

**StoSilent**  
Sets the tone  
in acoustics.

**StoSilent**  
Acoustic systems by Sto  
**Planning manual**

It should be noted that the details, illustrations, general technical information, and drawings contained in this brochure are only general proposals and details which merely describe basic functions schematically. 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.

# Contents



## Knowledge

Introduction	4
Planning room acoustics sensibly – acoustic quality in rooms	5
StoSilent – the right solution for every room	6
Sustainability	10
Application fields arranged by ambient interior climate	14

## Overview of StoSilent

Technical characteristics	16
Installation, colour shades, surface quality	18
Colour shade design and coatings	19

## StoSilent in detail

<b>StoSilent Distance – the suspended panel system</b>	<b>20</b>
System description and important notes	20
System overviews	23
Suspension and sub-construction	27
Surfaces and installations	29
Sound characteristics	30
Sound absorption in detail	34
Construction details	41

## StoSilent Direct – the simple direct system

System description and important notes	59
System overview	61
Sound characteristics	62
Sound absorption in detail	64
Construction details	69

## Knowledge in detail

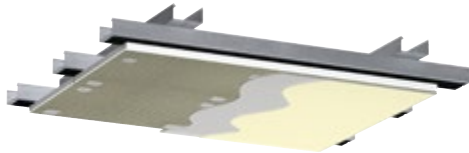
StoSilent – application fields, challenges, benefits, solutions	82
Colours and surfaces	88
System accessories	90
Cleaning and renovation	91
Glossary	96

# Always striking the right tone

## Tips and notes on using the planning manual

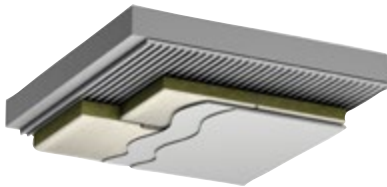
### StoSilent Distance

The suspended panel system



### StoSilent Direct

The easy direct system



**Striking the right note or tone in conversation, in music, or in a lecture is the sine qua non of good communication. To ensure this note or tone is also perceived clearly, i.e. heard and understood by the listener, interior spaces and rooms must be created with optimum acoustics. This is the task facing planners and architects. These planning aids define – clearly, comprehensively, and quickly – what these people need to take into account in order to create the optimum 'ambient interior climate' for a good listening experience, employing Sto acoustic systems.**

StoSilent acoustic solutions strike the right tone based on the purpose of the room in question. Restaurants, offices, function rooms, schools, swimming pools – they all have their own requirements with regard to

sound quality. Our StoSilent systems combine all of the necessary technical properties to create numerous room designs, all with different purposes, which ensure that words and sound are properly conveyed and understood. At the same time, they satisfy the highest standards with regard to design, ecology, and sustainability – true to our motto: “building with conscience”.

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, 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.

# Planning room acoustics sensibly

## DIN 18041 – acoustic quality in rooms

Room acoustics deal primarily with the acoustic quality in individual rooms. Acoustic quality refers to the effects the acoustic properties of a room have on sound performances, which predominantly feature music and speech. If a room has good physical properties and audio-psychological effects, this will create good acoustic quality and ensure unrestricted intelligibility of music and speech. The new, revised DIN 18041 standard – “Acoustic quality in rooms – Specifications and instructions for the room acoustic design” – defines measures to ensure sufficient acoustic quality in rooms used for a range of purposes.

The acoustic quality of a room as defined by the scope of the standard is largely determined by the following factors:

- Room location within the building
- Sound insulation of the perimeter elements of a room
- Noise generated by mains utilities
- Shape and size of room (primary structure)
- Surface properties of room peripheries
- Furnishings (secondary structure)

The dimensions and spatial distribution of sound-absorbing and sound-reflecting surfaces in the room in question are major influencing factors when it comes to acoustic quality. This in turn has a significant impact on speech intelligibility. If speech is difficult to understand, cognitive processes must be employed more intensively in order to process the spoken information. (Source: DIN 18041 E 2015-02)

The new standard is divided into two applications:

- Firstly, acoustic quality over medium to long distances (rooms in group A) including classrooms in schools, group rooms in day-care centres for children, conference rooms, courtrooms and council chambers, seminar rooms, lecture halls, meeting rooms, rooms in day-care centres for senior citizens, sports halls, and swimming baths
- Secondly, acoustic quality over short distances (rooms in group B) including thoroughfares where people are likely to congregate, dining rooms, canteens, play areas and changing rooms in schools and child day-care centres, exhibition rooms, entrance halls, counter areas, offices

DIN 18041 does not address acoustic quality in rooms with special requirements, such as theatres, concert halls, cinemas, sacred spaces, or rooms intended for high-quality recording of music and speech. Nor does it specifically address private homes and living spaces.

In the interests of inclusive construction, the needs of people with limited hearing capacity must be taken into account right from the beginning of the planning stage. After all, communication is not limited to typical function rooms – people communicate with each other wherever they happen to meet, whether it is in corridors, foyers, break halls or elsewhere.

Although DIN 18041 has not been officially implemented in building inspection requirements in Germany, application of the standard is generally required when it comes to sustainable construction in the public sector.

**“Guidelines issued by the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) already cite DIN 18041 as a generally recognised code of practice. As a result, state building construction projects already draw on the skills of room acousticians and other specialist planners in many cases to implement room-acoustic measures based on the relevant usage requirements. Regular compliance with this standard, particularly in the case of new buildings and conversions, makes spoken communication better and easier for all involved.”** (Source: DIN e. V.: [www.din.de](http://www.din.de))

Conclusion: DIN 18041 is not (yet) a “technical building regulation”. It should, however, definitely be taken into account during planning.

# StoSilent

## The right solution for every room

Weizen Logistics Centre, open-plan office, DE-Stühlingen, StoSilent Direct

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

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

### Acoustics in the world of work

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

According to surveys and scientific studies, disruptive noise is one of the most frequently criticised factors in office environments. When these environments are designed and coordinated in order to optimise the acoustics, employees and employers



benefit in equal measure. An acoustic design which suits the purpose of the room will increase productivity, job satisfaction, and well-being, and is therefore a key factor in ensuring motivation and success in the world of office work.

The solutions in our StoSilent acoustic range are compatible with the sustainability and healthy living which feature so prominently in the modern world of work, while also meeting the architectural standards 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 provide them with information – 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. A combination of ceiling and wall absorbers, screen walls, or – if applicable – workstation absorbers will provide the best possible room acoustics in this situation.



Conference room at the University of Music and the Performing Arts, DE-Stuttgart, StoSilent Distance

### Individual office

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

### Multi-person office

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

### Video conference room

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

### Seminar room

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

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

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

### Conference room

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

### Reception area

The reception area of a company or a public building serves as its “business card” and, as such, must meet certain acoustic requirements in addition to its spatial and architectural design. Intelligent absorber solutions create the right level of acoustic privacy. If the entrance area is quiet and sound



Bank reception, DE-Weil am Rhein, StoSilent Distance

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!



Vapiano restaurant at the central bus station, DE-Munich, StoSilent Distance

# StoSilent

## The right solution for every room

### Retail

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

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

### Shopping centres

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

Sound-absorbing ceiling and wall surface areas – in large atriums, for example – create a comfortable atmosphere and encourage customers to stay. These means they can relax in

open-style restaurants in between their purchases and enjoy their shopping trip to the full.

### 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 rever-

beration time and extraneous noise.

In this case, acoustic quality is also a major factor, and is described, planned, and measured using abstract parameters such as early reverberation time, intensity, distinctness, clarity, lateral fraction, diffusion, and so on. The top priority is always to create the perfect listening experience from every part of the hall, whether audience members are sitting in the stalls, circle, or a box. To ensure that this is the case, the acoustic products and systems must be tailored to the specific requirements of the building in question.

### Acoustics in educational institutions

It is impossible to learn and teach in a noisy environment. Noise is one of the main causes of disturbance in schools and nurseries in particular. Implementing effective room-acoustic measures is the only way to ensure successful learning and teaching in these institutions. Due to the multifunctionality of the rooms, the construction materials used in the education sector need to meet high



Kärnten Therme spa, AT-Villach, StoSilent Distance



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 and requirements: directing sound reflections and stopping, restricting, or improving the propagation of sound. Suitable constructions must be selected in



Banca Popolare di Lodi (auditorium), IT-Lodi, StoSilent Distance

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

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

#### Living spaces

The primary focus in private homes is often on achieving an appealing appearance, while acoustic considerations are neglected. The requirements laid out by standards and directives do not apply in this case. But a living space is characterised as much by its acoustics as by its visual properties. Clear, modern architecture and acoustically effective room dampening using efficient absorbers do not need to be mutually exclusive. Large-scale 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



Nursery school, DE-Gundremmingen, StoSilent Distance

of residents: communication is quieter and calmer.

### Corridors

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

### Canteens

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

#### Tip:

Create a balanced ratio between background noise and speech, so that people can have conversations without any disturbance, 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 82 - 86.

# Sustainability

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, and well-being. With regard to a building refurbishment, this means taking into account considerations such as cost factors (economy), demands for environmental and climate protection (ecology), working standards and economic costs (social), as well as health aspects and living comfort (well-being), and coordinating all of these factors effectively. In this way we are supplementing the classic definition quite deliberately to include the element of well-being, which in our view is elementary: particularly when designing facades and interiors, human factors such as subjective perceptions, individual values, aesthetic appeal, and comfort play an essential role. 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 the 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 & Environmental Design) certification criteria. The requirements that the products used must fulfil include low emissions values, and the absence of any hazardous materials or harmful substances in their processing, use, and disposal. Our acoustic systems meet these requirements perfectly: through the use of 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) 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 Acoustic Performance” and “ID Credit 1: Innovation in Design” in an LEED certification.

# 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 "TUV". 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		
				
Products	StoSilent Coll MW	A+	–	–
	StoSilent Decor M	A+	Test standard TM-10 Internal dispersion plasters 06/09	RL0602 Internal wall paint with a mineral base
	StoSilent Filler	A+	–	–
	StoSilent Fix	A+	–	–
	StoSilent Plan	A+	–	–
	StoSilent Prep Quarz	A+	–	–
	StoSilent Prim	A	–	–
	StoSilent Top Basic	A+	–	–
	StoSilent Top Finish	A+	–	–

## Explanations of the seals of approval and test procedures

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

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

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



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

TÜV seal of quality – “low-emission, physiologically harmless, and production monitored”  
The product meets the stringent criteria of the TÜV SÜD test standard TM-10 on internal dispersion plasters, edition 06/09.  
Under normal application conditions, no impairments are to be expected for applicators and users.



### Quality mark for environment-friendly, healthy 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.



# StoSilent acoustic systems

## 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. In addition, the systems can also be used in swimming baths and in protected outdoor areas. The prerequisite is always appropriate structural and building physical heat and moisture protection which is planned professionally according to requirements and the application in question.

