.67</b>	<b>0.58</b>
Third-octave band	0.33	0.34	0.56	0.75	0.61	0.64
$\alpha_p$	0.35	0.30	0.45	0.70	0.65	0.60



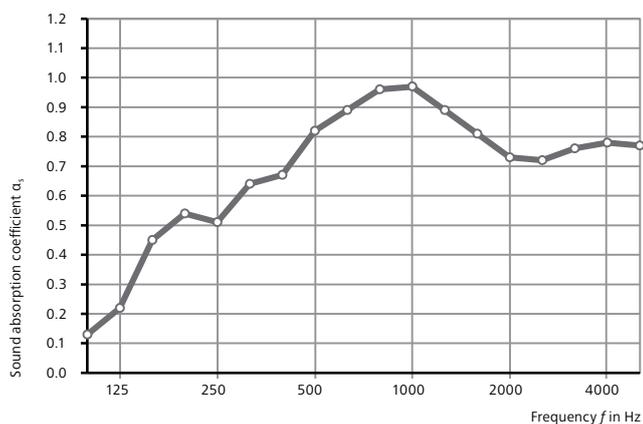
**System:** StoSilent Distance A2 **Structural height:** 200 mm  
**Build-up:** StoSilent Board 210  **$\alpha_w$ :** 0.40 (MH)  
**Coating:** StoSilent Decor M  **$\alpha_{p, 125}$ :** 0.25  
**Thickness:** 25 mm **NRC:** 0.55

Frequency <i>f</i> in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.24	0.20	0.27	0.60	0.98	0.71
Octave band	<b>0.24</b>	<b>0.16</b>	<b>0.35</b>	<b>0.76</b>	<b>0.95</b>	<b>0.68</b>
Third-octave band	0.21	0.21	0.47	0.89	0.85	0.79
$\alpha_p$	0.25	0.20	0.35	0.75	0.95	0.75



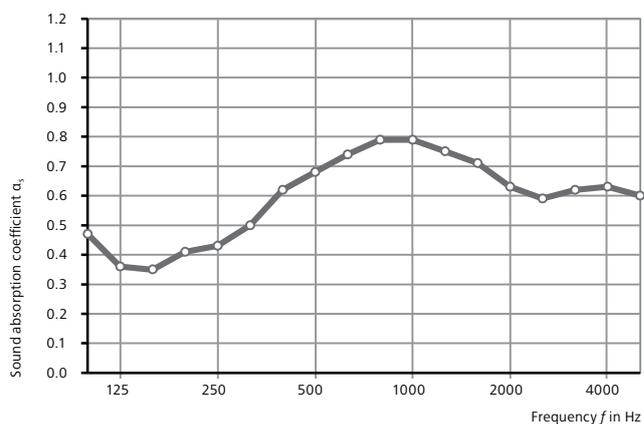
**System:** StoSilent Distance A2 **Thickness:** 25 mm  
**Build-up:** StoSilent Board 210, with open shadow gap **Structural height:** 200 mm  
**Coating:** StoSilent Decor M  **$\alpha_w$ :** 0.50 (H)  
 **$\alpha_{p, 125}$ :** 0.30 **NRC:** 0.55

Frequency <i>f</i> in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.27	0.30	0.32	0.58	0.88	0.68
Octave band	<b>0.39</b>	<b>0.25</b>	<b>0.36</b>	<b>0.70</b>	<b>0.88</b>	<b>0.63</b>
Third-octave band	0.30	0.28	0.46	0.82	0.78	0.71
$\alpha_p$	0.30	0.30	0.40	0.70	0.85	0.65



**System:** StoSilent Distance A2 **Structural height:** 55 mm  
**Build-up:** StoSilent Board 100  **$\alpha_w$ :** 0.80  
**Coating:** StoSilent Top Basic & Finish  **$\alpha_{p, 125}$ :** 0.25  
**Thickness:** 25 mm **NRC:** 0.75

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

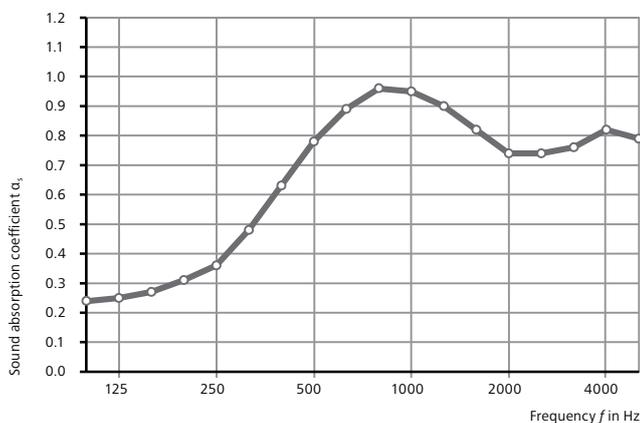


**System:** StoSilent Distance A2 **Structural height:** 125 mm  
**Build-up:** StoSilent Board 100  **$\alpha_w$ :** 0.70  
**Coating:** StoSilent Top Basic & Finish  **$\alpha_{p, 125}$ :** 0.40  
**Thickness:** 25 mm **NRC:** 0.65

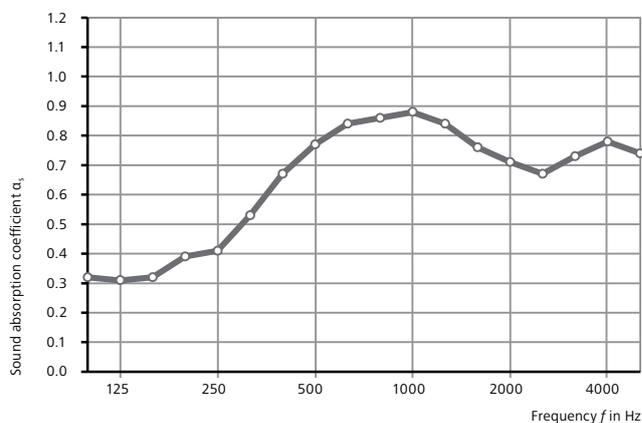
Frequency <i>f</i> in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.47	0.41	0.62	0.79	0.71	0.62
Octave band	<b>0.36</b>	<b>0.43</b>	<b>0.68</b>	<b>0.79</b>	<b>0.63</b>	<b>0.63</b>
Third-octave band	0.35	0.50	0.74	0.75	0.59	0.60
$\alpha_p$	0.40	0.45	0.70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

# StoSilent Distance

## Sound absorption in detail



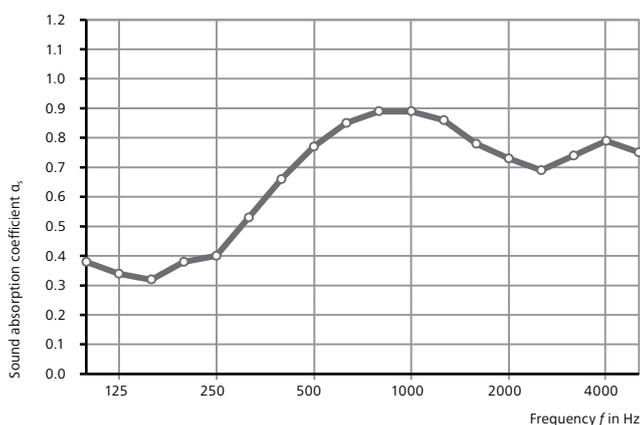
**System:** StoSilent Distance A2  
**Build-up:** StoSilent Board 100  
**Coating:** StoSilent Top Basic & Finish  
**Thickness:** 25 mm  
**Structural height:** 270 mm  
 $\alpha_w$ : 0.70 (M)  
 $\alpha_{p, 125}$ : 0.25  
**NRC:** 0.70



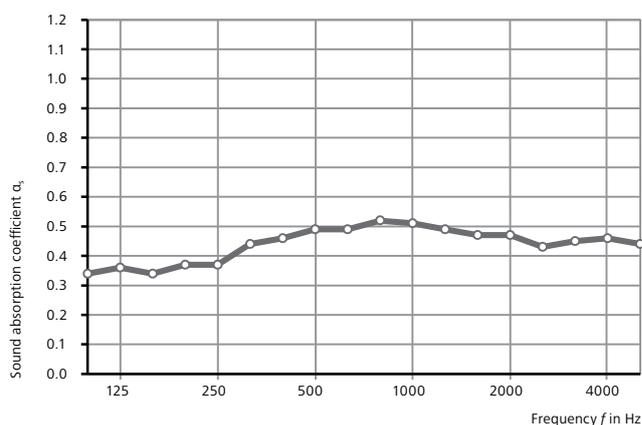
**System:** StoSilent Distance A2  
**Build-up:** StoSilent Board 100  
**Coating:** StoSilent Top Basic & Finish, tinted black  
**Thickness:** 25 mm  
**Structural height:** 200 mm  
 $\alpha_w$ : 0.70  
 $\alpha_{p, 125}$ : 0.30  
**NRC:** 0.70

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

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



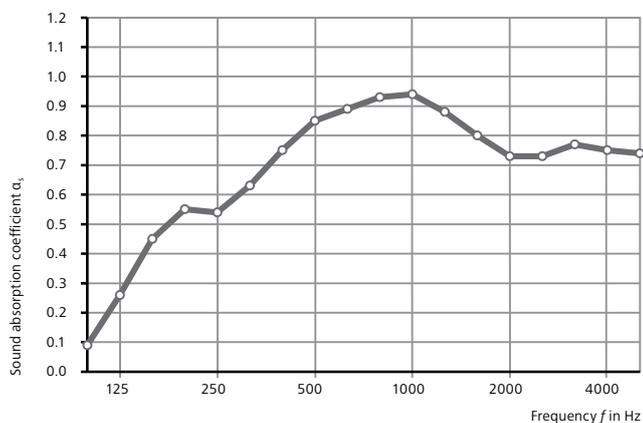
**System:** StoSilent Distance A2  
**Build-up:** StoSilent Board 100 + renovation  
**Coating:** StoSilent Top Basic & Finish + Decor M (renov.)  
**Thickness:** 25 mm  
**Structural height:** 200 mm  
 $\alpha_w$ : 0.75  
 $\alpha_{p, 125}$ : 0.35  
**NRC:** 0.70



**System:** StoSilent Distance A2  
**Build-up:** StoSilent Board 100 + renovation  
**Coating:** StoSilent Top Basic & Finish (removed & reapplied)  
**Thickness:** 25 mm  
**Structural height:** 200 mm  
 $\alpha_w$ : 0.50  
 $\alpha_{p, 125}$ : 0.35  
**NRC:** 0.45

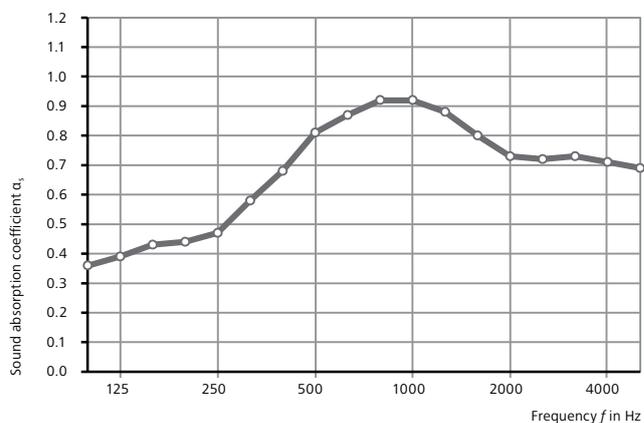
Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.38	0.38	0.66	0.89	0.78	0.74
Octave band	0.34	0.40	0.77	0.89	0.73	0.79
Third-octave band	0.32	0.53	0.85	0.86	0.69	0.75
$\alpha_p$	0.35	0.45	0.75	0.90	0.75	0.75

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.34	0.37	0.46	0.52	0.47	0.45
Octave band	0.36	0.37	0.49	0.51	0.47	0.46
Third-octave band	0.34	0.44	0.49	0.49	0.43	0.44
$\alpha_p$	0.35	0.40	0.50	0.50	0.45	0.45



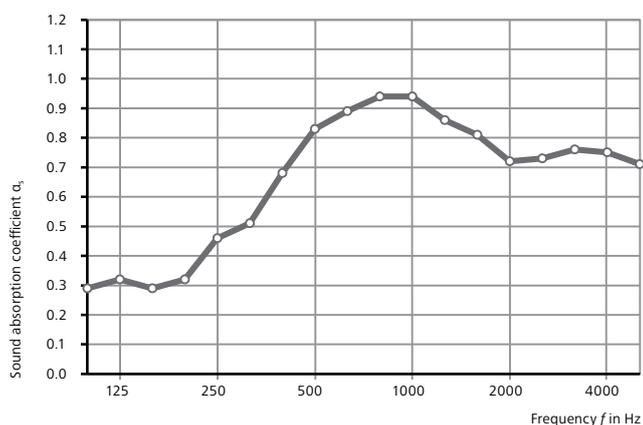
**System:** StoSilent Distance A2 **Structural height:** 55 mm  
**Build-up:** StoSilent Board 110  **$\alpha_w$ :** 0.80  
**Coating:** StoSilent Decor M  **$\alpha_{p, 125}$ :** 0.25  
**Thickness:** 25 mm **NRC:** 0.75

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



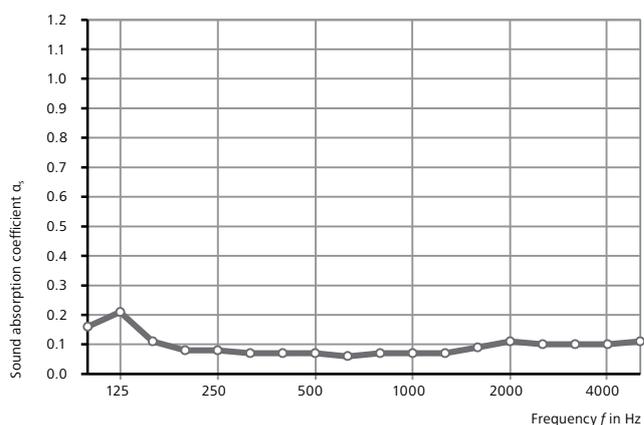
**System:** StoSilent Distance A2 **Structural height:** 125 mm  
**Build-up:** StoSilent Board 110  **$\alpha_w$ :** 0.75  
**Coating:** StoSilent Decor M  **$\alpha_{p, 125}$ :** 0.40  
**Thickness:** 25 mm **NRC:** 0.75

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



**System:** StoSilent Distance A2 **Structural height:** 270 mm  
**Build-up:** StoSilent Board 110  **$\alpha_w$ :** 0.75  
**Coating:** StoSilent Decor M  **$\alpha_{p, 125}$ :** 0.30  
**Thickness:** 25 mm **NRC:** 0.75

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



**System:** StoSilent Distance A2 **Structural height:** 270 mm  
**Build-up:** StoSilent Board 110, filled (reflective)  **$\alpha_w$ :** 0.10  
**Coating:** StoSilent Decor M  **$\alpha_{p, 125}$ :** 0.15  
**Thickness:** 25 mm **NRC:** 0.10

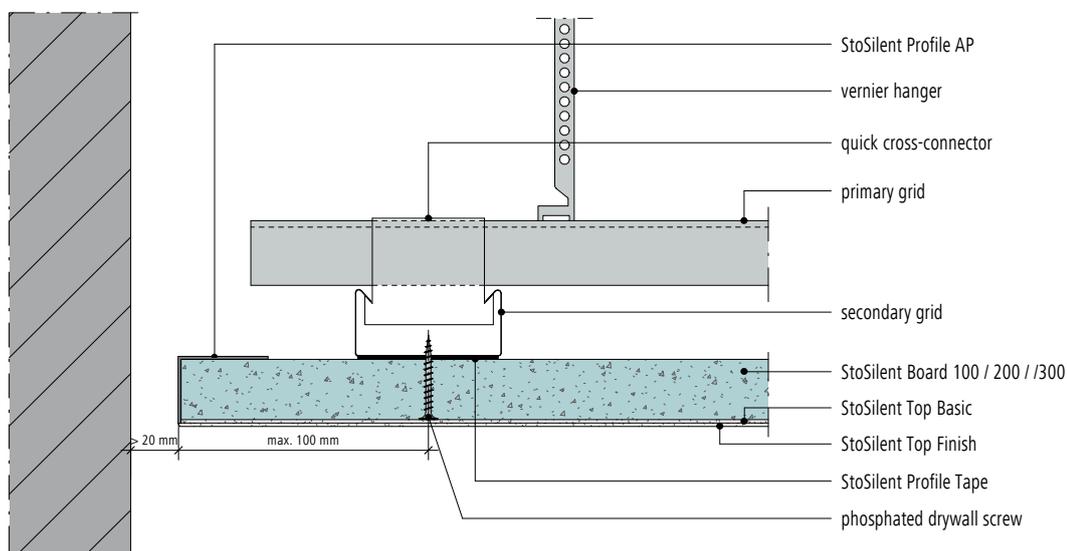
Frequency <i>f</i> in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.16	0.08	0.07	0.07	0.09	0.10
Octave band	<b>0.21</b>	<b>0.08</b>	<b>0.07</b>	<b>0.07</b>	<b>0.11</b>	<b>0.10</b>
Third-octave band	0.11	0.07	0.06	0.07	0.10	0.11
$\alpha_p$	0.15	0.10	0.05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

# StoSilent Distance

## Construction details: ceiling Coating: StoSilent Top

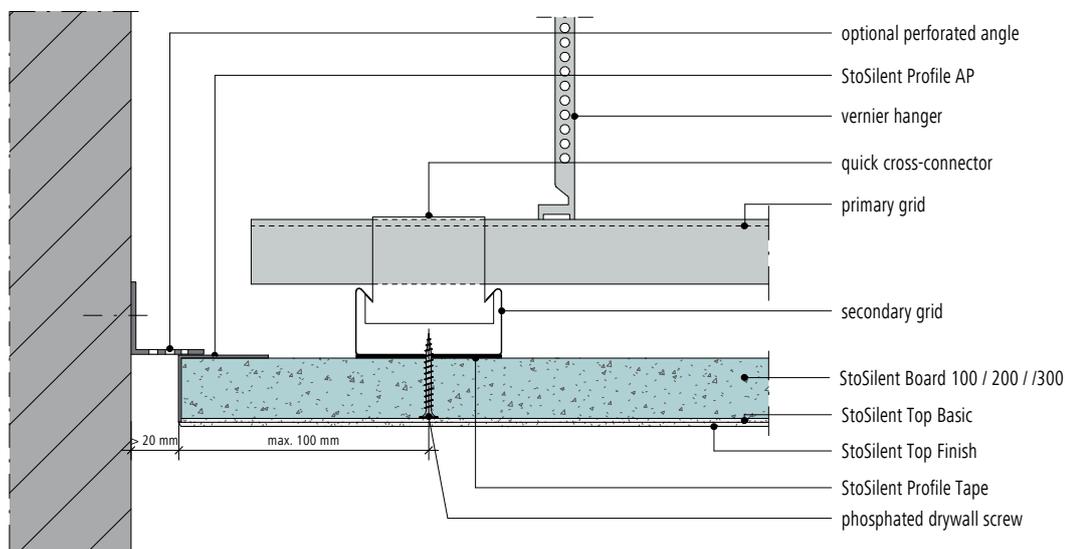
### Ceiling (vertical section): open wall junction

Sto-HQ-DE\_SSDI-BT-0100\_EN



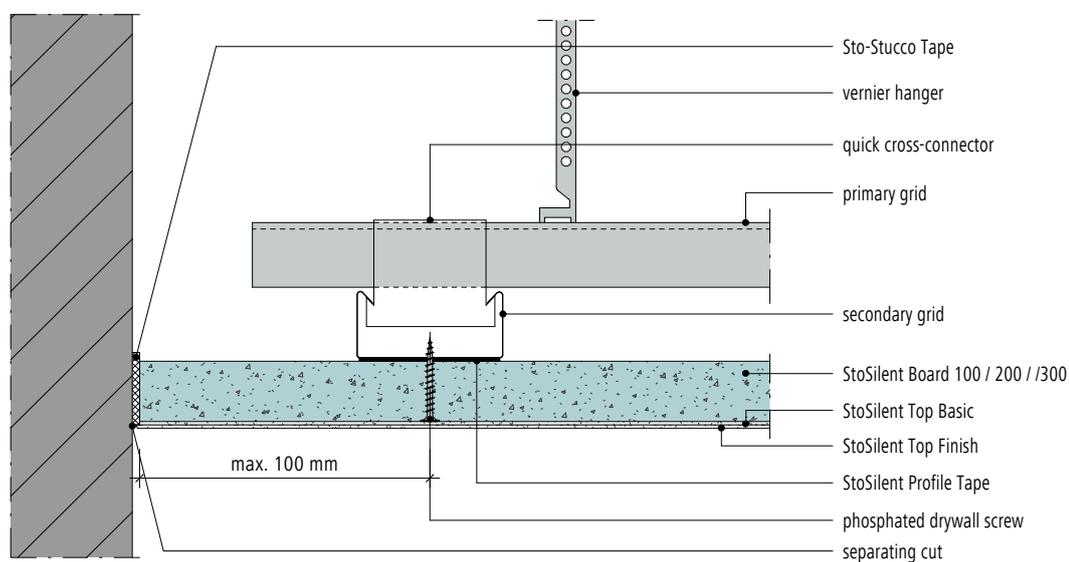
### Ceiling (vertical section): wall junction with perforated angle bracket

Sto-HQ-DE\_SSDI-BT-0110\_EN



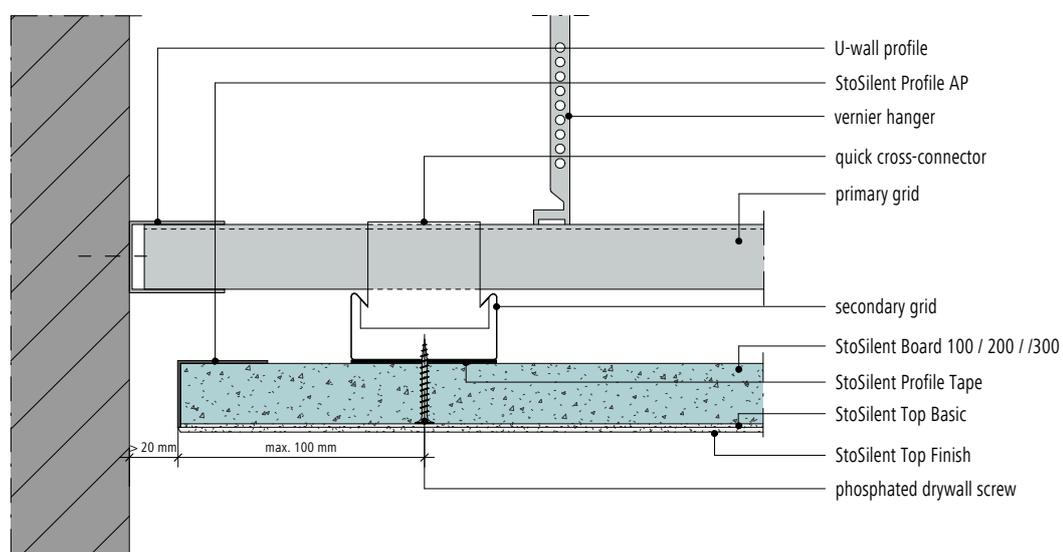
### Ceiling (vertical section): wall junction with Sto-Stucco Tape

Sto-HQ-DE\_SSDI-BT-0115\_EN



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

Sto-HQ-DE\_SSDI-BT-0140\_EN

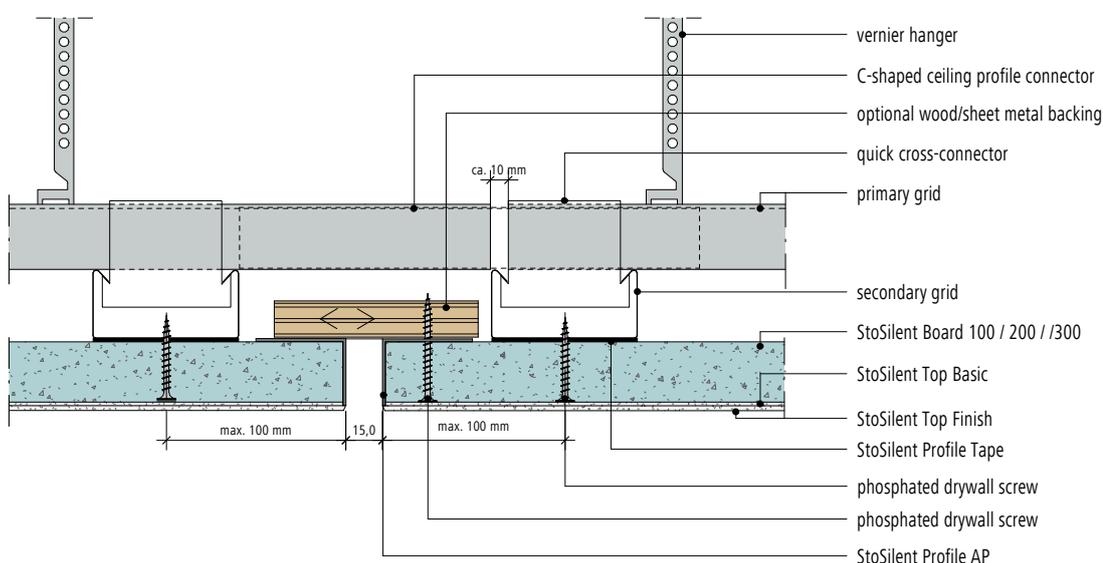


# StoSilent Distance

## Construction details: ceiling Coating: StoSilent Top

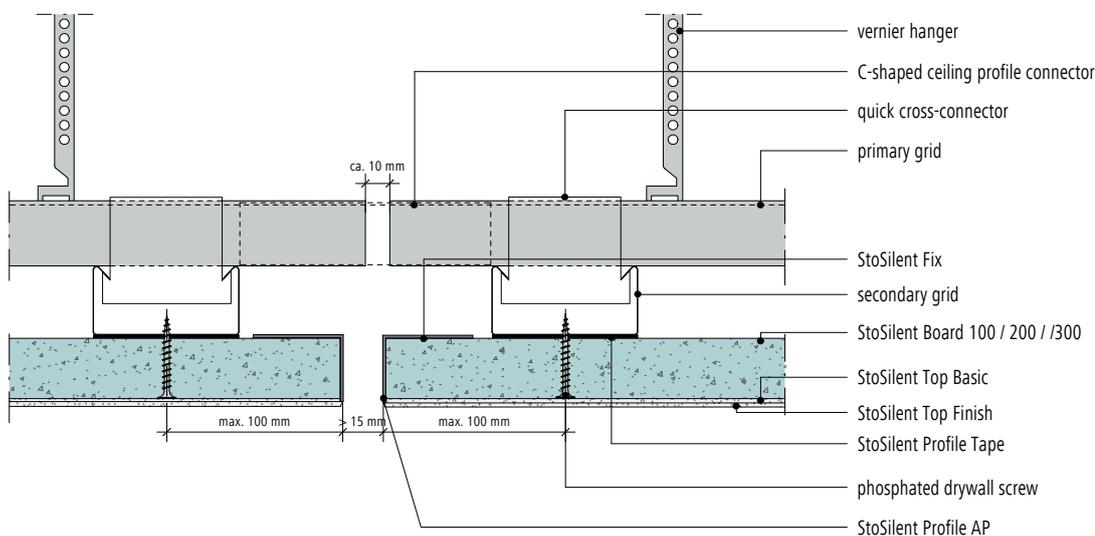
### Ceiling (vertical section): expansion joint formation, backed

Sto-HQ-DE\_SSDI-BT-0210\_EN



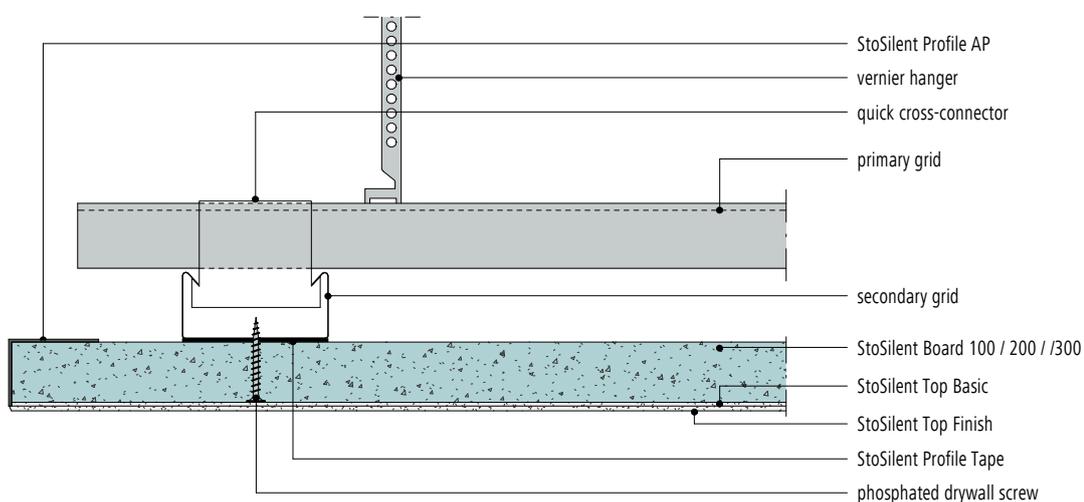
### Ceiling (vertical section): expansion joint formation

Sto-HQ-DE\_SSDI-BT-0220\_EN



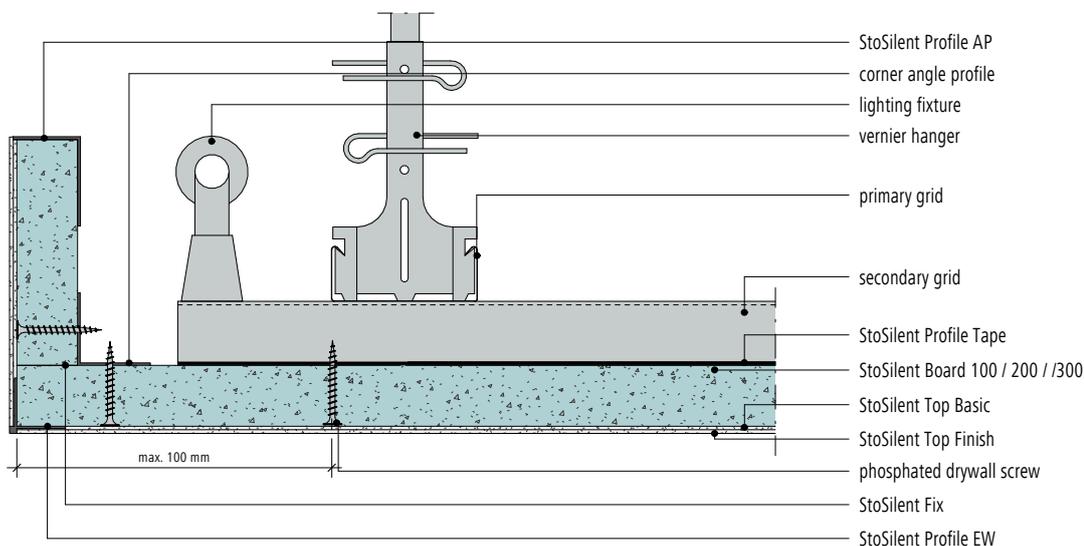
### Ceiling (vertical section): projection without load

Sto-HQ-DE\_SSDI-BT-0310\_EN



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

Sto-HQ-DE\_SSDI-BT-0320\_EN

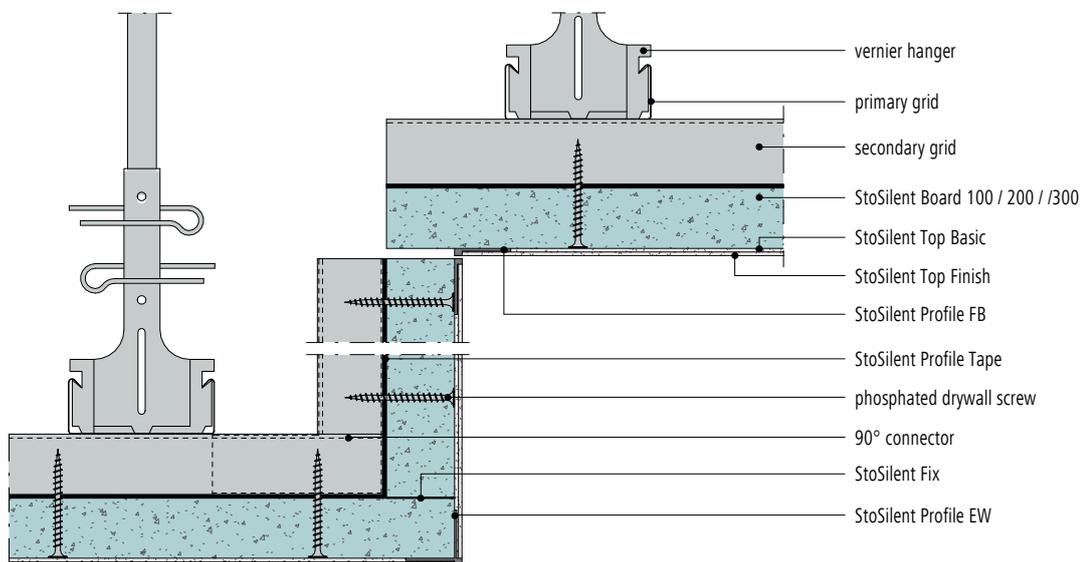


# StoSilent Distance

## Construction details: ceiling Coating: StoSilent Top

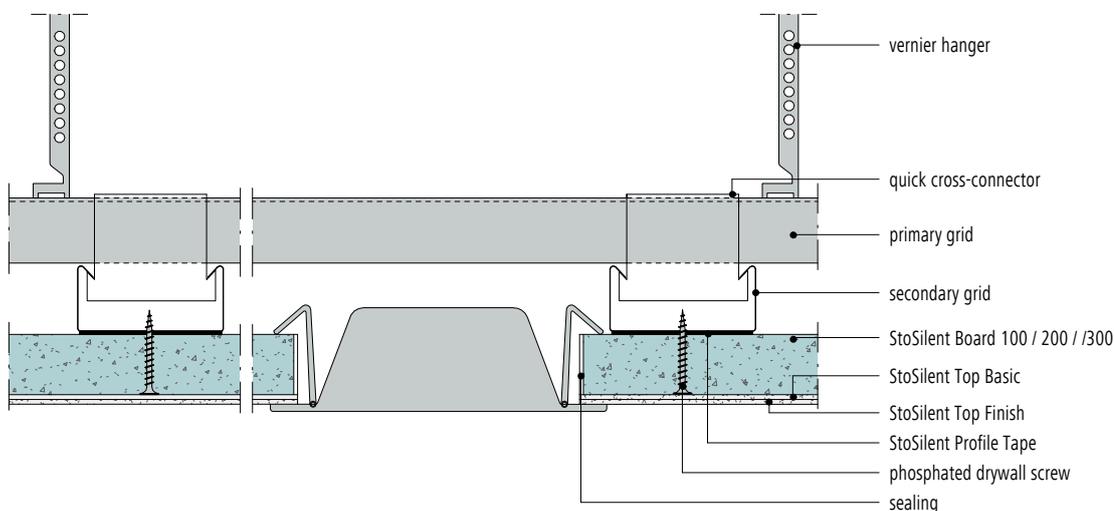
### Ceiling (vertical section): stepped structure in straight-edged application

Sto-HQ-DE\_SSDI-BT-0410\_EN



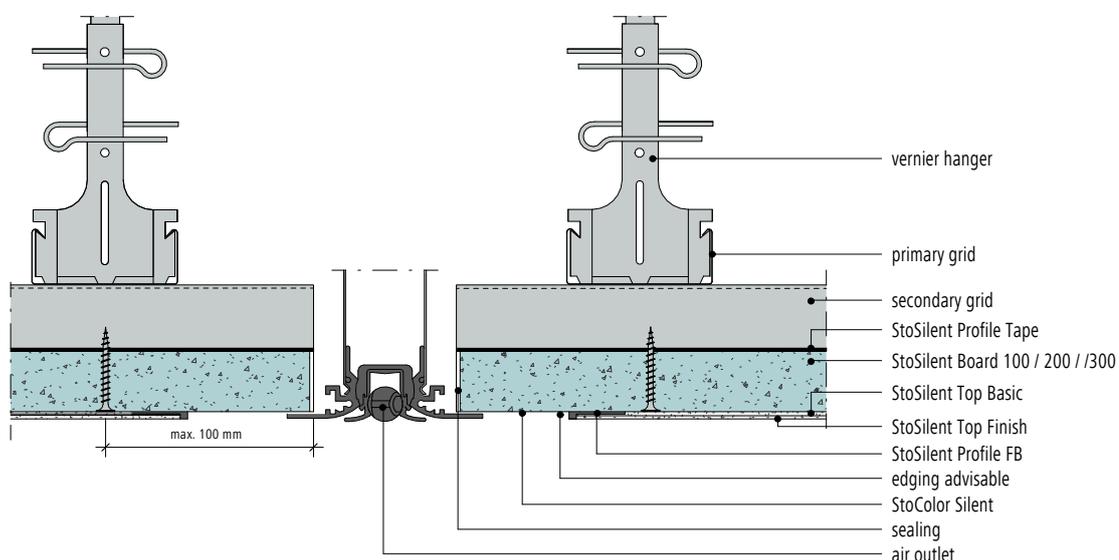
### Ceiling (vertical section): installation of lamps

Sto-HQ-DE\_SSDI-BT-0610\_EN



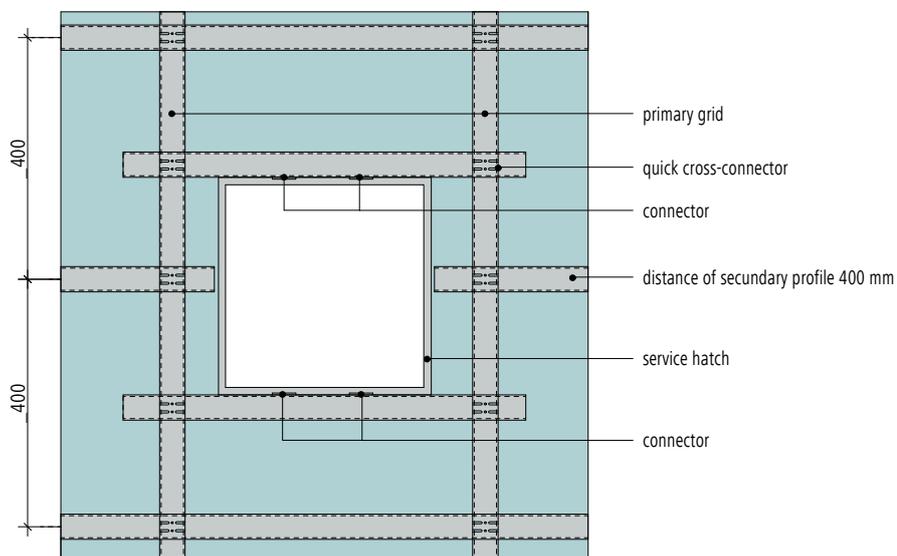
### Ceiling (vertical section): air outlet