StoSilent – fields of application					
		Interior			
Use and building elements	<b>Requirements:</b> Sufficient structural heat and moisture protection for the relevant building elements	<ul style="list-style-type: none"> <li>Habitable room</li> <li>Interior wall</li> <li>Intermediate floor</li> </ul>	<ul style="list-style-type: none"> <li>Habitable room</li> <li>External wall</li> <li>Ceiling towards the outside</li> </ul>	<ul style="list-style-type: none"> <li>Swimming bath (climate-controlled), max. 30° C, max. 70 % humidity</li> <li>Wall and ceiling</li> <li>No condensation, no splash water, not over ice-cold pools</li> <li>No brine pools</li> </ul>	
Stress	Air temperature	≤ 30 °C	≤ 25 °C	≤ 30 °C	≤ 30 °C
	Humidity	≤ 70 %	≤ 70 %	≤ 70 %	≤ 70 %
	Stress class according to Table 8 from EN 13964 * Class B includes class A if class A is not listed separately.	B*	A	B*	B*
	Condensation/precipitation/splash water	No	No	No	No
	Wind load max. 1.0 kN/m <sup>2</sup>	No	No	No	No
System	StoSilent Distance	With rear ventilation	With rear ventilation		With rear ventilation and anti-corrosion load-bearing construction
	StoSilent Direct	√	Calculations required as proof	x	x
Coating	StoSilent Top Basic	√	√	√	√
	StoSilent Top Finish	√	√	√	√
	StoSilent Decor	√	√	√	√
	StoColor	√	√	√	√

√ Approved X Not possible

While in interiors, StoSilent systems primarily regulate the room acoustics, in areas such as shopping arcades and the 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.

## Interior and exterior

Application					
	Exterior				Interior or exterior
<ul style="list-style-type: none"> <li>Swimming bath (climate-controlled), max. 30° C, max. 70 % humidity</li> <li>Over ice-cold pools                             <ul style="list-style-type: none"> <li>Sauna exit</li> <li>Ice rink</li> </ul> </li> <li>Wall and ceiling</li> </ul>	<ul style="list-style-type: none"> <li>Ground-level open arcade</li> <li>Shopping arcade</li> <li>Protected against precipitation                             <ul style="list-style-type: none"> <li>Ceiling</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Balcony ceiling</li> <li>Access balcony                             <ul style="list-style-type: none"> <li>Loggia</li> </ul> </li> <li>Outside/external wall</li> </ul>	<ul style="list-style-type: none"> <li>Underground car park</li> <li>Ceiling towards heated rooms</li> </ul>	<ul style="list-style-type: none"> <li>Entrance to underground car park</li> <li>Multi-storey car park</li> <li>Underground station                             <ul style="list-style-type: none"> <li>Ceiling</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Other applications</li> </ul>
≤ 30 °C	-20 °C to 40 °C	-20 °C to 40 °C	-20 °C to 40 °C	-20 °C to 40 °C	
≤ 70 %	20 % to 90 %	20 % to 90 %	20 % to 90 %	20 % to 90 %	
Yes	No	No	No	No	No
No	No	Yes	No	Yes	
x	✓	x	✓	Adjust sub-construction to wind load	On request
x	✓	x	✓	✓	
x	✓	x	x	x	
x	x	x	x	x	
x	✓	x	✓	✓	
x	✓	x	✓	✓	

# Technical characteristics

## Concise facts and figures

Technical characteristics	StoSilent Distance				
StoSilent	StoSilent Board 100	StoSilent Board 110	StoSilent Board 200	StoSilent Board 210	StoSilent Board 300
Degree of absorption*	NRC up to 0.75	NRC up to 0.80	NRC up to 0.55	NRC up to 0.60	NRC up to 0.60
EN 13501 building material classification	A2-s1, d0	A2-s1, d0	A2-s1, d0	A2-s1, d0	B-s1, d0
Finish	StoSilent Top	StoSilent Decor	StoSilent Top	StoSilent Decor	StoSilent Top
Finish	In accordance with the StoColor System, pastel colour shades	In accordance with the StoColor System, silicate products	In accordance with the StoColor System, pastel colour shades	In accordance with the StoColor System, silicate products	In accordance with the StoColor System, pastel colour shades
Texture of the finish	Smooth coating (with finest graining)	Spray plaster (fine texture)	Smooth coating (with finest graining)		Smooth coating (with finest graining)
LRV of the finish	75.4 %	90.0 %	75.4 %	90.0 %	75.4 %
LRV of the finish	77.0 %	83.0 %	77.0 %	83.0 %	77.0 %
Whiteness of the finish	69.0 %	66.0 %	69.0 %	66.0 %	69.0 %
Thermal conductivity	0.087 W/(mK)	0.085 W/(mK)	0.084 W/(mK)	0.086 W/(mK)	0.089 W/(mK)
sd value	0.12 m	0.13 m	0.21 m	0.19 m	0.16 m
pH value of coating/plaster	8–9	11–12	8–9	11–12	8–9
Minimum bending radius	–	–	10 m	10 m	10 m
System thickness***	approx. 28 mm	approx. 27 mm	approx. 28 mm	approx. 27 mm	approx. 18 mm
kg/m <sup>2</sup> board	7.0	7.2	9.2	9.0	5.7
kg/m <sup>2</sup> coating (wet)	5.5	2.7	5.5	2.7	5.5
kg/m <sup>2</sup> coating (dry)	4.1	1.8	4.1	1.8	4.1
kg/m <sup>2</sup> system without sub-construction (dry)	11.1	9.0	13.3	10.8	9.8
Boards/formats/weight	1200 x 625 x 25 mm	1200 x 625 x 25 mm	1200 x 800 x 25 mm	1200 x 800 x 25 mm	1200 x 800 x 15 mm 1200 x 800 x 25 mm 2400 x 1200 x 15 mm
Coating variants	StoSilent Top Finish StoSilent Top Basic	StoSilent Decor M	StoSilent Top Finish StoSilent Top Basic	StoSilent Decor M	StoSilent Top Finish StoSilent Top Basic
Application: min. temperature of air/building element/coating	12 °C	12 °C	12 °C	12 °C	12 °C
Application: max. relative humidity/building element moisture level****	70 %	70 %	70 %	70 %	70 %

\* Weighted sound absorption coefficient in accordance with EN ISO 11654

\*\* Absorption area per test object – value dependent on format and suspension height

\*\*\* Without sub-construction/suspension

\*\*\*\* In the case of higher values, special approval must be sought through consultation with the Sto Technical Support Centre (TSC).



		StoSilent Direct	
StoSilent Board 310	StoSilent Board 310 F	StoSilent Board MW 100–46 mm	StoSilent Board MW 100–66 mm
NRC up to 0.60	NRC up to 0.50	NRC up to 0.95	NRC up to 1.00
B-s1, d0	B-s1, d0	A2-s1, d0	A2-s1, d0
StoSilent Decor	StoSilent Decor	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
In accordance with the StoColor System, silicate products	In accordance with the StoColor System, silicate products	Various	Various
Spray plaster (fine texture)	Spray plaster (fine texture)	Smooth coating/spray plaster (fine texture)	Smooth coating/spray plaster (fine texture)
90.0 %	90.0 %	Various	Various
83.0 %	83.0 %	Various	Various
66.0 %	66.0 %	Various	Various
0.082 W/(mK)	0.082 W/(mK)	0.040 W/(mK)	0.040 W/(mK)
0.11 m	0.11 m	< 0.2 m	< 0.2 m
11–12	11–12	8–12	8–12
10 m	5 m	5 m	5 m
approx. 17 mm	approx. 17 mm	approx. 56 mm	approx. 76 mm
5.4	5.5	6.0	7.9
2.7	2.7	5.2 (Decor), 5.0 (Top)	5.2 (Decor), 5.0 (Top)
1.8	1.8	4.0 (Decor), 3.7 (Top)	4.0 (Decor), 3.7 (Top)
7.2	7.3	14.5 (Decor M), 14.2 (Top)	16.4 (Decor M), 16.1 (Top)
1200 x 800 x 15 mm 1200 x 800 x 25 mm 2400 x 1200 x 15 mm	1200 x 800 x 15 mm 2400 x 1200 x 15 mm	800 x 600 x 46 mm	800 x 600 x 66 mm
StoSilent Decor M	StoSilent Decor M	Without coating StoColor Climasan StoSilent Decor M StoSilent Top Basic	Without coating StoColor Climasan StoSilent Decor M StoSilent Top Basic
12 °C	12 °C	12 °C	12 °C
70 %	70 %	70 %	70 %

# StoSilent acoustic systems

Useful information regarding installation, colour shades, surface quality

**Our acoustic systems StoSilent Distance and StoSilent Direct are created on site by specialist tradesmen using individual components such as sub-construction, board, and coating.**

The experience of the tradesmen regarding the application of the StoSilent systems ensures that the high standards associated with the visual and functional quality of the acoustic systems are always achieved. Ultimately, the quality standard delivered on the surface constitutes the “signature” of the applicator.

## Requirements on site at the construction site

- The lowest permitted application and substrate temperature is 12 °C.
- The maximum level of relative air humidity and building element moisture must not exceed 70 %.
- Quick heating or cooling during the installation and drying time can cause cracks to appear.

## Additional requirements for acoustic panels

- Ensure that the panels are protected against humidity and weathering influences.
- 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.
- Installation only after setting the right temperature and equilibrium humidity in the room

## Colour shades

We offer the matching coatings in a wide range of colours for all our acoustic solutions.

## Surface quality

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

The skills and abilities of the tradesman 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 for the invitation to tender document to draw attention to these characteristics and to take into account the more stringent requirements associated with versions involving the use of glancing light.



Mediathek Oberkirch media centre, DE-Oberkirch, StoSilent Compact Sil

# StoSilent acoustic systems

## Colour shade design and coatings

	White	Limited tintability in accordance with the StoColor System	Tintable in accordance with the StoColor System	Colour range
<b>StoSilent Distance</b>				
With StoSilent Top Basic finish	√	√		
With StoSilent Top Finish finish	√	√		
With StoSilent Decor M finish	√	√		
<b>StoSilent Direct</b>				
With StoSilent Top Basic finish	√	√		
With StoSilent Decor M finish	√	√		
With StoColor Climasan finish	√	√		
Without finish	√			

# StoSilent Distance

The seamless board system

The StoSilent Distance system can be installed as a suspended ceiling or wall covering with a cavity. The sub-construction is made of metal profiles and the acoustic panel consists of expanded glass granulate. The advantages of this material: it is light, absorbs sound, and can be adjusted to any shape of room to form a homogeneous, seamless surface.

## 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. NRC = 0.60 for a board thickness of 25 mm, fire classification B-s1, d0, according to EN 13501-1, BRANZ fire tested in accordance with ISO 5660, AS/NZ 3837

### StoSilent Distance A2

Reaches sound absorption values up to a maximum of NRC = 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  $\alpha_w = 0.50$ . Fire classification B-s1, d0, according to EN 13501-1



Augsburger Aktienbank AG, DE-Augsburg, StoSilent Distance with StoSilent Decor and StoSilent Top

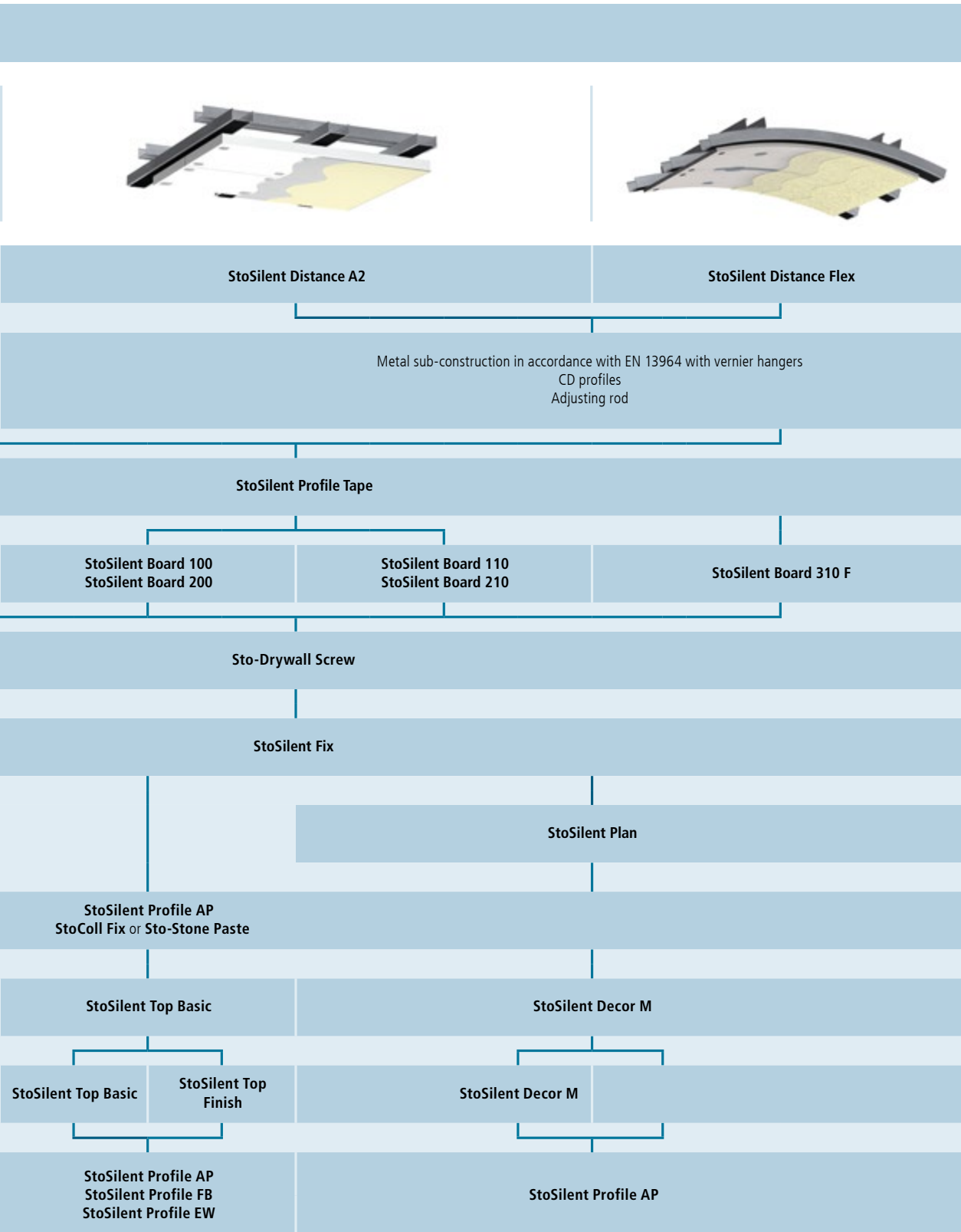
## System description of StoSilent Distance



System version	StoSilent Distance			
Sub-construction	Metal sub-construction in accordance with EN 13964 with vernier hangers Adjusting rod CD profiles Sto-Hinterlüftungsprofil / Rondo / USG			
Waterproofing				
Acoustic panel	StoSilent Board 300		StoSilent Board 310	
Screw connection				
Bonding				
Filler and levelling coat			StoSilent Plan	
Edge finish				
Intermediate coat	StoSilent Top Basic		StoSilent Decor M	
Finish	StoSilent Top Basic	StoSilent Top Finish	StoSilent Decor M	
Accessories	StoSilent Profile FB StoSilent Profile EW			

The detailed technical specifications and information on the products contained in the Technical Data Sheets and approvals must be observed.

**StoSilent Distance**  
The suspended panel system



The detailed technical specifications and information on the products contained in the Technical Data Sheets and approvals must be observed.

# StoSilent Distance

## The seamless board system

### Important system notes 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)
  - Only of limited suitability for areas subject to mechanical stress
  - To avoid uncontrolled low-pressure areas, cavities in neighbouring walls must be sealed.
  - To enable pressure equalisation between the ceiling cavity and the used space, rear ventilation either through an open all-round joint or corresponding ceiling openings must be assured. 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 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 insulation purposes, non-visible flat-panel loudspeakers can be incorporated in the ceiling construction.
  - Installation in brine pools or sea water 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® Access Panel D171.

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

- The StoSilent Top Finish finish is tintable in white and in more than 250 colour shades of the StoColor System, special colour shades are 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 10 m can be implemented.

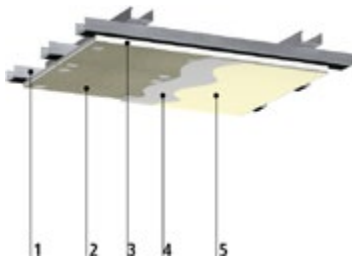
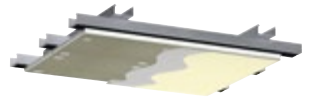
### Important system notes for coating with StoSilent Decor:

- 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.
- Radii in excess of 5 m can be implemented using the StoSilent Board 310 F acoustic panel (from 10 m with StoSilent Board 210 and StoSilent Board 310).

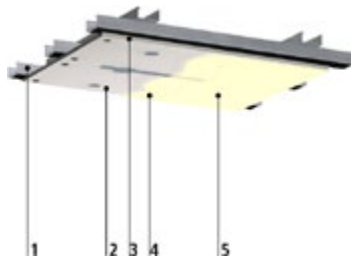
# StoSilent Distance

## System overview

StoSilent Distance  
The suspended panel system



1. Sub-construction with StoSilent Profile Tape
2. StoSilent Board 300 acoustic panel
3. Bonding
4. Intermediate coat
5. Finish



1. Sub-construction with StoSilent Profile Tape
2. StoSilent Board 310 acoustic panel
3. Bonding
4. Filler and levelling coat
5. Finish

**StoSilent Distance**  
Suspended acoustic system made of expanded glass granulate boards, reaction to fire B-s1,d0, in accordance with EN 3501. **BRANZ fire tested in accordance with ISO 5660, AS/NZS 3837**

### 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>

### Areas of application

- Interior
- For suspended ceiling and wall structures
- Not suitable for wall areas which can be reached by hand or which are exposed to other types of mechanical stress
- Not suitable for splash zones

### Fixing

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

### Reaction to fire

- BRANZ fire tested in accordance with ISO 5660, AS/NZ 3837
- 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 C 423 max. 0.60,  
values depend on system thickness
- StoSilent Decor coating:  
 $\alpha_w$  in accordance with EN 11654 max. 0.55,  
NRC in accordance with ASTM C 423 max. 0.60,  
values depend on system thickness

### Design options

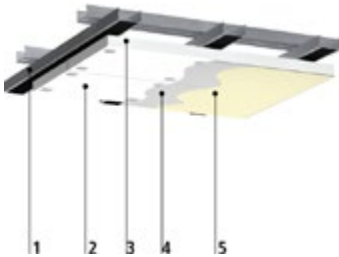
- Fine surface
- Textured surface

### Application

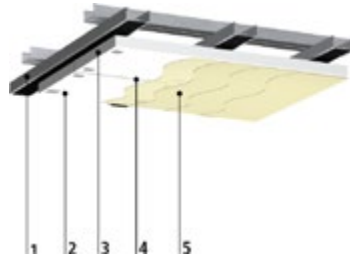
- By trained specialists

# StoSilent Distance A2

## System overview



1. Sub-construction with StoSilent Profile Tape
2. StoSilent Board 100 acoustic panel
3. Bonding
4. Intermediate coat
5. Finish



1. Sub-construction with StoSilent Profile Tape
2. StoSilent Board 110 acoustic panel
3. Bonding
4. Filler and levelling coat
5. Finish

### StoSilent Distance A2

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

#### System advantages

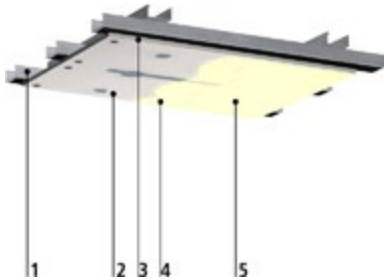
- Low weight
- Easy application due to homogeneous board structure
- Low moisture-induced and thermal expansion
- With non-air-permeable facing
- Seamless installation possible across areas of up to 200 m<sup>2</sup>
- Non-combustible, class A2-s1, d0, in accordance with EN 13501-1

#### Areas of application

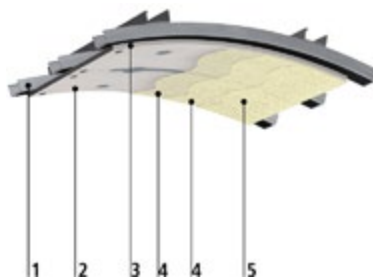
- Interior
- For suspended ceiling constructions
- Not suitable for wall areas which can be reached by hand or which are exposed to other types of mechanical stress
- Especially suited for ceilings and upper wall areas of escape routes, corridors, staircases, or meeting places
- Not bendable
- Not suitable for splash zones



**StoSilent Distance**  
The suspended panel system



1. Sub-construction with StoSilent Profile Tape
2. StoSilent Board 200 acoustic panel
3. Bonding
4. Intermediate coat
5. Finish



1. Sub-construction with StoSilent Profile Tape
2. StoSilent Board 210 acoustic panel
3. Bonding
4. Intermediate coat
5. Finish

**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 C 423 max. 0.75
    - Sto Silent Board 200:
      - $\alpha_w$  in accordance with EN 11654 max. 0.55,
      - NRC in accordance with ASTM C 423 max. 0.55
- Values depend on the height of construction

- StoSilent Decor coating:
    - StoSilent Board 110:
      - $\alpha_w$  in accordance with EN 11654 max. 0.80,
      - NRC in accordance with ASTM C 423 max. 0.80
    - StoSilent Board 210:
      - $\alpha_w$  in accordance with EN 11654 max. 0.55,
      - NRC in accordance with ASTM C 423 max. 0.60
- Values depend on the height of construction

**Design options**

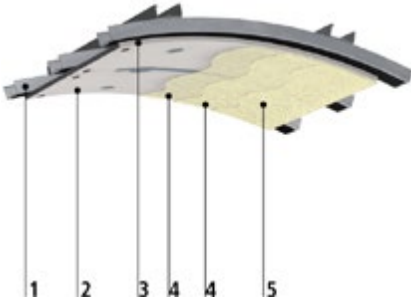
- Fine surface
- Textured surface

**Application**

- By trained specialists

# StoSilent Distance Flex

## System overview



1. Sub-construction with StoSilent Profile Tape
2. StoSilent Board 310 F acoustic panel
3. Bonding
4. Filler and levelling coat
5. Finish

### 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>

#### Areas of application

- Interior
- For suspended ceiling and wall structures
- Not suitable for wall areas which can be reached by hand or which are exposed to other types of mechanical stress
- 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 C 423: max. 0.50
- Values depend on the height of construction

#### Design options

- Textured surface

#### Application

- By trained specialists

# StoSilent Distance

## Suspension and sub-construction

StoSilent Distance  
The suspended panel system



The seamless acoustic panel systems **StoSilent Distance**, **StoSilent Distance A2**, and **StoSilent Distance Flex** 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 pro-

fessionally 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 building elements.
- Long-span hangers can also be employed whenever acoustic protection requirements necessitate the separation of building elements.

### 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. Dowels 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.

## Fixing technique for different suspension heights

Fixing technique	Top-hat profile	Vernier hanger	Vernier extension	Direct-mounting clip	Vernier direct hanger	Direct hanger (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

1) 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 thickness of the suspended ceiling.