Sto-HQ-DE\_SSDI-BT-0630\_EN



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

Sto-HQ-DE\_SSDI-BT-0640\_EN

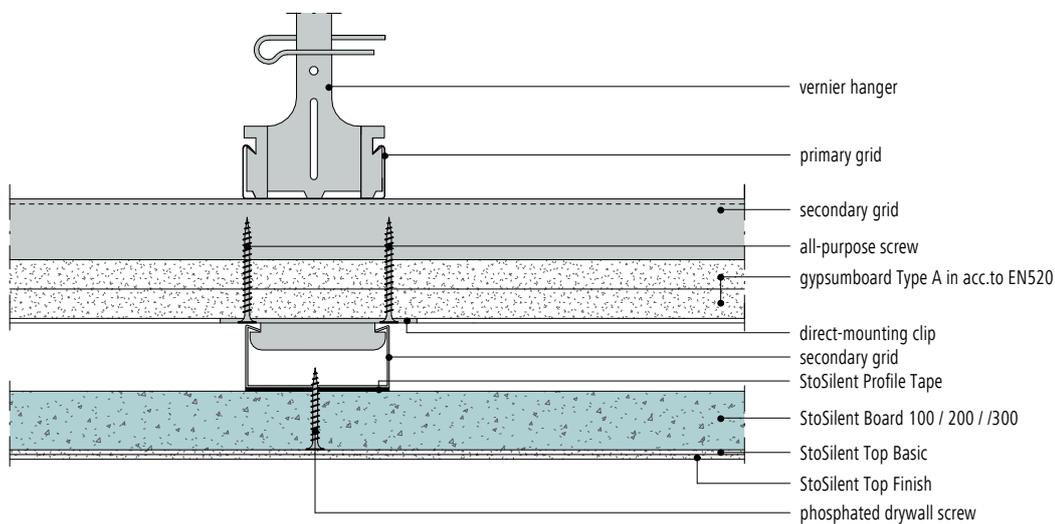


# StoSilent Distance

## Construction details: ceiling Coating: StoSilent Top

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

Sto-HQ-DE\_SSDI-BT-0720\_EN

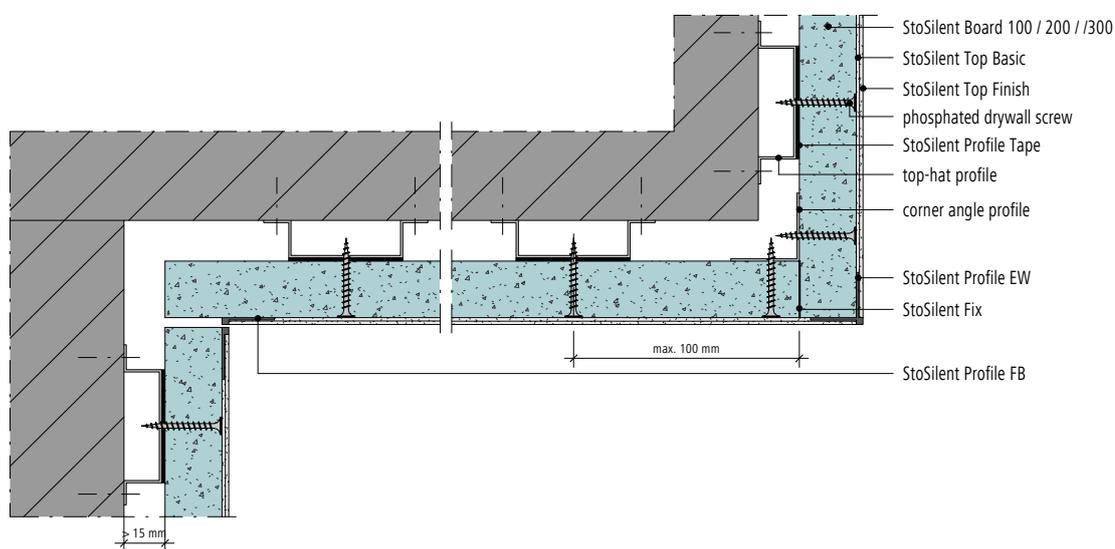


## Construction details: wall

### Coating: StoSilent Top

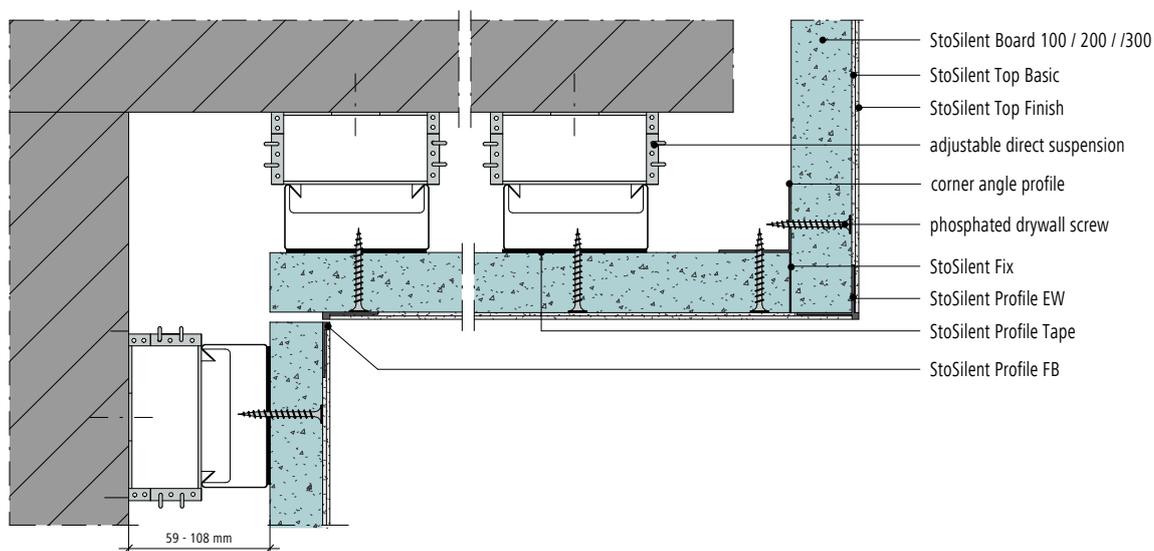
#### Wall (horizontal section): wall covering with top-hat profile

Sto-HQ-DE\_SSDI-BT-0511\_EN



#### Wall (horizontal section): wall covering with adjustable direct suspension

Sto-HQ-DE\_SSDI-BT-0520\_EN

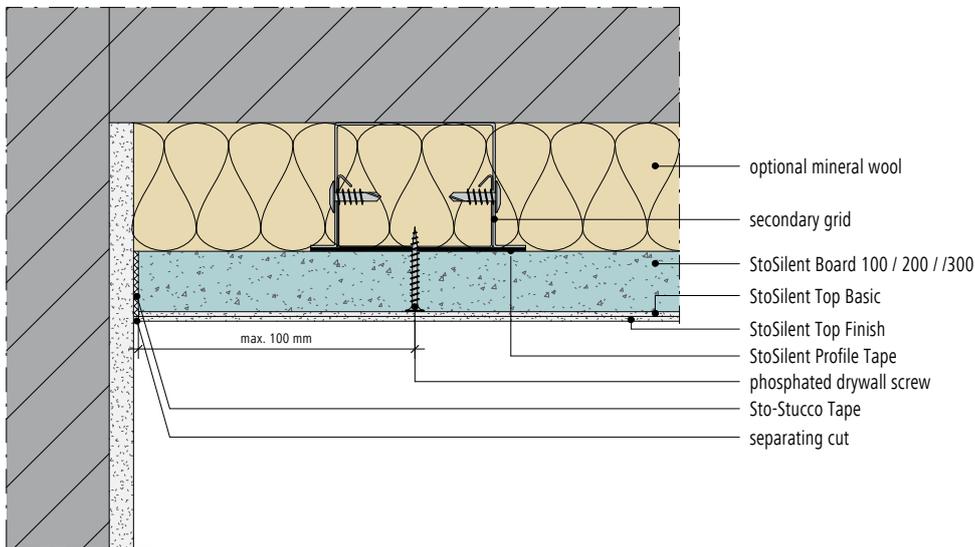


# StoSilent Distance

## Construction details: wall Coating: StoSilent Top

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

Sto-HQ-DE\_SSDI-BT-0540\_EN

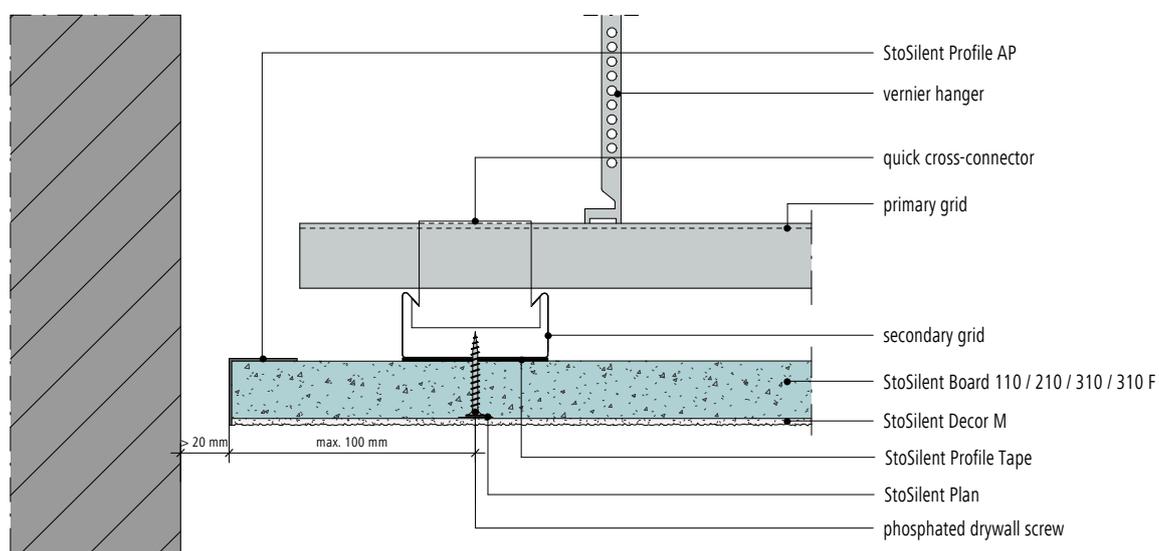


## Construction details: ceiling

### Coating: StoSilent Decor

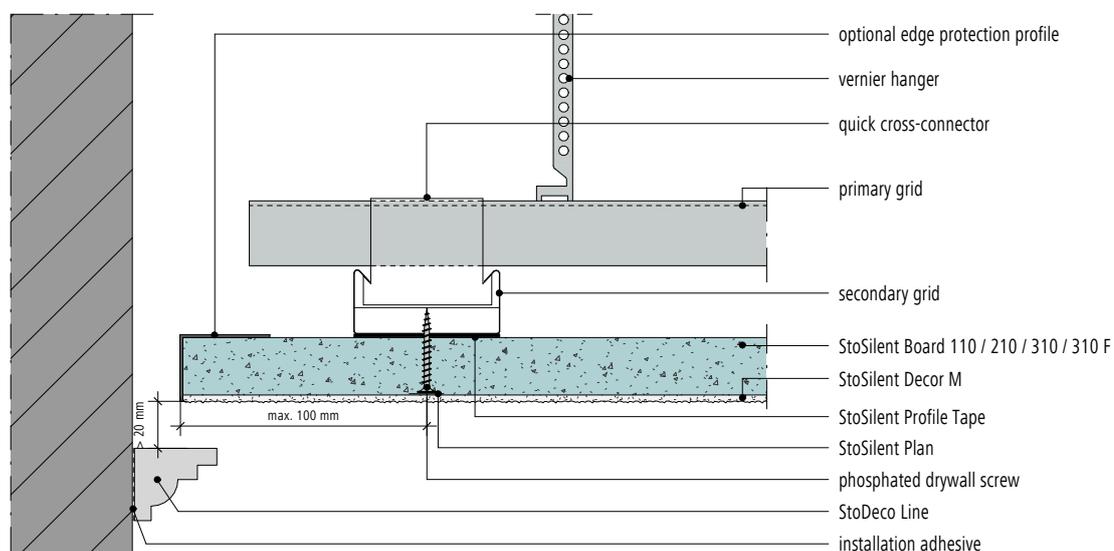
#### Ceiling (vertical section): open wall junction

Sto-HQ-DE\_SSDI-D-0100\_EN



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

Sto-HQ-DE\_SSDI-D-0120\_E

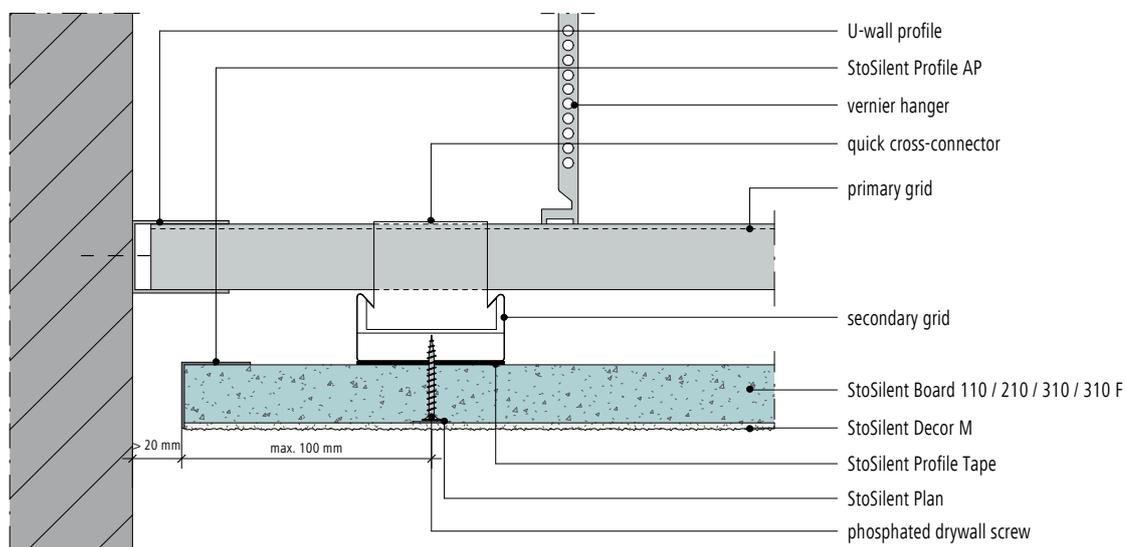


# StoSilent Distance

## Construction details: ceiling Coating: StoSilent Decor

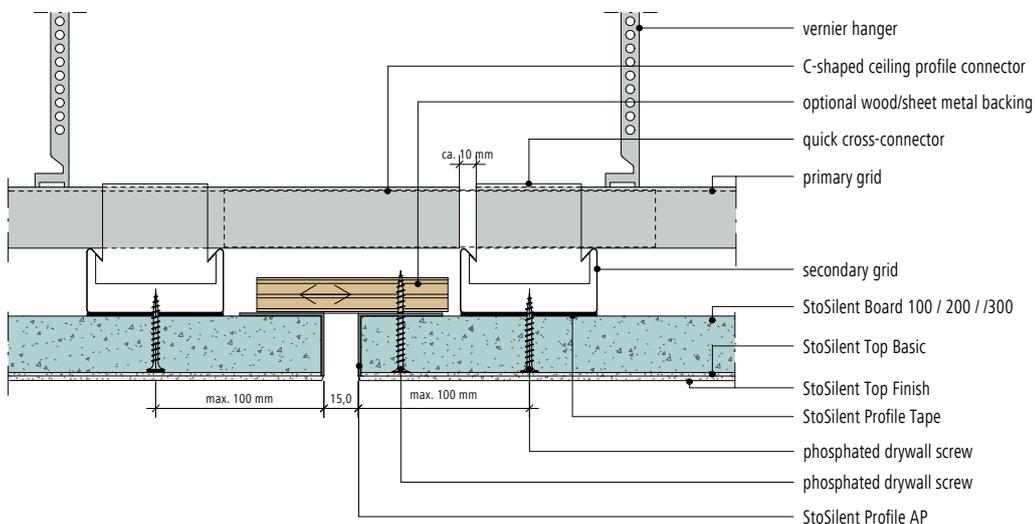
### Ceiling (vertical section): wall junction with U-wall profile

Sto-HQ-DE\_SSDI-D-0140\_EN.pdf



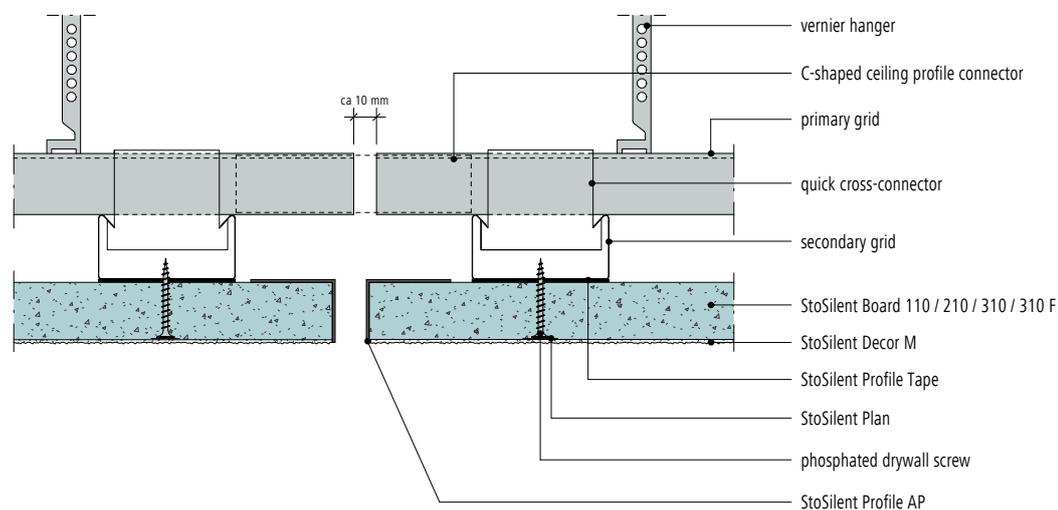
### Ceiling (vertical section): expansion joint formation, backed

Sto-HQ-DE\_SSDI-BT-0210\_EN



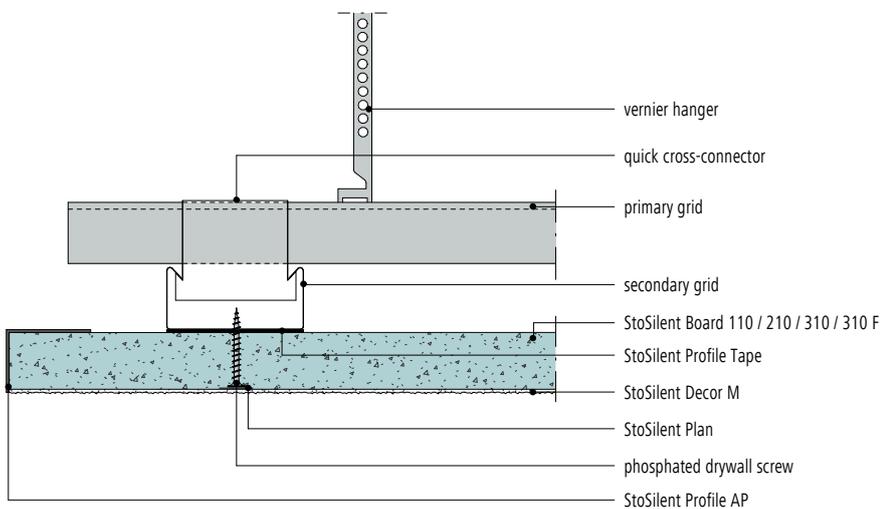
## Ceiling (vertical section): expansion joint formation, open

Sto-HQ-DE\_SSDI\_D-0220\_2019-12-01



## Ceiling (vertical section): projection without load

Sto-HQ-DE\_SSDI-D-0310\_EN

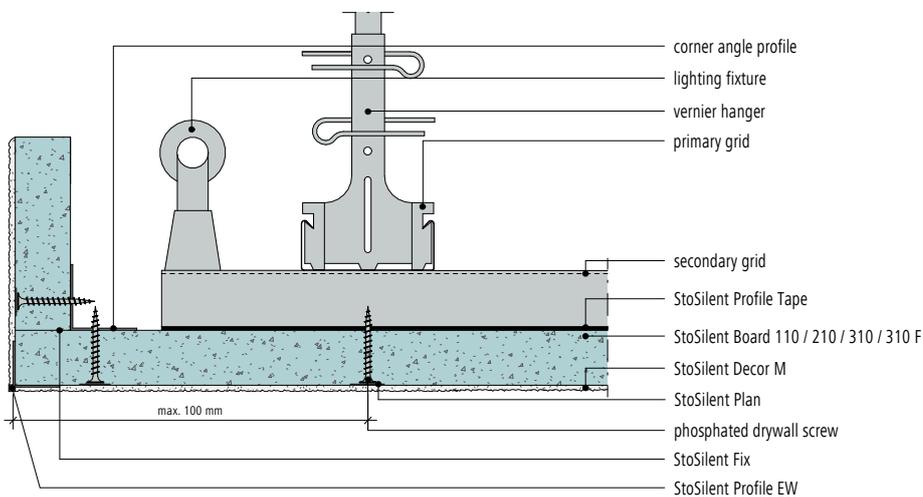


# StoSilent Distance

## Construction details: ceiling Coating: StoSilent Decor

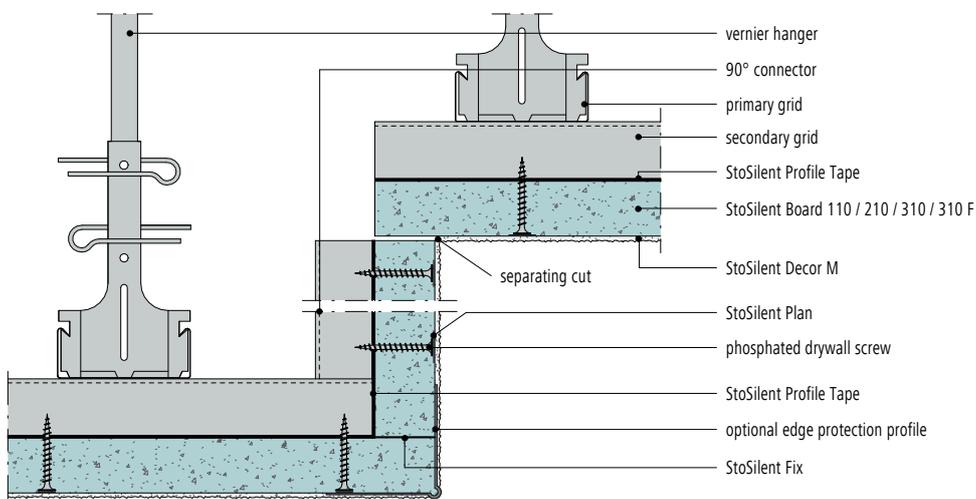
### Ceiling (vertical section): projection with upstanding edge and load

Sto-HQ-DE\_SSDI-D-0320\_EN



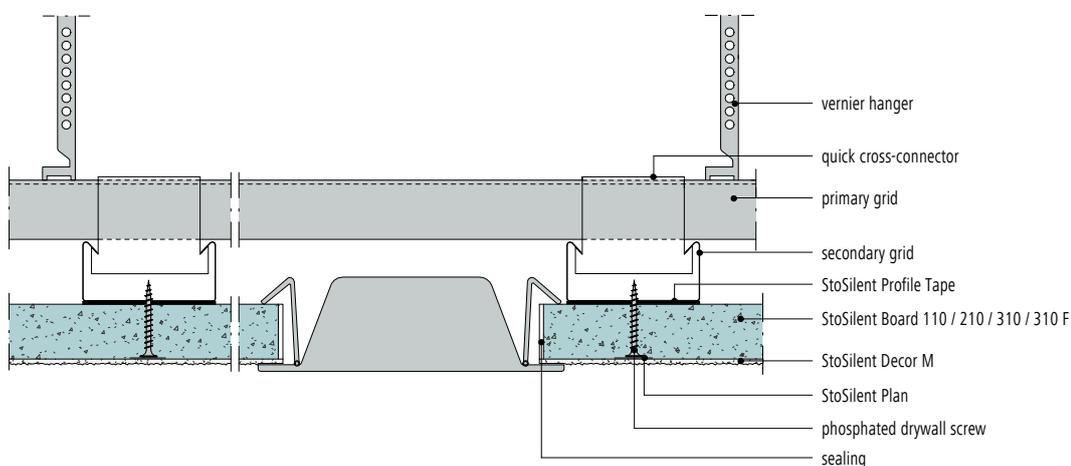
### Ceiling (vertical section): stepped structure in straight-edged application

Sto-HQ-DE\_SSDI-D-0410\_EN



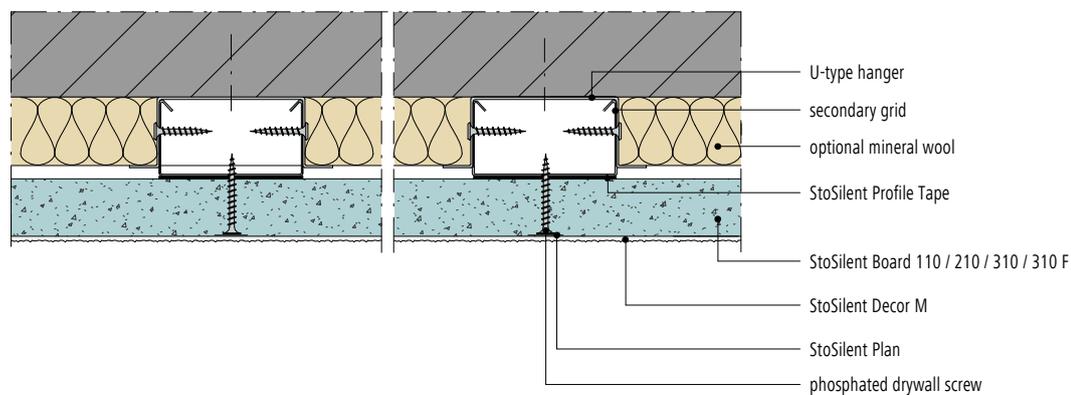
## Ceiling (vertical section): installation of lamps

Sto-HQ-DE\_SSDI-D-0610\_EN



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

Sto-HQ-DE\_SSDI-D-0530\_EN

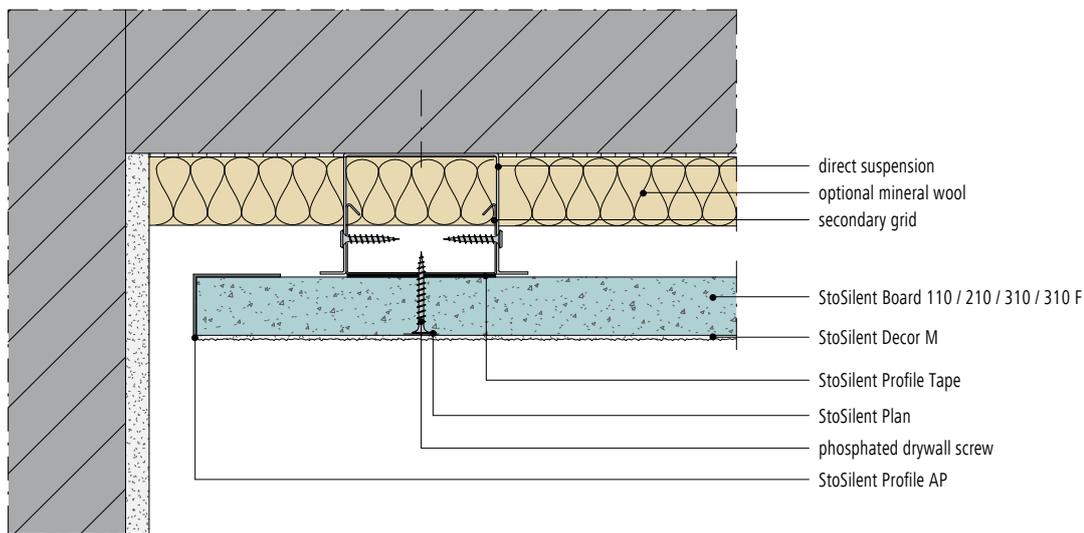


# StoSilent Distance

Construction details: ceiling  
 Coating: StoSilent Decor

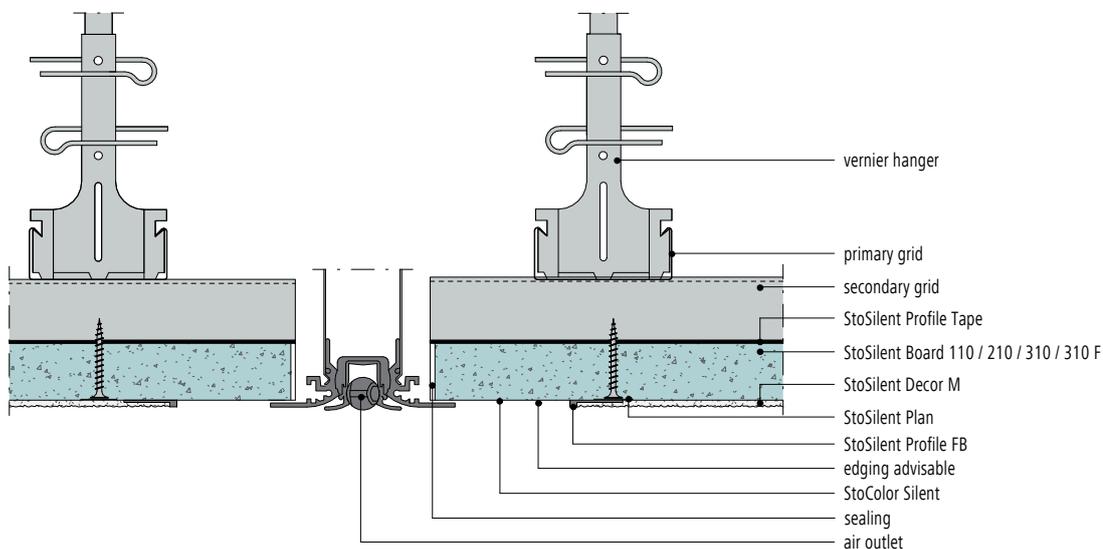
## Wall (horizontal section): lateral connection to a wall covering

Sto-HQ-DE\_SSDI-D-0540\_EN



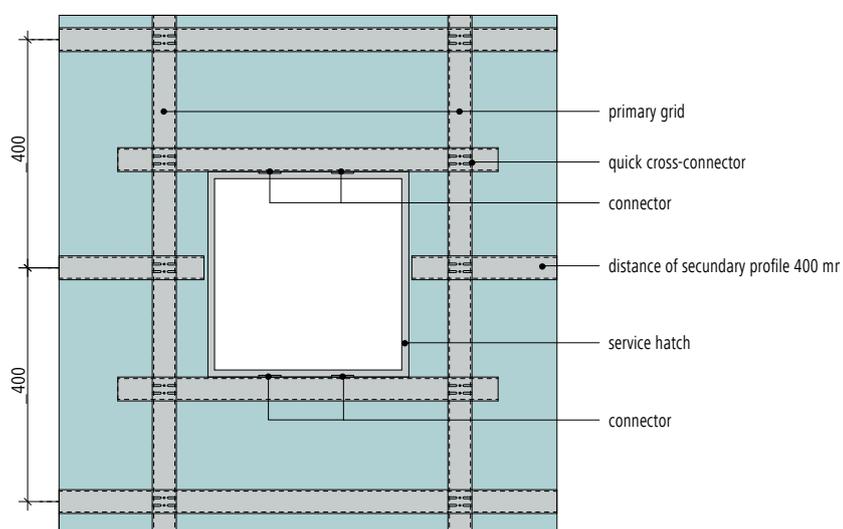
## Ceiling (vertical section): air outlet

Sto-HQ-DE\_SSDI-D-0630\_EN



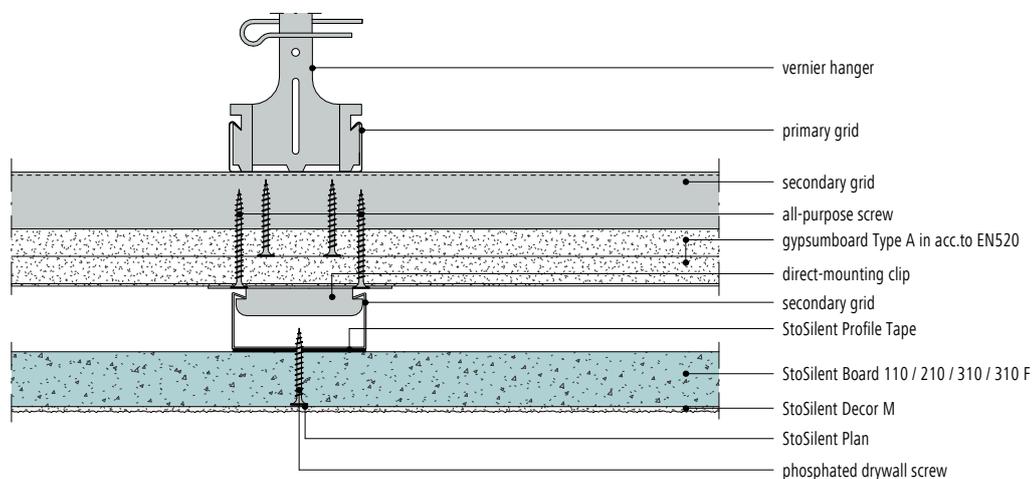
## Ceiling (horizontal section): service hatch with trimmer in the sub-construction

Sto-HQ-DE\_SSDI-D-0640\_EN



## Ceiling (vertical section): ceiling under ceiling

Sto-HQ-DE\_SSDI-D-0720\_EN.pdf

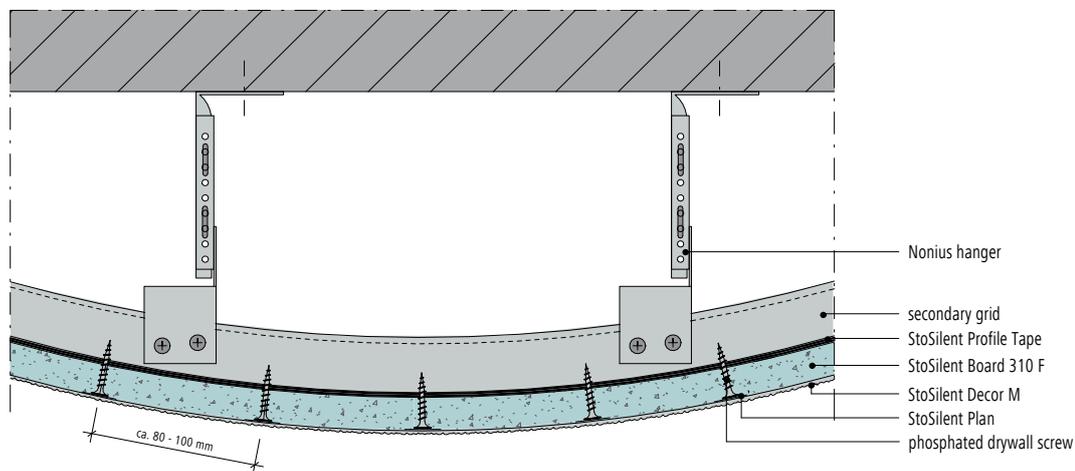


# StoSilent Distance

## Construction details: wall Coating: StoSilent Decor

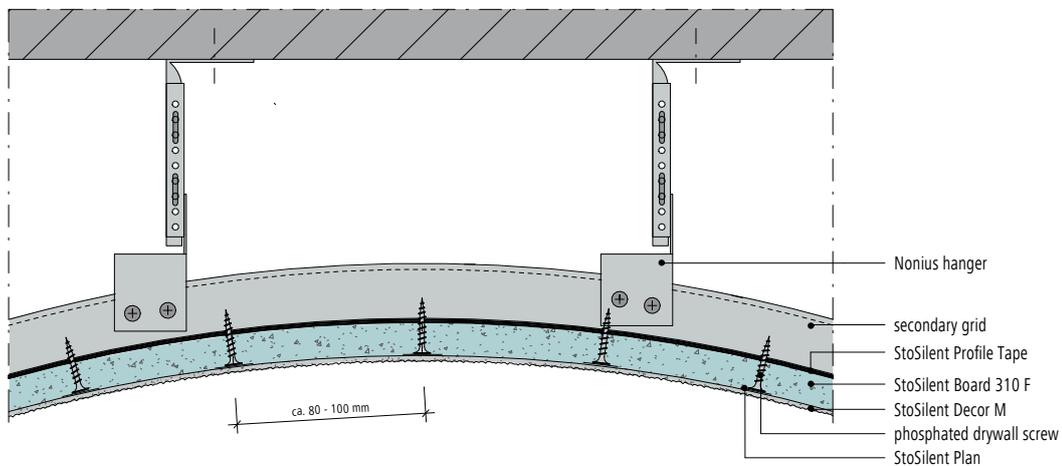
### Ceiling (vertical section): curved ceiling and wall areas for $R > 5\text{ m}$

Sto-HQ-DE\_SSDF-D-0715\_EN



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

Sto-HQ-DE\_SSDF-D-0710\_EN



# StoSilent Direct

## The easy direct system

**This space-saving direct system is very easy to assemble, manages without a sub-construction, and is suitable for almost any substrate. StoSilent Direct does not just have outstanding sound-absorbing properties, it also makes a multitude of different surface finishes possible. With the corresponding plaster coating, it is even possible to design seamless surfaces up to 700 m<sup>2</sup>.**

### Important system instructions

- Primarily suited to interior ceilings and walls (see table in "Application fields arranged by ambient interior climate" section)
- For level and curved surfaces, please see table for details of possible radii (convex and concave)
- For direct bonding onto ceilings and walls
- Up to 700 m<sup>2</sup> possible without expansion joint, using StoSilent Decor M and StoSilent Decor MF as a finish
- Up to 200 m<sup>2</sup> possible without expansion joint, using StoSilent Top Basic and StoSilent Top Finish as a finish (max. side length: 20 m)
- Can be installed without any surface area limitation and with visibly formed joints using StoSilent Decor M, StoSilent Decor MF, StoColor Climasan, and StoColor Silent as a finish
- Recommendation: installation at a height of above 2 m on walls outside areas subject to a risk of impacts
- Not for use in brine pools or in areas subject to a risk of splash water
- The substrate must be able to bear a load of  $\geq 5$  kPa
- Movement and separating joints must be incorporated. Further specifications can be found in the application guideline

- It is important to comply with the substrate and application temperatures as well as the air conditions for the system products in accordance with the Technical Data Sheet
- If using the product on external walls and ceilings, verification in terms of building physics must be provided in the planning phase in order to avoid an uncontrolled occurrence of condensation in the system build-up

	Panel thickness		
	36 mm	46 mm	66 mm
<b>System thickness</b>	40 mm	50 mm	70 mm
<b>Area of application</b>	At low height	All-purpose	For high absorption
<b>Minimum convex radius*</b>	3 m	4 m	5 m
<b>Minimum concave radius*</b>	2.5 m	3 m	4 m
<b>Maximum cutting depth</b>	10 mm	20 mm	40 mm

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

Image:  
**DJ room, Markdorf, DE**

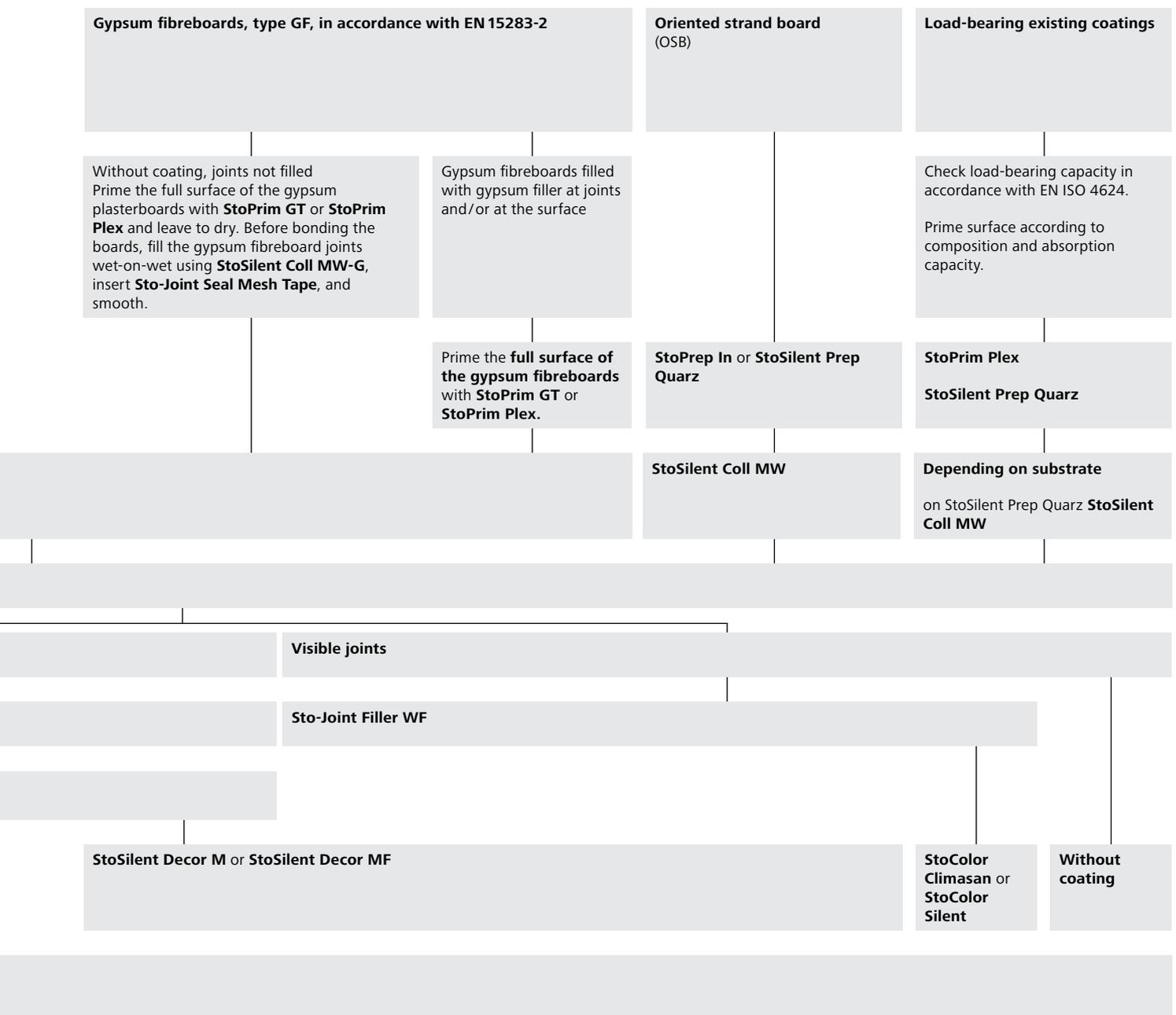




# StoSilent Direct

## StoSilent Direct system description

<b>Substrate</b>	<b>Concrete</b> Remove formwork oil and separating layers; for joints in prefabricated ceilings, holes, blow-holes: fill and smooth with StoLevel In RS.	<b>Gypsum plasterboards, type A, in accordance with EN 520</b>
<b>Pre-treatment</b>		Without coating, joints not filled Before bonding the boards, fill the gypsum plasterboard joints wet-on-wet using <b>StoSilent Coll MW-G</b> , insert <b>Sto-Joint Seal Mesh Tape</b> and smooth. Gypsum plasterboards filled with gypsum filler at joints and/or at the surface
<b>Priming coat</b>		Prime the filled surfaces with <b>StoPrim Plex</b> or <b>StoPrim GT</b> .
<b>Adhesive</b>	<b>StoSilent Coll MW</b>	<b>StoSilent Coll MW-G</b>
<b>acoustic panel</b>	<b>StoSilent Board MW 100</b>	
<b>Design</b>	<b>Seamless</b>	
<b>Filler and levelling coat</b>	<b>StoSilent Filler</b>	
<b>Intermediate coat</b>	<b>StoSilent Top Basic natural</b>	
<b>Finish</b>	<b>StoSilent Top Finish</b>	<b>StoSilent Top Basic tinted</b>
<b>Accessories, supplementary products</b>	<b>StoSilent Profile AP 210, Soudal Fix ALL® Flexi, StoSeal Band BK, Sto-Stucco Tape, StoFix Ashlar ND Midi, StoFix Ashlar ND Mini, StoFix Ashlar Quick, StoFix Zyrillo, StoSilent Install VS, StoSilent Install Spot</b>	





# StoSilent Direct

## System overview

### StoSilent Direct

#### Bonded acoustic system made of coated acoustic panels

#### System advantages

- Non-combustible, class A2-s1, d0 in accordance with EN 13501-1
- shortened reverberation time, reduced noise
- installation without sub-construction
- Easy to apply

#### Area of application

- interior
- For ceilings and upper wall areas
- Recommendation: installation at a height of above 2 m on walls outside areas subject to a risk of impacts
- Especially suitable for ceilings and upper wall areas of escape routes, corridors, staircases, or meeting places

#### Fixing

- Full-surface bonding directly to substrate
- Installation of lights, smoke alarms, etc. with StoFix Ashlar
- Installation of lights, smoke alarms, etc. with StoSilent Install Spot
- Installation of curtain rails, etc. with StoSilent Install VS

#### Reaction to fire

- Class A2-s1, d0 in accordance with EN 13501-1
- REI 60 in accordance with EN 13501-2 (wood joist ceiling construction)
- K<sub>2</sub>60 in accordance with EN 13501-2 (bonded to gypsum plasterboard, with StoSilent Top Basic)

#### Sound absorption

- StoSilent Top Finish coating:  $\alpha_w$  in accordance with EN 11654 max. 0.65, NRC in accordance with ASTM C423 max. 0.65, values depend on the thickness of the system
- StoSilent Top Basic coating:  $\alpha_w$  in accordance with EN 11654 max. 0.65, NRC in accordance with ASTM C423 max. 0.65, values depend on the thickness of the system
- StoSilent Decor M coating on StoSilent Top Basic:  $\alpha_w$  in accordance with EN 11654 max. 0.80, NRC in accordance with ASTM C423 max. 0.90, values depend on the thickness of the system

- StoSilent Decor M coating (visible joints):  $\alpha_w$  in accordance with EN 11654 max. 1.00, NRC in accordance with ASTM C423 max. 0.95, values depend on the thickness of the system
- StoColor Climasan coating (visible joints):  $\alpha_w$  in accordance with EN 11654 max. 0.95, NRC in accordance with ASTM C423 max. 1.00, values depend on the thickness of the system
- Without coating (visible joints):  $\alpha_w$  in accordance with EN 11654 max. 1.00, NRC in accordance with ASTM C423 max. 1.00, values depend on the thickness of the system

#### Design options

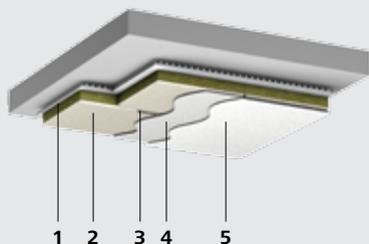
- smooth surface with fine or finest grain size
- Textured surface with fine graining
- Seamless
- With visibly formed joints

#### Application

- By trained specialists

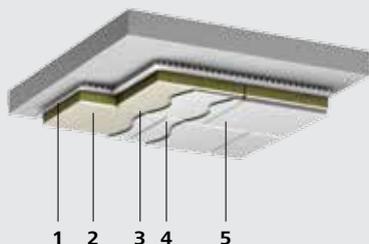
## Systems

### Build-up



- 1 — Adhesive
- 2 — Acoustic panel
- 3 — Filler and levelling coat
- 4 — Intermediate coat
- 5 — Finish

### Build-up



- 1 — Adhesive
- 2 — Acoustic panel
- 3 — Filler and levelling coat
- 4 — Intermediate coat
- 5 — Finish



# StoSilent Direct

It's all about the right sound absorption

## Systems built over an area (with visible joints)

System	Board/product	coating	Build-up in accordance with ISO 354	Structural height in mm
StoSilent Direct	StoSilent Board MW 100, 36 mm	Without coating (visible joints)	Type A	36
	StoSilent Board MW 100, 36 mm	Without coating (visible joints)	E-200	200 <sup>1)</sup>
	StoSilent Board MW 100, 46 mm	Without coating (visible joints)	Type A	46
	StoSilent Board MW 100, 46 mm	Without coating (visible joints)	E-200	200 <sup>1)</sup>
	StoSilent Board MW 100, 66 mm	Without coating (visible joints)	Type A	66
	StoSilent Board MW 100, 66 mm	Without coating (visible joints)	E-200	200 <sup>1)</sup>
	StoSilent Board MW 100, 46 mm	Colour coating (visible joints)	Type A	61 <sup>2)</sup>
	StoSilent Board MW 100, 46 mm	Colour coating (visible joints)	E-200	200 <sup>1)</sup>
	StoSilent Board MW 100, 66 mm	Colour coating (visible joints)	Type A	81 <sup>2)</sup>
	StoSilent Board MW 100, 66 mm	Colour coating (visible joints)	E-200	200 <sup>1)</sup>
	StoSilent Board MW 100, 36 mm	StoSilent Decor (visible joints)	Type A	52 <sup>2)</sup>
	StoSilent Board MW 100, 36 mm	StoSilent Decor (visible joints)	E-200	200 <sup>1)</sup>
	StoSilent Board MW 100, 46 mm	StoSilent Decor (visible joints)	Type A	62 <sup>2)</sup>
	StoSilent Board MW 100, 46 mm	StoSilent Decor (visible joints) – renovation, StoSilent Decor	Type A	63 <sup>2)</sup>
	StoSilent Board MW 100, 46 mm	StoSilent Decor (visible joints)	E-200	200 <sup>1)</sup>
	StoSilent Board MW 100, 66 mm	StoSilent Decor (visible joints)	Type A	82 <sup>2)</sup>
	StoSilent Board MW 100, 66 mm	StoSilent Decor (visible joints) – renovation, StoSilent Decor	Type A	83 <sup>2)</sup>
	StoSilent Board MW 100, 66 mm	StoSilent Decor (visible joints)	E-200	200 <sup>1)</sup>

<sup>1)</sup> On gypsum plasterboard suspended ceiling with cavity

<sup>2)</sup> Bonded to carrier boards, loosely placed on cavity floor with coating

	Thickness of board/plaster in mm	$\alpha_w$ EN ISO 11654	NRC ASTM C423	SAA ASTM C423	Absorber class in accordance with EN ISO 11654	Test report
	36	0.80 (H)	0.90	0.89	b	M100960/24
	36	0.80	0.85	0.84	b	M100960/24
	46	1.00	0.95	0.97	A	M100960/15
	46	0.95	0.90	0.90	A	M100960/15
	66	1.00	1.00	1.01	A	M100960/15
	66	1.00	0.95	0.96	A	M100960/15
	46	0.95	0.95	0.93	A	M100960/15
	46	0.90	0.85	0.89	A	M100960/15
	66	0.95	1.00	0.99	A	M100960/15
	66	0.95	0.95	0.94	A	M100960/15
	36	0.85	0.85	0.86	b	M100960/24
	36	0.80	0.85	0.84	b	M100960/24
	46	1.00	0.90	0.92	A	M100960/18
	46	0.95	0.90	0.93	A	M100960/18
	46	0.90	0.85	0.89	A	M100960/18
	66	1.00	0.95	0.97	A	M100960/18
	66	1.00	1.00	0.98	A	M100960/18
	66	1.00	0.95	0.95	A	M100960/18



# StoSilent Direct

It's all about the right sound absorption

## Systems built over an area (seamless)

System	Board/product	coating	Build-up in accordance with ISO 354	Structural height in mm
StoSilent Direct	StoSilent Board MW 100, 36 mm	StoSilent Top Basic & StoSilent Decor	Type A	56 <sup>2)</sup>
	StoSilent Board MW 100, 36 mm	StoSilent Top Basic & StoSilent Decor	E-200	200 <sup>1)</sup>
	StoSilent Board MW 100, 46 mm	StoSilent Top Basic & StoSilent Decor	Type A	64 <sup>2)</sup>
	StoSilent Board MW 100, 46 mm	StoSilent Top Basic & StoSilent Decor	E-200	200 <sup>1)</sup>
	StoSilent Board MW 100, 66 mm	StoSilent Top Basic & StoSilent Decor	Type A	86 <sup>2)</sup>
	StoSilent Board MW 100, 66 mm	StoSilent Top Basic & StoSilent Decor	E-200	200 <sup>1)</sup>
	StoSilent Board MW 100, 36 mm	StoSilent Top Basic & Top Basic, white	Type A	53 <sup>2)</sup>
	StoSilent Board MW 100, 36 mm	StoSilent Top Basic & Top Basic, white	E-200	200 <sup>1)</sup>
	StoSilent Board MW 100, 46 mm	StoSilent Top Basic & Top Basic, white	Type A	63 <sup>2)</sup>
	StoSilent Board MW 100, 46 mm	StoSilent Top Basic & Top Basic, white	E-200	200 <sup>1)</sup>
	StoSilent Board MW 100, 66 mm	StoSilent Top Basic & Top Basic, white	Type A	83 <sup>2)</sup>
	StoSilent Board MW 100, 66 mm	StoSilent Top Basic & Top Basic, white	E-200	200 <sup>1)</sup>
	StoSilent Board MW 100, 36 mm	StoSilent Top Basic & Top Finish	Type A	53 <sup>2)</sup>
	StoSilent Board MW 100, 36 mm	StoSilent Top Basic & Top Finish	E-200	200 <sup>1)</sup>
	StoSilent Board MW 100, 46 mm	StoSilent Top Basic & Top Finish	Type A	63 <sup>2)</sup>
	StoSilent Board MW 100, 46 mm	StoSilent Top Basic & Top Finish	E-200	200 <sup>1)</sup>
	StoSilent Board MW 100, 66 mm	StoSilent Top Basic & Top Finish	Type A	83 <sup>2)</sup>
	StoSilent Board MW 100, 66 mm	StoSilent Top Basic & Top Finish	E-200	200 <sup>1)</sup>

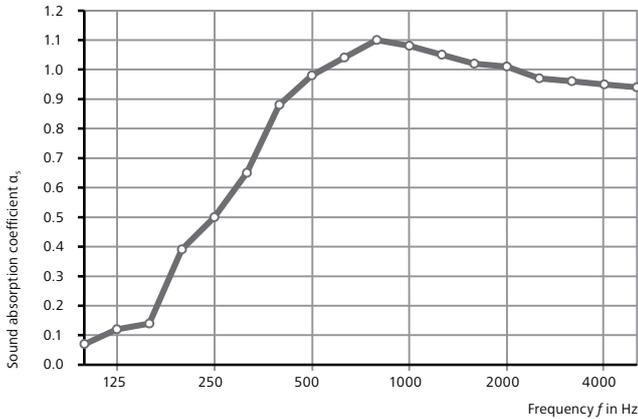
<sup>1)</sup> On gypsum plasterboard suspended ceiling with cavity

<sup>2)</sup> Bonded to carrier boards, loosely placed on cavity floor with coating

	Thickness of board/plaster in mm	$\alpha_{w}$ EN ISO 11654	<i>NRC</i> ASTM C423	<i>SAA</i> ASTM C423	Absorber class in accordance with EN ISO 11654	Test report
	36	0.70	0.70	0.73	C	M100960/24
	36	0.70	0.70	0.69	C	M100960/24
	46	0.75	0.80	0.80	C	M100960/15
	46	0.75	0.75	0.75	C	M100960/15
	66	0.80 (L)	0.90	0.88	b	M100960/15
	66	0.80	0.80	0.83	b	M100960/15
	36	0.55	0.60	0.59	D	M100960/24
	36	0.60	0.60	0.55	C	M100960/24
	46	0.65 (L)	0.65	0.67	C	M100960/15
	46	0.65	0.65	0.63	C	M100960/15
	66	0.55 (L)	0.55	0.56	D	M100960/15
	66	0.55	0.50	0.54	D	M100960/15
	36	0.60	0.65	0.62	C	M100960/24
	36	0.65	0.60	0.60	C	M100960/24
	46	0.60	0.60	0.63	C	M100960/18
	46	0.60	0.60	0.59	C	M100960/18
	66	0.60 (L)	0.60	0.60	C	M100960/18
	66	0.60	0.60	0.57	C	M100960/18

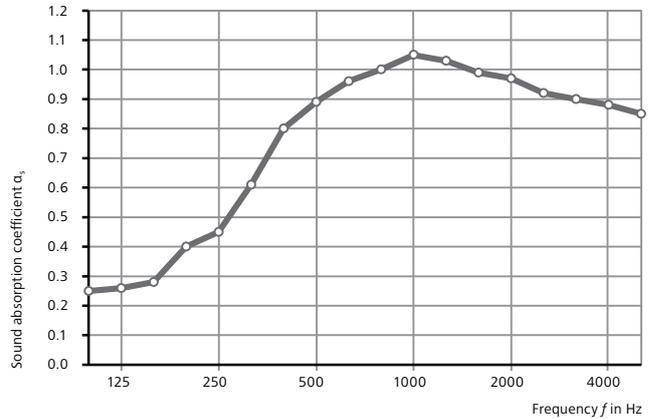
# StoSilent Direct

## Sound absorption in detail



**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 36 mm  
**Coating:** without coating (visible joints)

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

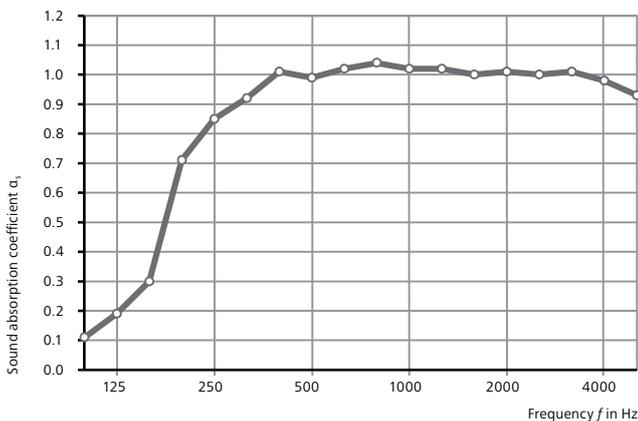


**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 36 mm  
**Coating:** without coating (visible joints)

**Thickness:** 36 mm  
**Structural height:** 200 mm  
 $\alpha_w$ : 0.80  
 $\alpha_{p, 125}$ : 0.25  
**NRC:** 0.85

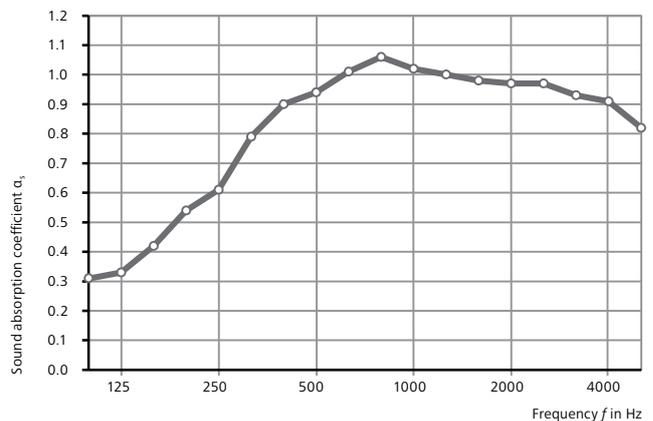
Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.07	0.39	0.88	1.10	1.02	0.96
Octave band	0.12	0.50	0.98	1.08	1.01	0.95
Third-octave band	0.14	0.65	1.04	1.05	0.97	0.94
$\alpha_p$	0.10	0.50	0.95	1.00	1.00	0.95

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



**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 46 mm  
**Coating:** without coating (visible joints)

**Thickness:** 46 mm  
**Structural height:** 46 mm  
 $\alpha_w$ : 1.00  
 $\alpha_{p, 125}$ : 0.20  
**NRC:** 0.95

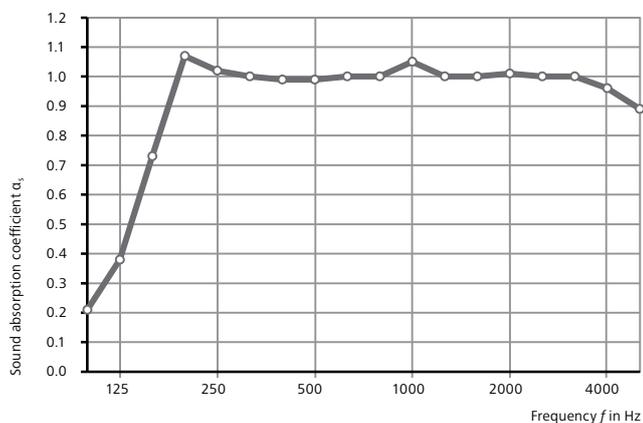


**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 46 mm  
**Coating:** without coating (visible joints)

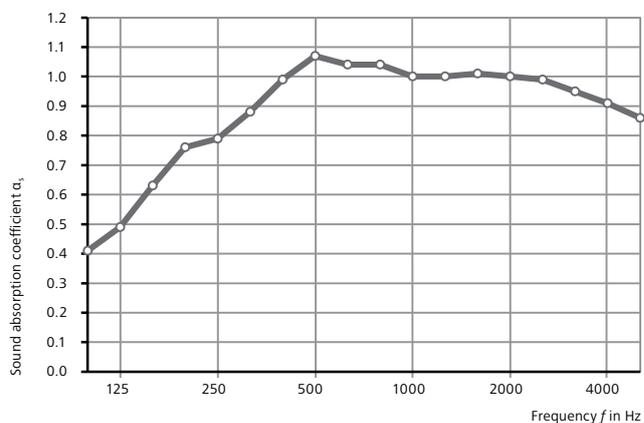
**Thickness:** 46 mm  
**Structural height:** 200 mm  
 $\alpha_w$ : 0.95  
 $\alpha_{p, 125}$ : 0.35  
**NRC:** 0.90

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

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



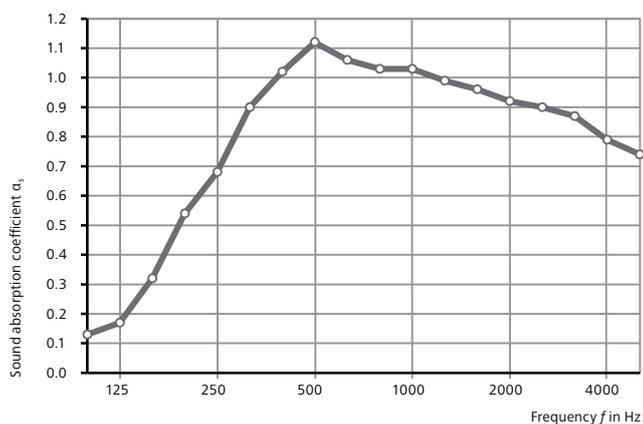
**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 66 mm  
**Coating:** without coating (visible joints)  
**Thickness:** 66 mm  
**Structural height:** 66 mm  
 $\alpha_w$ : 1.00  
 $\alpha_{p, 125}$ : 0.45  
**NRC:** 1.00



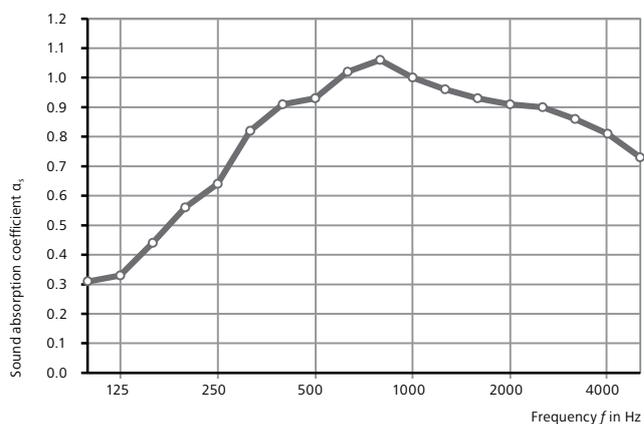
**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 66 mm  
**Coating:** without coating (visible joints)  
**Thickness:** 66 mm  
**Structural height:** 200 mm  
 $\alpha_w$ : 1.00  
 $\alpha_{p, 125}$ : 0.50  
**NRC:** 0.95

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

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



**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 46 mm  
**Coating:** StoColor Climasan (visible joints)  
**Thickness:** 46 mm  
**Structural height:** 46 mm  
 $\alpha_w$ : 0.95  
 $\alpha_{p, 125}$ : 0.20  
**NRC:** 0.95



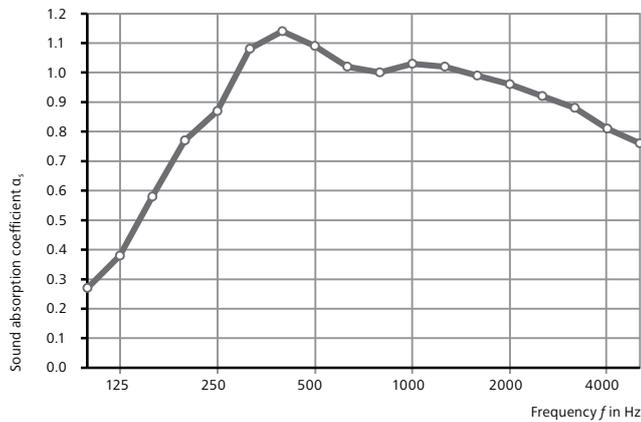
**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 46 mm  
**Coating:** StoColor Climasan (visible joints)  
**Thickness:** 46 mm  
**Structural height:** 200 mm  
 $\alpha_w$ : 0.90  
 $\alpha_{p, 125}$ : 0.35  
**NRC:** 0.85

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

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

# StoSilent Direct

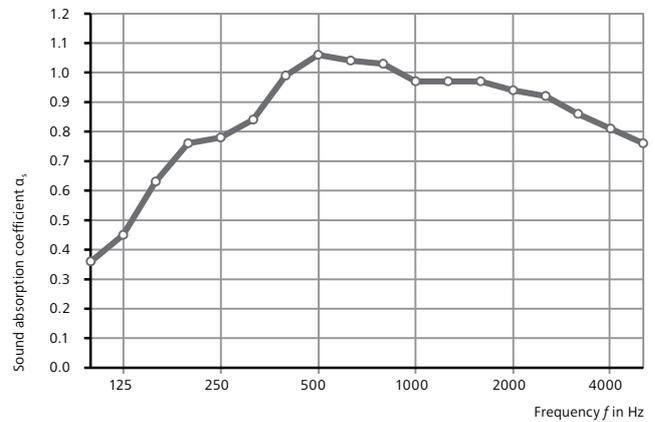
## Sound absorption in detail



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

**Thickness:** 66 mm  
**Structural height:** 66 mm  
 $\alpha_w$ : 0.95  
 $\alpha_{p, 125}$ : 0.40  
**NRC:** 1.00

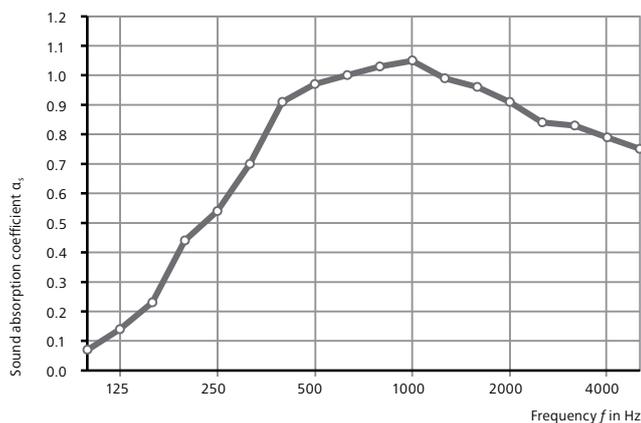
Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.27	0.77	1.14	1.00	0.99	0.88
Octave band	<b>0.38</b>	<b>0.87</b>	<b>1.09</b>	<b>1.03</b>	<b>0.96</b>	<b>0.81</b>
Third-octave band	0.58	1.08	1.02	1.02	0.92	0.76
$\alpha_p$	0.40	0.90	1.00	1.00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



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

**Thickness:** 66 mm  
**Structural height:** 200 mm  
 $\alpha_w$ : 0.95  
 $\alpha_{p, 125}$ : 0.50  
**NRC:** 0.95

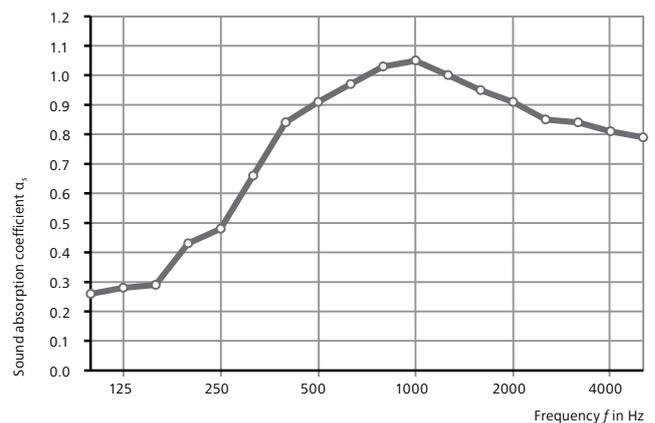
Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.36	0.76	0.99	1.03	0.97	0.86
Octave band	<b>0.45</b>	<b>0.78</b>	<b>1.06</b>	<b>0.97</b>	<b>0.94</b>	<b>0.81</b>
Third-octave band	0.63	0.84	1.04	0.97	0.92	0.76
$\alpha_p$	0.50	0.80	1.00	1.00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



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

**Thickness:** 36 mm  
**Structural height:** 36 mm  
 $\alpha_w$ : 0.85  
 $\alpha_{p, 125}$ : 0.15  
**NRC:** 0.85

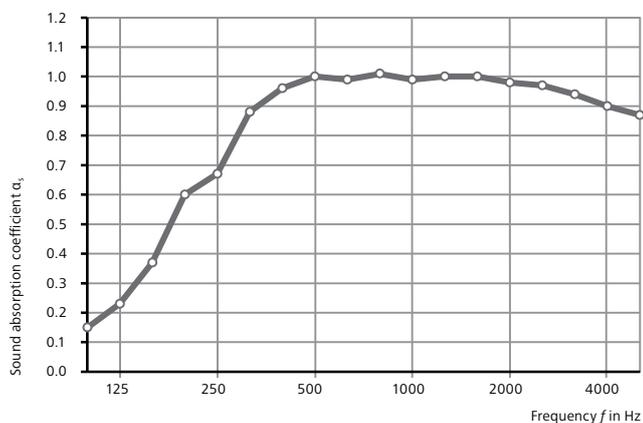
Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.07	0.44	0.91	1.03	0.96	0.83
Octave band	<b>0.14</b>	<b>0.54</b>	<b>0.97</b>	<b>1.05</b>	<b>0.91</b>	<b>0.79</b>
Third-octave band	0.23	0.70	1.00	0.99	0.84	0.75
$\alpha_p$	0.15	0.55	0.95	1.00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



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

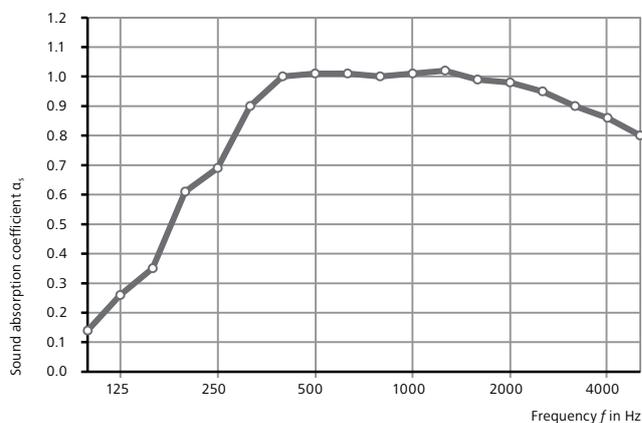
**Thickness:** 36 mm  
**Structural height:** 200 mm  
 $\alpha_w$ : 0.80  
 $\alpha_{p, 125}$ : 0.30  
**NRC:** 0.85

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



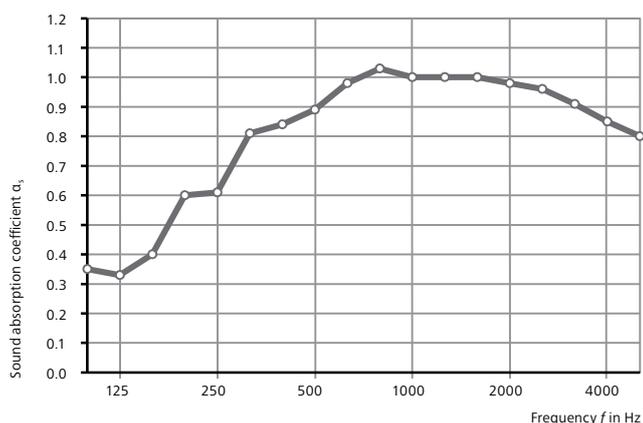
**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 46 mm  
**Coating:** StoSilent Decor (visible joints)  
**Thickness:** 46 mm  
**Structural height:** 46 mm  
 $\alpha_w$ : 1.00  
 $\alpha_{p, 125}$ : 0.25  
**NRC:** 0.90

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



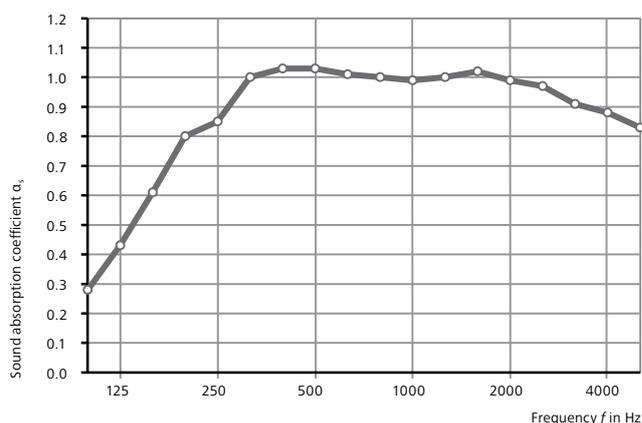
**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 46 mm + renovation  
**Coating:** StoSilent Decor (renov.) (vis. joints)  
**Thickness:** 46 mm  
**Structural height:** 46 mm  
 $\alpha_w$ : 0.95  
 $\alpha_{p, 125}$ : 0.25  
**NRC:** 0.90

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.14	0.61	1.00	1.00	0.99	0.90
Octave band	<b>0.26</b>	<b>0.69</b>	<b>1.01</b>	<b>1.01</b>	<b>0.98</b>	<b>0.86</b>
Third-octave band	0.35	0.90	1.01	1.02	0.95	0.80
$\alpha_p$	0.25	0.75	1.00	1.00	0.95	0.85



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

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

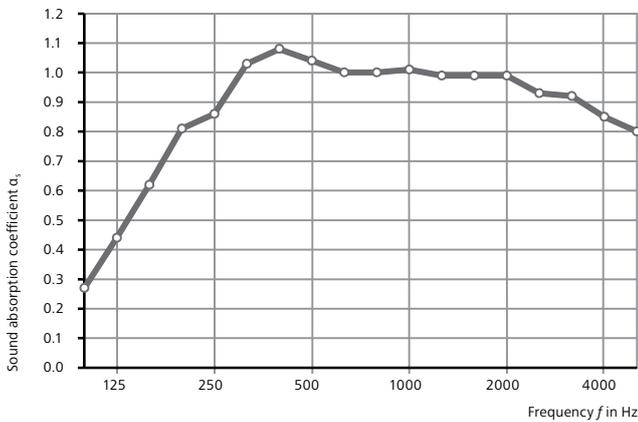


**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 66 mm  
**Coating:** StoSilent Decor (visible joints)  
**Thickness:** 66 mm  
**Structural height:** 66 mm  
 $\alpha_w$ : 1.00  
 $\alpha_{p, 125}$ : 0.45  
**NRC:** 0.95

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

# StoSilent Direct

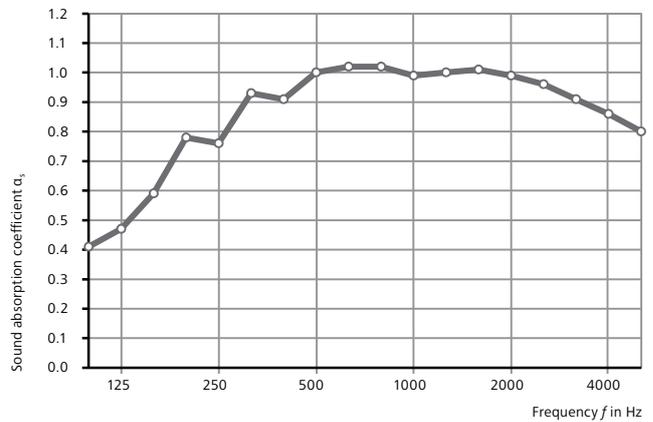
## Sound absorption in detail



**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 66 mm + renov.  
**Coating:** StoSil. Decor (vis. joints) + Decor (renov.)