# StoSilent Distance

## Suspension and sub-construction

Rocco Forte Group De Luxe Hotel,  
DE-Frankfurt, StoSilent Distance

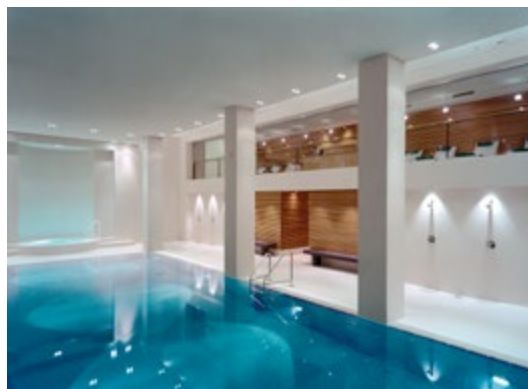
The StoSilent Distance systems are suitable for use in different climate conditions. These range from offices to climate-controlled swimming pools. The prerequisite is a suitable sub-construction which must be selected according to the stress classes defined in EN 13964. In general, screwing the acoustic 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 pools

Special requirements apply to rooms exposed to moisture and to swimming pools. According to EN 13964 "Suspended ceilings – requirements and test methods", additional protection against corrosion measures are vitally necessary 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.

#### Important 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	Building elements 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 continually melt-refined 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	Building elements 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 continually melt-refined 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	Building elements 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 continually melt-refined 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; Subsequently powder-coated systems 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".

# StoSilent Distance

## Surfaces and installations

StoSilent Distance  
The suspended panel system



**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 square metres. 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. In this manner, similar climate conditions can be created inside the room and in the ceiling cavity above it.

This reduces strong airflows and the associated soiling of the surface, 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 specified 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 loudspeakers, 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, projection length ≤ 10 m	Expansion joint b = 15 mm*
Partial surface, projection 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

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

### Important notes

- For the purposes of pressure equalisation, seamless acoustic panel systems need to have open, all-round joints and/or ceiling apertures (min. 0.8 % of ceiling surface area).
- Existing structural expansion joints must always be incorporated.
- In special kinds of construction geometry, required expansion joints need to be planned into the design (execution of expansion joints acc. to EN 13964 "Sub-ceilings – requirements and test methods").
- On 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.

# Sound characteristics

It's all about the right sound absorption

## Systems built over an area (seamless)

System	Board/product	Coating	Build-up acc. to ISO 354	Structural height i
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 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 + mineral wool*	StoSilent Top Basic & Sto-Terrazzo Effect	E-55	55
	StoSilent Board 300, 25 mm + mineral wool*	StoSilent Top Basic & silicon carbide F14	E-55	55
	StoSilent Board 300, 25 mm	StoSilent Top Basic, tinted (blue)	E-125	125
	StoSilent Board 310	StoSilent Decor M	E-45	45
	StoSilent Board 310	StoSilent Decor M	E-260	260
	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
	StoSilent Board 315 (filled, reflective)	StoSilent Decor M	E-260	260

**StoSilent Top Basic is an optional finish for all StoSilent Distance board variants with an average of 10% less in NRC values**

\* Mineral wool, 30 mm thick, Knauf TP 120 A30

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

**StoSilent Distance**  
The suspended panel system



Panel thickness in mm	Board thickness in mm	$a_w$ EN ISO 11654	<i>NRC</i> ASTM C 423	<i>SAA</i> ASTM C 423	Absorber class 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
	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	0.60	0.60	0.57	C	M35 120/110
	25	0.60	0.55	0.56	C	M35 120/110
	25	0.50 (M)	0.55	0.55	D	M35 120/110
	15	0.45 (H)	0.50	0.50	D	M35 120/49
	15	0.40 (H)	0.50	0.49	D	M35 120/49
	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
	15	0.10	0.05	0.07	–	M35 120/97

# Sound characteristics

It's all about the right sound absorption

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

System	Board/product	Coating	Build-up acc. to ISO 354	Structural height i
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 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 (version)	200
	StoSilent Board 200, with open shadow gap + mineral wool**	StoSilent Top Finish	E-200 (version)	200
	StoSilent Board 210	StoSilent Decor M	E-200	200
	StoSilent Board 210, with open shadow gap	StoSilent Decor M	E-200 (version)	200
	StoSilent Board 210, with open shadow gap + mineral wool**	StoSilent Decor M	E-200 (version)	200

**StoSilent Top Basic is an optional finish for all StoSilent Distance board variants with an average of 10% less in NRC values**

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

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



**StoSilent Distance**  
The suspended panel system



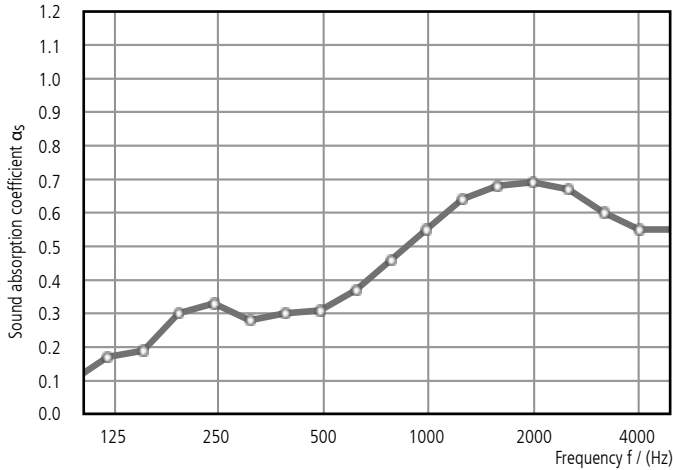
Panel thickness in mm	Board thickness in mm	EN ISO 11654	<i>NRC</i> ASTM C 423	<i>SAA</i> ASTM C 423	Absorber class EN ISO 11654	Test report
	25	0.80	0.75	0.76	B	M35 120/73
	25	0.70	0.65	0.66	C	M35 120/112
	25	0.70	0.65	0.64	C	M35 120/112
	25	0.70 (M)	0.70	0.71	C	M35 120/73
	25	0.80	0.75	0.77	B	M35 120/81
	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	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

# StoSilent Distance

## Sound absorption in detail

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

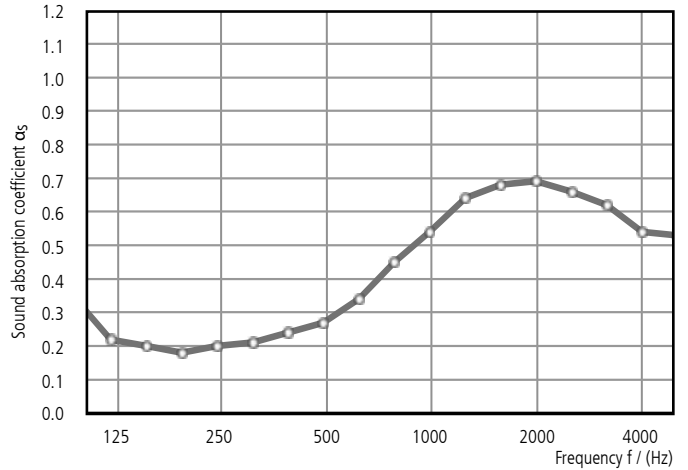
**Thickness:** 15 mm  
**Structural height:** 45 mm  
 $a_w$ : 0.45 (H)  
**NRC:** 0.45



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
$a_p$	0.15	0.30	0.35	0.55	0.70	0.55

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

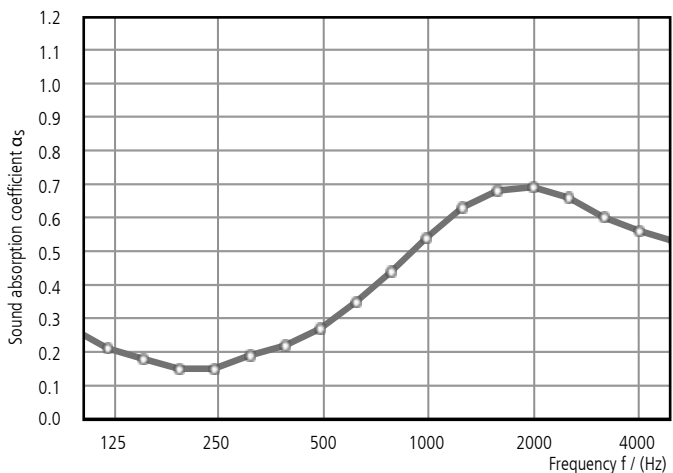
**Thickness:** 15 mm  
**Structural height:** 115 mm  
 $a_w$ : 0.40 (H)  
**NRC:** 0.45



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
$a_p$	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

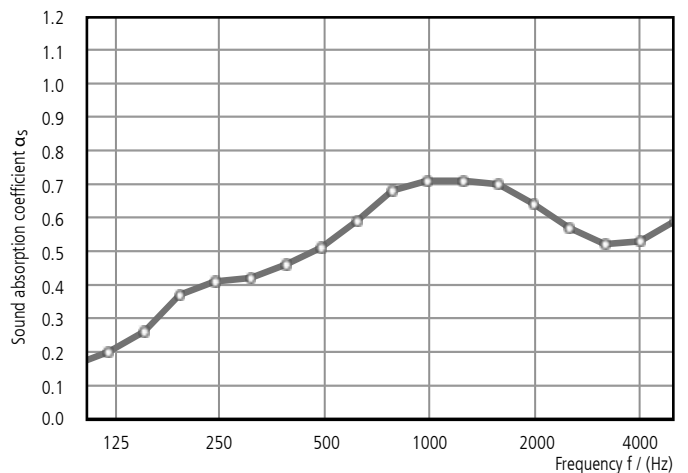
**Thickness:** 15 mm  
**Structural height:** 260 mm  
 $a_w$ : 0.35 (H)  
**NRC:** 0.40



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
$a_p$	0.20	0.15	0.30	0.55	0.70	0.55

**System:** StoSilent Distance  
**Build-up:** StoSilent Board 300, 25 mm  
**Coating:** StoSilent Top Basic & Finish

**Thickness:** 25 mm  
**Structural height:** 55 mm  
 $a_w$ : 0.60  
**NRC:** 0.55

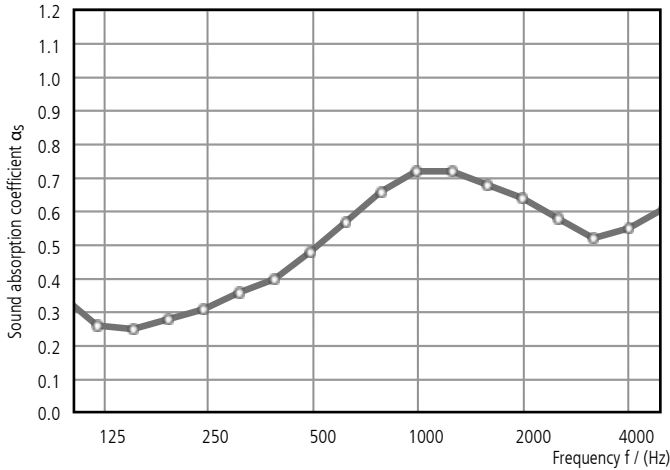


Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.16	0.37	0.46	0.68	0.70	0.52
Octave band	0.20	0.41	0.51	0.71	0.64	0.53
Third-octave band	0.26	0.42	0.59	0.71	0.57	0.59
$a_p$	0.20	0.40	0.50	0.70	0.65	0.55