**Thickness:** 66 mm  
**Structural height:** 66 mm  
 $\alpha_w$ : 1.00  
 $\alpha_{p, 125}$ : 0.45  
**NRC:** 1.00

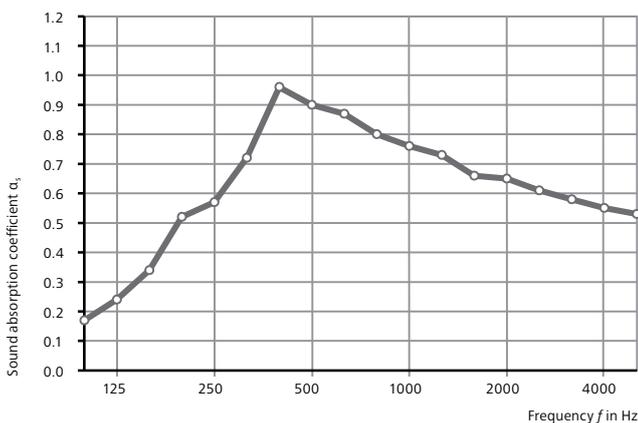
Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.27	0.81	1.08	1.00	0.99	0.92
Octave band	<b>0.44</b>	<b>0.86</b>	<b>1.04</b>	<b>1.01</b>	<b>0.99</b>	<b>0.85</b>
Third-octave band	0.62	1.03	1.00	0.99	0.93	0.80
$\alpha_p$	0.45	0.90	1.00	1.00	0.95	0.85



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

**Thickness:** 66 mm  
**Structural height:** 200 mm  
 $\alpha_w$ : 1.00  
 $\alpha_{p, 125}$ : 0.50  
**NRC:** 0.95

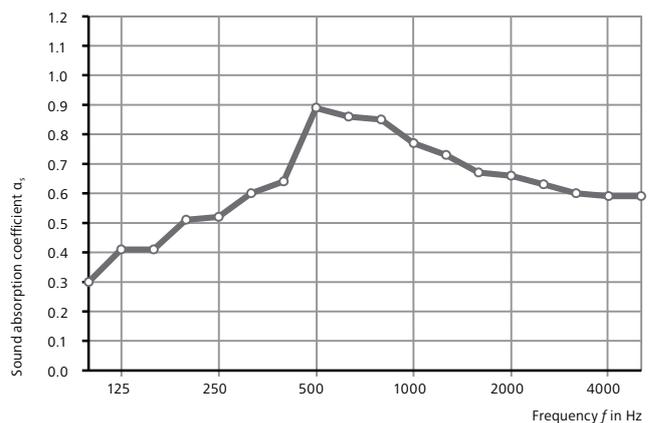
Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.41	0.78	0.91	1.02	1.01	0.91
Octave band	<b>0.47</b>	<b>0.76</b>	<b>1.00</b>	<b>0.99</b>	<b>0.99</b>	<b>0.86</b>
Third-octave band	0.59	0.93	1.02	1.00	0.96	0.80
$\alpha_p$	0.50	0.80	1.00	1.00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



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

**Thickness:** 46 mm  
**Structural height:** 64 mm  
 $\alpha_w$ : 0.75  
 $\alpha_{p, 125}$ : 0.30  
**NRC:** 0.80

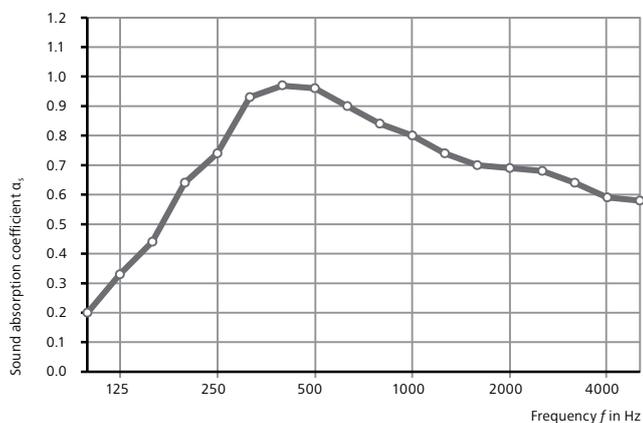
Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.20	0.64	0.97	0.84	0.70	0.64
Octave band	<b>0.33</b>	<b>0.74</b>	<b>0.96</b>	<b>0.80</b>	<b>0.69</b>	<b>0.59</b>
Third-octave band	0.44	0.93	0.90	0.74	0.68	0.58
$\alpha_p$	0.30	0.75	0.95	0.80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



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

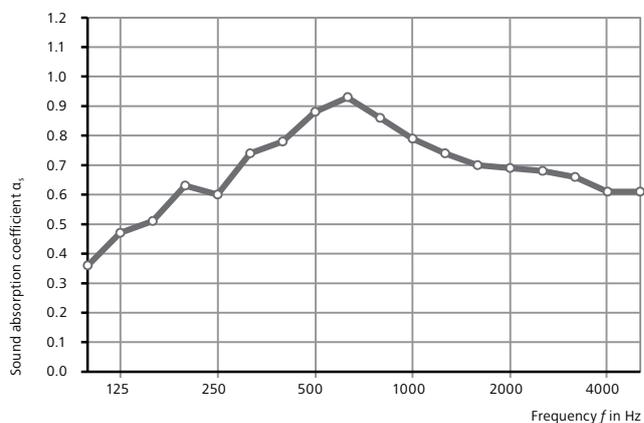
**Thickness:** 46 mm  
**Structural height:** 200 mm  
 $\alpha_w$ : 0.75  
 $\alpha_{p, 125}$ : 0.45  
**NRC:** 0.75

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



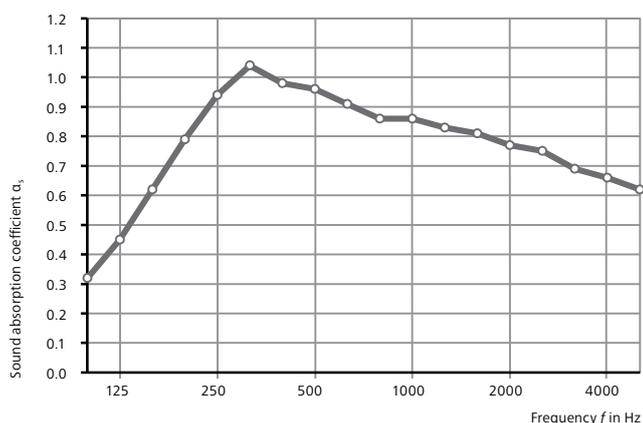
**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 66mm  
**Coating:** StoSilent Top Basic & StoSilent Decor  
**Thickness:** 66 mm  
**Structural height:** 86 mm  
 $\alpha_w$ : 0.80 (L)  
 $\alpha_{p, 125}$ : 0.45  
**NRC:** 0.90

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



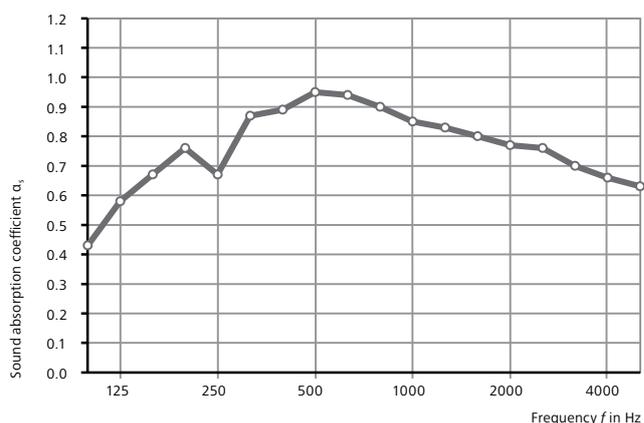
**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 66mm  
**Coating:** StoSilent Top Basic & StoSilent Decor  
**Thickness:** 66 mm  
**Structural height:** 200 mm  
 $\alpha_w$ : 0.80  
 $\alpha_{p, 125}$ : 0.55  
**NRC:** 0.80

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



**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 36mm  
**Coating:** StoSilent Top Basic & Top Basic, white  
**Thickness:** 36 mm  
**Structural height:** 53 mm  
 $\alpha_w$ : 0.55  
 $\alpha_{p, 125}$ : 0.30  
**NRC:** 0.60

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



**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 36mm  
**Coating:** StoSilent Top Basic & Top Basic, white  
**Thickness:** 36 mm  
**Structural height:** 200 mm  
 $\alpha_w$ : 0.60  
 $\alpha_{p, 125}$ : 0.40  
**NRC:** 0.60

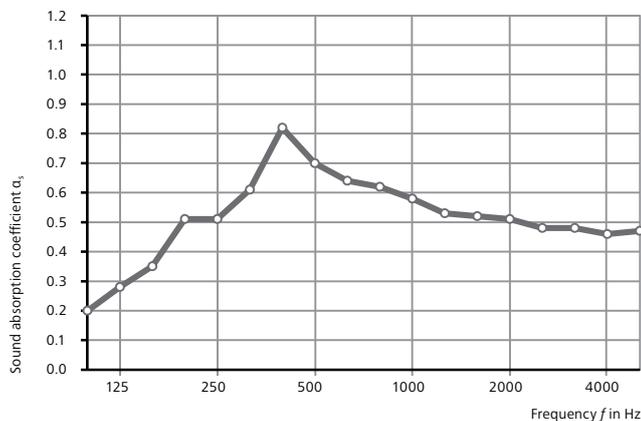
Frequency <i>f</i> in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.34	0.45	0.57	0.62	0.53	0.48
Octave band	<b>0.40</b>	<b>0.44</b>	<b>0.76</b>	<b>0.59</b>	<b>0.51</b>	<b>0.48</b>
Third-octave band	0.40	0.47	0.64	0.55	0.49	0.50
$\alpha_p$	0.40	0.45	0.65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



# StoSilent Direct

## Sound absorption in detail

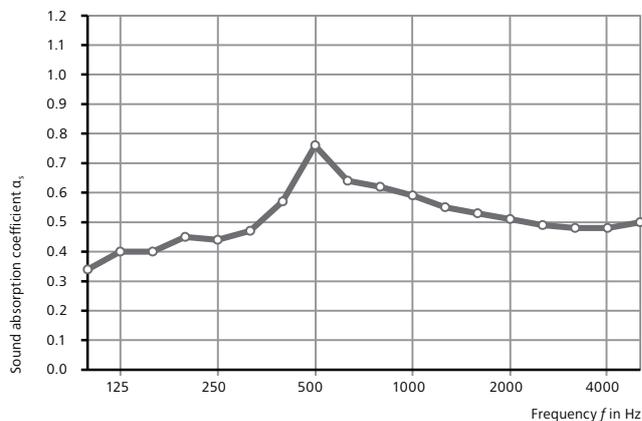
StoSilent Direct



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

**Thickness:** 46 mm  
**Structural height:** 63 mm  
 **$\alpha_w$ :** 0.65 (L)  
 **$\alpha_{p, 125}$ :** 0.35  
**NRC:** 0.65

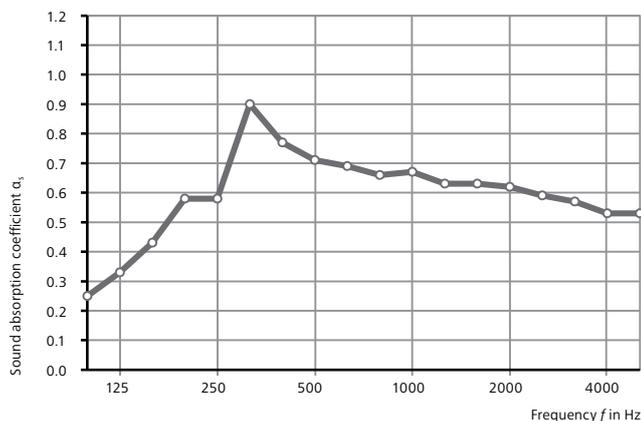
Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.25	0.58	0.77	0.66	0.63	0.57
Octave band	<b>0.33</b>	<b>0.58</b>	<b>0.71</b>	<b>0.67</b>	<b>0.62</b>	<b>0.53</b>
Third-octave band	0.43	0.90	0.69	0.63	0.59	0.53
$\alpha_p$	0.35	0.70	0.70	0.65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



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

**Thickness:** 46 mm  
**Structural height:** 200 mm  
 **$\alpha_w$ :** 0.65  
 **$\alpha_{p, 125}$ :** 0.40  
**NRC:** 0.65

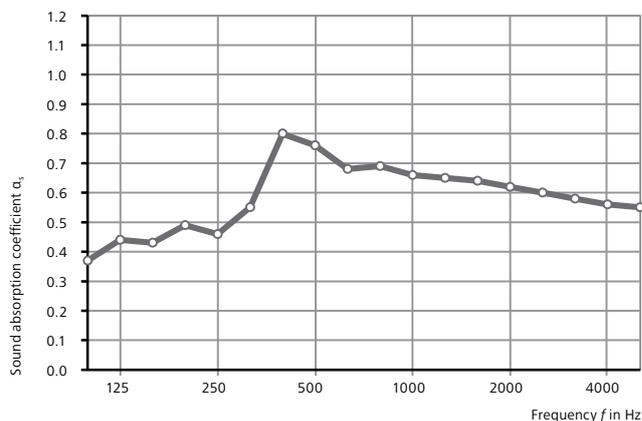
Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.37	0.49	0.80	0.69	0.64	0.58
Octave band	<b>0.44</b>	<b>0.46</b>	<b>0.76</b>	<b>0.66</b>	<b>0.62</b>	<b>0.56</b>
Third-octave band	0.43	0.55	0.68	0.65	0.60	0.55
$\alpha_p$	0.40	0.50	0.75	0.65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



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

**Thickness:** 66 mm  
**Structural height:** 83 mm  
 **$\alpha_w$ :** 0.55 (L)  
 **$\alpha_{p, 125}$ :** 0.40  
**NRC:** 0.55

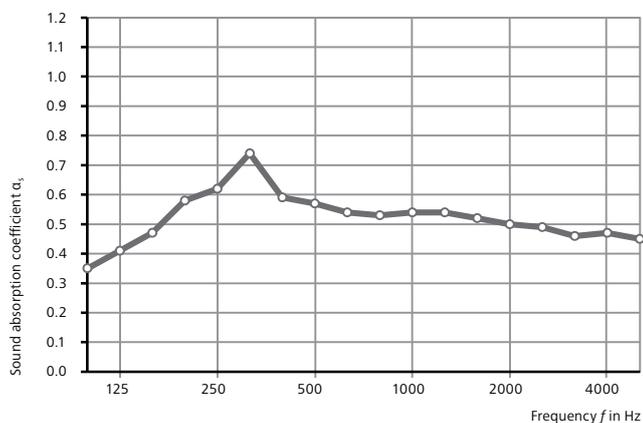
Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.35	0.58	0.59	0.53	0.52	0.46
Octave band	<b>0.41</b>	<b>0.62</b>	<b>0.57</b>	<b>0.54</b>	<b>0.50</b>	<b>0.47</b>
Third-octave band	0.47	0.74	0.54	0.54	0.49	0.45
$\alpha_p$	0.40	0.65	0.55	0.55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



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

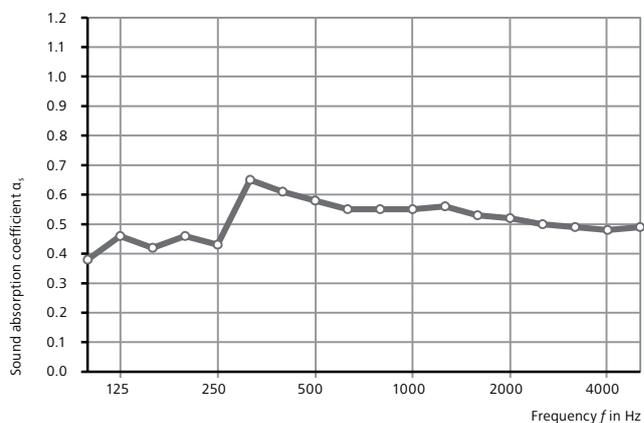
**Thickness:** 66 mm  
**Structural height:** 200 mm  
 **$\alpha_w$ :** 0.55  
 **$\alpha_{p, 125}$ :** 0.40  
**NRC:** 0.50

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



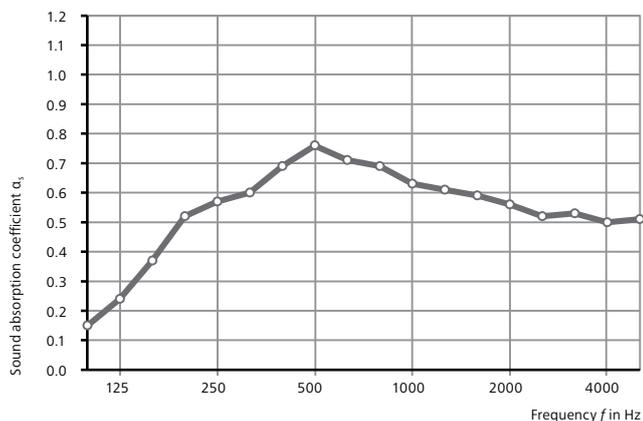
**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 36 mm  
**Coating:** StoSilent Top Basic & Top Finish  
**Thickness:** 36 mm  
**Structural height:** 53 mm  
 $\alpha_w$ : 0.60  
 $\alpha_{p, 125}$ : 0.25  
**NRC:** 0.65

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



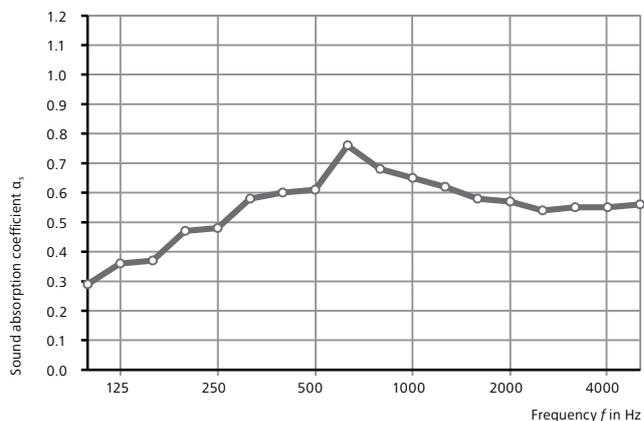
**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 36 mm  
**Coating:** StoSilent Top Basic & Top Finish  
**Thickness:** 36 mm  
**Structural height:** 200 mm  
 $\alpha_w$ : 0.65  
 $\alpha_{p, 125}$ : 0.35  
**NRC:** 0.60

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



**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 46 mm  
**Coating:** StoSilent Top Basic & Top Finish  
**Thickness:** 46 mm  
**Structural height:** 63 mm  
 $\alpha_w$ : 0.60  
 $\alpha_{p, 125}$ : 0.30  
**NRC:** 0.60

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



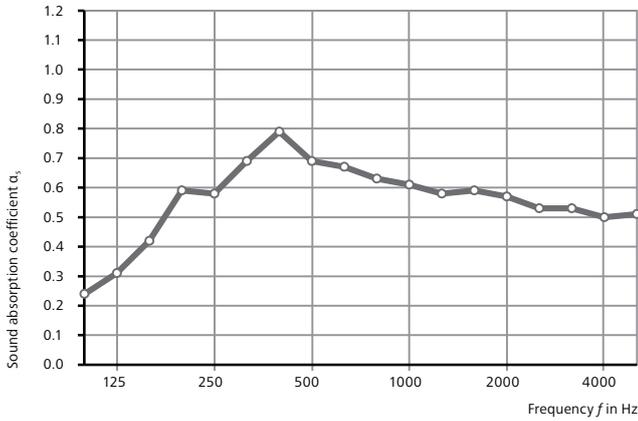
**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW 100, 46 mm  
**Coating:** StoSilent Top Basic & Top Finish  
**Thickness:** 46 mm  
**Structural height:** 200 mm  
 $\alpha_w$ : 0.60  
 $\alpha_{p, 125}$ : 0.40  
**NRC:** 0.60

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

# StoSilent Direct

## Sound absorption in detail

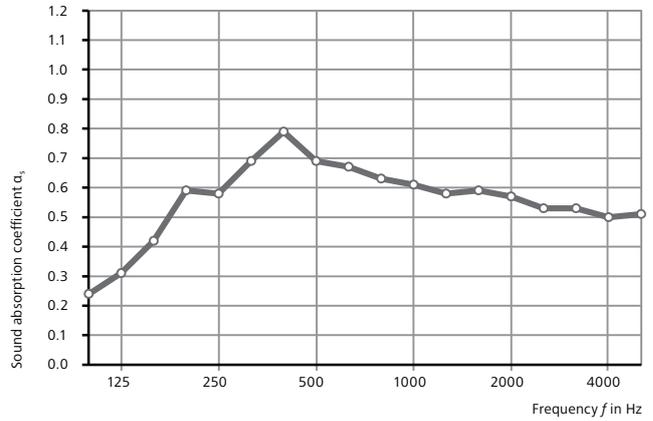
StoSilent Direct



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

**Thickness:** 66 mm  
**Structural height:** 83 mm  
 $\alpha_w$ : 0.60 (L)  
 $\alpha_{p, 125}$ : 0.40  
**NRC:** 0.60

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



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

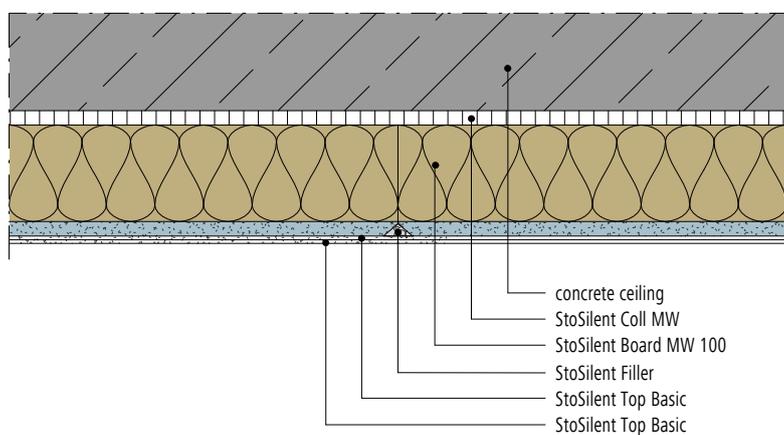
**Thickness:** 66 mm  
**Structural height:** 200 mm  
 $\alpha_w$ : 0.60  
 $\alpha_{p, 125}$ : 0.45  
**NRC:** 0.60

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

## Construction details – ceiling

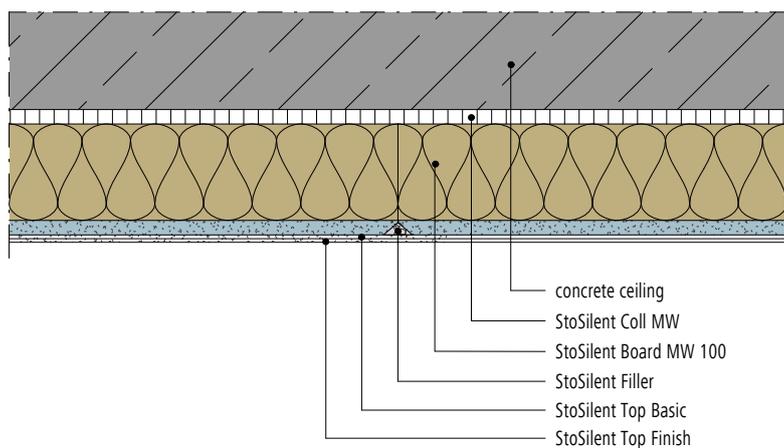
### Ceiling (section): system build-up with adhesive and StoSilent Top Basic coating

Sto-HQ-DE\_SSDR-BB-1010\_2019-12-01Sto-HQ-DE\_SSDR-BB-1010\_EN



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

Sto-HQ-DE\_SSDR-BT-1010\_EN

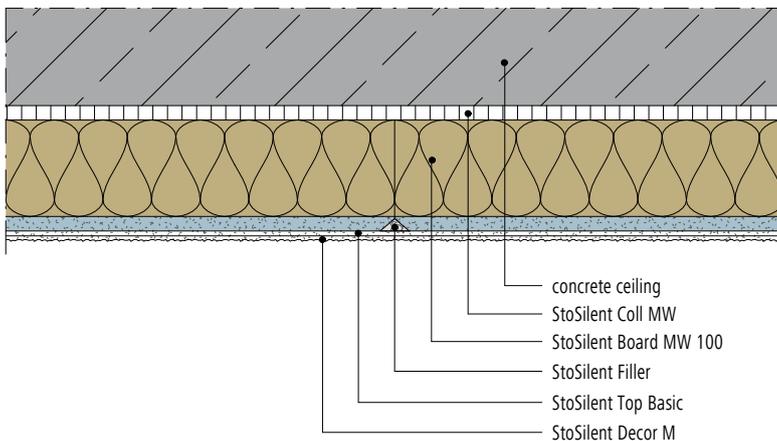


# StoSilent Direct

## Construction details – ceiling

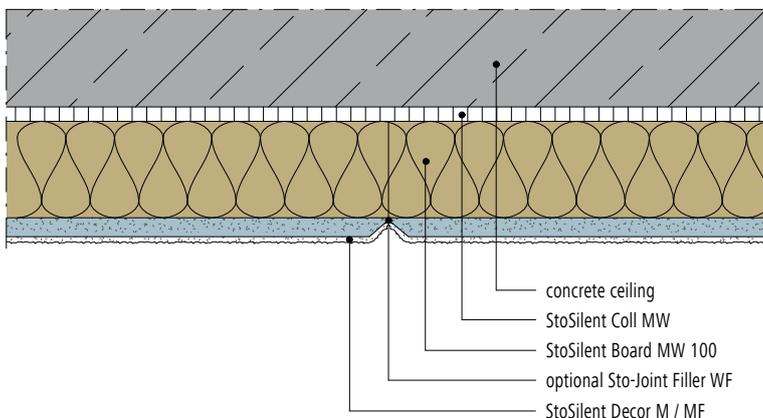
### Ceiling (section): system build-up with adhesive and StoSilent Top Basic and StoSilent Decor M coating

Sto-HQ-DE\_SSDR-BD-1010\_EN



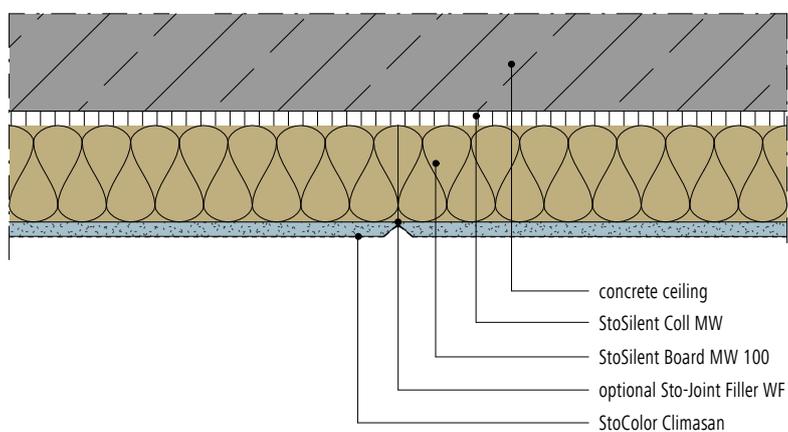
### Ceiling (section): system build-up with adhesive and StoSilent Decor M/MF coating

Sto-HQ-DE\_SSDR-D-1010\_EN



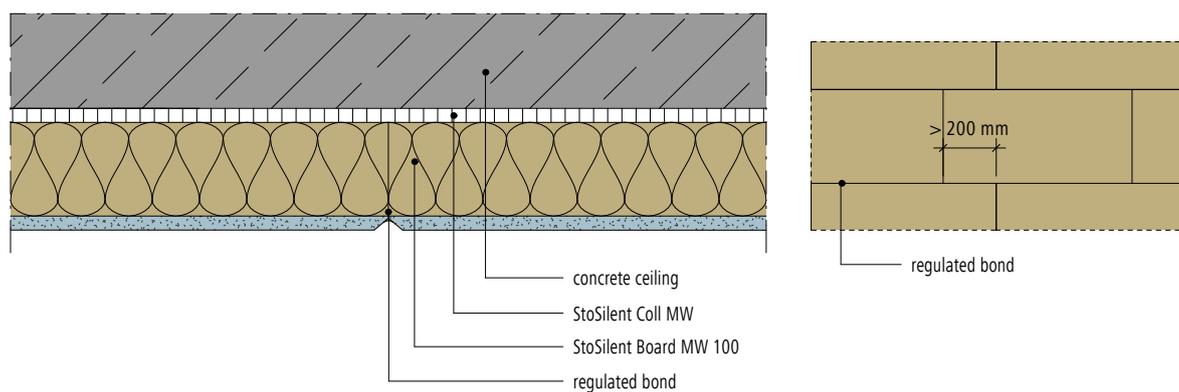
### Ceiling (section): system build-up with adhesive and StoColor Climasan coating

Sto-HQ-DE\_SSDR-C-1010\_EN



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

Sto-HQ-DE\_SSDR-O-1010\_EN

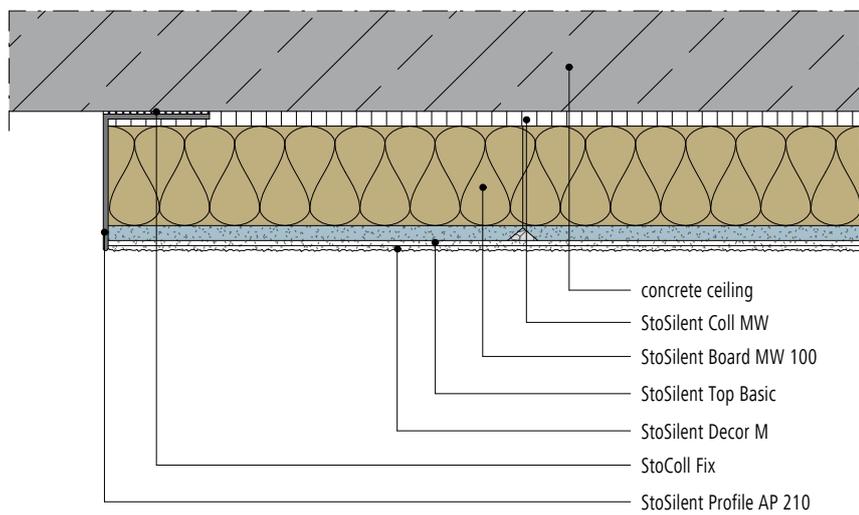


# StoSilent Direct

## Construction details – ceiling

### Ceiling (section): connection to a partially insulated ceiling with StoSilent Profile AP 210

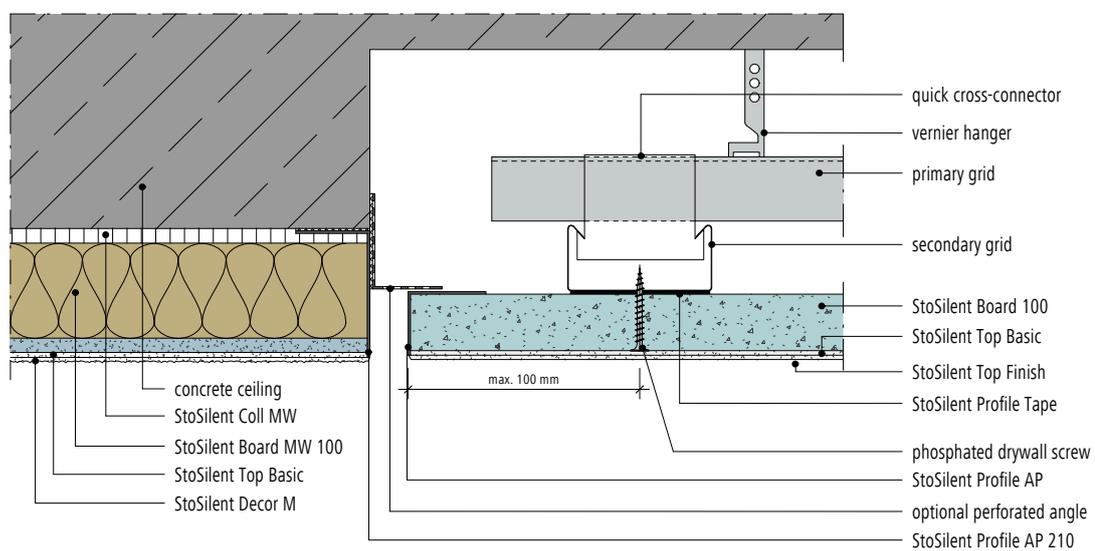
Sto-HQ-DE\_SSDR-BD-1110\_EN



## Construction details – ceiling / wall

### Ceiling (section): connection to a suspended ceiling

Sto-HQ-DE\_SSDR-BD-1200\_EN

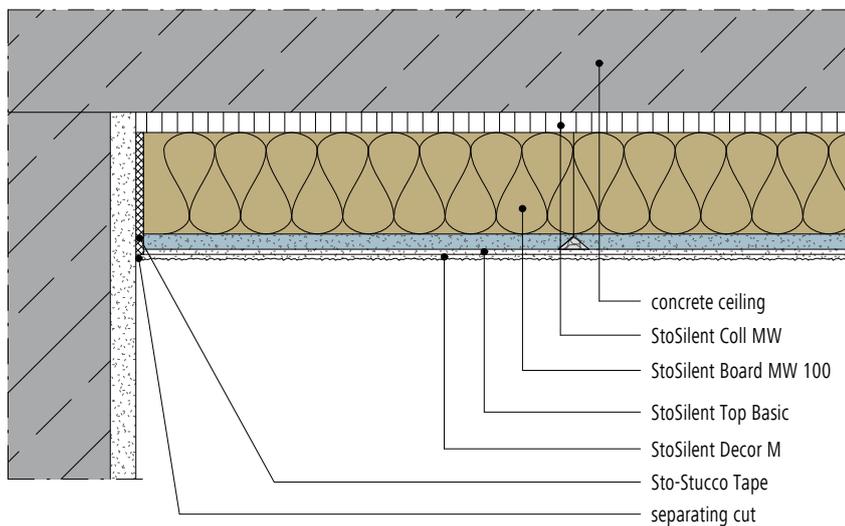


# StoSilent Direct

## Construction details – ceiling

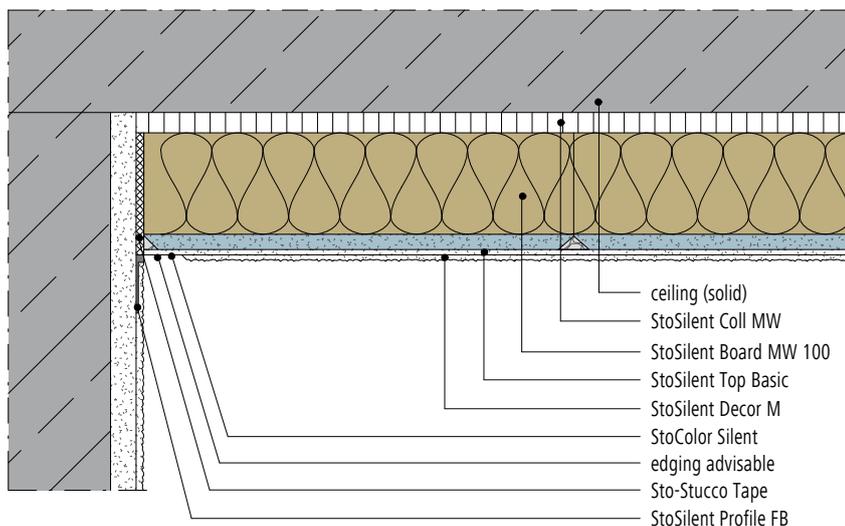
### Ceiling (section): connection to existing plaster with separating cut

Sto-HQ-DE\_SSDR-BD-1205\_EN



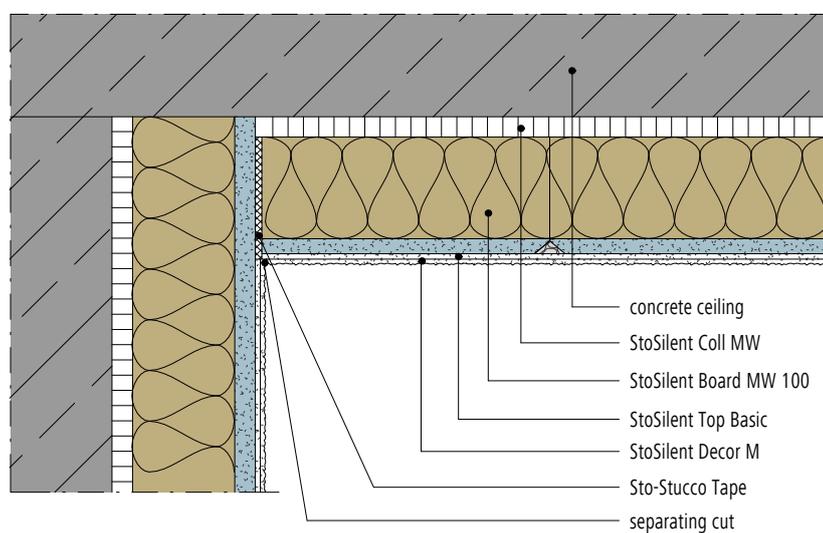
### Ceiling (section): connection to existing plaster with StoSilent Profile FB and formation of edging

Sto-HQ-DE\_SSDR-BD-1206\_EN



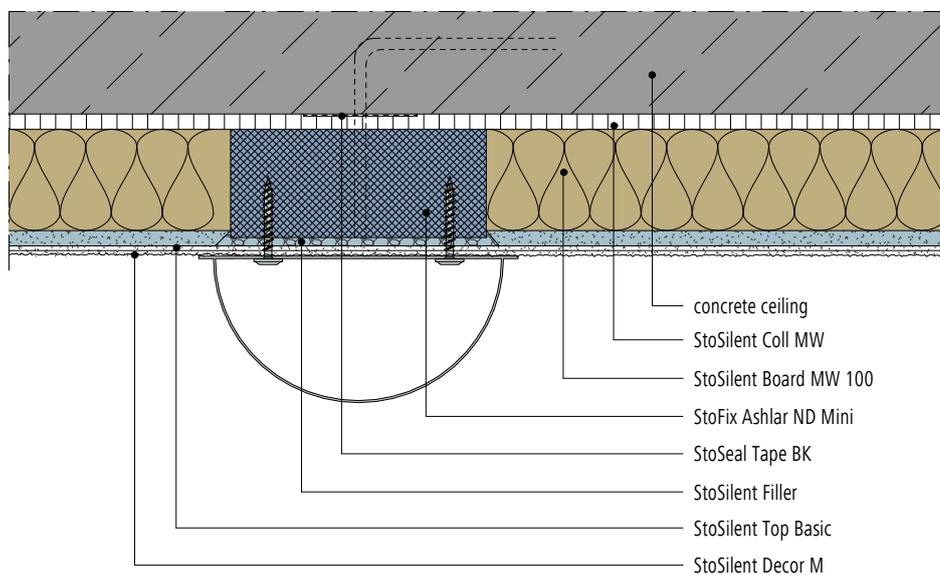
### Ceiling (section): connection to an internal corner with separating cut

Sto-HQ-DE\_SSDR-BD-1210\_EN



### Ceiling (section): lamp fixing

Sto-HQ-DE\_SSDR-BD-1215\_EN

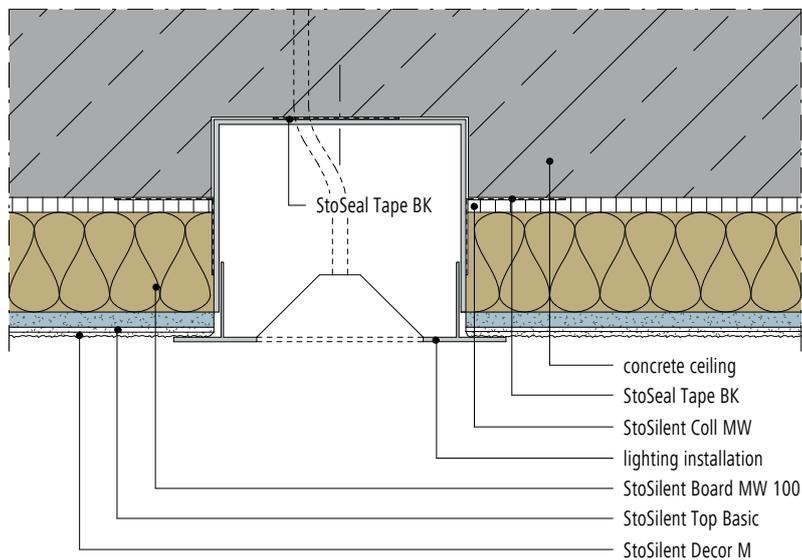


# StoSilent Direct

## Construction details – ceiling

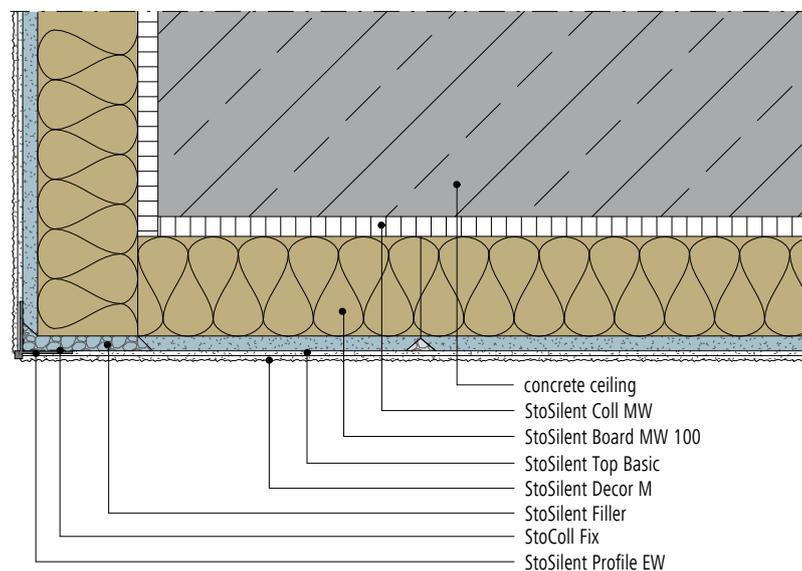
### Ceiling (section): fixing of lights

Sto-HQ-DE\_SSDR-BD-1225\_EN



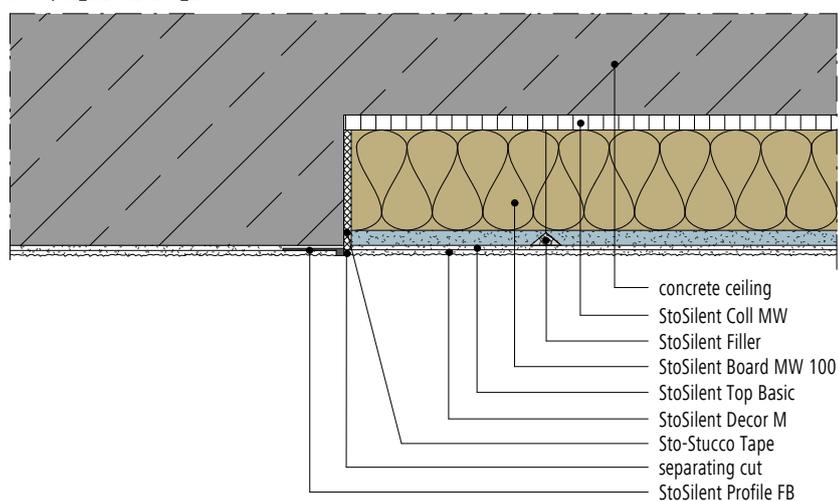
### Ceiling (section): corner formation in the case of an offset ceiling

Sto-HQ-DE\_SSDR-BD-1230\_EN



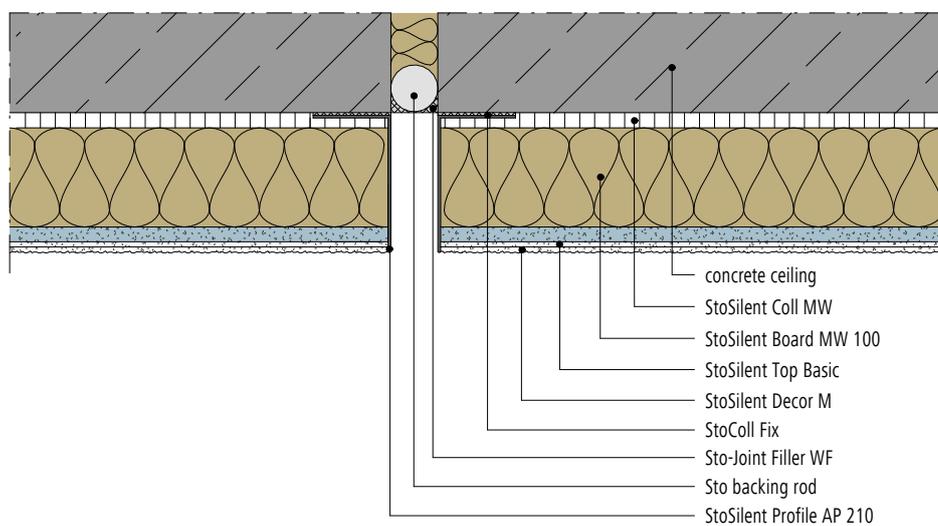
### Ceiling (section): connection to a transition for a change in material using StoSilent Profile FB

Sto-HQ-DE\_SSDR-BD-1240\_EN



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

Sto-HQ-DE\_SSDR-BD-1800\_EN

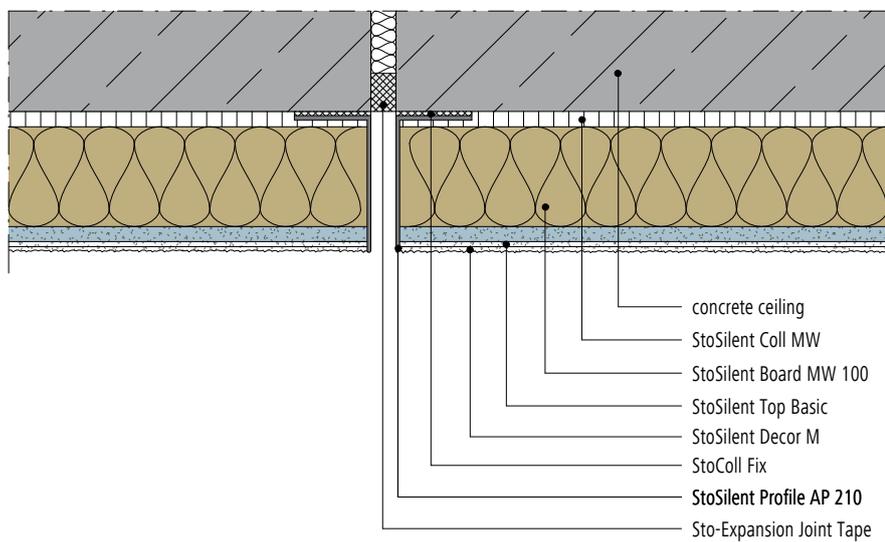


# StoSilent Direct

## Construction details – ceiling

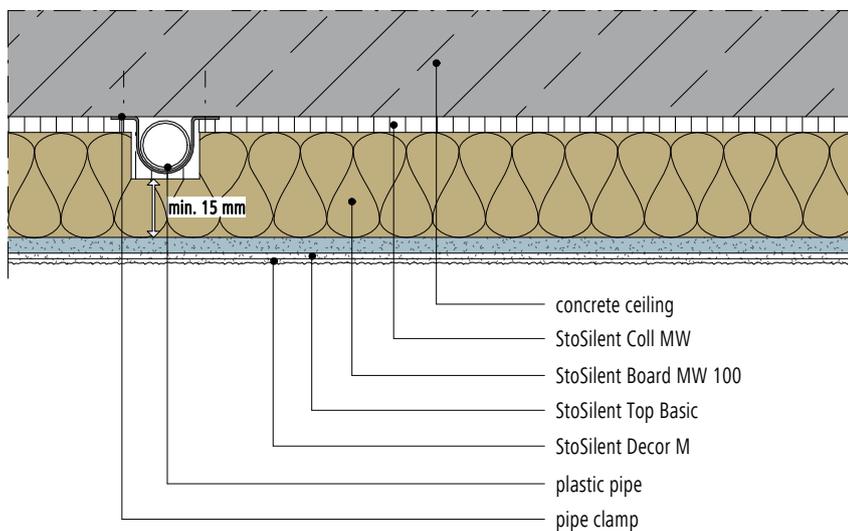
### Ceiling (section): structural expansion joint with Sto-Expansion Joint Tape

Sto-HQ-DE\_SSDR-BD-1805\_EN



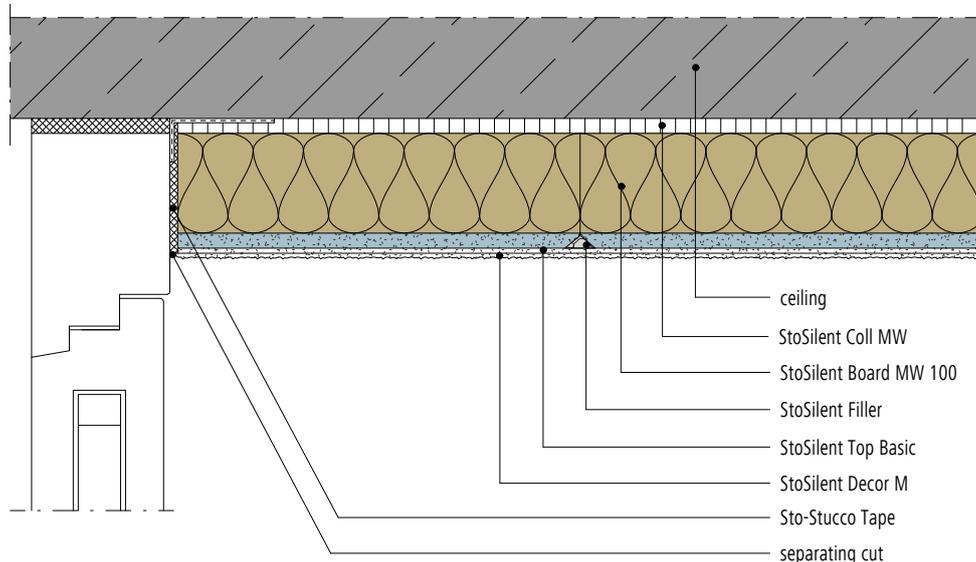
### Ceiling (section): integration of a duct for installations

Sto-HQ-DE\_SSDR-BD-1900\_EN



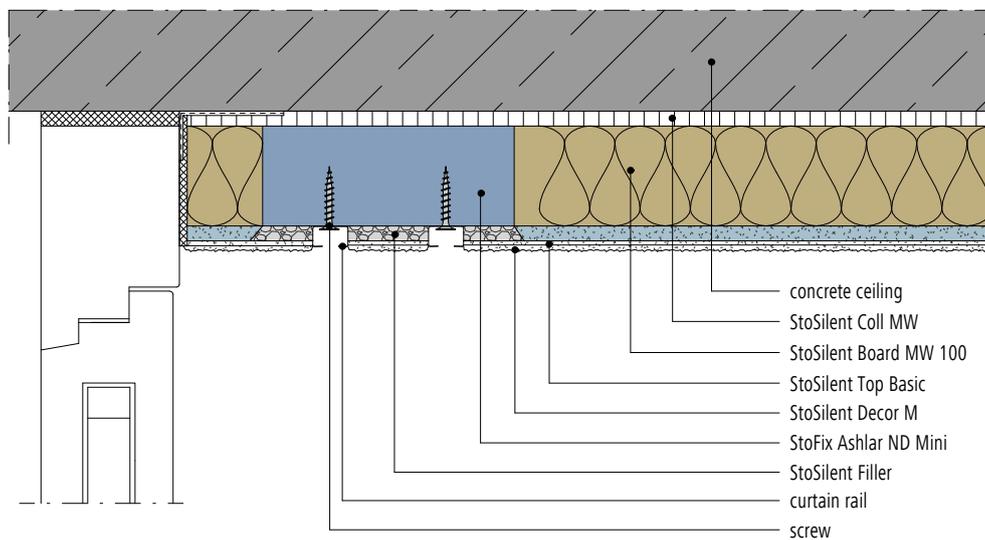
### Ceiling (section): connection to a window

Sto-HQ-DE\_SSDR-BD-1920\_EN



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

Sto-HQ-DE\_SSDR-BD-1925\_EN

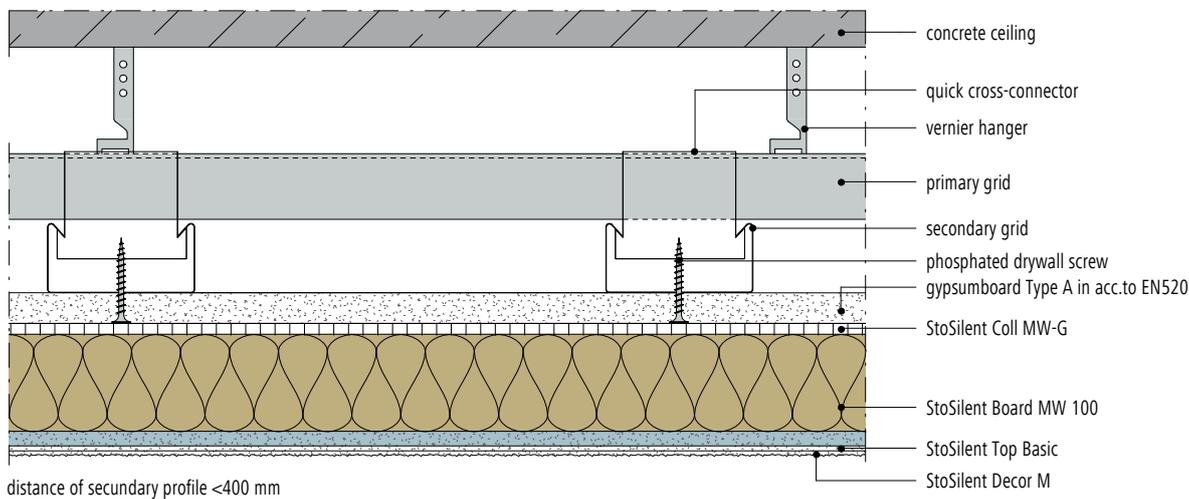


# StoSilent Direct

## Construction details – ceiling

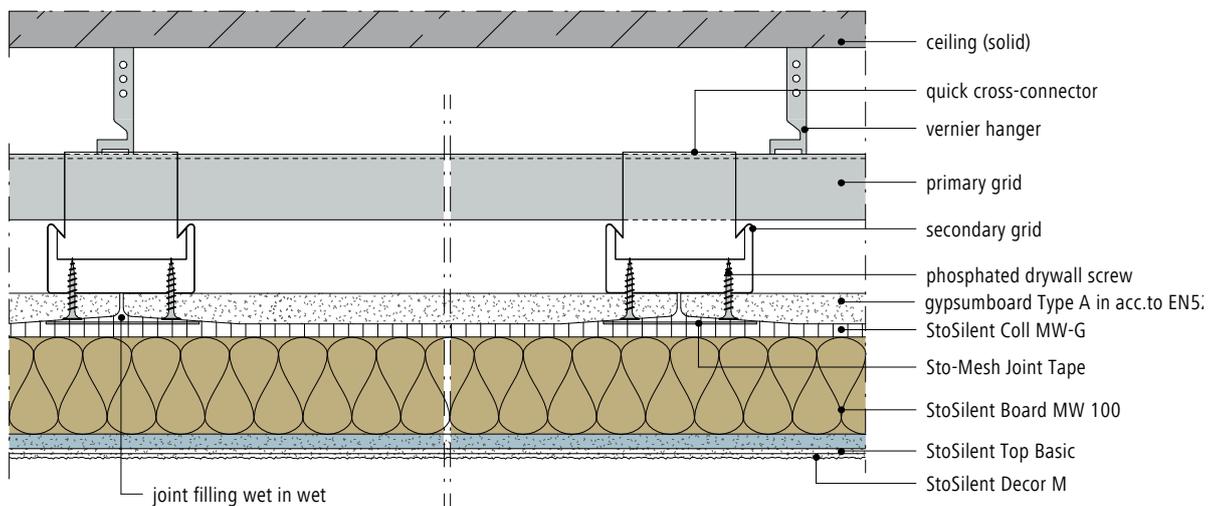
### Ceiling (section): system build-up for a suspended ceiling

Sto-HQ-DE\_SSDR-BD-2000\_EN



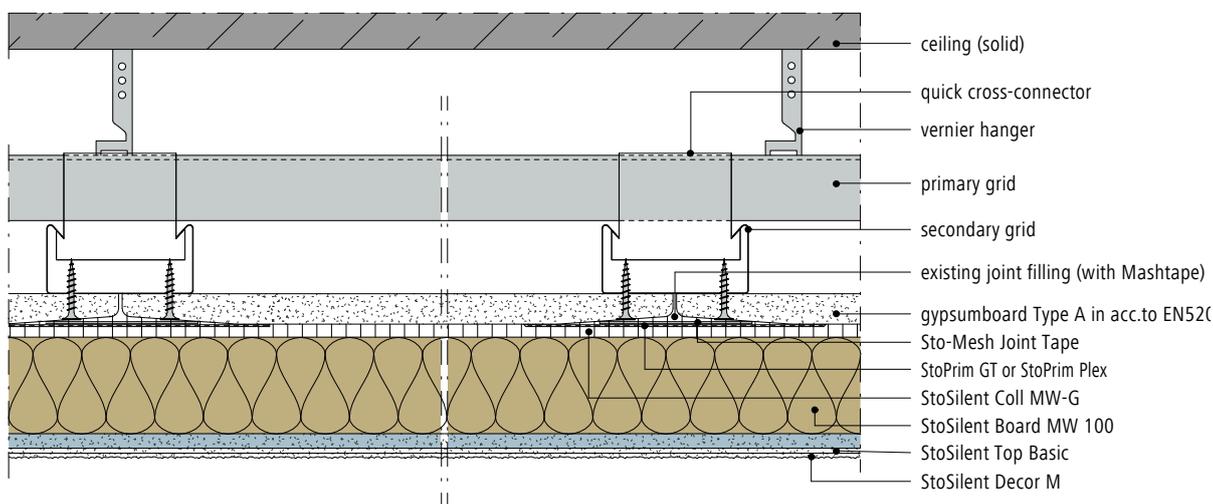
### Ceiling (section): system build-up for a suspended ceiling

Sto-HQ-DE\_SSDR-BD-2020\_EN



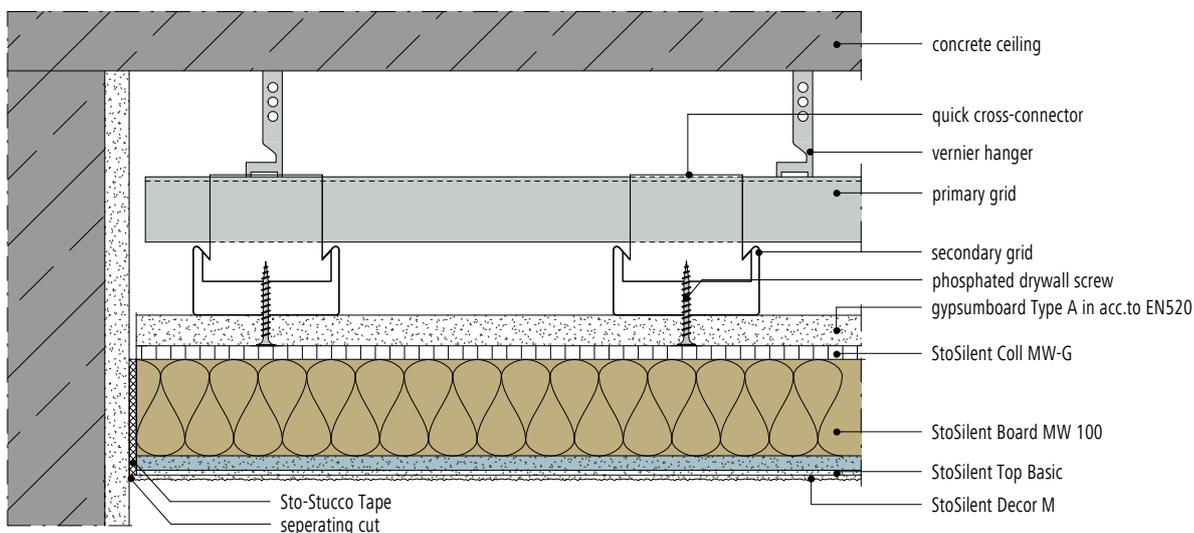
### Ceiling (section): system build-up on existing joint filler and levelling coat

Sto-HQ-DE\_SSDR-BD-2025\_EN



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

Sto-HQ-DE\_SSDR-BD-2010\_EN

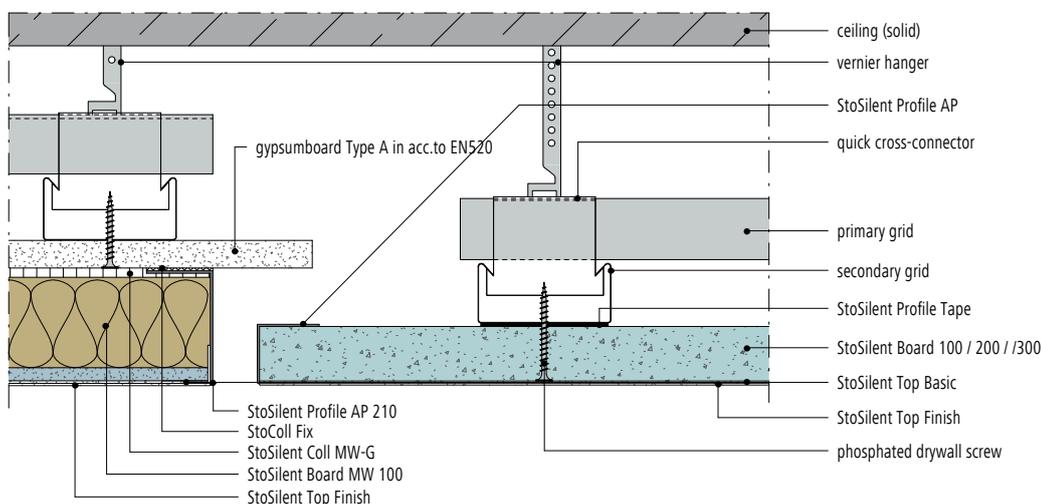


# StoSilent Direct

## Construction details – ceiling

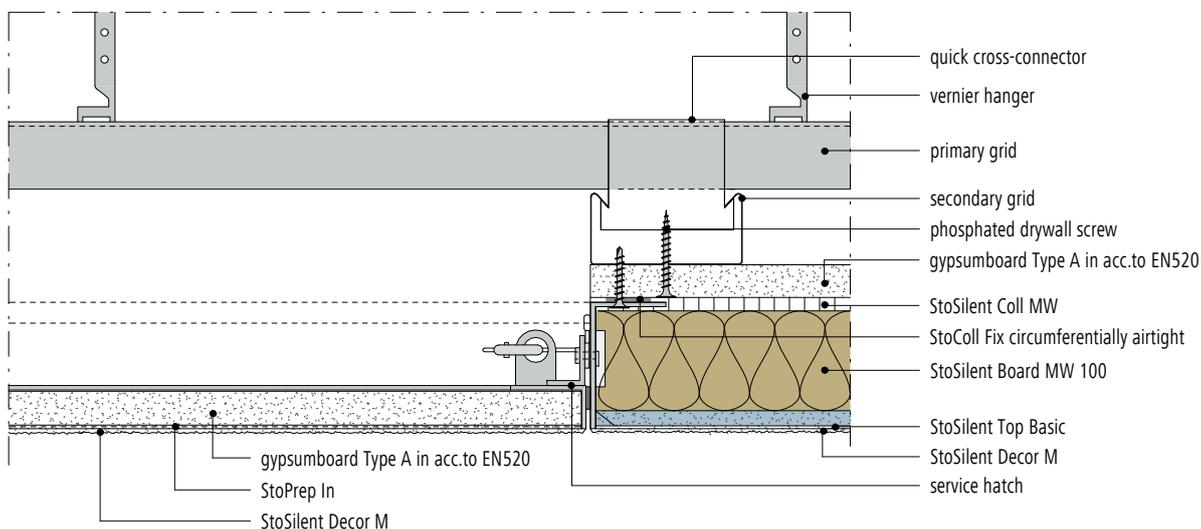
### Ceiling (section): connection of joint formation from StoSilent Distance to StoSilent Direct

Sto-HQ-DE\_SSDR-BD-1930\_EN



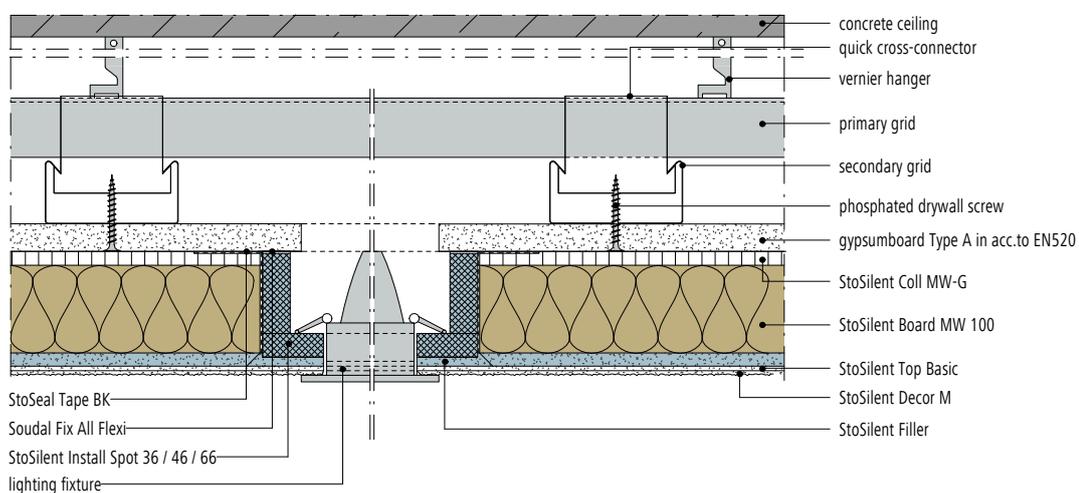
### Ceiling (vertical section): installation of a service hatch

Sto-HQ-DE\_SSDR-BD-2100\_EN



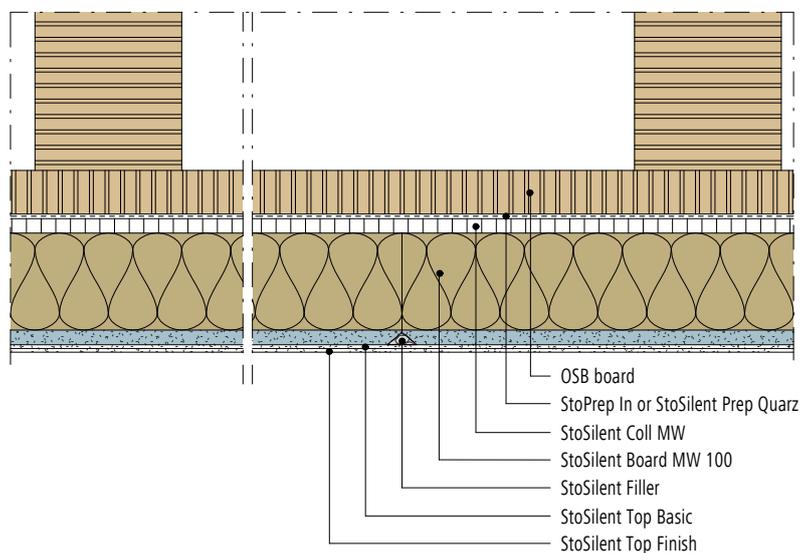
### Ceiling (section): installation of lights with StoSilent Install Spot

Sto-HQ-DE\_SSDR-BD-2200\_EN



### Ceiling (section): system build-up with adhesive on OSB

Sto-HQ-DE\_SSDR-BT-1016\_EN



# StoSilent Modular

## The adjustable ceiling system

### StoSilent Modular system description



Product range	StoSilent Modular 100	StoSilent Modular 230	StoSilent Modular 300	StoSilent Modular 400
Technology	PET fibres	Expanded glass granulate	Polyester fibres	Expanded glass granulate
Surface	PET nonwoven fibre	Colour coating	Polyester fibres	StoSilent Decor, StoSilent Top
Colour design	white	StoColor System	White, colour range	StoColor System

**StoSilent Modular is recommended wherever suspended or directly mounted systems are not possible, or where the acoustics need to be optimised when the room is already in use. This innovative acoustic system is so variable in form that it enables you to consciously set visual accents.**

#### StoSilent Modular 100

This affordable system features acoustically efficient absorber panels and anodised aluminium frames and is primarily used to regulate reverberations and reduce noise. StoSilent Modular stands out from the usual products on the market thanks to its material and extremely thin profile edge.

The StoSilent Modular 100 ceiling element has been awarded the OEKO-TEX® certificate and meets particularly high quality standards.

#### StoSilent Modular 200

The carrier boards of the StoSilent Modular 200 system are made from expanded glass granulate. With the StoSilent Modular 230 system variant, they are available with a fine-textured colour coating in every colour from the StoColor System. In the white version, they offer the added effect of reducing odours and harmful substances thanks to the photocatalytic colour coating involving StoColor Climasan. Within the specified format, a wide range of custom shapes can be created thanks to the lightweight, load-bearing, and sound-absorbent carrier board made from expanded glass granulate. The combinations of the special carrier board and an insulant layer made from recycled PET fibres produces an

exceptionally harmonic absorption spectrum, allowing the reverberation time in auditoria to be perfectly adjusted – without overdamping at high frequencies and booming at low frequencies.

#### StoSilent Modular 300

This sophisticated absorber solution boasts a high-quality appearance. The slim polyester fibre board, which is only 8 mm thick, can be used to create elegant surfaces in selected colour shades while ensuring excellent sound absorption. Thanks to the special construction of the aluminium carrier frame, the element can be fixed to walls or ceilings. A thin visible profile edge that is just 3 mm thick stylishly completes the element.

#### StoSilent Modular 400

StoSilent Modular 400 offers an unlimited range of shapes and colours for areas measuring up to 200 m<sup>2</sup> in size and up to 20 m in length. The system can be custom-made on the construction site to suit the specific requirements of architects and building owners. StoSilent Modular 400 is based on the StoSilent Board carrier boards, which are made from expanded glass granulate. Once these have been mounted on the sub-construction, they are combined with the StoSilent Decor and StoSilent Top finishes. The edge finish can be created in accordance with specifications or on a bespoke basis.



**Casino Milupa  
cafeteria, Fulda, DE**  
Execution: Klüber Putz  
GmbH, Künzell, DE  
Sto expertise: StoSilent  
Modular 100  
Photo: Gerhard Hagen, DE



**Safran restaurant,  
Radolfzell, DE**  
Execution: Niederberg-  
er Putz&Stuck, Singen,  
DE  
Sto expertise: StoSilent  
Modular 230  
Photo: Martin Baitinger,  
Böblingen, DE



**Schopf residential  
building, Mieming,  
AT**  
Design: driendl\*archi-  
tects zt Ges.m.b.H.,  
Vienna, AT  
Sto expertise: StoSilent  
Modular 400 with  
StoSilent Decor M in  
special format  
Photo: Christian Schellander, AT



StoSilent Modular 300  
example of use



StoSilent Modular 300;  
corner formation with  
40 mm radius



StoSilent Modular 300;  
corner formation with  
90° corner

# StoSilent Modular 100

## System overview

### StoSilent Modular 100

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

#### System advantages

- High degree of sound absorption
- Simple to install
- Low weight
- System pre-assembled at the factory
- Very large formats available

#### Area of application

- interior
- For reducing noise and reverberation
- For a bespoke acoustic room treatment

#### Fixing

- With suspension system available separately
- Suspension sets in 3 versions: vernier hanger, threaded rod, cable hanger

#### Reaction to fire

- Class B-s1, d0, in accordance with EN 13501 (PET board)

#### Sound absorption

- High degree of sound absorption (depending on suspension height and format)

#### Sustainability

- PET board made of recycled fibres with OEKO-TEX® certificate

#### Design options

- Rectangular formats, min. 500x500mm, max. 3000x1250mm
- Special formats on request

#### Colour range

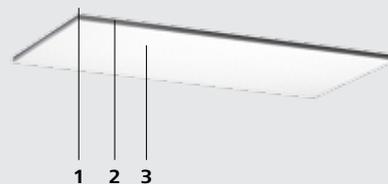
- PET board: white (approx. RAL 9003), with fine, unidirectional texture
- Frame: anodised aluminium, natural, without texture, colour shade approx. RAL 9006

#### Application

- Simple assembly from prefabricated parts and modules in accordance with installation instructions
- Quick, clean, and easy application

## System

### Build-up



- 1 — Suspension system
- 2 — Frame made of anodised aluminium
- 3 — Carrier board, acoustically effective

# StoSilent Modular 230

## System overview

### StoSilent Modular 230

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

#### System advantages

- High degree of sound absorption
- Simple to install
- Low weight
- System pre-assembled at the factory

#### Area of application

- interior
- For reducing noise and reverberation
- For a bespoke acoustic room treatment

#### Fixing

- Suspension system included

#### Reaction to fire

- Class C-s3, d0 in accordance with EN 13501 (PET fibre layer)
- StoSilent Modular 230: class A2-s1, d0 in accordance with EN 13501 (coated carrier board)

#### Sound absorption

- High degree of sound absorption (depending on suspension height and format)

#### Design options

- Format max. 2350x1150 mm
- Special formats on request
- Fine-textured colour coating on StoSilent Modular 230 ceiling element
- With a layer of PET fibre

#### Colour range

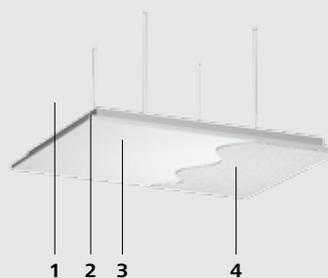
- StoSilent Modular 230 – colour coating, fully tintable in accordance with the StoColor System

#### Application

- Simple assembly from prefabricated parts and modules in accordance with installation instructions
- Quick, clean, and easy application

## System

### Build-up



- 1 — Wire cable suspension, height-adjustable
- 2 — Sub-construction made of galvanised steel sheet
- 3 — Carrier board, acoustically effective
- 4 — Finish, coated at the factory



# StoSilent Modular 300

## System overview

**StoSilent Modular 300**  
Sound-absorbing ceiling element made of polyester fibre board on an aluminium frame

### System advantages

- High degree of sound absorption
- Simple to install
- Low weight
- System pre-assembled at the factory

### Area of application

- interior
- For reducing noise and reverberation
- For a bespoke acoustic room treatment

### Fixing

- Suspension system included (cable hanger)

### Reaction to fire

- Class B-s2, d0, up to D-s3, d0, in accordance with EN 13501 (PES fibre board, depending on colour shade)

### Sound absorption

- High degree of sound absorption (depending on suspension height and format)

### Sustainability

- Carrier board made from homogeneous polyester fibres (PES)

### Design options

- 90° corners
- Rounded corners, r = 40 mm
- Format max. 2350 x 1150 mm
- Special formats on request

### Colour range

- White, colour range
- Special colour shades on request
- Frame: aluminium, powder-coated, silver-coloured

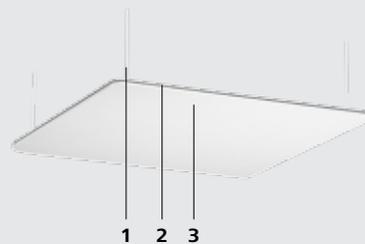
### Application

- Simple assembly from prefabricated parts and modules in accordance with installation instructions
- Quick, clean, and easy application

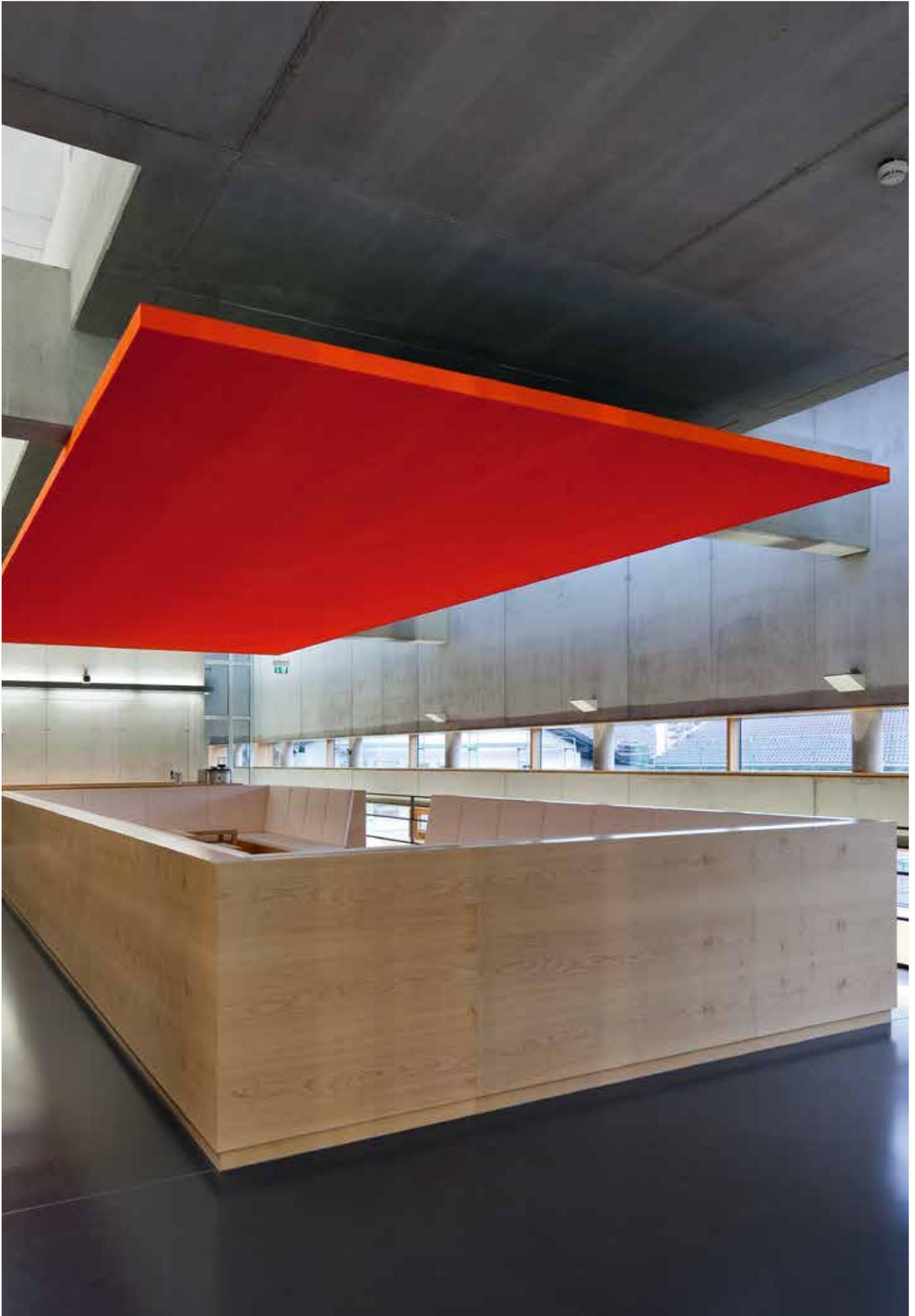
Image on the right:  
**Max Planck Institute, Seewiesen, DE**  
Design: **adam architekten GbR, Munich, DE**  
Execution: Rußbach GmbH & Co. KG, Munich, DE  
Sto expertise: StoSilent Modular 400

## System

### Build-up



- 1 — Wire cable suspension, height-adjustable
- 2 — Sub-construction made of powder-coated aluminium
- 3 — Carrier board, acoustically effective





# StoSilent Modular

## It's all about the right sound absorption

### Individual absorbers

For individual objects, here ceiling elements and wall panels, the equivalent sound absorption area  $A_{eq}$  is specified in  $m^2$  and defined as equivalent sound absorption area per object  $A_{Object}$ .

The equivalent sound absorption area per object  $A_{Object}$  in  $m^2$  is provided for the various versions, formats, and structural heights on the pages that follow.

System	Board/product	Coating/surface	Suspension height of lower edge in mm	Element thickness in mm
StoSilent Modular 100	StoSilent Modular 100, 3000x1250mm	Nonwoven surface, white	200	26
	StoSilent Modular 100, 3000x1250mm	Nonwoven surface, white	400	26
	StoSilent Modular 100 as wall element, 2350x1150mm	Nonwoven surface, white	40	26
	StoSilent Modular 100, 2350x1150mm	Nonwoven surface, white	200	26
	StoSilent Modular 100, 2350x1150mm	Nonwoven surface, white	400	26
	StoSilent Modular 100, 1250x1250mm	Nonwoven surface, white	200	26
	StoSilent Modular 100, 1250x1250mm	Nonwoven surface, white	400	26
StoSilent Modular 230	StoSilent Modular 230 as wall element, 2400x1200mm + PET**	Fine-textured colour coating	51	19 (without PET)
	StoSilent Modular 230, 2350x1150mm + PET*	Fine-textured colour coating	200	19 (without PET)
	StoSilent Modular 230, 2350x1150mm + PET*	Fine-textured colour coating	400	19 (without PET)
	StoSilent Modular 230, 1150x1150mm + PET*	Fine-textured colour coating	200	19 (without PET)
	StoSilent Modular 230, 1150x1150mm + PET*	Fine-textured colour coating	400	19 (without PET)
StoSilent Modular 300	StoSilent Modular 300 as wall element, 2350x1150mm	Polyester fibre board, white	48	48
	StoSilent Modular 300, 2350x1150mm	Polyester fibre board, white	200	48
	StoSilent Modular 300, 2350x1150mm	Polyester fibre board, white	400	48
	StoSilent Modular 300 as wall element, 1150x1150mm	Polyester fibre board, dark grey	48	48
	StoSilent Modular 300, 1150x1150mm	Polyester fibre board, dark grey	200	48
	StoSilent Modular 300, 1150x1150mm	Polyester fibre board, dark grey	400	48
	StoSilent Modular 300 as wall element, 900x900mm	Polyester fibre board, green	48	48
	StoSilent Modular 300, 900x900mm	Polyester fibre board, green	200	48
	StoSilent Modular 300, 900x900mm	Polyester fibre board, green	400	48

### StoSilent Modular 400:

The StoSilent Modular 400 system is primarily based on the StoSilent Board carrier board, which is made from expanded glass granulate. It is created by combining this carrier board with the StoSilent Decor and StoSilent Top finishes. StoSilent Modular 400 is produced on the construction site in a wide range of versions according to individual requirements. Due to this diversity, it is not possible to provide sound absorption values which apply to all possible versions, surfaces, shapes, and coatings.