**StoSilent Distance**  
The suspended panel system

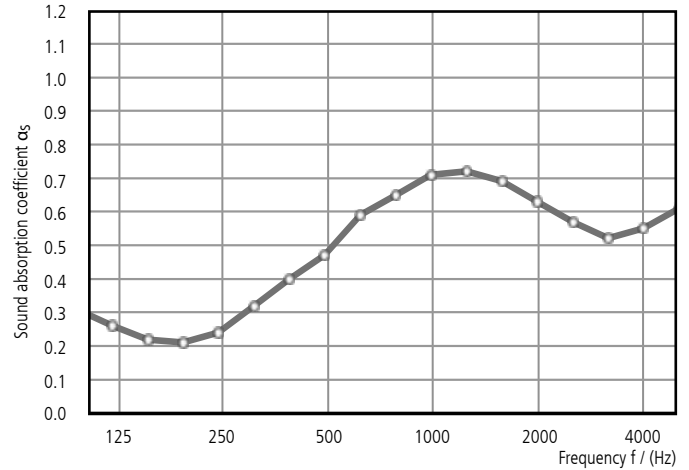


**System:** StoSilent Distance  
**Build-up:** StoSilent Board 300, 25 mm  
**Coating:** StoSilent Top Basic & Finish  
**Thickness:** 25 mm  
**Structural height:** 125 mm  
 $a_w$ : 0.55  
**NRC:** 0.55



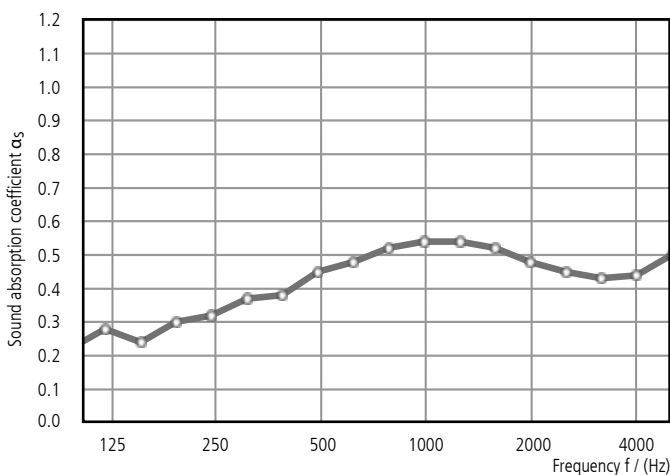
Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.35	0.28	0.40	0.66	0.68	0.52
Octave band	0.26	0.31	0.48	0.72	0.64	0.55
Third-octave band	0.25	0.36	0.57	0.72	0.58	0.61
$a_p$	0.30	0.30	0.50	0.70	0.65	0.55

**System:** StoSilent Distance  
**Build-up:** StoSilent Board 300, 25 mm  
**Coating:** StoSilent Top Basic & Finish  
**Thickness:** 25 mm  
**Structural height:** 270 mm  
 $a_w$ : 0.50  
**NRC:** 0.50



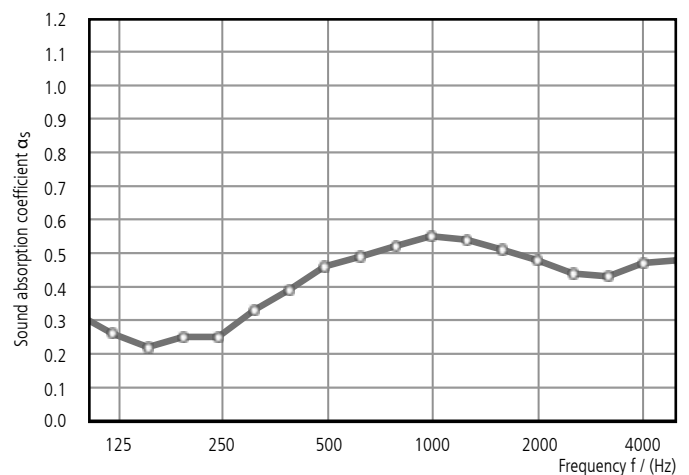
Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.31	0.21	0.40	0.65	0.69	0.52
Octave band	0.26	0.24	0.47	0.71	0.63	0.55
Third-octave band	0.22	0.32	0.59	0.72	0.57	0.61
$a_p$	0.25	0.25	0.50	0.70	0.65	0.55

**System:** StoSilent Distance  
**Build-up:** StoSilent Board 300, 25 mm  
**Coating:** StoSilent Top Basic, white  
**Thickness:** 25 mm  
**Structural height:** 55 mm  
 $a_w$ : 0.50  
**NRC:** 0.45



Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.22	0.30	0.38	0.52	0.52	0.43
Octave band	0.28	0.32	0.45	0.54	0.48	0.44
Third-octave band	0.24	0.37	0.48	0.54	0.45	0.50
$a_p$	0.25	0.35	0.45	0.55	0.50	0.45

**System:** StoSilent Distance  
**Build-up:** StoSilent Board 300, 25 mm  
**Coating:** StoSilent Top Basic, white  
**Thickness:** 25 mm  
**Structural height:** 125 mm  
 $a_w$ : 0.50  
**NRC:** 0.45



Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.32	0.25	0.39	0.52	0.51	0.43
Octave band	0.26	0.25	0.46	0.55	0.48	0.47
Third-octave band	0.22	0.33	0.49	0.54	0.44	0.48
$a_p$	0.25	0.30	0.45	0.55	0.50	0.45

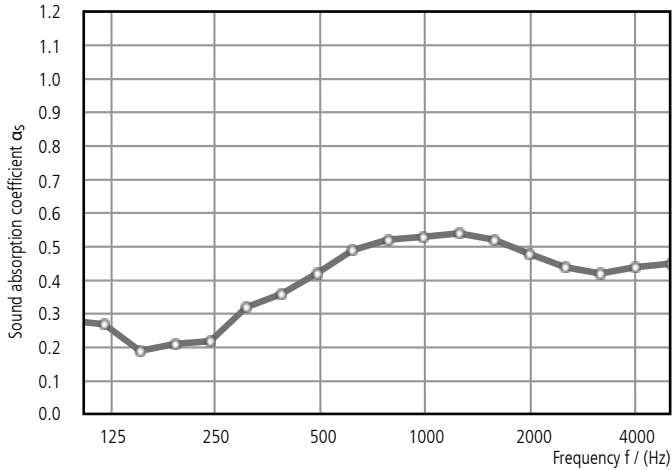
The detailed technical specifications and information on the products contained in the Technical Data Sheets and approvals must be observed.

# StoSilent Distance

## Sound absorption in detail

**System:** StoSilent Distance  
**Build-up:** StoSilent Board 300, 25 mm  
**Coating:** StoSilent Top Basic, white

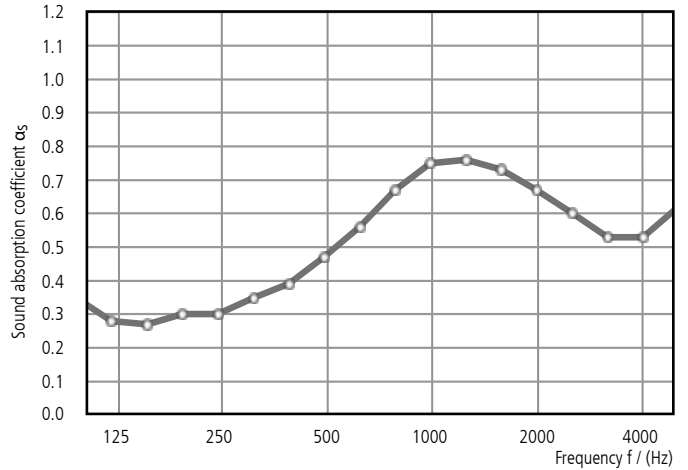
**Thickness:** 25 mm  
**Structural height:** 270 mm  
 $a_w$ : 0.45  
**NRC:** 0.40



Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.28	0.21	0.36	0.52	0.52	0.42
Octave band	0.27	0.22	0.42	0.53	0.48	0.44
Third-octave band	0.19	0.32	0.49	0.54	0.44	0.45
$a_p$	0.25	0.25	0.40	0.55	0.50	0.45

**System:** StoSilent Distance  
**Build-up:** StoSilent Board 300, 25 mm  
**Coating:** StoSilent Top Basic, tinted (blue)

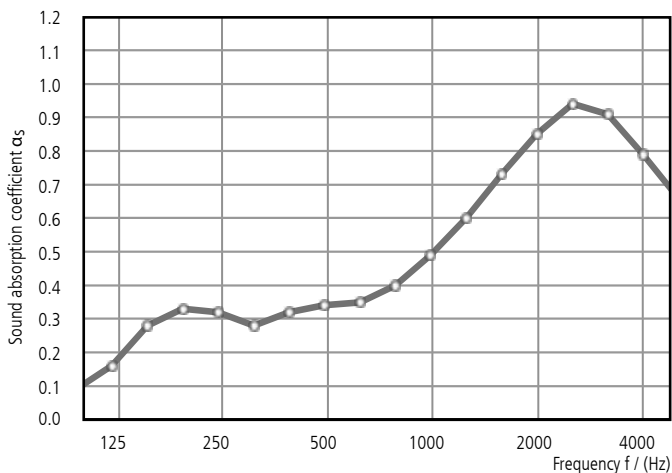
**Thickness:** 25 mm  
**Structural height:** 125 mm  
 $a_w$ : 0.50 (H)  
**NRC:** 0.55



Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.35	0.30	0.39	0.67	0.73	0.53
Octave band	0.28	0.30	0.47	0.75	0.67	0.53
Third-octave band	0.27	0.35	0.56	0.76	0.60	0.62
$a_p$	0.30	0.30	0.45	0.75	0.65	0.55

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

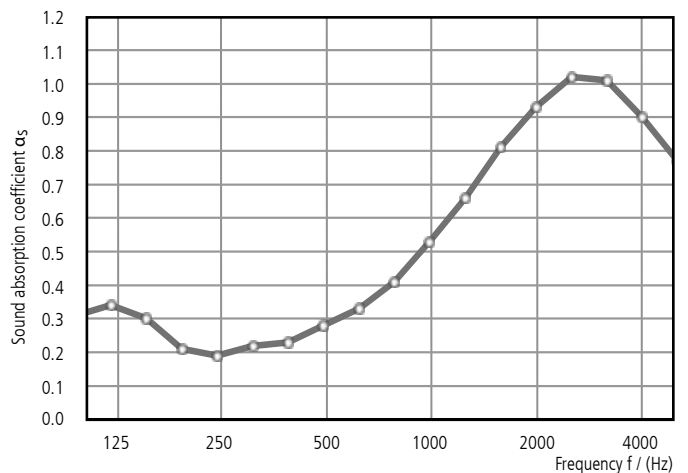
**Thickness:** 15 mm  
**Structural height:** 45 mm  
 $a_w$ : 0.45 (H)  
**NRC:** 0.50



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
$a_p$	0.20	0.30	0.35	0.50	0.85	0.80

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

**Thickness:** 15 mm  
**Structural height:** 260 mm  
 $a_w$ : 0.40 (H)  
**NRC:** 0.50



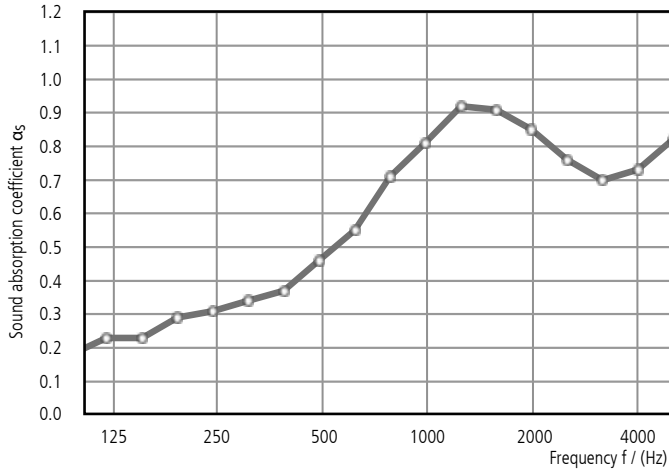
Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.31	0.21	0.23	0.41	0.81	1.01
Octave band	0.34	0.19	0.28	0.53	0.93	0.90
Third-octave band	0.30	0.22	0.33	0.66	1.02	0.77
$a_p$	0.30	0.20	0.30	0.55	0.90	0.90

**StoSilent Distance**  
The suspended panel system



**System:** StoSilent Distance  
**Build-up:** StoSilent Board 300, 25 mm  
**Coating:** StoSilent Decor M

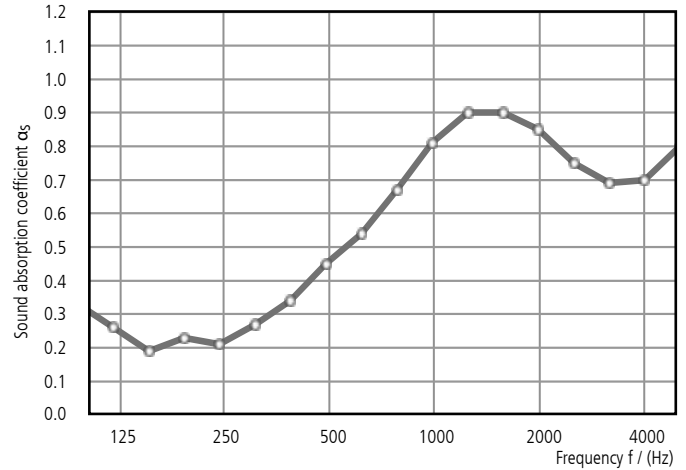
**Thickness:** 25 mm  
**Structural height:** 55 mm  
 **$a_w$ :** 0.50 (MH)  
**NRC:** 0.60



Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.18	0.29	0.37	0.71	0.91	0.70
Octave band	0.23	0.31	0.46	0.81	0.85	0.73
Third-octave band	0.23	0.34	0.55	0.92	0.76	0.82
$a_p$	0.20	0.30	0.45	0.80	0.85	0.75

**System:** StoSilent Distance  
**Build-up:** StoSilent Board 300, 25 mm  
**Coating:** StoSilent Decor M

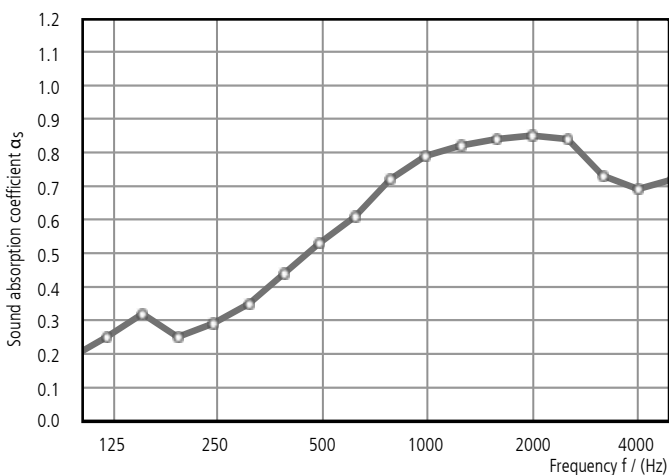
**Thickness:** 25 mm  
**Structural height:** 125 mm  
 **$a_w$ :** 0.50 (MH)  
**NRC:** 0.60



Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.33	0.23	0.34	0.67	0.90	0.69
Octave band	0.26	0.21	0.45	0.81	0.85	0.70
Third-octave band	0.19	0.27	0.54	0.90	0.75	0.80
$a_p$	0.25	0.25	0.45	0.80	0.85	0.75

**System:** StoSilent Distance  
**Build-up:** StoSilent Board 310, 25 mm  
**Coating:** StoSilent Decor M

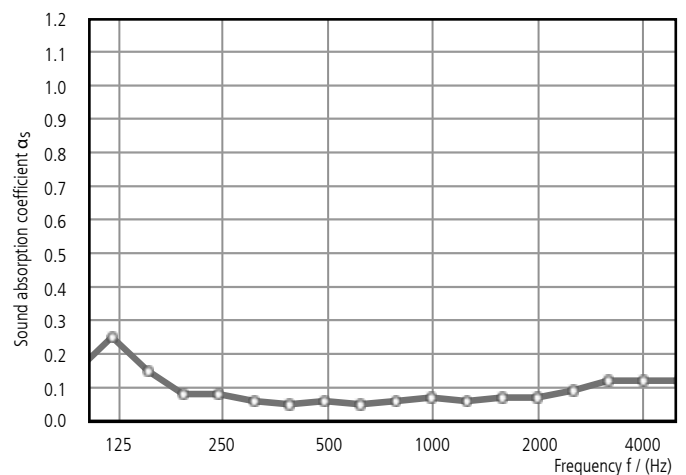
**Thickness:** 25 mm  
**Structural height:** 270 mm  
 **$a_w$ :** 0.50 (MH)  
**NRC:** 0.60



Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.19	0.25	0.44	0.72	0.84	0.73
Octave band	0.25	0.29	0.53	0.79	0.85	0.69
Third-octave band	0.32	0.35	0.61	0.82	0.84	0.72
$a_p$	0.25	0.30	0.55	0.80	0.85	0.70

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

**Thickness:** 15 mm  
**Structural height:** 260 mm  
 **$a_w$ :** 0.10  
**NRC:** 0.05



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	0.25	0.08	0.06	0.07	0.07	0.12
Third-octave band	0.15	0.06	0.05	0.06	0.09	0.12
$a_p$	0.20	0.05	0.05	0.05	0.10	0.10

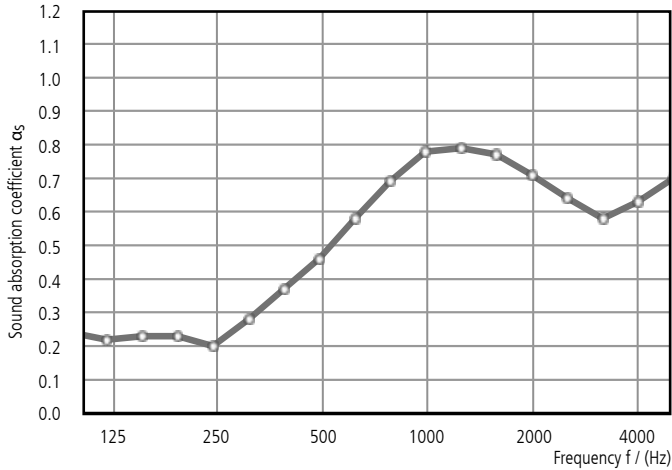
The detailed technical specifications and information on the products contained in the Technical Data Sheets and approvals must be observed.

# StoSilent Distance

## Sound absorption in detail

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

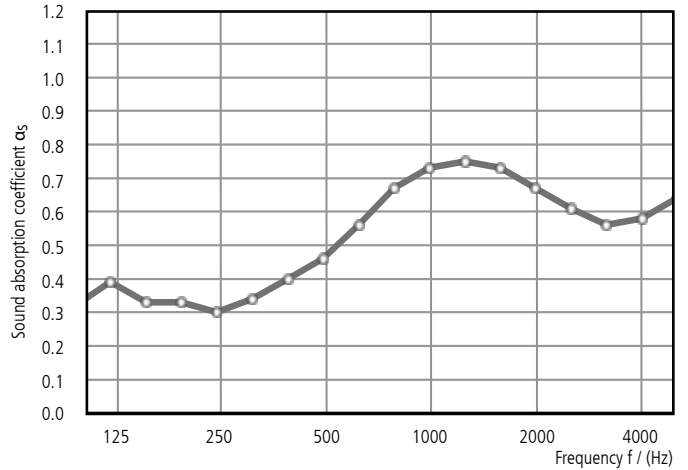
**Thickness:** 25 mm  
**Structural height:** 200 mm  
 $a_w$ : 0.50 (MH)  
**NRC:** 0.55



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	0.22	0.20	0.46	0.78	0.71	0.63
Third-octave band	0.23	0.28	0.58	0.79	0.64	0.70
$a_p$	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

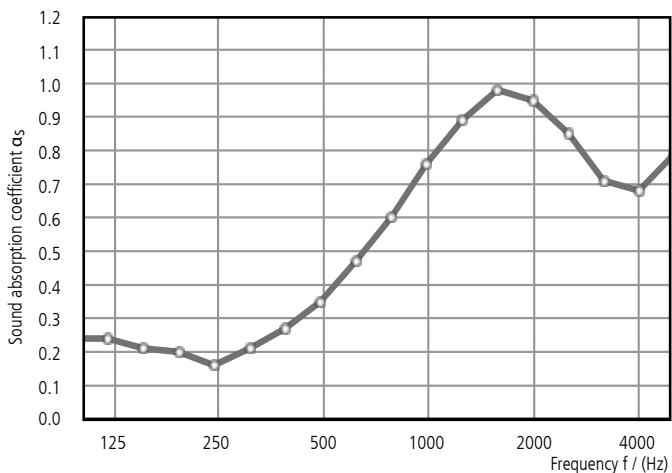
**Thickness:** 25 mm  
**Structural height:** 200 mm  
 $a_w$ : 0.50  
**NRC:** 0.55



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	0.39	0.30	0.46	0.73	0.67	0.58
Third-octave band	0.33	0.34	0.56	0.75	0.61	0.64
$a_p$	0.35	0.30	0.45	0.70	0.65	0.60

**System:** StoSilent Distance A2  
**Build-up:** StoSilent Board 210  
**Coating:** StoSilent Decor M

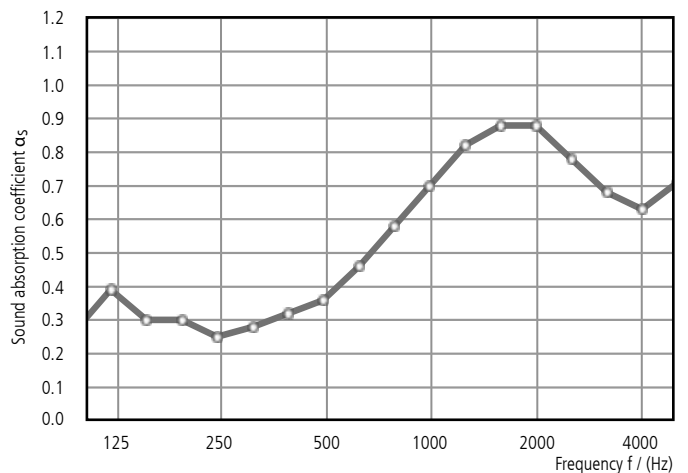
**Thickness:** 25 mm  
**Structural height:** 200 mm  
 $a_w$ : 0.40 (MH)  
**NRC:** 0.55



Frequency $f$ 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	0.24	0.16	0.35	0.76	0.95	0.68
Third-octave band	0.21	0.21	0.47	0.89	0.85	0.79
$a_p$	0.25	0.20	0.35	0.75	0.95	0.75

**System:** StoSilent Distance A2  
**Build-up:** StoSilent Board 210, with open shadow gap  
**Coating:** StoSilent Decor M