	Element dimensions		Element surface area in m <sup>2</sup>	Test report
	Element length in mm	Element width in mm		
	3000	1250	3.75	M100960/17
	3000	1250	3.75	M100960/17
	2350	1150	2.70	M100960/17
	2350	1150	2.70	M100960/17
	2350	1150	2.70	M100960/17
	1250	1250	1.56	M100960/17
	1250	1250	1.56	M100960/17
	2400	1200	2.88	M100960/23
	2400	1200	2.88	M100960/23
	2400	1200	2.88	M100960/23
	1200	1200	1.44	M100960/23
	1200	1200	1.44	M100960/23
	2350	1150	2.70	M100960/21
	2350	1150	2.70	M100960/21
	2350	1150	2.70	M100960/21
	1150	1150	1.32	M100960/21
	1150	1150	1.32	M100960/21
	1150	1150	1.32	M100960/21
	900	900	0.81	M100960/21
	900	900	0.81	M100960/21
	900	900	0.81	M100960/21

\* PET: PET fibre board with an area of 0.77 m<sup>2</sup> per ceiling element with 1200x1200 mm/1.81 m<sup>2</sup> per ceiling element with 2400x1200 mm, thickness: 40 mm

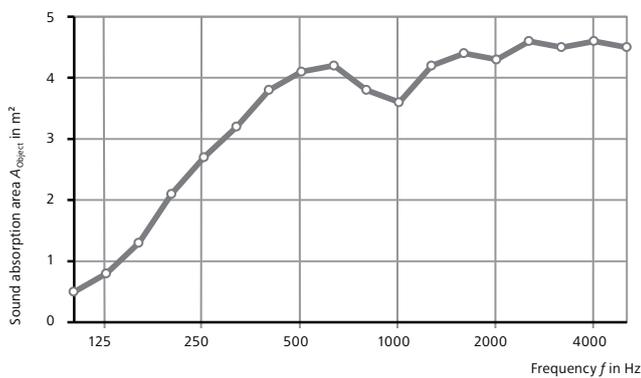
\*\* PET: PET fibre board with an area of 2.04 m<sup>2</sup> per ceiling element, thickness: 25 mm



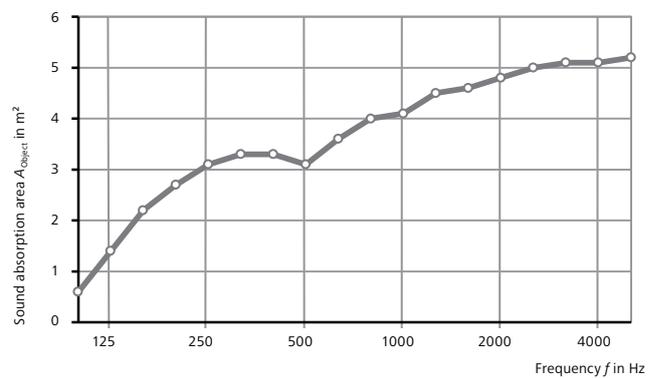
# StoSilent Modular

## Sound absorption in detail

StoSilent Modular



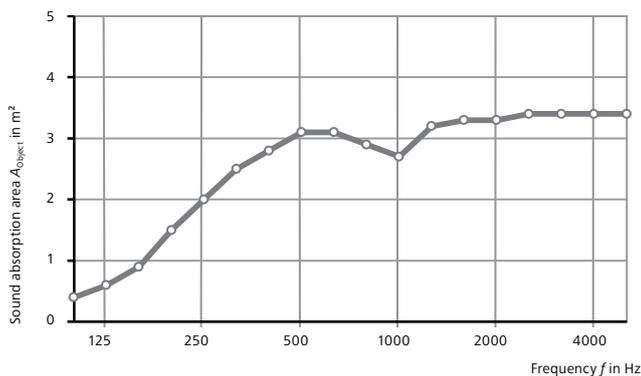
**System:** StoSilent Modular 100  
**Format:** 3.00 m x 1.25 m  
**Coating:** PET nonwoven fibre, white  
**Thickness:** 26 mm  
**Structural height:** 200 mm



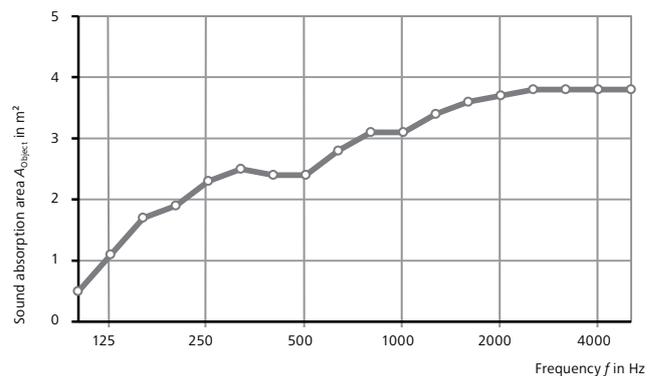
**System:** StoSilent Modular 100  
**Format:** 3.00 m x 1.25 m  
**Coating:** PET nonwoven fibre, white  
**Thickness:** 26 mm  
**Structural height:** 400 mm

Frequency $f$ in Hz	Sound absorption area $A_{Object}$ in $m^2$					
	125	250	500	1000	2000	4000
Third-octave band	0.50	2.10	3.80	3.80	4.40	4.50
Octave band	0.80	2.70	4.10	3.60	4.30	4.60
Third-octave band	1.30	3.20	4.20	4.20	4.60	4.50

Frequency $f$ in Hz	Sound absorption area $A_{Object}$ in $m^2$					
	125	250	500	1000	2000	4000
Third-octave band	0.60	2.70	3.30	4.00	4.60	5.10
Octave band	1.40	3.10	3.10	4.10	4.80	5.10
Third-octave band	2.20	3.30	3.60	4.50	5.00	5.20



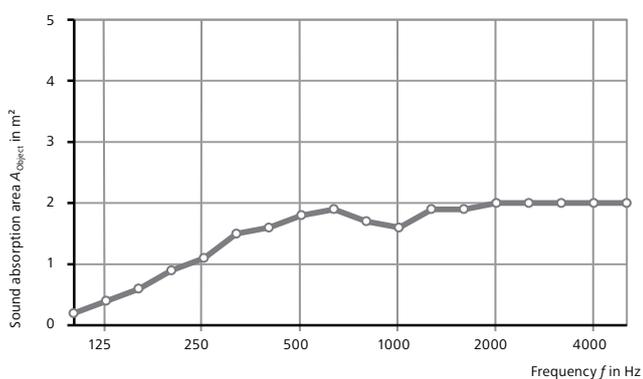
**System:** StoSilent Modular 100  
**Format:** 2.35 m x 1.15 m  
**Coating:** PET nonwoven fibre, white  
**Thickness:** 26 mm  
**Structural height:** 200 mm



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

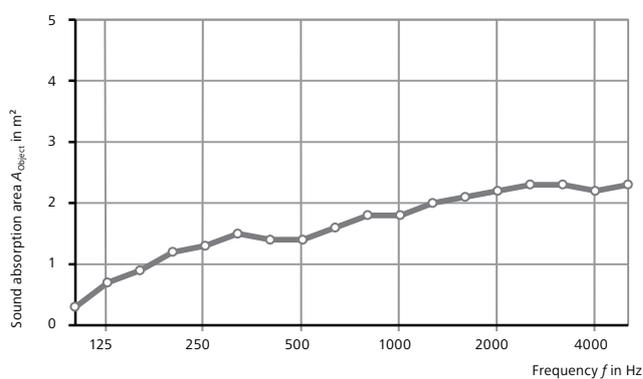
Frequency $f$ in Hz	Sound absorption area $A_{Object}$ in $m^2$					
	125	250	500	1000	2000	4000
Third-octave band	0.40	1.50	2.80	2.90	3.30	3.40
Octave band	0.60	2.00	3.10	2.70	3.30	3.40
Third-octave band	0.90	2.50	3.10	3.20	3.40	3.40

Frequency $f$ in Hz	Sound absorption area $A_{Object}$ in $m^2$					
	125	250	500	1000	2000	4000
Third-octave band	0.50	1.90	2.40	3.10	3.60	3.80
Octave band	1.10	2.30	2.40	3.10	3.70	3.80
Third-octave band	1.70	2.50	2.80	3.40	3.80	3.80



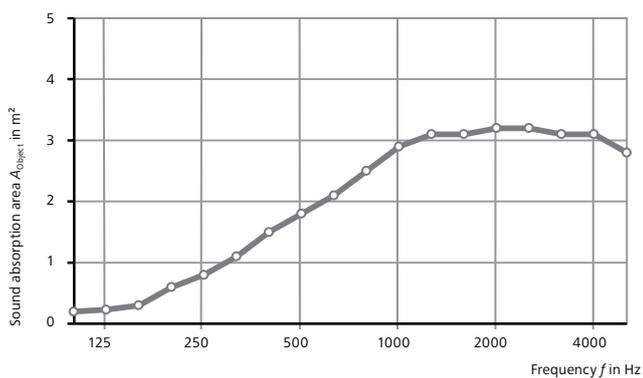
**System:** StoSilent Modular 100  
**Format:** 1.25 m x 1.25 m  
**Coating:** PET nonwoven fibre, white  
**Thickness:** 26 mm  
**Structural height:** 200 mm

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



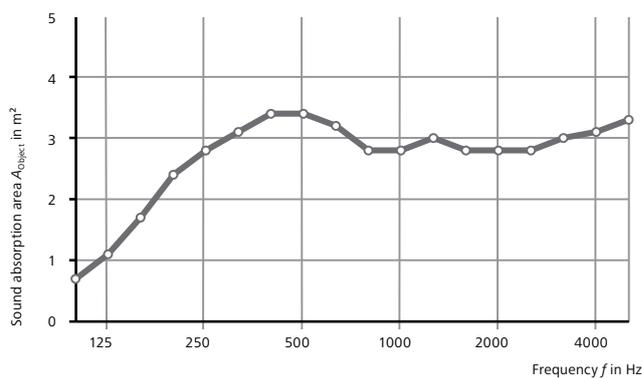
**System:** StoSilent Modular 100  
**Format:** 1.25 m x 1.25 m  
**Coating:** PET nonwoven fibre, white  
**Thickness:** 26 mm  
**Structural height:** 400 mm

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



**System:** StoSilent Modular 100  
**Format:** 2.35 m x 1.15 m  
**Coating:** PET nonwoven fibre, white  
**Thickness:** 26 mm  
**Structural height:** 40 mm

Frequency f in Hz	Sound absorption area $A_{Object}$ in m <sup>2</sup>					
	125	250	500	1000	2000	4000
Third-octave band	0.20	0.60	1.50	2.50	3.10	3.10
Octave band	0.23	0.80	1.80	2.90	3.20	3.10
Third-octave band	0.30	1.10	2.10	3.10	3.20	2.80



**System:** StoSilent Modular 230  
**Format:** 2.40 m x 1.20 m  
**Coating:** fine-textured colour coating  
**Thickness:** 19 (without PET)  
**Structural height:** 200 mm

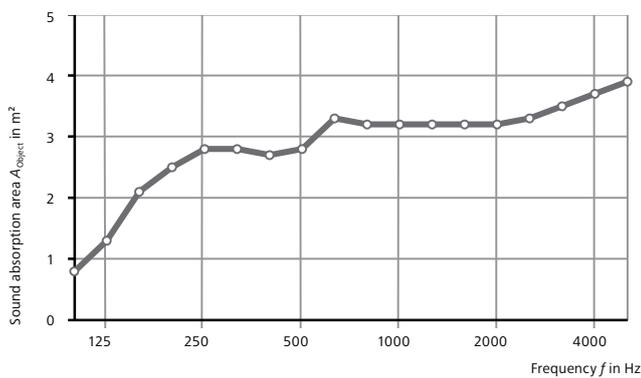
Frequency f in Hz	Sound absorption area $A_{Object}$ in m <sup>2</sup>					
	125	250	500	1000	2000	4000
Third-octave band	0.70	2.30	3.50	3.10	2.90	3.20
Octave band	1.30	2.80	3.50	2.90	2.90	3.40
Third-octave band	1.80	3.30	3.40	3.10	3.10	3.50



# StoSilent Modular

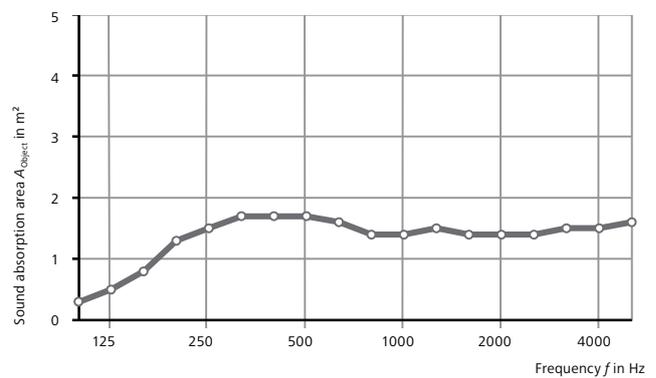
## Sound absorption in detail

StoSilent Modular



**System:** StoSilent Modular 230  
**Format:** 2.40 m x 1.20 m  
**Coating:** fine-textured colour coating

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

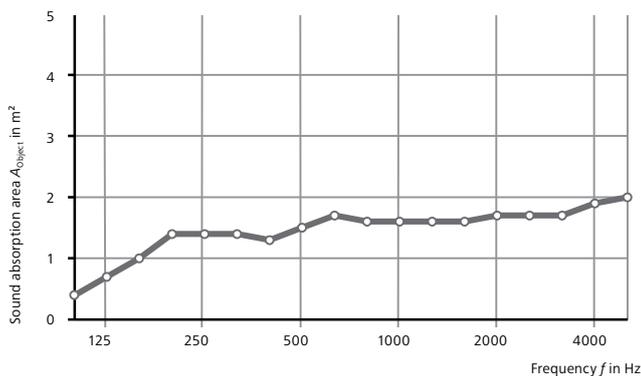


**System:** StoSilent Modular 230  
**Format:** 1.20 m x 1.20 m  
**Coating:** fine-textured colour coating

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

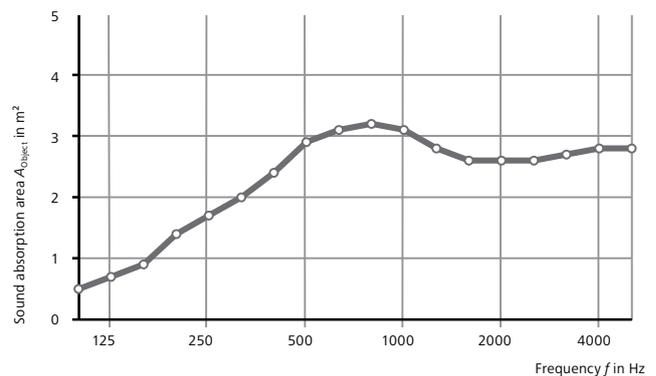
Frequency $f$ in Hz	Sound absorption area $A_{Object}$ in $m^2$					
	125	250	500	1000	2000	4000
Third-octave band	0.80	2.60	2.90	3.40	3.30	3.80
Octave band	2.00	2.90	3.00	3.40	3.40	4.00
Third-octave band	2.20	3.00	3.50	3.30	3.60	4.10

Frequency $f$ in Hz	Sound absorption area $A_{Object}$ in $m^2$					
	125	250	500	1000	2000	4000
Third-octave band	0.20	1.10	1.80	1.60	1.50	1.70
Octave band	0.60	1.30	1.70	1.50	1.60	1.90
Third-octave band	0.80	1.60	1.70	1.60	1.60	1.90



**System:** StoSilent Modular 230  
**Format:** 1.20 m x 1.20 m  
**Coating:** fine-textured colour coating

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

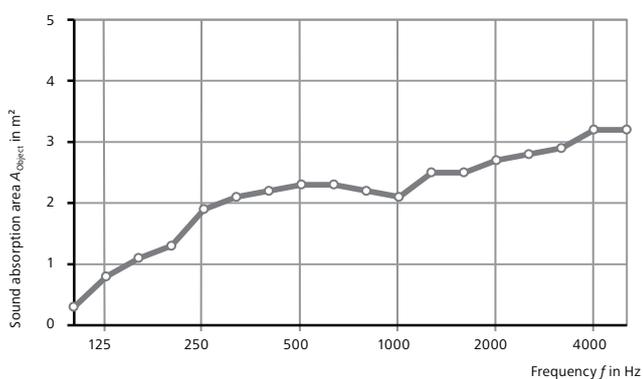


**System:** StoSilent Modular 230  
**Format:** 2.40 m x 1.20 m  
**Coating:** fine-textured colour coating

**Thickness:** 19 (without PET)  
**Structural height:** 51 mm

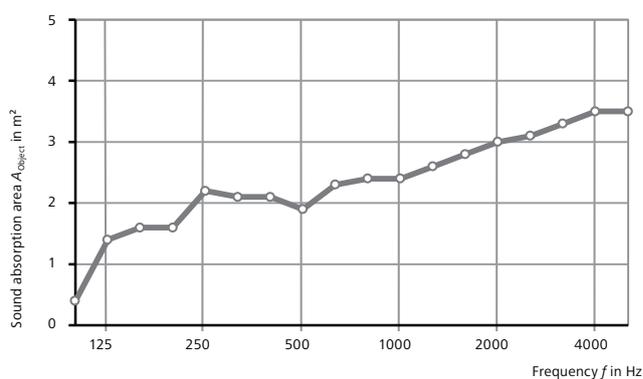
Frequency $f$ in Hz	Sound absorption area $A_{Object}$ in $m^2$					
	125	250	500	1000	2000	4000
Third-octave band	0.30	1.20	1.50	1.70	1.80	2.00
Octave band	0.90	1.30	1.40	1.70	1.90	2.20
Third-octave band	1.00	1.40	1.80	1.70	1.90	2.20

Frequency $f$ in Hz	Sound absorption area $A_{Object}$ in $m^2$					
	125	250	500	1000	2000	4000
Third-octave band	0.50	1.40	2.40	3.20	2.60	2.70
Octave band	0.70	1.70	2.90	3.10	2.60	2.80
Third-octave band	0.90	2.00	3.10	2.80	2.60	2.80



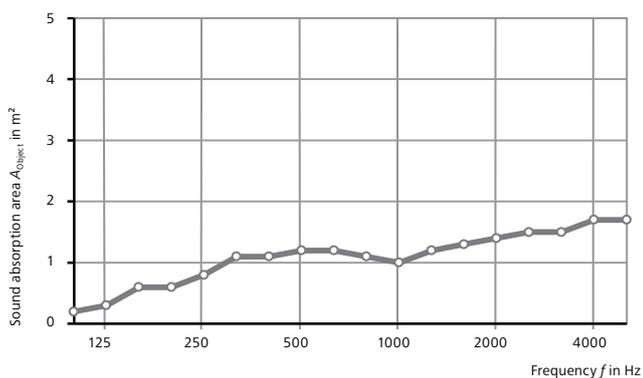
**System:** StoSilent Modular 300 **Thickness:** 48 mm  
**Format:** 2.35 m x 1.15 m **Structural height:** 200 mm  
**Coating:** polyester fibre board, white

Frequency $f$ in Hz	Sound absorption area $A_{Object}$ in $m^2$					
	125	250	500	1000	2000	4000
Third-octave band	0.30	1.30	2.20	2.20	2.50	2.90
Octave band	<b>0.80</b>	<b>1.90</b>	<b>2.30</b>	<b>2.10</b>	<b>2.70</b>	<b>3.20</b>
Third-octave band	1.10	2.10	2.30	2.50	2.80	3.20



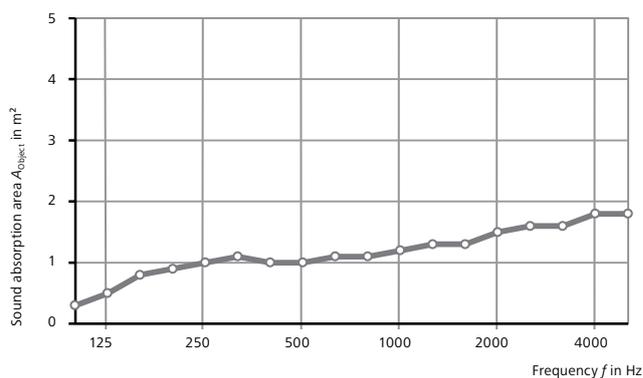
**System:** StoSilent Modular 300 **Thickness:** 48 mm  
**Format:** 2.35 m x 1.15 m **Structural height:** 400 mm  
**Coating:** polyester fibre board, white

Frequency $f$ in Hz	Sound absorption area $A_{Object}$ in $m^2$					
	125	250	500	1000	2000	4000
Third-octave band	0.40	1.60	2.10	2.40	2.80	3.30
Octave band	<b>1.40</b>	<b>2.20</b>	<b>1.90</b>	<b>2.40</b>	<b>3.00</b>	<b>3.50</b>
Third-octave band	1.60	2.10	2.30	2.60	3.10	3.50



**System:** StoSilent Modular 300 **Thickness:** 48 mm  
**Format:** 1.15 m x 1.15 m **Structural height:** 200 mm  
**Coating:** polyester fibre board, dark grey

Frequency $f$ in Hz	Sound absorption area $A_{Object}$ in $m^2$					
	125	250	500	1000	2000	4000
Third-octave band	0.20	0.60	1.10	1.10	1.30	1.50
Octave band	<b>0.30</b>	<b>0.80</b>	<b>1.20</b>	<b>1.00</b>	<b>1.40</b>	<b>1.70</b>
Third-octave band	0.60	1.10	1.20	1.20	1.50	1.70

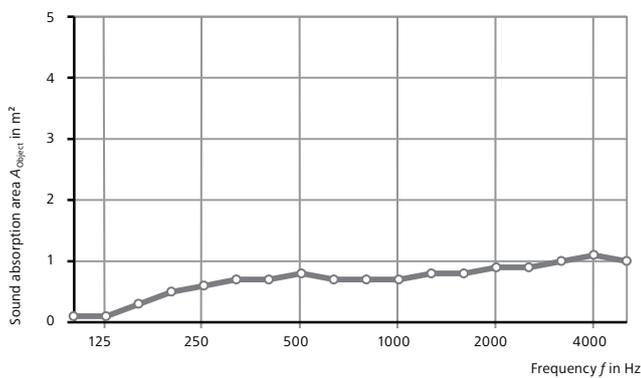


**System:** StoSilent Modular 300 **Thickness:** 48 mm  
**Format:** 1.15 m x 1.15 m **Structural height:** 400 mm  
**Coating:** polyester fibre board, grey

Frequency $f$ in Hz	Sound absorption area $A_{Object}$ in $m^2$					
	125	250	500	1000	2000	4000
Third-octave band	0.30	0.90	1.00	1.10	1.30	1.60
Octave band	<b>0.50</b>	<b>1.00</b>	<b>1.00</b>	<b>1.20</b>	<b>1.50</b>	<b>1.80</b>
Third-octave band	0.80	1.10	1.10	1.30	1.60	1.80

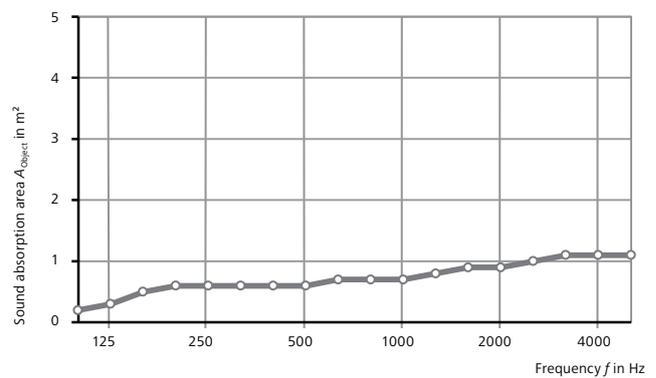
# StoSilent Modular

## Sound absorption in detail



**System:** StoSilent Modular 300  
**Format:** 0.90 m x 0.90 m  
**Coating:** polyester fibre board, green

**Thickness:** 48 mm  
**Structural height:** 200 mm

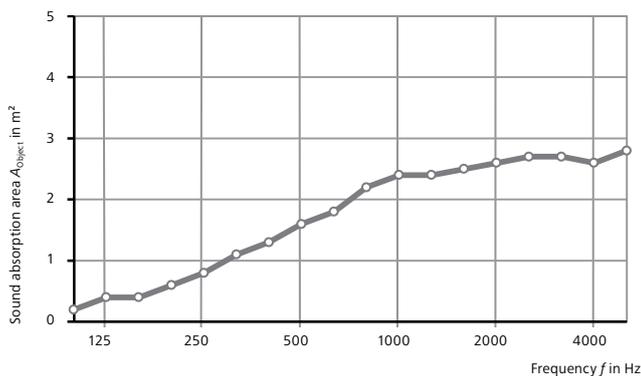


**System:** StoSilent Modular 300  
**Format:** 0.90 m x 0.90 m  
**Coating:** polyester fibre board, green

**Thickness:** 48 mm  
**Structural height:** 400 mm

Frequency $f$ in Hz	Sound absorption area $A_{Object}$ in $m^2$					
	125	250	500	1000	2000	4000
Third-octave band	0.10	0.50	0.70	0.70	0.80	1.00
Octave band	0.10	0.60	0.80	0.70	0.90	1.10
Third-octave band	0.30	0.70	0.70	0.80	0.90	1.00

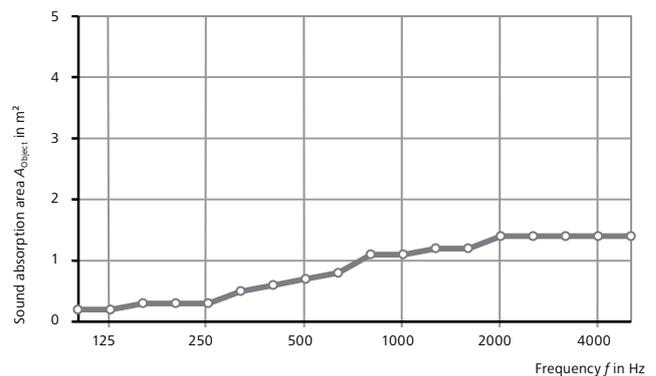
Frequency $f$ in Hz	Sound absorption area $A_{Object}$ in $m^2$					
	125	250	500	1000	2000	4000
Third-octave band	0.20	0.60	0.60	0.70	0.90	1.10
Octave band	0.30	0.60	0.60	0.70	0.90	1.10
Third-octave band	0.50	0.60	0.70	0.80	1.00	1.10



**System:** StoSilent Modular 300  
**Format:** 2.35 m x 1.15 m  
**Coating:** polyester fibre board, white

**Thickness:** 48 mm  
**Structural height:** 48 mm

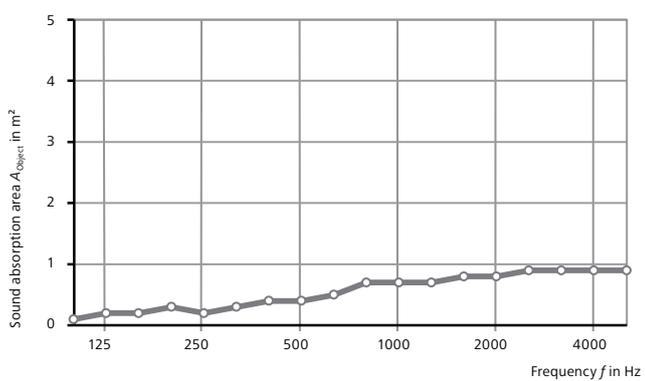
Frequency $f$ in Hz	Sound absorption area $A_{Object}$ in $m^2$					
	125	250	500	1000	2000	4000
Third-octave band	0.20	0.60	1.30	2.20	2.50	2.70
Octave band	0.40	0.80	1.60	2.40	2.60	2.60
Third-octave band	0.40	1.10	1.80	2.40	2.70	2.80



**System:** StoSilent Modular 300  
**Format:** 1.15 m x 1.15 m  
**Coating:** polyester fibre board, grey

**Thickness:** 48 mm  
**Structural height:** 48 mm

Frequency $f$ in Hz	Sound absorption area $A_{Object}$ in $m^2$					
	125	250	500	1000	2000	4000
Third-octave band	0.20	0.30	0.60	1.10	1.20	1.40
Octave band	0.20	0.30	0.70	1.10	1.40	1.40
Third-octave band	0.30	0.50	0.80	1.20	1.40	1.40



**System:** StoSilent Modular 300  
**Format:** 0.90 m x 0.90 m  
**Coating:** polyester fibre board, green

**Thickness:** 48 mm  
**Structural height:** 48 mm

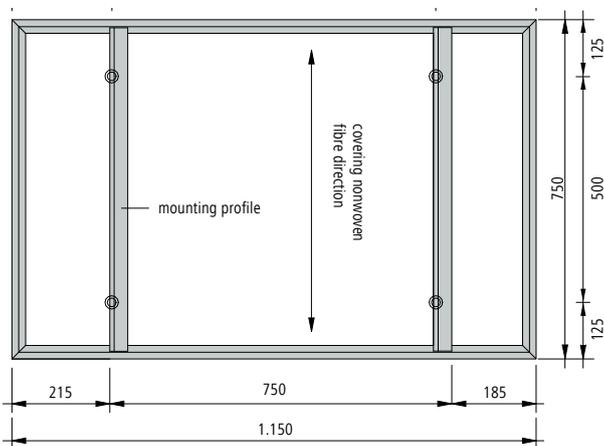
Frequency $f$ in Hz	Sound absorption area $A_{Object}$ in $m^2$					
	125	250	500	1000	2000	4000
Third-octave band	0.10	0.30	0.40	0.70	0.80	0.90
Octave band	<b>0.20</b>	<b>0.20</b>	<b>0.40</b>	<b>0.70</b>	<b>0.80</b>	<b>0.90</b>
Third-octave band	0.20	0.30	0.50	0.70	0.90	0.90

# StoSilent Modular

## StoSilent Modular 100 construction details

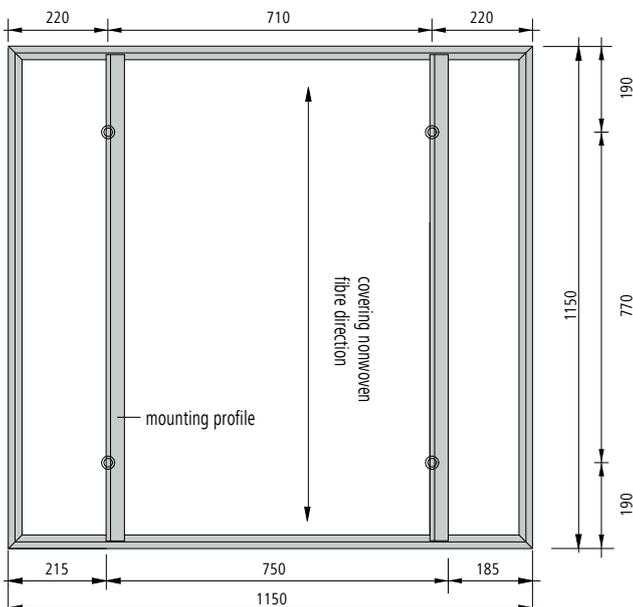
### Top view: StoSilent Modular 100 ceiling element, 1150x750 mm

Sto-HQ-DE\_SSMO 100\_1150x750 mm\_EN



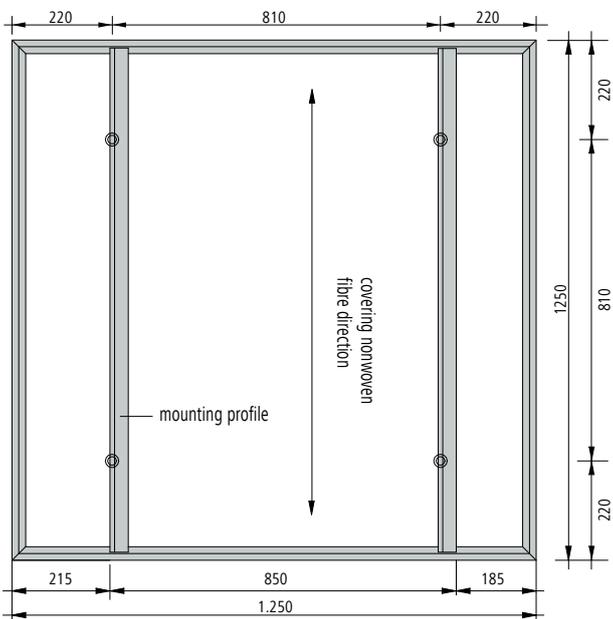
### Top view: StoSilent Modular 100 ceiling element, 1150x1150 mm

Sto-HQ-DE\_SSMO 100\_1150x1150 mm\_EN



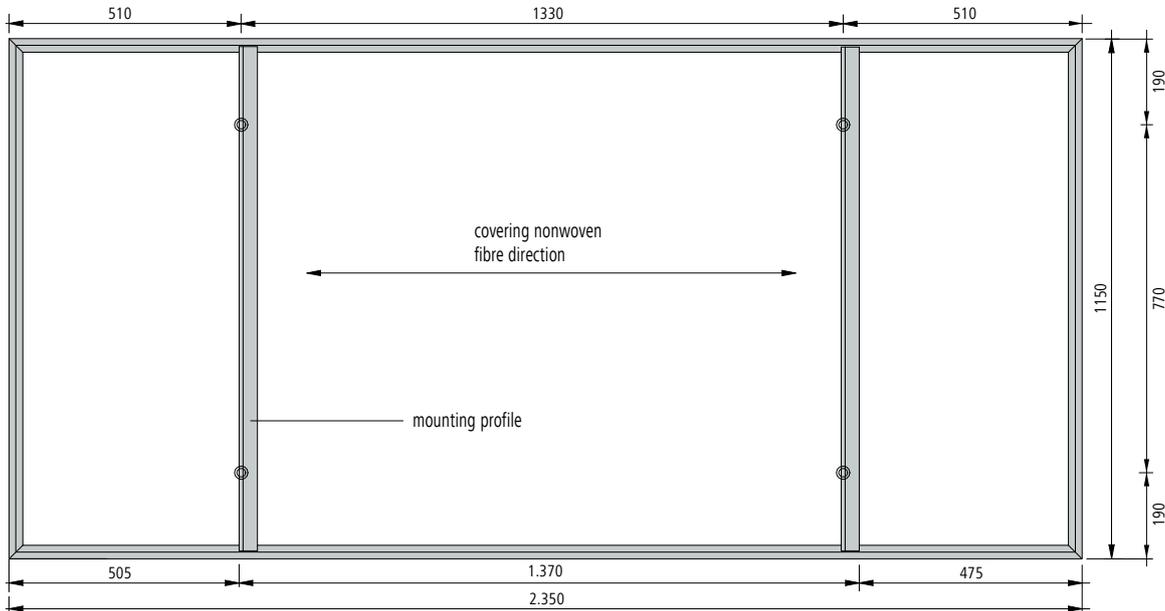
**Top view: StoSilent Modular 100 ceiling element, 1250x1250 mm**

Sto-HQ-DE\_SSMO 100\_1250x1250 mm\_EN



**Top view: StoSilent Modular 100 ceiling element, 2350x1150 mm**

Sto-HQ-DE\_SSMO 100\_2350x1150 mm\_EN

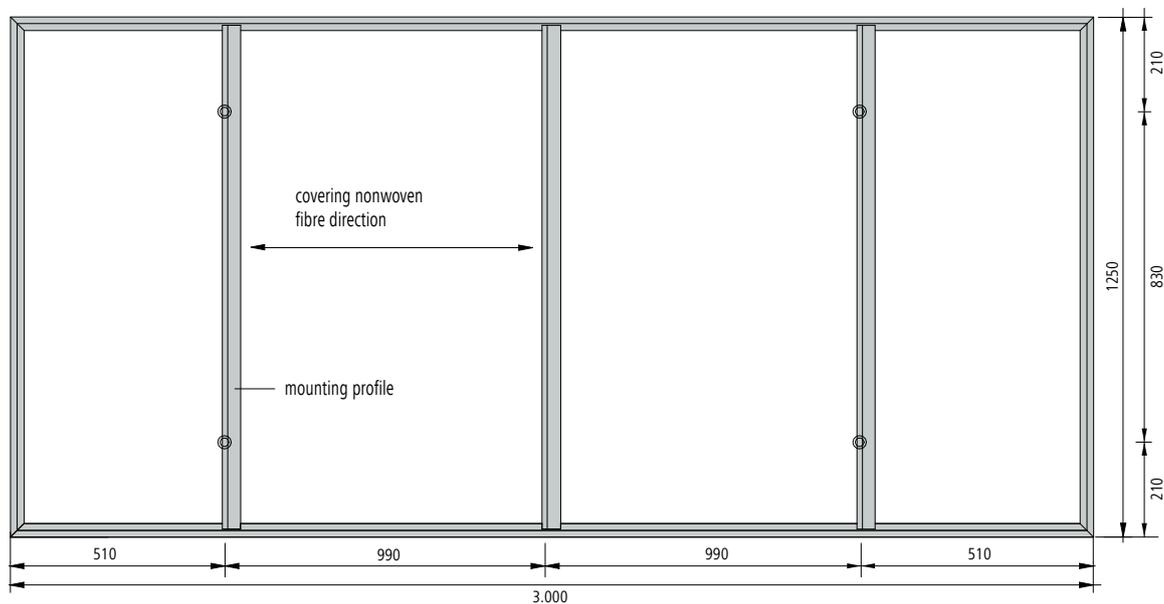


# StoSilent Modular

## StoSilent Modular 100 construction details

### Top view: StoSilent Modular 100 ceiling element, 3000x1250 mm

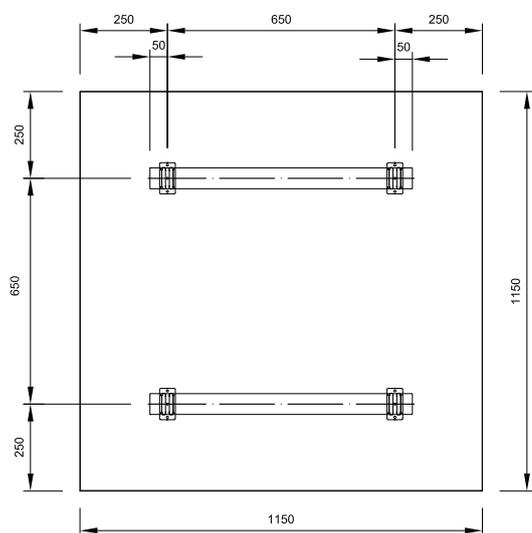
Sto-HQ-DE\_Modular 100 3000x1250



## StoSilent Modular 230 construction details

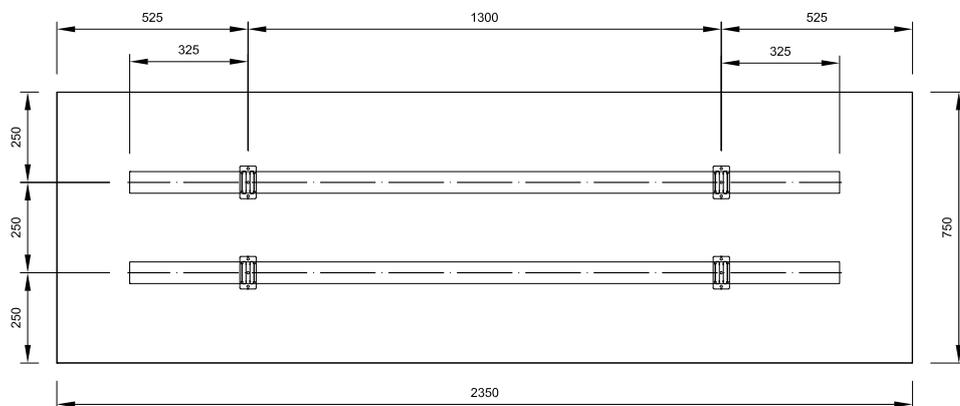
### Top view: StoSilent Modular 230 ceiling element, 1150x1150 mm

Sto-HQ-DE\_Modular 230 1150x1150



### Top view: StoSilent Modular 230 ceiling element, 2350x750 mm

Sto-HQ-DE\_Modular 230 2350x750

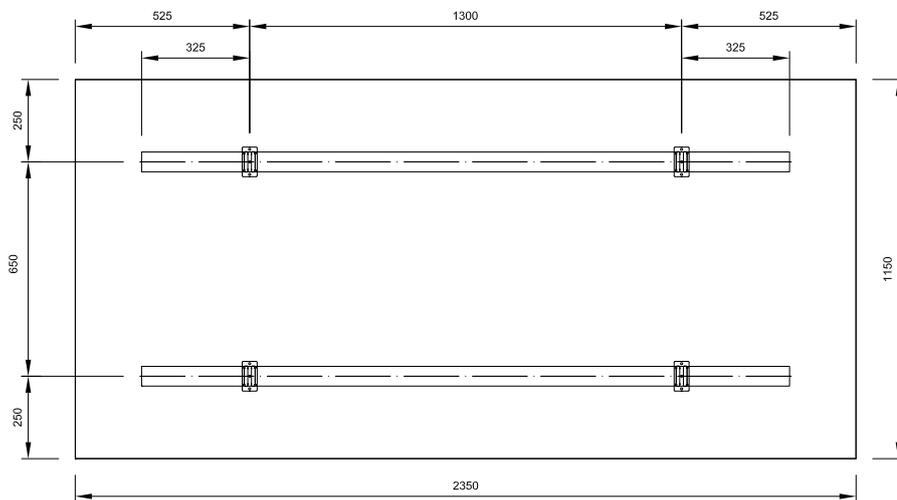


# StoSilent Modular

## StoSilent Modular 230 construction details

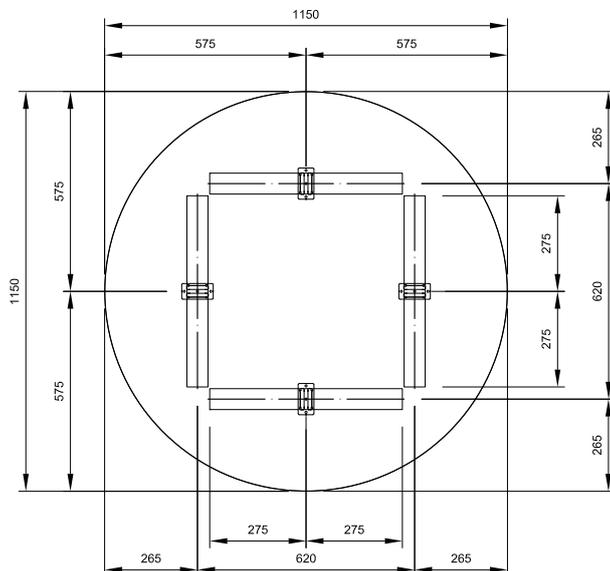
### Top view: StoSilent Modular 230 ceiling element, 2350 x 1150 mm

Sto-HQ-DE\_Modular 230 2350x1150



### Top view: StoSilent Modular 230 ceiling element, R 575 mm

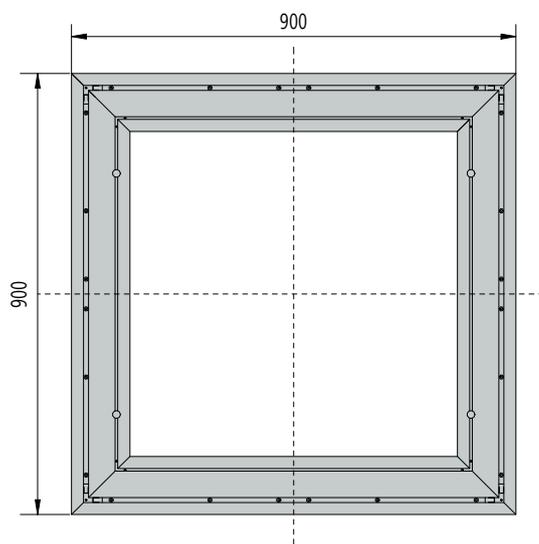
Sto-HQ-DE\_Modular 230 R 575



## StoSilent Modular 300 construction details

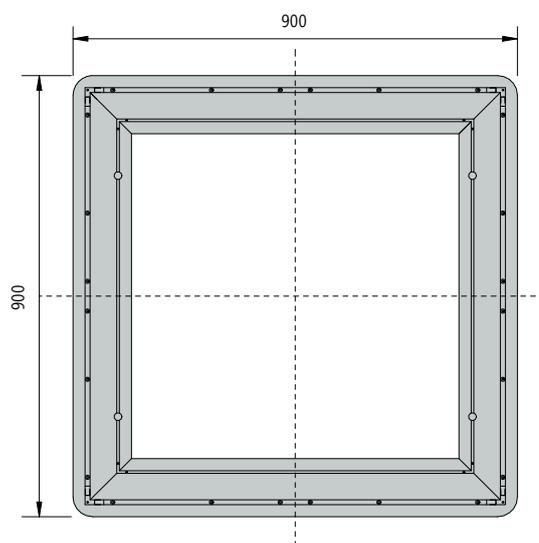
### Top view: StoSilent Modular 300 ceiling element, 900x900 mm

Sto-HQ-DE\_Modular 300 900x900



### Top view: StoSilent Modular 300 ceiling element, 900x900 mm, R 40 mm

Sto-HQ-DE\_Modular 300 900x900 R 40 mm

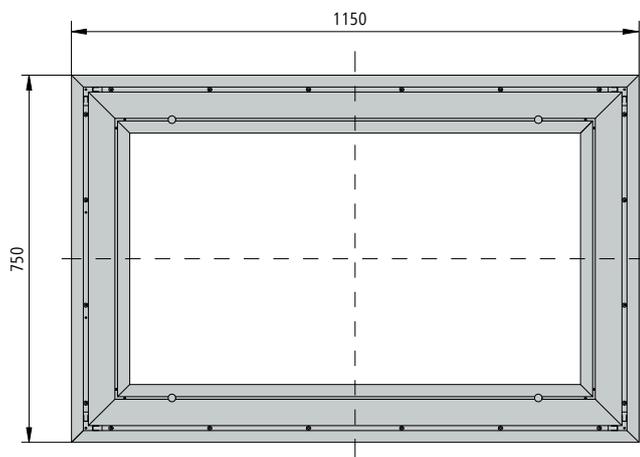


# StoSilent Modular

## StoSilent Modular 300 construction details

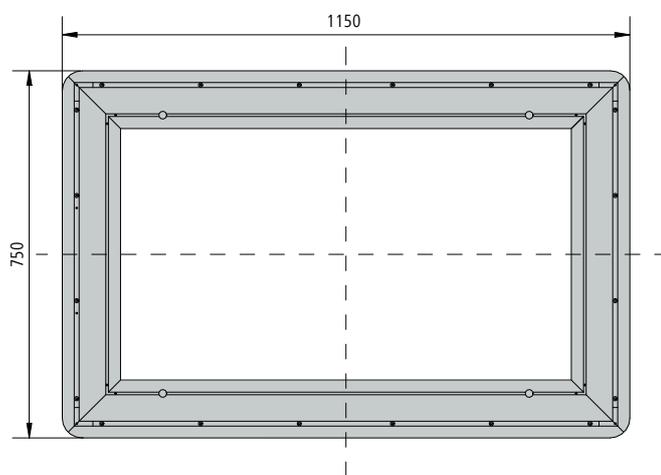
### Top view: StoSilent Modular 300 ceiling element, 1150x750 mm

Sto-HQ-DE\_Modular 300 1150x750



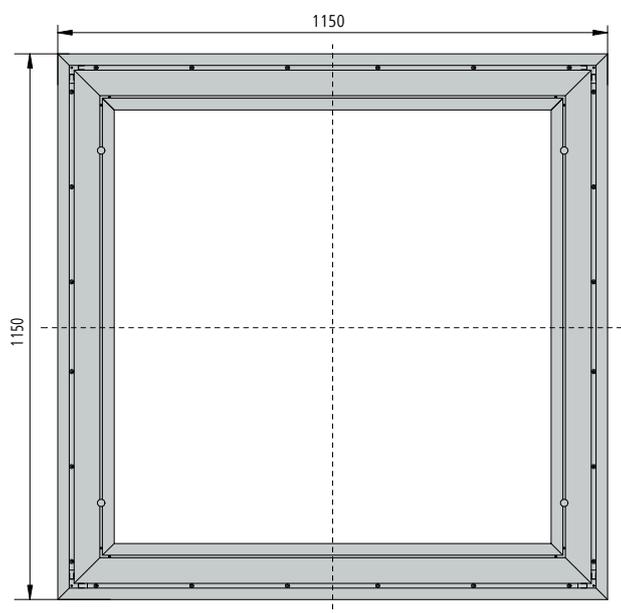
### Top view: StoSilent Modular 300 ceiling element, 1150x750 mm, R 40 mm

Sto-HQ-DE\_Modular 300 1150x750 R 40

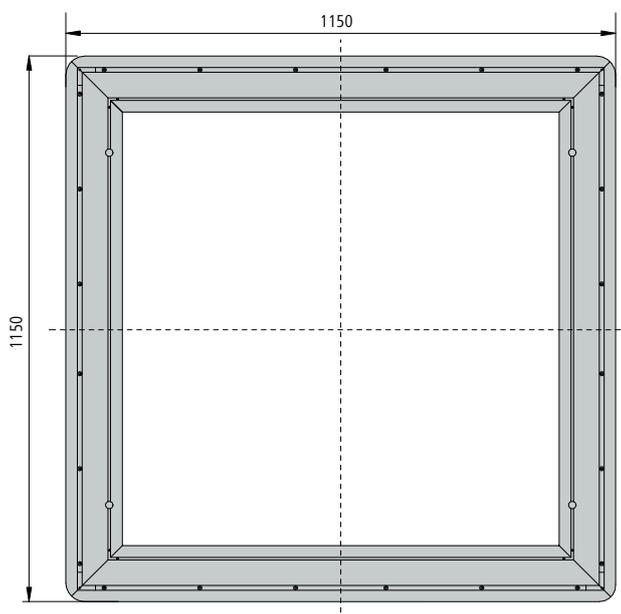


**Top view: StoSilent Modular 300 ceiling element, 1150x1150 mm**

Sto-HQ-DE\_Modular 300 1150x1150 90 E

**Top view: StoSilent Modular 300 ceiling element, 1150x1150 mm, R 40 mm**

Sto-HQ-DE\_Modular 300 1150x1150 R 40mm

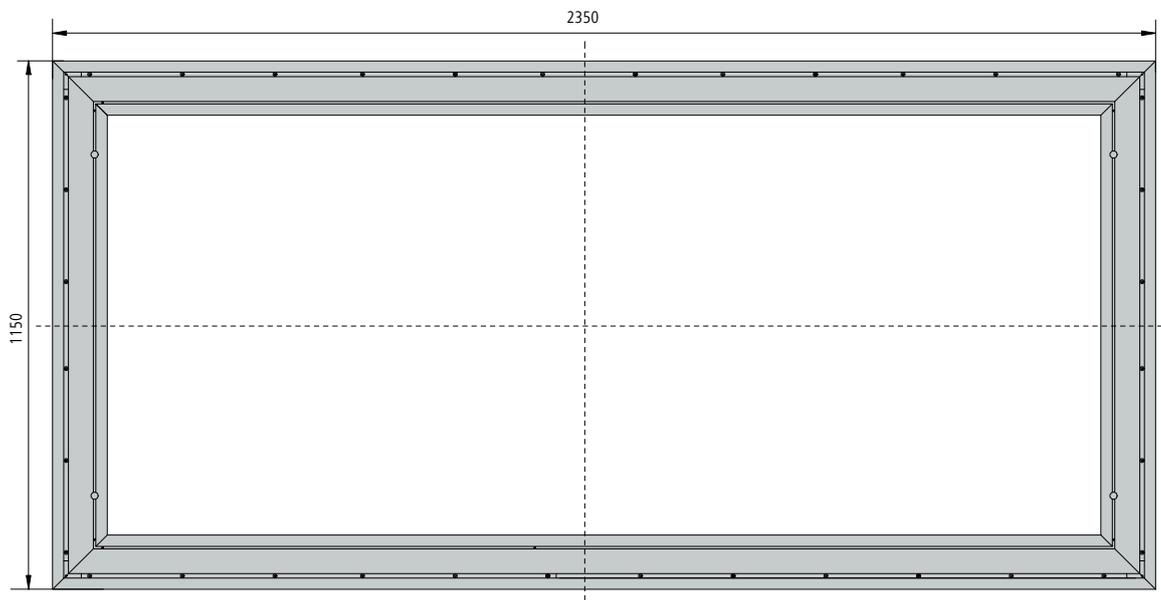


# StoSilent Modular

## StoSilent Modular 300 construction details

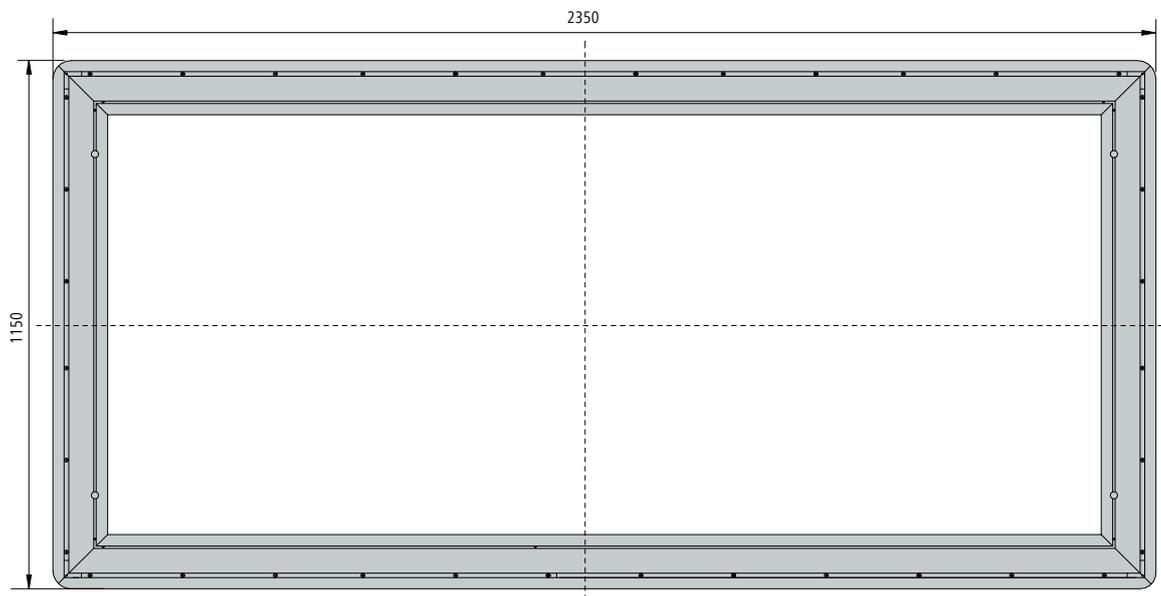
### Top view: StoSilent Modular 300 ceiling element, 2350 x 1150 mm

Sto-HQ-DE\_Modular 300 2350x1150



### Top view: StoSilent Modular 300 ceiling element, 2350 x 1150 mm, R 40 mm

Sto-HQ-DE\_Modular 300 2350x1150 R 40mm



# StoSilent Compact

## The flexible plaster system

Many structural scenarios do not allow suspended or mounted acoustic systems – for example, in the case of listed or sacred buildings. In such cases, our StoSilent Compact plaster systems are the ideal choice. They are just as easy to apply as conventional plasters and have a positive impact on the room acoustics.

StoSilent Compact enables seamless, homogeneous surfaces to be quickly realised. The StoSilent Compact Miral and StoSilent Compact Sil plaster systems both also make ideal absorber solutions for multi-dimensional, curved surfaces. This means that only a minimum amount of room height is lost – highly recommended for low ceiling heights.



### StoSilent Compact Miral system description

system profile	StoSilent Profile AS Sto-Stone Paste
Priming coat	StoPrim Plex StoSilent Prep Quarz
Finish	5x StoSilent Miral AP, StoColor Silent optional



### StoSilent Compact Sil system description

system profile	StoSilent Profile PL Sto-Stone Paste
Priming coat	StoPrim Plex StoSilent Prep Quarz
intermediate coat	scratch coat Layers 1 and 2: StoSilent Sil AP Comp. A with StoSilent Sil AP Comp. B
	Layer 3 StoSilent Sil AP Comp. A with StoSilent Sil AP Comp. B
Finish	StoSilent Decor M or StoSilent Decor MF

# StoSilent Compact Miral

## System overview

**StoSilent Compact Miral**  
**Mineral, non-combustible, acoustic plaster system with rough surface**

### System advantages

- Porous decorative coating
- Low weight
- Good sound absorption in the medium and high-frequency range
- Alternative to suspended or mounted systems

### Area of application

- interior
- For ceilings and upper wall areas
- Recommendation: installation at a height of above 2 m on walls outside areas subject to a risk of impacts
- For curves and spherical surfaces
- Suitable for nearly all types of room
- Do not use in brine pools, steam baths, or on gypsum fibreboards

### Reaction to fire

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

### Sound absorption

- $\alpha_w$  in accordance with EN 11654 max. 0.30 (H)
- NRC in accordance with ASTM C423 max. 0.35
- Values depend on the structural height – approx. 15 mm in this case. With a structural height of approx. 25 mm  $\alpha_w$  in accordance with EN 11654 max. 0.50 (H) and NRC in accordance with ASTM C423 max. 0.60.

### Design options

- Rough surface with coarse graining, 3000 x 1250 mm
- Special formats on request

### Colour range

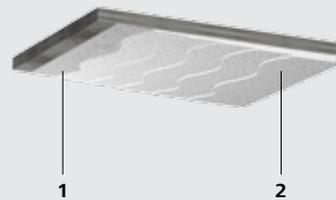
- White (approx. RAL 9003)
- Limited tintability with StoTint Aqua
- Colour coating with StoColor Silent

### Application

- By trained specialists
- To be sprayed on in several thin layers
- Thickness: approx. 15 mm

## System

### Build-up



- 1 — Prime coating  
2 — Finish

# StoSilent Compact Sil

## StoSilent Compact Sil Silicate acoustic plaster system of normal combustibility with a textured surface

### System advantages

- Porous decorative coating
- Low weight
- Good sound absorption in the medium and high-frequency range
- Alternative to suspended or mounted systems

### Area of application

- interior
- For ceilings and upper wall areas
- Recommendation: installation at a height of above 2 m on walls outside areas subject to a risk of impacts
- For curves and spherical surfaces
- Suitable for nearly all types of room
- Do not use in brine pools, steam baths, or on gypsum fibreboards

### Reaction to fire

- Class C-s1, d0 in accordance with EN 13501-1

### Sound absorption

- $\alpha_w$  in accordance with EN 11654 max. 0.45 (MH)
- NRC in accordance with ASTM C423 max. 0.60
- values depend on application method

### Design options

- textured surface with fine grain size
- Broad range of colour design possibilities with StoSilent Decor

### Colour range

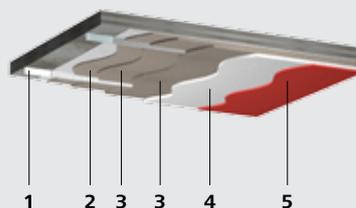
- White (approx. RAL 9010)
- Tintable in accordance with the StoColor System
- Colour coating with StoSilent Decor

### Application

- By trained specialists
- Multi-layer
- Thickness: 25 mm
- Quick, clean, and easy application

## System

### Build-up



- 1 — System profile
- 2 — Prime coating
- 3 — Intermediate coat
- 4 — Intermediate coat
- 5 — Finish



# StoSilent Compact

It's all about the right sound absorption

## Systems built over an area (seamless)

System	Product	coating	Build-up in accordance with ISO 354	Structural height in mm
StoSilent Compact	StoSilent Sil AP	StoSilent Decor	Type B	38 <sup>1)</sup>
	StoSilent Sil AP	StoSilent Decor	E-285	283 <sup>2)</sup>
	StoSilent Miral AP, application with hopper gun	none	Type A	28 <sup>1)</sup>
	StoSilent Miral AP, machine-applied with screw pump	none	Type A	28 <sup>1)</sup>
	StoSilent Miral AP, application with hopper gun	none	E-200	200 <sup>2)</sup>
	StoSilent Miral AP, machine-applied with screw pump	none	E-200	200 <sup>2)</sup>
	StoSilent Miral AP, machine-applied with screw pump	none	Type A	38 <sup>1)</sup>
	StoSilent Miral AP, machine-applied with screw pump – renovation	Additional StoColor colour coating	Type A	38 <sup>1)</sup>
	StoSilent Miral AP, machine-applied with screw pump	none	E-200	200 <sup>2)</sup>

<sup>1)</sup> On carrier board, loosely placed on cavity floor

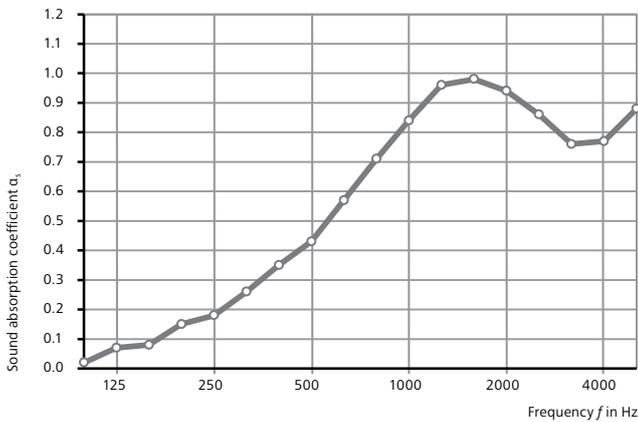
<sup>2)</sup> On carrier board with cavity

	Plaster thickness in mm	$\alpha_w$ EN ISO 11654	<i>NRC</i> ASTM C423	<i>SAA</i> ASTM C423	Absorber class in accordance with ENISO 11654	Test report
	25	0.45 (MH)	0.60	0.60	D	M35 120/107
	25	0.40 (MH)	0.60	0.59	D	M35 120/107
	15	0.30 (H)	0.35	0.35	D	M100960/11
	15	0.30 (H)	0.35	0.34	D	M100960/11
	15	0.30 (H)	0.35	0.35	D	M100960/11
	15	0.30 (H)	0.35	0.34	D	M100960/11
	25	0.45 (MH)	0.60	0.62	D	M100960/20
	25	0.45 (MH)	0.65	0.64	D	M100960/20
	25	0.50 (MH)	0.60	0.62	D	M100960/20



# StoSilent Compact

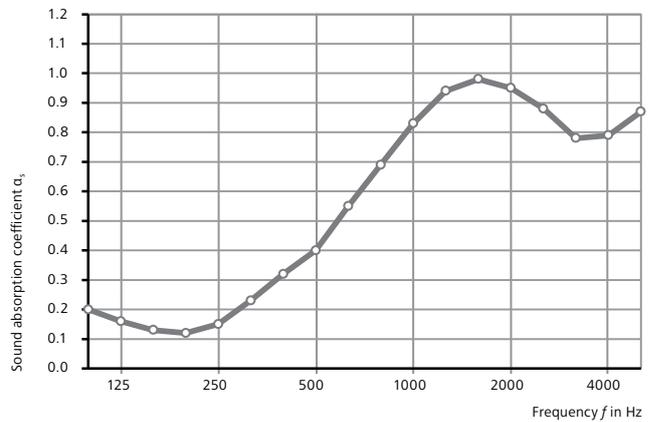
## Sound absorption in detail



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

**Structural height:** 38 mm  
 **$\alpha_w$ :** 0.45 (MH)  
 **$\alpha_{p, 125}$ :** 0.05  
**NRC:** 0.60

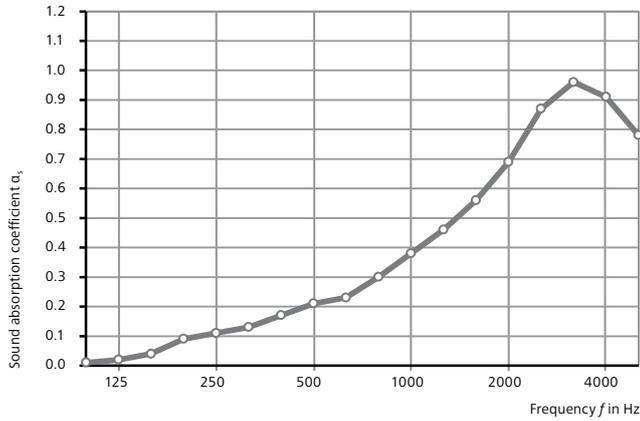
Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.02	0.15	0.35	0.71	0.98	0.76
Octave band	0.07	0.18	0.43	0.84	0.94	0.77
Third-octave band	0.08	0.26	0.57	0.96	0.86	0.88
$\alpha_p$	0.05	0.20	0.45	0.85	0.95	0.80



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

**Structural height:** 283 mm  
 **$\alpha_w$ :** 0.40 (MH)  
 **$\alpha_{p, 125}$ :** 0.15  
**NRC:** 0.60

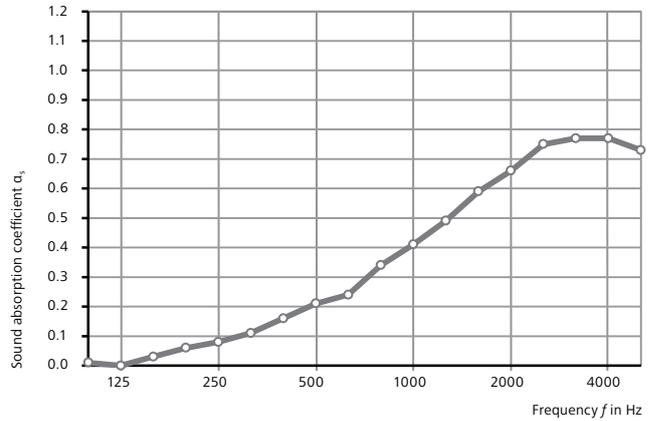
Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.20	0.12	0.32	0.69	0.98	0.78
Octave band	0.16	0.15	0.40	0.83	0.95	0.79
Third-octave band	0.13	0.23	0.55	0.94	0.88	0.87
$\alpha_p$	0.15	0.15	0.40	0.80	0.95	0.80



**System:** StoSilent Compact Miral  
**Build-up:** StoSilent Miral AP, application with hopper gun  
**Coating:** none

**Thickness:** 15 mm  
**Structural height:** 28 mm  
 $\alpha_w$ : 0.30 (H)  
 $\alpha_{p, 125}$ : 0.00  
**NRC:** 0.35

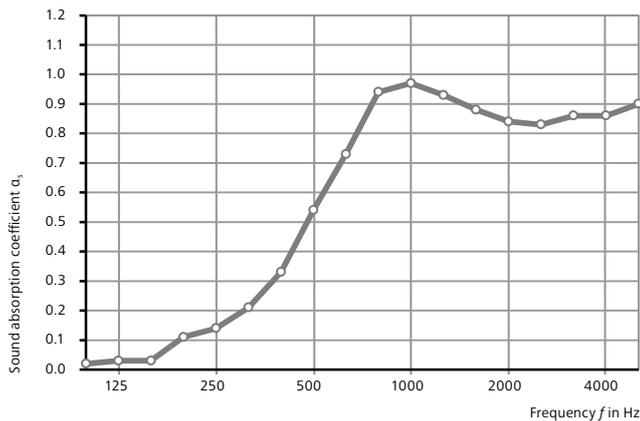
Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.01	0.09	0.17	0.30	0.56	0.96
Octave band	<b>0.02</b>	<b>0.11</b>	<b>0.21</b>	<b>0.38</b>	<b>0.69</b>	<b>0.91</b>
Third-octave band	0.04	0.13	0.23	0.46	0.87	0.78
$\alpha_p$	0.00	0.10	0.20	0.40	0.70	0.90



**System:** StoSilent Compact Miral  
**Build-up:** StoSilent Miral AP, machine-applied with screw pump  
**Coating:** none

**Thickness:** 15 mm  
**Structural height:** 28 mm  
 $\alpha_w$ : 0.30 (H)  
 $\alpha_{p, 125}$ : 0.00  
**NRC:** 0.35

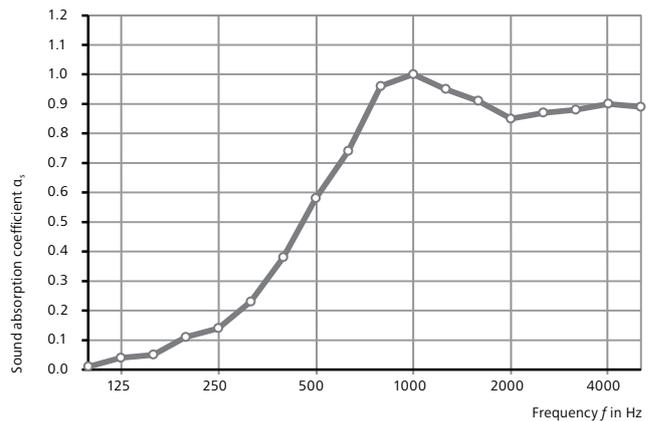
Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.01	0.06	0.16	0.34	0.59	0.77
Octave band	<b>0.00</b>	<b>0.08</b>	<b>0.21</b>	<b>0.41</b>	<b>0.66</b>	<b>0.77</b>
Third-octave band	0.03	0.11	0.24	0.49	0.75	0.73
$\alpha_p$	0.00	0.10	0.20	0.40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



**System:** StoSilent Compact Miral  
**Build-up:** StoSilent Miral AP, machine-applied with screw pump  
**Coating:** none

**Thickness:** 25 mm  
**Structural height:** 38 mm  
 $\alpha_w$ : 0.45 (MH)  
 $\alpha_{p, 125}$ : 0.05  
**NRC:** 0.60

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



**System:** StoSilent Compact Miral  
**Build-up:** StoSilent Miral AP (screw pump) + renovation colour coating as a renovation coat  
**Coating:** renovation colour coating as a renovation coat

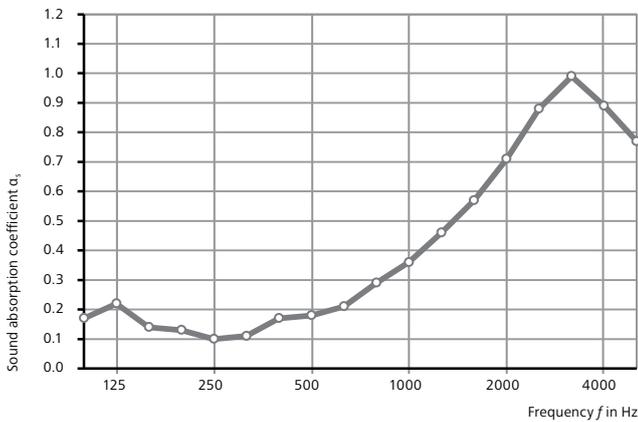
**Thickness:** 25 mm  
**Structural height:** 38 mm  
 $\alpha_w$ : 0.45 (MH)  
 $\alpha_{p, 125}$ : 0.05  
**NRC:** 0.65

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



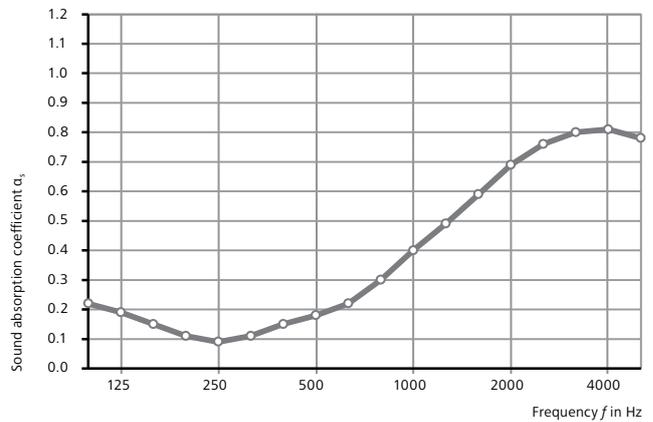
# StoSilent Compact

## Sound absorption in detail



**System:** StoSilent Compact Miral  
**Build-up:** StoSilent Miral AP, application with hopper gun  
**Coating:** none

**Thickness:** 15 mm  
**Structural height:** 200 mm  
 $\alpha_w$ : 0.30 (H)  
 $\alpha_{p, 125}$ : 0.20  
**NRC:** 0.35



**System:** StoSilent Compact Miral  
**Build-up:** StoSilent Miral AP, machine-applied with screw pump  
**Coating:** none

**Thickness:** 15 mm  
**Structural height:** 200 mm  
 $\alpha_w$ : 0.30 (H)  
 $\alpha_{p, 125}$ : 0.20  
**NRC:** 0.35

Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.17	0.13	0.17	0.29	0.57	0.99
Octave band	<b>0.22</b>	<b>0.10</b>	<b>0.18</b>	<b>0.36</b>	<b>0.71</b>	<b>0.89</b>
Third-octave band	0.14	0.11	0.21	0.46	0.88	0.77
$\alpha_p$	0.20	0.10	0.20	0.35	0.70	0.90

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

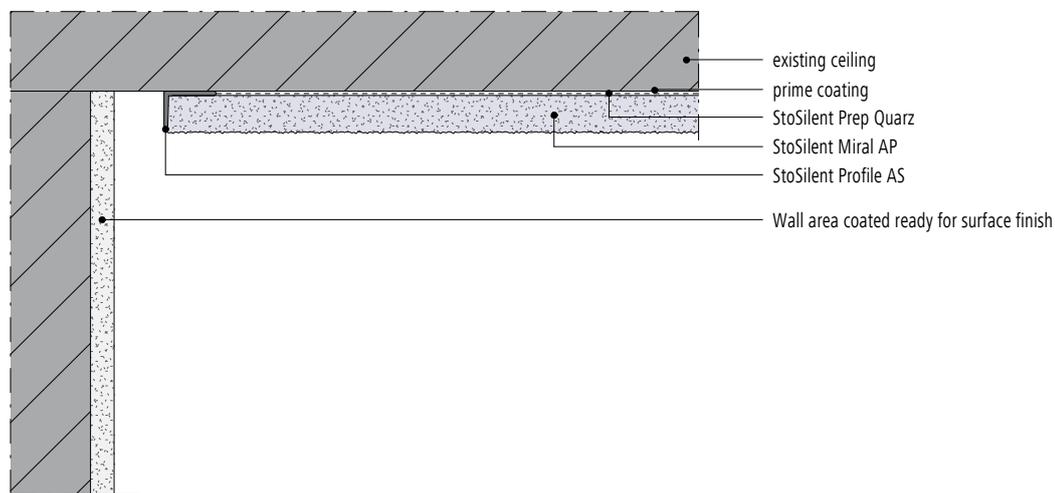


# StoSilent Compact

## Construction details – ceiling

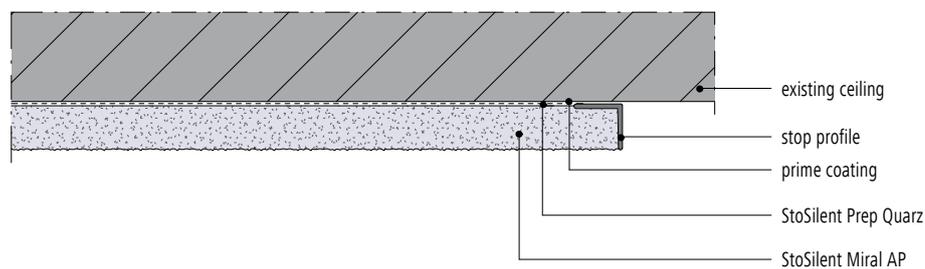
### Ceiling (vertical section): wall junction

Sto-HQ-DE\_SSCM-0100\_EN



### Ceiling (vertical section): connection across the surface

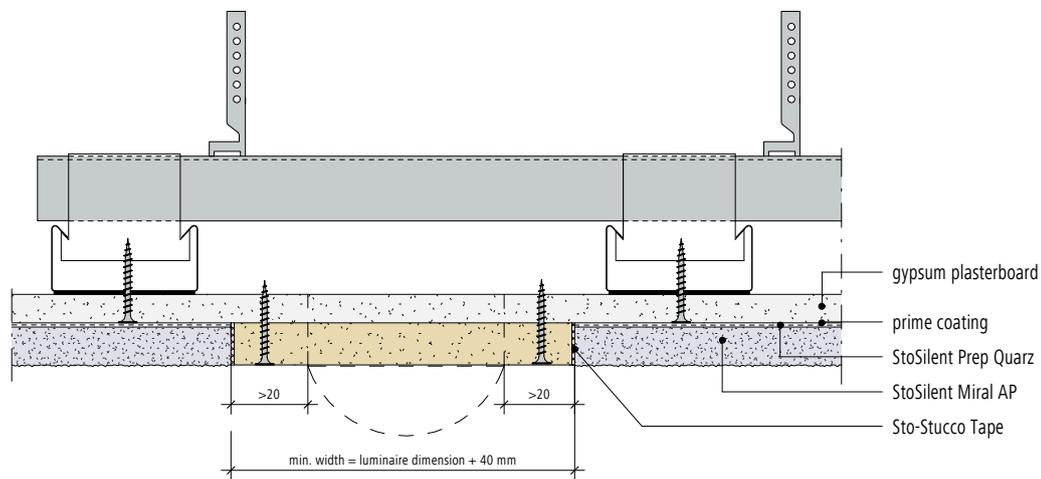
Sto-HQ-DE\_SSCM-0110\_EN



# Construction details – ceiling

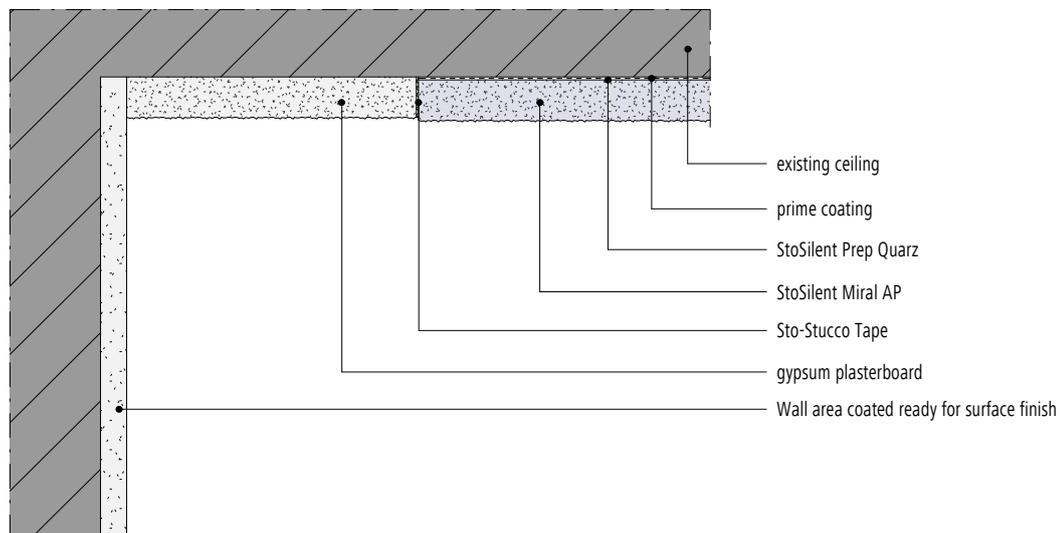
## Ceiling (vertical section): installation frame for integrated lighting

Sto-HQ-DE\_SSCM-130\_EN



## Ceiling (vertical section): levelling frieze

Sto-HQ-DE\_SSCM-140\_EN





# Getting from the requirements to the StoSilent solution

## Overview

Category	Area of application	Challenge	Technical background
Office	Open-plan office	<ul style="list-style-type: none"> <li>• Compromise between background noise and speech</li> <li>• Peace and quiet in own workplace</li> <li>• Good speech intelligibility on the phone</li> <li>• Good speech intelligibility over short distances within small work teams</li> <li>• Moderate to poor speech intelligibility over greater distances</li> <li>• Acoustic separation of areas further away</li> <li>• Prevention of flutter echoes</li> </ul>	<ul style="list-style-type: none"> <li>• Regulation of reverberation time</li> <li>• Sound level reduction</li> <li>• Adjusted damping and speech intelligibility</li> <li>• Good masking of extraneous noise</li> <li>• Protection from disruptive direct sound</li> <li>• Adjustment of background noise</li> <li>• Suppression of flutter echoes</li> </ul>
	Individual office	<ul style="list-style-type: none"> <li>• Reduction of reverberation time to ensure good speech intelligibility in meetings and during telephone calls</li> </ul>	<ul style="list-style-type: none"> <li>• Room damping</li> <li>• Sound level reduction</li> </ul>
	Multi-person office	<ul style="list-style-type: none"> <li>• Reduction of extraneous noise</li> <li>• Reduction of stress factors</li> <li>• Increased concentration and productivity</li> </ul>	<ul style="list-style-type: none"> <li>• Room damping</li> <li>• Sound level reduction</li> </ul>
	Video conference room	<ul style="list-style-type: none"> <li>• Short reverberation times and high-quality damping improve speech intelligibility and reduce electronic feedback</li> </ul>	<ul style="list-style-type: none"> <li>• Regulation of reverberation time</li> <li>• Sound level reduction</li> <li>• High-quality damping</li> <li>• Good speech intelligibility</li> <li>• Low extraneous noise</li> <li>• Suppression of flutter echoes</li> </ul>
	Seminar room	<ul style="list-style-type: none"> <li>• Very good speech intelligibility from anywhere in the room increases the attentiveness of speakers and listeners</li> <li>• Relatively short reverberation time</li> <li>• Low background noise improves speech intelligibility</li> <li>• Low background noise makes it easier for speakers to speak</li> <li>• No disruptive flutter echoes</li> </ul>	<ul style="list-style-type: none"> <li>• Adjusted reverberation time</li> <li>• Moderate damping</li> <li>• Targeted absorption to protect against adverse reflections</li> <li>• Reflectors act as sound mirrors for targeted sound direction</li> </ul>
	Conference room	<ul style="list-style-type: none"> <li>• Very good speech intelligibility from anywhere in the room increases the attentiveness of speakers and listeners</li> <li>• Relatively short reverberation time</li> <li>• Low background noise increases speech intelligibility and makes it easier for speakers to speak</li> <li>• No disruptive flutter echoes</li> </ul>	<ul style="list-style-type: none"> <li>• Adjusted reverberation time</li> <li>• Moderate damping</li> <li>• Targeted absorption to protect against adverse reflections</li> <li>• Reflectors act as sound mirrors for targeted sound direction</li> </ul>
	Reception area	<ul style="list-style-type: none"> <li>• Reception area as “acoustic business card”</li> <li>• Quiet reception area creates impression of high quality</li> <li>• Private conversations when greeting visitors thanks to highly effective absorbers close by</li> </ul>	<ul style="list-style-type: none"> <li>• Short reverberation time</li> <li>• High absorption at close range</li> <li>• Low background noise</li> <li>• Protection provided by separating elements</li> </ul>