**Thickness:** 25 mm  
**Structural height:** 200 mm  
 $a_w$ : 0.50 (H)  
**NRC:** 0.55

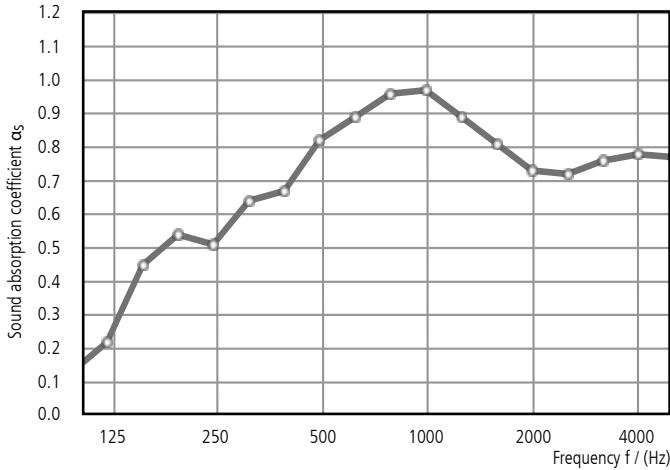


Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.27	0.30	0.32	0.58	0.88	0.68
Octave band	0.39	0.25	0.36	0.70	0.88	0.63
Third-octave band	0.30	0.28	0.46	0.82	0.78	0.71
$a_p$	0.30	0.30	0.40	0.70	0.85	0.65

**StoSilent Distance**  
The suspended panel system

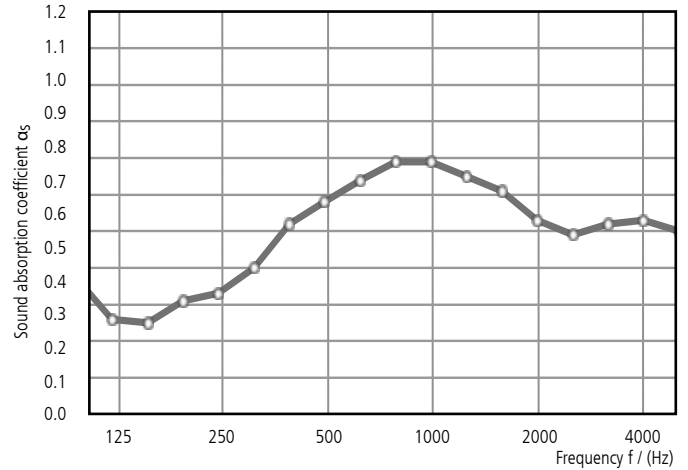


**System:** StoSilent Distance A2  
**Build-up:** StoSilent Board 100  
**Coating:** StoSilent Top Basic & Finish  
**Thickness:** 25 mm  
**Structural height:** 55 mm  
 **$a_w$ :** 0.80  
**NRC:** 0.75



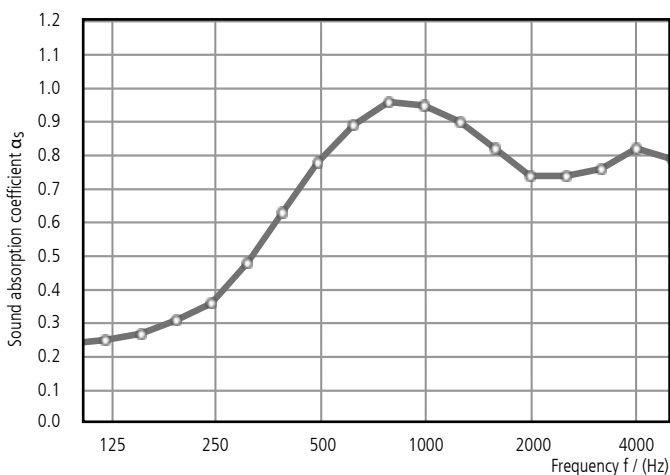
Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.13	0.54	0.67	0.96	0.81	0.76
Octave band	0.22	0.51	0.82	0.97	0.73	0.78
Third-octave band	0.45	0.64	0.89	0.89	0.72	0.77
$a_p$	0.25	0.55	0.80	0.95	0.75	0.75

**System:** StoSilent Distance A2  
**Build-up:** StoSilent Board 100  
**Coating:** StoSilent Top Basic & Finish  
**Thickness:** 25 mm  
**Structural height:** 125 mm  
 **$a_w$ :** 0.70  
**NRC:** 0.65



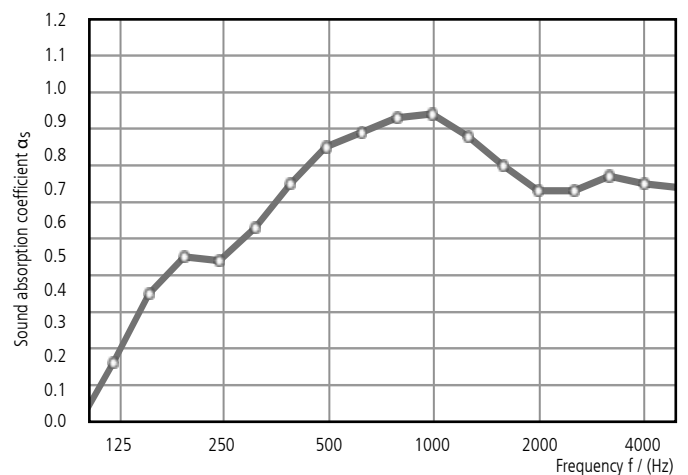
Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.47	0.41	0.62	0.79	0.71	0.62
Octave band	0.36	0.43	0.68	0.79	0.63	0.63
Third-octave band	0.35	0.50	0.74	0.75	0.59	0.60
$a_p$	0.40	0.45	0.70	0.80	0.65	0.60

**System:** StoSilent Distance A2  
**Build-up:** StoSilent Board 100  
**Coating:** StoSilent Top Basic & Finish  
**Thickness:** 25 mm  
**Structural height:** 270 mm  
 **$a_w$ :** 0.70 (M)  
**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
$a_p$	0.25	0.40	0.75	0.95	0.75	0.80

**System:** StoSilent Distance A2  
**Build-up:** StoSilent Board 110  
**Coating:** StoSilent Decor M  
**Thickness:** 25 mm  
**Structural height:** 55 mm  
 **$a_w$ :** 0.80  
**NRC:** 0.75



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

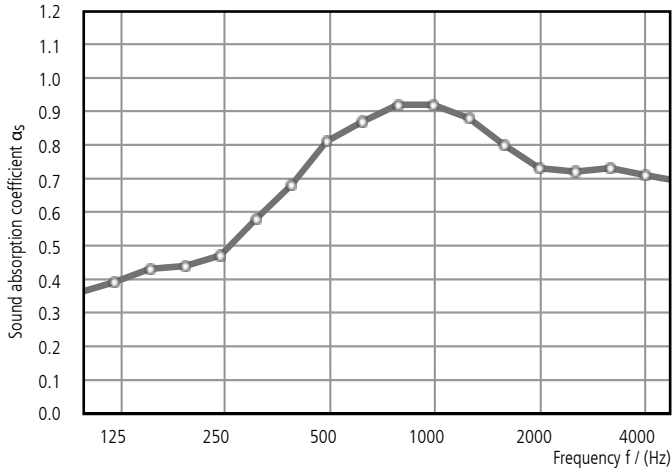
The detailed technical specifications and information on the products contained in the Technical Data Sheets and approvals must be observed.

# StoSilent Distance

## Sound absorption in detail

**System:** StoSilent Distance A2  
**Build-up:** StoSilent Board 110  
**Coating:** StoSilent Decor M

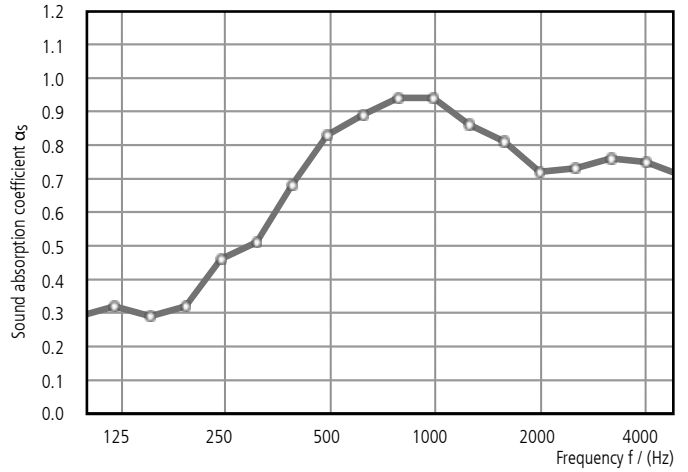
**Thickness:** 25 mm  
**Structural height:** 125 mm  
 $a_w$ : 0.75  
**NRC:** 0.75



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

**System:** StoSilent Distance A2  
**Build-up:** StoSilent Board 110  
**Coating:** StoSilent Decor M

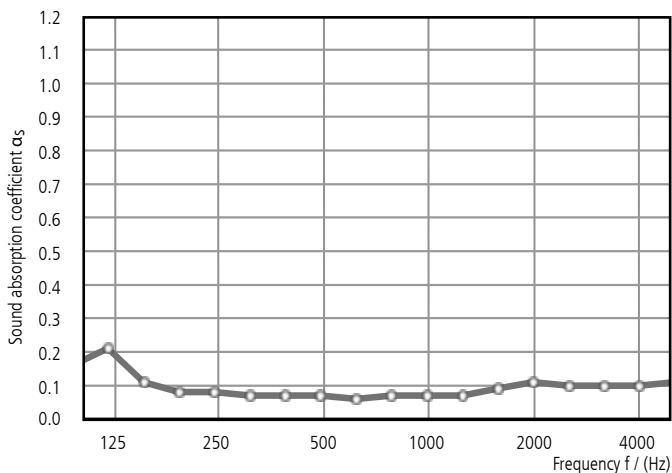
**Thickness:** 25 mm  
**Structural height:** 270 mm  
 $a_w$ : 0.75  
**NRC:** 0.75



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

**System:** StoSilent Distance A2  
**Build-up:** StoSilent Board 110, filled (reflective)  
**Coating:** StoSilent Decor M