Benefits	Solutions	Product/system suggestions
<ul style="list-style-type: none"> <li>• Makes for a highly effective workplace</li> <li>• Less stress thanks to adjusted room acoustics</li> <li>• Quiet work areas</li> <li>• Low error rate due to undisturbed work</li> </ul>	<ul style="list-style-type: none"> <li>• Full-surface suspended ceiling</li> <li>• Absorbent wall coverings</li> <li>• Moderate sound absorption</li> <li>• Separating walls</li> <li>• Absorbent furniture systems</li> </ul>	<ul style="list-style-type: none"> <li>• StoSilent Distance A2 with StoSilent Board 210 and StoSilent Decor coating</li> </ul> <p>Alternative:</p> <ul style="list-style-type: none"> <li>• StoSilent Modular ceiling element</li> </ul>
<ul style="list-style-type: none"> <li>• Good speech intelligibility ensures high efficiency for speakers and listeners</li> </ul>	<ul style="list-style-type: none"> <li>• Suspended ceiling with moderate to high sound absorption</li> <li>• StoSilent Modular absorbent elements for ceilings and walls</li> </ul>	<ul style="list-style-type: none"> <li>• StoSilent Distance</li> <li>• StoSilent Direct</li> <li>• StoSilent Modular</li> </ul> <p>Coating system:</p> <ul style="list-style-type: none"> <li>• StoSilent Top</li> <li>• StoSilent Decor</li> </ul>
<ul style="list-style-type: none"> <li>• Makes for a highly effective workplace</li> <li>• Less stress thanks to adjusted room acoustics</li> <li>• Quiet work areas</li> <li>• Low error rate due to undisturbed work</li> </ul>	<ul style="list-style-type: none"> <li>• Full-surface acoustic ceiling</li> <li>• Moderate sound absorption</li> </ul> <p>Alternative:</p> <ul style="list-style-type: none"> <li>• Ceiling element, coverage approx. 70 %</li> <li>• Wall panels</li> </ul>	<ul style="list-style-type: none"> <li>• StoSilent Distance A2 with StoSilent Board 210 and StoSilent Decor coating system</li> </ul> <p>Alternative:</p> <ul style="list-style-type: none"> <li>• StoSilent Modular 100</li> <li>• StoSilent Direct</li> </ul>
<ul style="list-style-type: none"> <li>• Good speech intelligibility ensures high efficiency for speakers and listeners</li> <li>• Low background noise increases “acoustic comfort”</li> <li>• Adjusted room acoustics lead to successful, effective video conferences</li> </ul>	<ul style="list-style-type: none"> <li>• Full-surface arrangement under the ceiling and on the wall opposite the screen (LEDE = live end, dead end)</li> </ul>	<p>Systems with high absorption such as:</p> <ul style="list-style-type: none"> <li>• StoSilent Distance A2 ceiling system and wall covering with StoSilent Board 200 and StoSilent Decor coating</li> <li>• StoSilent Modular 300 ceiling element and wall panels, coloured</li> </ul>
<ul style="list-style-type: none"> <li>• Functional seminar rooms thanks to optimised room acoustics</li> <li>• Increased attentiveness for effective seminars</li> <li>• Disruption-free listening</li> <li>• Room acoustics support the speakers and make their task easier</li> </ul>	<ul style="list-style-type: none"> <li>• Suspended ceiling with moderate to high sound absorption</li> <li>• Wall covering with moderate to high sound absorption on the back wall</li> <li>• Ceiling element and wall panels</li> </ul>	<ul style="list-style-type: none"> <li>• StoSilent Distance</li> <li>• StoSilent Direct</li> <li>• StoSilent Modular</li> </ul> <p>Coating system:</p> <ul style="list-style-type: none"> <li>• StoSilent Top</li> <li>• StoSilent Decor</li> </ul>
<ul style="list-style-type: none"> <li>• Functional seminar rooms thanks to optimised room acoustics</li> <li>• Increased attentiveness for effective seminars</li> <li>• Disruption-free listening</li> <li>• Room acoustics support the speakers and make their task easier</li> </ul>	<ul style="list-style-type: none"> <li>• Suspended ceiling with moderate to high sound absorption, full-surface</li> <li>• Ceiling system without sub-construction, full-surface</li> <li>• Wall covering opposite speaker position, moderate to high sound absorption</li> </ul>	<ul style="list-style-type: none"> <li>• StoSilent Distance</li> <li>• StoSilent Direct</li> <li>• StoSilent Modular</li> </ul> <p>Coating system:</p> <ul style="list-style-type: none"> <li>• StoSilent Top</li> <li>• StoSilent Decor</li> </ul>
<ul style="list-style-type: none"> <li>• High damping for quiet rooms</li> <li>• A quiet room creates quiet visitors</li> <li>• Absorbers positioned close to the counter create “acoustic proximity zones” for greater privacy</li> </ul>	<ul style="list-style-type: none"> <li>• Suspended ceiling with moderate to high sound absorption, full-surface</li> <li>• Ceiling system without sub-construction, full-surface</li> <li>• Ceiling element, directly over the workplace and/or counter</li> </ul>	<ul style="list-style-type: none"> <li>• StoSilent Distance</li> <li>• StoSilent Direct</li> <li>• StoSilent Modular</li> </ul> <p>Coating system:</p> <ul style="list-style-type: none"> <li>• StoSilent Top</li> <li>• StoSilent Decor</li> </ul>



# Getting from the requirements to the Sto-Silent solution

## Overview

Category	Area of application	Challenge	Technical background
Education	Schools	Significant quality boost thanks to: <ul style="list-style-type: none"> <li>• Increase in speech intelligibility</li> <li>• Less stress and effort thanks to reduced noise</li> <li>• Reduced noise for personnel in their workplace</li> <li>• Increased comprehensibility for people with impaired hearing (inclusion)</li> </ul>	<ul style="list-style-type: none"> <li>• Adjusted room acoustics with absorption and sound direction</li> <li>• Short reverberation times for quiet rooms</li> <li>• Prevention of disruptive reflections and flutter echoes</li> </ul>
	Nursery schools	Significant quality boost thanks to: <ul style="list-style-type: none"> <li>• Increase in speech intelligibility</li> <li>• Less stress and effort thanks to reduced noise</li> <li>• Reduced noise for personnel in their workplace</li> <li>• Increased comprehensibility for people with impaired hearing (inclusion)</li> </ul>	<ul style="list-style-type: none"> <li>• Short reverberation time</li> <li>• High absorption</li> <li>• Low background noise</li> </ul>
	Lecture theatres	<ul style="list-style-type: none"> <li>• Very good speech intelligibility from anywhere in the room increases the attentiveness of speakers and listeners</li> <li>• Relatively short reverberation time</li> <li>• Low background noise improves speech intelligibility</li> <li>• No disruptive flutter echoes</li> </ul>	<ul style="list-style-type: none"> <li>• Adjusted room acoustics with absorption and sound direction</li> <li>• Short reverberation times for quiet rooms</li> <li>• Prevention of disruptive reflections and flutter echoes</li> </ul>

Benefits	Solutions	Product/system suggestions
<ul style="list-style-type: none"> <li>• Very good speech intelligibility for effective teaching and learning</li> <li>• Quiet rooms for high levels of concentration and attention</li> <li>• Particularly high requirements for learning foreign languages</li> <li>• Very quiet rooms and short reverberation times for teaching of pupils with impaired hearing</li> </ul>	<p>The products and systems must be tailored to the specific requirements of the scenario concerned.</p> <p>Wide range of requirements for absorption and, hence, absorber build-up:</p> <ul style="list-style-type: none"> <li>• Reflecting</li> <li>• Low-frequency absorber (StoSilent Distance)</li> <li>• Mid-frequency absorber</li> <li>• High-frequency absorber (StoSilent Compact)</li> </ul>	<ul style="list-style-type: none"> <li>• StoSilent Distance A2</li> <li>• StoSilent Direct</li> </ul> <p>Coating system:</p> <ul style="list-style-type: none"> <li>• StoSilent Top</li> <li>• StoSilent Decor</li> <li>• StoSilent Compact Miral</li> </ul>
<ul style="list-style-type: none"> <li>• High absorption over large areas to reduce noise and regulate reverberation</li> </ul>	<ul style="list-style-type: none"> <li>• Highly absorbent systems and elements on walls and ceilings</li> </ul>	<ul style="list-style-type: none"> <li>• StoSilent Distance</li> <li>• StoSilent Direct</li> <li>• StoSilent Modular on ceilings and walls</li> </ul> <p>Coating system:</p> <ul style="list-style-type: none"> <li>• StoSilent Decor</li> <li>• StoSilent Top</li> </ul>
<ul style="list-style-type: none"> <li>• Very good speech intelligibility for effective teaching and learning</li> <li>• Quiet rooms for high levels of concentration and attention</li> <li>• Particularly high requirements for learning foreign languages</li> <li>• Very quiet rooms and short reverberation times for teaching of pupils with impaired hearing</li> </ul>	<p>The products and systems must be tailored to the specific requirements of the scenario concerned.</p> <p>Wide range of requirements for absorption and, hence, absorber build-up:</p> <ul style="list-style-type: none"> <li>• Reflecting</li> <li>• Low-frequency absorber (StoSilent Distance)</li> <li>• Mid-frequency absorber</li> <li>• High-frequency absorber (StoSilent Compact)</li> </ul>	<ul style="list-style-type: none"> <li>• StoSilent Distance A2</li> <li>• StoSilent Direct</li> </ul> <p>Coating system:</p> <ul style="list-style-type: none"> <li>• StoSilent Top</li> <li>• StoSilent Decor</li> <li>• StoSilent Compact Miral</li> </ul>



# Getting from the requirements to the StoSilent solution

## Overview

Category	Area of application	Challenge	Technical background
Leisure	Restaurant	<ul style="list-style-type: none"> <li>• “High-quality” acoustics = quiet room</li> <li>• Quiet environment with dampened sound is associated with top-class restaurants (according to Gault/Millau)</li> <li>• A pleasant atmosphere in a restaurant is created through the location and history, facilities, table culture, and service. “3-star acoustics” are just as important</li> </ul>	<ul style="list-style-type: none"> <li>• Short reverberation time</li> <li>• High absorption</li> <li>• Low background noise</li> </ul>
	Retail	<ul style="list-style-type: none"> <li>• Personnel and customers will be more relaxed in a pleasant atmosphere with good acoustic properties</li> <li>• As a result, customers will tend to stay in the shop longer</li> </ul>	<ul style="list-style-type: none"> <li>• Large-scale absorption systems</li> <li>• Peaceful environment</li> <li>• Low background noise</li> </ul>
	Shopping centre	<ul style="list-style-type: none"> <li>• Stress-free shopping in a peaceful environment with carefully selected systems and adjusted absorption</li> </ul>	<ul style="list-style-type: none"> <li>• Large-scale absorption systems</li> <li>• Peaceful environment</li> <li>• Low background noise encourages customers to be quieter</li> </ul>
	Swimming pool/spa	<ul style="list-style-type: none"> <li>• Acoustics play a major role in determining visitors’ comfort, along with the air and water temperature</li> <li>• Reverberation is dampened by sound-absorbent ceiling and wall coverings and elements</li> <li>• Background noise reduced to create relaxing room acoustics</li> </ul>	<ul style="list-style-type: none"> <li>• Large-scale absorption systems</li> <li>• Peaceful environment</li> <li>• Low background noise encourages bathers to be quieter</li> </ul>
	Hotel lobby	<ul style="list-style-type: none"> <li>• The reception area should preserve the anonymity of customers and visitors. It is therefore important to regulate the close-range reverberation</li> </ul>	<ul style="list-style-type: none"> <li>• Short reverberation time</li> <li>• High absorption at close range</li> <li>• Low background noise</li> <li>• Protection provided by separating elements</li> </ul>
	Theatre/concert	<ul style="list-style-type: none"> <li>• Aesthetic aspects play only a minor role</li> <li>• Acoustic quality is top priority</li> <li>• The shape of the room is tailored to its purpose</li> <li>• Systems and surfaces are carefully designed</li> </ul>	<ul style="list-style-type: none"> <li>• Stringent acoustic specifications define the entire room</li> <li>• Sound distribution, direction, reverberation</li> <li>• Targeted use of absorbers</li> <li>• Planning for all frequency ranges</li> <li>• Use of different types of absorber with wide-band or deliberately narrow-band sound absorption</li> <li>• Reflectors are used as acoustic components</li> </ul>

Benefits	Solutions	Product/system suggestions
<ul style="list-style-type: none"> <li>• Pleasant atmosphere</li> <li>• Relaxed conversation</li> <li>• High customer satisfaction</li> </ul>	<ul style="list-style-type: none"> <li>• Full-surface acoustic system on the ceiling</li> <li>• Moderate sound absorption generally sufficient</li> </ul>	<ul style="list-style-type: none"> <li>• StoSilent Distance A2</li> <li>• StoSilent Direct</li> <li>• StoSilent Compact</li> <li>• StoSilent Modular 230</li> <li>• StoSilent Modular 300</li> </ul> Coating system: <ul style="list-style-type: none"> <li>• StoSilent Top</li> <li>• StoSilent Decor</li> </ul>
<ul style="list-style-type: none"> <li>• Pleasant atmosphere</li> <li>• Relaxed browsing</li> <li>• High customer satisfaction</li> </ul>	<ul style="list-style-type: none"> <li>• Full-surface acoustic system</li> <li>• Individual absorber elements</li> <li>• Moderate sound absorption generally sufficient</li> </ul>	<ul style="list-style-type: none"> <li>• StoSilent Distance A2</li> <li>• StoSilent Direct</li> <li>• StoSilent Modular</li> </ul> Coating system: <ul style="list-style-type: none"> <li>• StoSilent Top</li> <li>• StoSilent Decor</li> </ul>
<ul style="list-style-type: none"> <li>• Less noise for personnel in their workplace</li> <li>• Stress-free shopping</li> <li>• Customers stay longer</li> <li>• Greater efficiency for retailers and customers</li> </ul>	<ul style="list-style-type: none"> <li>• Full-surface acoustic system</li> <li>• Individual absorber elements</li> <li>• Moderate sound absorption generally sufficient</li> </ul>	<ul style="list-style-type: none"> <li>• StoSilent Distance A2</li> <li>• StoSilent Direct</li> <li>• StoSilent Modular</li> </ul> Coating system: <ul style="list-style-type: none"> <li>• StoSilent Top</li> <li>• StoSilent Decor</li> </ul>
<ul style="list-style-type: none"> <li>• Pleasantly quiet atmosphere</li> <li>• Reduced noise enables relaxation</li> <li>• Less stress enables rest and recuperation</li> <li>• Noise protection for employees</li> </ul>	<ul style="list-style-type: none"> <li>• Full-surface acoustic system</li> <li>• Individual absorber elements</li> <li>• Acoustic plaster systems</li> <li>• Moderate sound absorption generally sufficient, high absorption also possible depending on surface coverage</li> </ul>	<ul style="list-style-type: none"> <li>• StoSilent Distance A2</li> <li>• StoSilent Modular</li> <li>• StoSilent Compact Miral</li> </ul> Coating system: <ul style="list-style-type: none"> <li>• StoSilent Decor</li> <li>• StoSilent Top</li> </ul> Condition: <ul style="list-style-type: none"> <li>• Field test by Sto on a case-by-case basis</li> <li>• Use in areas without splash water or condensation</li> <li>• Not over cold or ice-cold pools</li> </ul>
<ul style="list-style-type: none"> <li>• High damping for quiet rooms</li> <li>• A quiet room creates quiet visitors</li> <li>• Absorbers positioned close to the counter create "acoustic proximity zones" for greater privacy</li> </ul>	<ul style="list-style-type: none"> <li>• Full-surface acoustic system</li> <li>• Individual absorber elements</li> <li>• Acoustic plaster systems</li> <li>• Moderate sound absorption generally sufficient, high absorption also possible depending on surface coverage</li> </ul>	<ul style="list-style-type: none"> <li>• StoSilent Distance A2</li> <li>• StoSilent Direct</li> <li>• StoSilent Modular</li> <li>• StoSilent Compact Miral</li> <li>• StoSilent Compact Sil</li> </ul> Coating system: <ul style="list-style-type: none"> <li>• StoSilent Decor</li> <li>• StoSilent Top</li> </ul>
<ul style="list-style-type: none"> <li>• The culmination of planning in terms of room and building acoustics</li> <li>• The highest standards with regard to room planning create outstanding listening experiences combined with visual, design, and emotional factors</li> </ul>	The products and systems must be tailored to the specific requirements of the scenario concerned. Wide range of requirements for absorption and, hence, absorber build-up: <ul style="list-style-type: none"> <li>• Reflecting</li> <li>• Low-frequency absorber (StoSilent Distance)</li> <li>• Mid-frequency absorber</li> <li>• High-frequency absorber (StoSilent Compact)</li> </ul>	<ul style="list-style-type: none"> <li>• StoSilent Distance A2</li> <li>• StoSilent Direct</li> <li>• StoSilent Compact</li> </ul> Coating system: <ul style="list-style-type: none"> <li>• StoSilent Top</li> <li>• StoSilent Decor</li> <li>• StoSilent Compact Miral</li> </ul>



# System accessories

## Thought through to the last detail

	Product	Art. no.	Area of application	Dimensions	Product/system
StoSilent Distance	StoSilent Profile AP	04075-008 white (RAL 9016)	Stop profile or edge protection	27.0 x 16.5 mm, L 250 cm	StoSilent Board 300 StoSilent Board 310
	StoSilent Profile AP	04075-010 white (RAL 9016)	Stop profile or edge protection	37.0 x 26.5 mm, L 250 cm	StoSilent Board 100/200 StoSilent Board 110/210
	StoSilent Profiles EW	04075-012	corner protection angle	24.0 x 24.0 mm, L 200 cm, edge 3.0 mm	StoSilent Board 100/200 StoSilent Board 300
	StoSilent Profiles FB	04075-011	stop profile	W 24.0 mm, L 200 cm, edge 3.0 mm	StoSilent Board 100/200 StoSilent Board 300
	edge profile	Via building materials suppliers	edge profile	23.0 x 23.0 mm, L 50 m	StoSilent Board 300
	Stop profile for curves	Via building materials suppliers	Stop profile for curves	33.0 x 13.5 mm, L 300 cm	StoSilent Board 100/200 StoSilent Board 110/210
	PVC angle	Via building materials suppliers	Bent connections	H 28.0 mm, L 250 cm	StoSilent Board 100/200 StoSilent Board 110/210
StoSilent Direct	StoSilent Profile AP 210	04075-017	stop profile	40.0 x 30.0 mm, L 250 cm	StoSilent Board MW 100
	StoSilent Profile AP 210	04075-015	stop profile	50.0 x 30.0 mm, L 250 cm	StoSilent Board MW 100
	StoSilent Profile AP 210	04075-014	stop profile	70.0 x 30.0 mm, L 250 cm	StoSilent Board MW 100
StoSilent Compact	StoSilent Profile AS	01041-002	Stop bead as stop profile	20.0 x 10.0 mm, L 250 cm	StoSilent Compact Miral
	StoSilent Profile PL	01036-004	Depth gauge	20.0 x 20.0 mm, L 250 cm	StoSilent Compact Sil
StoSilent Modular	StoSilent Modular 100 Suspension set, wire cable	07972-012	Hanger for ceiling elements	Suspension height: 50 cm	StoSilent Modular 100
	StoSilent Modular 100 Suspension set, wire cable	07972-020	Hanger for ceiling elements	Suspension height: 250 cm	StoSilent Modular 100
	StoSilent Modular 100 Suspension set, threaded rod	07972-013	Hanger for ceiling elements	Suspension height: 50 cm	StoSilent Modular 100
	StoSilent Modular 100 Suspension set, vernier	07972-014	Hanger for ceiling elements	Suspension height: 50 cm	StoSilent Modular 100
	StoSilent Modular 100 Connector	07972-016	Connecting hooks for ceiling element hangers	40.0 x 20.0 x 20.0 mm	StoSilent Modular 100

# Tool recommendations

For the best preparation and application of StoSilent acoustic products on building sites

## Scraping, sanding, cleaning

	Sto-Hand Sander Standard	Made of plastic with bonded-on closed-cell sponge rubber plate and 2 plastic clamping strips for quickly tightening the abrasive grid	Sanding transitions between panels after installation	08296-003
	Sto-Abrasive Grid	Sanding medium in grid form, P 100 or P 120	Abrasive grid grits for hand sanders	08296-007 08296-008
	Sto-Tile Sponge	Sponge made of hard-wearing, absorbent synthetic foam	Cleaning tools when smoothing the surface	08318-001
	Sto-EWIS Sanding Board	Aluminium sanding board with a wooden handle and hook-and-loop fastener	Bevelling cut board edges/sanding rebates/pressing boards	08335-004
	Sto-EWIS Abrasive Paper	Spare sandpaper for Sto-EWIS Sanding Board with hook-and-loop fastener, grain 16	Sanding the edges of the acoustic panels	08335-003
	StoColor Isol Spray	White-pigmented isolating and sealing primer, 400 ml	Isolating marks	17072-021
	Sto-Duster Standard	Duster with long, light bristles in wood body with long handle	Dusting off the honed ceiling	17109-002

## Smoothing, filling

	Sto-Wide Smoothing Trowel for ceilings	Ceiling spatula made of rust-free steel with grip strip, 1000 mm	Smoothing coatings	17202-009
	Sto-Extension for Wide Smoothing Trowel for ceilings	Extension handle for the Sto-Wide Smoothing Trowel for Ceilings, 2 x 1.00 m	Working from the ground	17202-011
	Sto-Swiss Smoothing Trowel Notched	Notched (4x4 mm) applying trowel made of stainless steel, 480 mm	Applying and combing in the first application cycle	08288-039
	Sto-Special Smoothing Trowel	Rust-free special smoothing trowel, 800 mm	Smoothing coatings	08288-029
	Sto-Swiss Smoothing Trowel	Applying trowel made of stainless steel	Application and smoothing	08288-002
	Sto-Finishing Trowel Plastic	Finishing trowel made of plastic, 1 mm blade	Spreading areas smooth	08289-002
	Sto-Rounded Finishing Spatula with Soft Grip	Finishing spatula with aluminium blade holder and soft handle, 570 mm	Smoothing coatings	08290-016
	Sto-Leaf and Square Tool	Plasterer's leaf and square tool, forged	Filling the edges	08355-007
	Sto-Notched Trowel, 10x10 mm/15x15 mm	Notched trowel made of stainless steel	Specially for applying adhesive compounds and fillers	08255-002 08255-005
	Sto-Finishing Trowel Profi	Smoothing trowel made of rust-free steel	Texturing finishing plasters	08288-001
	Sto-Spatula Trowel	Spatula trowel made of hardened, rust-free spring band steel	Pointing and applying adhesive	08356-001

# Tool recommendations

For the best preparation and application of StoSilent acoustic products on building sites

## Cutting, planing, sawing

	Sto-Sheet Metal and Figure Cutter straight	Hardened cutters in matt chrome finish for sheet metal and figures	For cutting sheet metal	08257-001
	Sto-Profile Saw	Handsaw with hardened spring band steel blade	Handsaw	08374-001
	Sto-Hand Fret Saw	Saw made of premium quality steel with varnished wooden handle	Handsaw	17416-002
	Sto-Utility Knife Cobra	High-quality utility knife with magazine	Cutting StoSilent Board to size	08362-007

## Painting, lacquering

	Sto-Radiator Roller FIL Short-Pile	High-quality lint-free roller with 100% polyamide filament yarn	Coating cut edges	17800-028
	Sto-Paint Roller Handle	Ergonomically formed handle with galvanised steel roller frame	For rollers with a width of 100–120 mm	08302-009
	Sto-Paint Grid	Paint roller grid made of bright galvanised metal	Rolling paint off the paint roller	08253-002

## Occupational safety

	Sto-Nylon Gloves Light	Nylon gloves with PU coating (sizes 9, 10, 11)	Work gloves for fine manual work	17153-039 / 040/041
	3M Fine Dust Mask P3 Comfort	Comfortable fine dust mask for protection from toxic and carcinogenic fine dusts	Dust protection mask for sanding work	08346-004
	Sto-Laboratory Goggles clear	Lightweight safety glasses	Safety goggles for overhead work	17156-021
	Sto-Disposable Coveralls Basic	Disposable coverall made of 100% polypropylene	Protective coverall for spraying work	17155-001

## Spraying

	Sto-Hopper Gun	Applying plasters and paste-form ceiling and wall coverings	The air supply can be shut off and regulated	18854-001
	Spare nozzle for hopper gun, 6mm/8mm	Spare nozzle after wear		18854-003 / 004

### Masking, covering, waterproofing

	3M Scotch™ 244 Super Masking Tape – gold	Gold-coloured, smooth, extra-thin paper tape of medium adhesive strength	Adhesive tape for the edge zone next to the wall	08221-019
	Kip 3833 Mesh Masker	Blue mesh tape with environmentally friendly PE masking film in professional quality	Covering and protection	17033-017
	Sto-Stucco Tape	High-quality foam tape with adhesive edge	For junctions to joints, walls, and ceilings	17045-002 17045-004 17045-005
	StoSilent Profile Tape	Self-adhesive special tape for CD profiles	For the airtight installation of acoustic panels onto the sub-construction	08799-004
	Härdi PAVISAVE Protective Nonwoven	Self-adhesive protective nonwoven with air cushioning, polythene film	Covering surfaces	08251-008
	Sto-Masking Paper Premium	Masking paper with impregnated PE-free surface	Protecting floors	03555-016
	3M™ Masking Paper MP	Recycled masking paper, moisture-resistant	Reliable covering during painting and plastering work	08315-005
	Sto-Joint Filler WF	Acrylic jointing sealant	Sealing joints	00508-001
	StoColl Fix	Fixing aid and adhesive compound	Adhesive fixing dabs for quick fixing	00016-001
	Cartridge Gun Pro	Cartridge gun for all commonly available sealants and fillers	For cartridges of up to 310 ml	08294-010

### Measuring, assembly, and installation

	Sto-Spirit Level	Anodised spirit level made of aluminium	For taking measurements	08372-008
	Sto-Chalk Line Device	Chalk line tool made of aluminium	Making coloured marks	08334-003
	Sto-Measuring Beaker	Nitro-resistant plastic beaker with measuring scale	Measuring liquids	17405-003



# StoSilent Decor

## Cleaning and renovation

### General information

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

A coat of commercially available paint must never be applied to the StoSilent Decor 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 ceiling surface, protective cotton gloves must be worn while working on the system.

Avoid any damage to the ceiling that could potentially result from 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 structure of the acoustically effective ceiling surface to become clogged. This is therefore to be avoided.

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

### Local soiling

Local soiling directly on the surface of StoSilent Decor can often be removed depending on the type of soiling. Surface treatment of this nature must be clarified on an individual basis and discussed in advance with Technical Consulting at Sto SE & Co. KGaA. We would like to expressly state that the removal of local soiling does not always guarantee the

required cleaning effect. We are also unable to guarantee that the original, uniform surface texture will be restored. For these reasons, we strongly recommend performing a full-surface renovation as described in the paragraph "Renovation for full-surface soiling" or a local renovation as described in the paragraph "Renovation in cases of local soiling and/or damage".

### Full-surface soiling

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

### Renovation

**Before carrying out any renovation work, the cause of the soiling and/or damage must always be identified – particularly when the filled spots are affected by marks/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 finish 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 (nonwoven 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 finish surrounding the damaged areas must then be covered.

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

Once the touched-up areas have dried, StoSilent Decor must be sprayed over a slightly wider area. After drying, carefully break the tips of the finish 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 layers in a criss-cross pattern until a visually even surface appearance is achieved. More than two spray layers may be necessary in order to cover soiling. The drying times and quantities specified by the StoSilent Decor Technical Data Sheet must be strictly observed.



# StoSilent Top Basic

## Cleaning and renovation

### General information

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

The StoSilent Top Basic finish 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 that could potentially result from 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 structure of the acoustically effective ceiling surface to become clogged. This is therefore to be avoided.

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

### Local soiling

Local soiling directly on the surface of StoSilent Top Basic can often be removed depending on the type of soiling. Surface

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

### Full-surface soiling

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

### Applying a StoSilent Decor overcoat

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

As StoSilent Decor has a significantly different surface texture from StoSilent Top Basic, this type of overcoat must be approved by the client after applying a test surface of at least 5 m<sup>2</sup>. StoSilent Decor is to be applied in accordance with the valid version of the 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 marks/stains as a result of airflow through ceiling boards due to acoustic panels having been left open on the rear side or having been installed

incorrectly. It is strongly recommended to seek advice from Technical Consulting at Sto SE & Co. KGaA in order to determine the most appropriate overcoating method.

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

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

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

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

#### **Renovation for full-surface soiling**

- Moisten the entire surface with clean water using a pressure sprayer or backpack sprayer and allow the moisture to soak in for approx. 10 minutes
- Completely scrape off the StoSilent Top Basic finish 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 present to complete the work

# StoSilent Top Finish

## Cleaning and renovation

### Care and use instructions for StoSilent Top Finish

#### General information

StoSilent Top Finish 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 that could potentially result from 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 structure 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".

##### Applying a StoSilent Decor overcoat

If the StoSilent Top Finish surface is undamaged, light soiling can be concealed by applying a full-surface overcoat of StoSilent Decor. As StoSilent Decor has a significantly different surface texture from StoSilent Top Finish, this type of overcoat must be approved by the client after applying a test surface of at least 5 m<sup>2</sup>. StoSilent Decor is to be applied in accordance with the valid version of the 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 marks/stains as a result of airflow through ceiling boards due to acoustic panels having been left open on the rear side or having been installed incorrectly. It is strongly recommended to seek advice from Technical Consulting at Sto SE & Co. KGaA in order to determine the most appropriate overcoating method.

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

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

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

- For damage up to a maximum of approx. 5 x 10 cm, remove the material from the surface. Moisten the surface locally, then knock off and remove the material using a suitable tool
- In the event of minor scrapes, the material can be directly applied without the covering layer being knocked off 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 area; this generally results in the area that has been touched up remaining slightly visible (similar to the appearance of a water stain).

### **Renovation for full-surface soiling**

- Moisten the entire surface with clean water using a pressure sprayer or backpack sprayer and allow the moisture to soak in for approx. 10 minutes
- Scrape off StoSilent Top Finish with the plastering trowel. The StoSilent Top Basic base layer must remain undamaged during this application cycle
- Once the moistened base layer has dried out completely, apply StoSilent Top Finish to the full surface in accordance with the up-to-date technical documentation from Sto SE & Co. KGaA. If necessary, carefully sand the intermediate coat of StoSilent Top Basic. Please also note that areal scaffolding is compulsory when applying StoSilent Top Finish, and an adequate number of employees must be present to complete the work

# StoColor Climasan/ StoColor Silent

## Cleaning and renovation

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

#### General information

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

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

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

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

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

If work is still required on the system despite having taken all precautionary measures, this work must only be performed by applicators who have been professionally trained in the installation of StoSilent acoustic ceilings. The work carried out by the tradesperson has a particularly significant effect on the acoustic performance and appearance of the system. Therefore, it must be performed with the utmost precision.

### Removing soiling

#### Local soiling

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

#### Full-surface soiling

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

#### Applying a StoSilent Decor overcoat

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 m<sup>2</sup>. StoSilent Decor is to be applied in accordance with the valid version of the 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 marks/stains as a result of airflow through ceiling boards due to acoustic panels having been left open on the rear side or installed incorrectly, or as a result of water stains. It is strongly recommended to seek advice from Technical Consulting at Sto SE & Co. KGaA in order to determine the most appropriate overcoating method.

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

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

visible on the surface even after local repairs of this nature have been completed. Damage to the surface must be compensated by applying the relevant finish to make the surface level. Once the local damage has been touched up, the surrounding finish 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 finish.

At the end of the finish 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. 150–300g/m<sup>2</sup>) until a visually even surface appearance is achieved. More than two application cycles may be necessary in order to cover soiling.

Particularly in the context of spraying on the colour coating, the work carried out by the tradesperson greatly affects the acoustic performance and the appearance of the ceiling element. Therefore, it must be performed with the utmost precision.

# StoSilent Modular

## Cleaning and renovation

### StoSilent Modular 100

#### Frame:

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

#### Board:

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

#### Installation:

- Wear clean white cotton gloves

### StoSilent Modular 230

#### General information:

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

#### Removing local soiling:

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

#### Renovation for full-surface soiling:

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

## **StoSilent Modular 300**

### **Frame:**

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

### **Board:**

- Remove dust with suction cleaning, using a soft brush and low suction power
- Use a commercially available upholstery cleaner in accordance with the instructions for use

### **Installation:**

- Wear clean white cotton gloves

# StoSilent Compact

## Cleaning and renovation

### General information

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

Coating the 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 that could potentially result from 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 structure 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 Compact Miral

#### Local and full-surface soiling and damage

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

#### Application cycle 1:

Suction clean the surface.

#### Application cycle 2:

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

#### Application cycle 3:

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

#### Application cycle 4:

Gently sweep the surface.

#### Application cycle 5:

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

**StoSilent Compact Sil**  
**Local and full-surface soiling and damage**

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

**Application cycle 1:**  
Suction clean the surface.

**Application cycle 2:**  
Local touch-up with StoSilent Sil AP (Comp. A and Comp. B). This involves filling the material in the relevant places using a bucket trowel.

**Application cycle 3:**  
Apply a StoSilent Decor overcoat. Overcoat the entire surface with one to two spray layers, as required, using suitable machine technology (e. g. Sto-Hopper Gun).

# Glossary

Even in the ancient world, construction works were designed to take account of acoustic factors. World-famous semi-amphitheatres and amphitheatres that are thousands of years old can be found far and wide, from the Mediterranean area right through to Great Britain. With their simple yet ingenious construction methods, these treasures of antiquity still have the power to amaze onlookers and “onhearers” alike. Distinguished theatres, opera houses, and concert halls exist all over the world. What’s more, acoustics have become ubiquitous in everyday life, whether in the form of the speech or music that we choose to listen to or the invasive noise over which we have no control. Acoustics is the branch of physics that focuses on describing and calculating sound in the broadest possible sense. Sound is absolutely everywhere – an essential factor for health and well-being, communication, and relaxation; and also very important from an economic perspective.

StoSilent is primarily concerned with room acoustics. The applications are as diverse as the requirements associated with each one. However, StoSilent also offers solutions for the tasks of building acoustics and sound immission protection, which are encountered in various guises within the context of further applications.

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

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

StoSilent – sets the tone in acoustics.

## Absorption

In this document, sound absorption means the energy loss that is achieved by damping the impacting airborne sound within suitable structures, constructions, and materials. Sound-absorbing materials such as foam structures, fibre insulating materials, or fabrics are porous absorbers. Oscillating boards act as membrane absorbers in accordance with the mass-spring principle. Resonance absorbers trap sound by relying on holes that are located in front of an enclosed cavity. The level of absorption generally depends on the frequency and operating principle of the absorber concerned.

## Degree of absorption

In this document, the term sound absorption coefficient refers to the degree of absorption. It describes the ratio between the sound energy that is absorbed by a material (i.e. not reflected) and the impacting sound energy that hits the surface of the material. The possible values range from 0 (corresponding to full sound reflection) to 1 (corresponding to full absorption). The sound absorption coefficient is dependent on the frequency.

## Acoustics

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

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

Defined as the product of surface  $S$  of an absorber in  $m^2$  and the degree of absorption  $\alpha$  of the absorber. The equivalent sound absorption area  $A_{eq}$  is specified in  $m^2$  and, just like the sound absorption coefficient itself, is dependent on the frequency. It refers to an abstract model area for a surface  $S$  material with a sound absorption coefficient of 1, and is used to represent the real material under consideration. In a reverberant room with a diffuse sound field, the model area would absorb the same amount of sound energy as the surface of the real absorber material under consideration. For instance,

a smooth  $100m^2$  concrete area with a sound absorption coefficient of 0.01 has an equivalent sound absorption area of  $1m^2$ , which is exactly the same as for a  $1m^2$  fibre insulating material with a sound absorption coefficient of 1.00. In areas following the US system, the sabin is used as the unit for the sound absorption area. A sound absorption area  $A$  of  $1m^2$  is defined as 1 metric sabin.

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

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

## A/V ratio

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

## Diffraction

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

## Weighted sound absorption coefficient

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

## Diffuse sound field

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

## Diffuser

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

## Direct sound

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

## Echo

Refers to the reflection of a sound signal that arrives at the reception point so much later than the direct sound that it is perceived as a separate auditory event. The time lag between the arrival of the direct sound and the arrival of the subsequent reflection must be at least 30 ms, or closer to 50 ms, in order

for the reflection to be perceived as an echo. Within the context of room acoustics, echoes are a nuisance because they generally reduce speech intelligibility and make music less enjoyable.

#### **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.

#### **Frequency**

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

#### **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.

#### **Critical distance**

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

#### **Reverberation chamber**

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

#### **Audibility**

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 sound pressure level that is tolerable to the human ear is approx. 140 dB and indicates 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. However, loudness 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.

#### **Reverberation**

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

#### **Reverberation time**

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

#### **Noise reduction coefficient NRC**

In accordance with ASTM C423, the *noise reduction coefficient (NRC)* is averaged from the third-octave values of the sound absorption coefficient  $\alpha_s$  at 250, 500, 1000, and 2000 Hz, and is rounded to 0.05.

#### **Porous absorber**

Refers to a foam or fibre material whose structure swallows sound energy through the processes of energy conversion and friction, thereby resulting in sound absorption. The characteristic properties are the porosity, airflow resistance, and structure factor. The thickness of the absorber has a significant impact on the level of sound absorption and the frequency response. Thick absorbers will routinely absorb more sound than thin ones made from the same material.

#### **Practical sound absorption coefficient $\alpha_p$**

Determined in accordance with EN ISO 11654. As a basis, the third-octave values of the sound absorption coefficient  $\alpha_s$  are averaged for the octaves from 125 Hz to 4000 Hz and rounded to 0.05. These values provide the basis for determining the weighted sound absorption coefficient  $\alpha_w$ .

#### **Shape indicators L, M, H**

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

#### **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).



# Glossary

## Sabin

Also see **Equivalent sound absorption area  $A_{eq}$**

## Sabine's formula

A simple equation that quantitatively describes the acoustics of a room. It can be used to calculate the reverberation time if the room volume and sound absorption area are both known. Conversely, if the reverberation time and volume are known, it is possible to calculate the available sound absorption area. Sabine's formula is  $T = V/A \cdot 0.163$  in s/m.  $T$  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.

## Sound

Mechanical oscillations of elastic media (gaseous, fluid or solid). In building and room acoustics, sound events in the air that surrounds us as a medium and which transmits sound to our ears are of central significance.

## Sound absorption class

Used to classify the sound absorber in accordance with ENISO 11654. The classification system provided in Annex B – which is informative rather than normative – is primarily intended for use in connection with broadband noise. The single-number value  $\alpha_w$  is used to specify the sound absorption class in accordance with Table 8.1 of the standard. On this basis, the weighted sound absorption coefficients  $\alpha_w$  are classified as follows: values 1.00, 0.95, and 0.90 belong to class A, values 0.85 and 0.80 belong to class B, values falling in the range from 0.75 to 0.60 belong to class C, values falling in the range from 0.55 to 0.30 belong to class D, the range 0.2 to 0.15 belongs to class E. The weighted sound absorption coefficient values  $\alpha_w$  falling in the range from 0.10 to 0.00 are not classified at all. The sound absorption classes do not provide an appropriate basis for room acoustics calculations and for verifying the project-specific suitability of an absorber.

## Sound absorption

Describes the sound energy that gets converted into thermal energy when a sound wave strikes a structural member, a surface, or a material. The sound absorption is specified in the form of the sound absorption coefficient  $\alpha$ .

## Sound absorption coefficient $\alpha_s$

The sound absorption coefficient  $\alpha_s$  describes the capacity of a material to absorb sound. It specifies the ratio between the sound energy absorbed by the material and the impacting sound energy and is dependent on frequency. The sound absorption coefficient  $\alpha_s$  indicates how well a material is able to absorb sound as a function of frequency. It is determined in a reverberation chamber that meets the requirements of ENISO 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 at 1000 Hz.

## Speech intelligibility

A criterion for room acoustics that describes the quality with which speech is transferred from the speaker to the hearer. When planning the room acoustics of auditoria, the aim is to achieve a level of speech intelligibility that falls somewhere within the range of sufficiently good to excellent.

## Speech transmission index (STI)

A measure of speech intelligibility when speech is transmitted from speaker to hearer in a room or via a loudspeaker system. The possible values range from 0 (incomprehensible) to 1 (excellent). When planning the room acoustics of auditoria, the aim is to achieve a level of speech intelligibility that falls somewhere within the range of sufficiently good to excellent along with correspondingly high STI values.

## Wavelength

Describes the smallest distance between two points with the same phase on a periodic wave. It is the speed of sound divided by the frequency and is specified in metres. In the case of low pitches with a low frequency, the wavelength is long; in the case of high frequencies, the wavelength is short.



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