**Thickness:** 25 mm  
**Structural height:** 270 mm  
 $a_w$ : 0.10  
**NRC:** 0.10



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



# StoSilent Distance

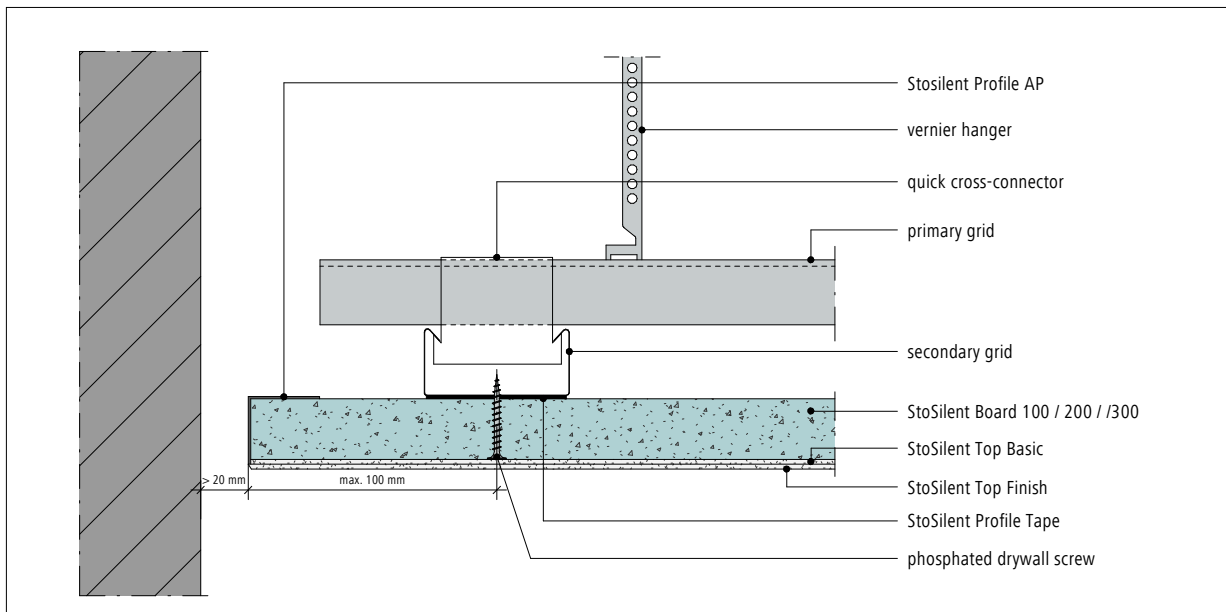
Construction details: ceiling

Coating: StoSilent Top

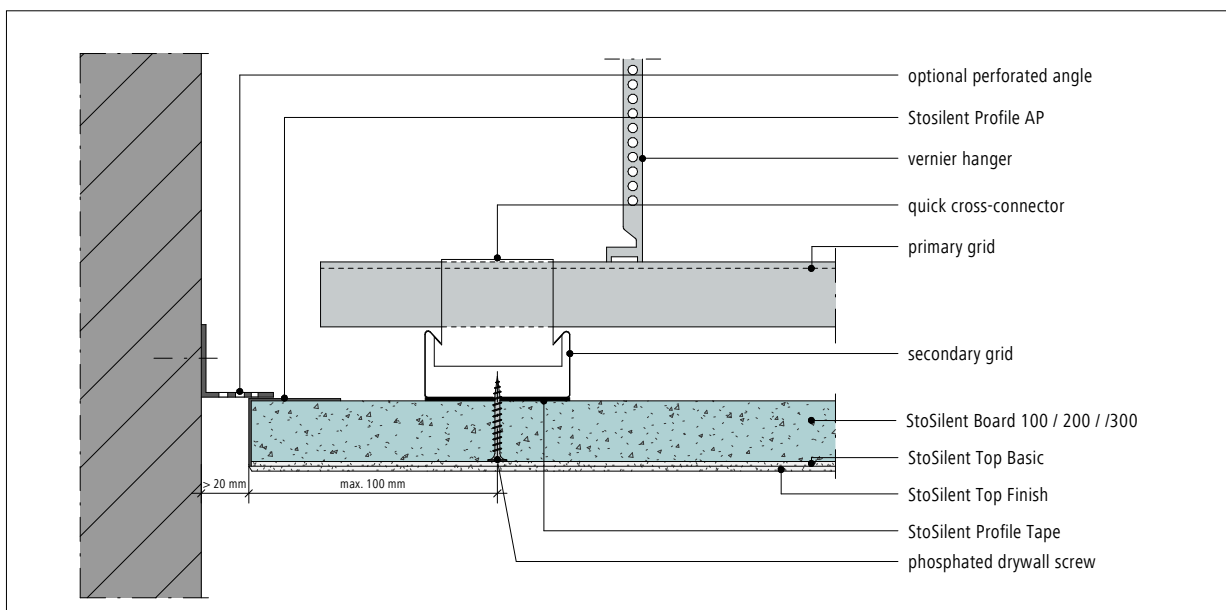
StoSilent Distance  
The suspended panel system



## Ceiling (vertical section): open wall junction



## Ceiling (vertical section): wall junction with hole angle



Note: This detail is a general, non-binding planning suggestion, which depicts the execution only schematically. The customer/planner/appliator is independently responsible for determining the suitability and completeness of the product for the particular construction project. Neighbouring works are only described schematically. All specifications and assumptions must be adjusted or agreed in the light of local conditions. Compliance with the technical specifications contained in the Technical Data Sheets, application guidelines, and system approvals is mandatory.

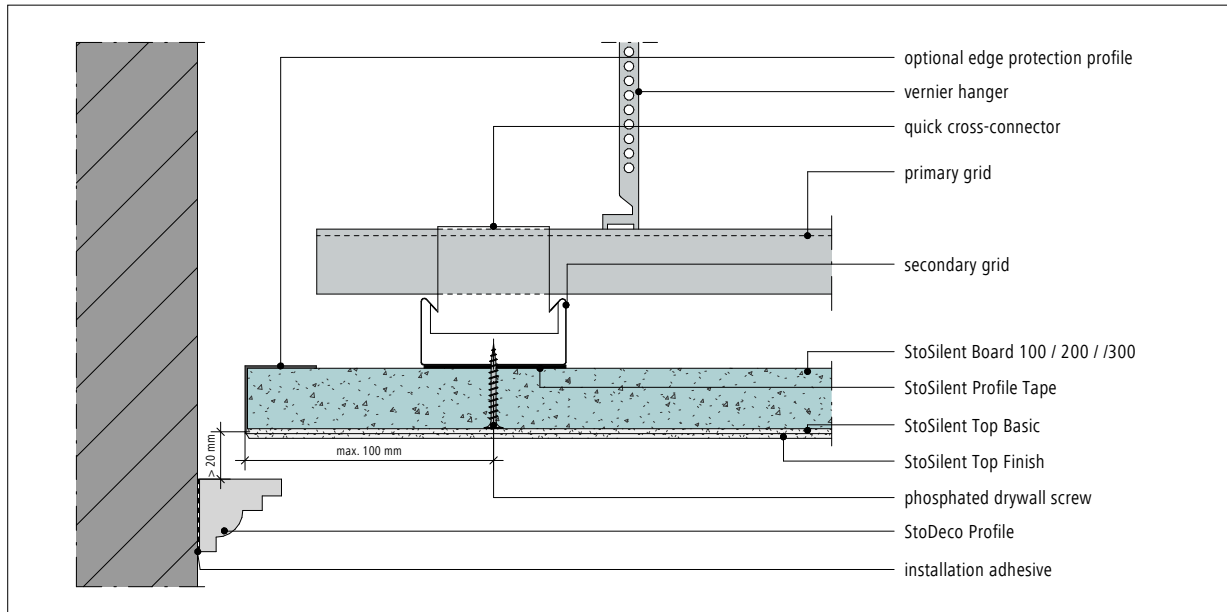
The detailed technical specifications and information on the products contained in the Technical Data Sheets and approvals must be observed.

# StoSilent Distance

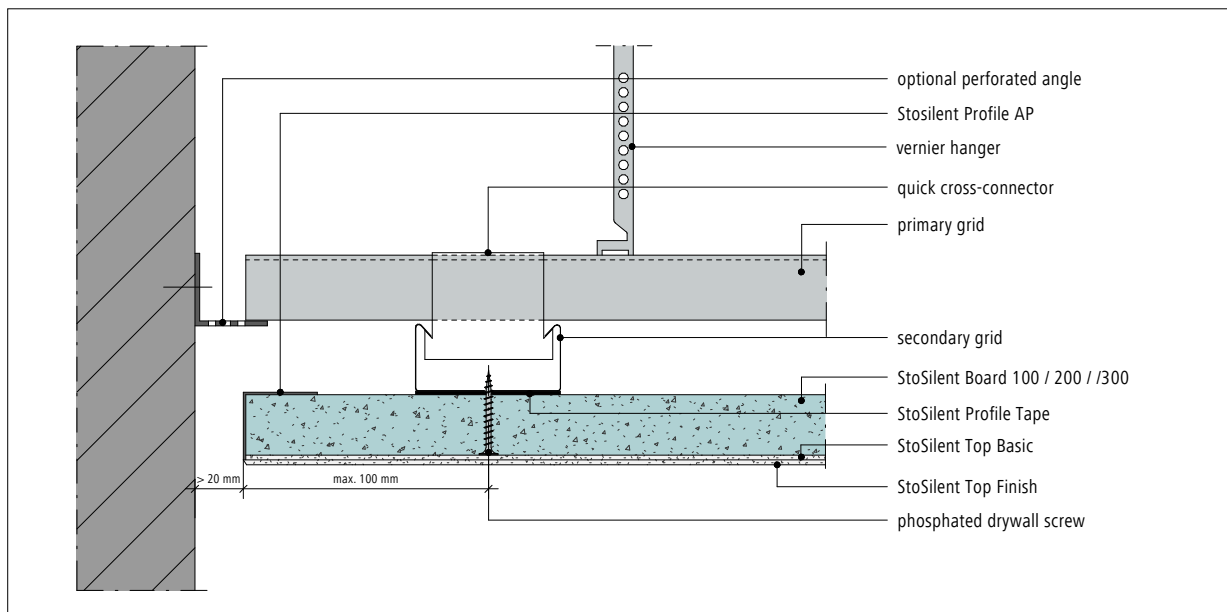
Construction details: ceiling

Coating: StoSilent Top

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



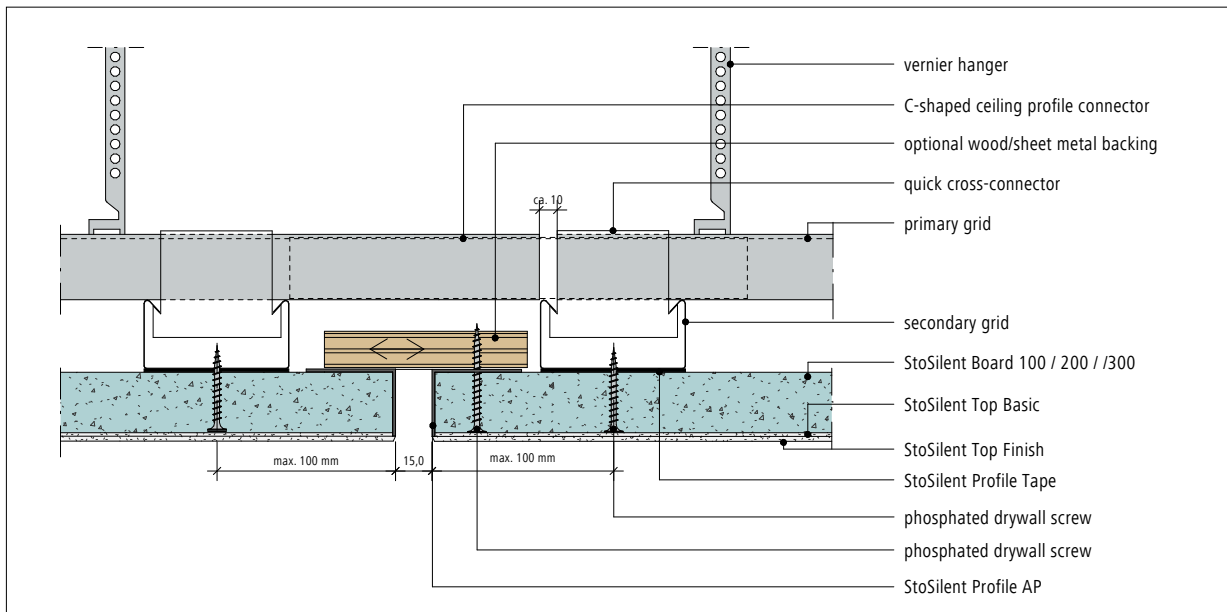
## Ceiling (vertical section): wall junction with offset angle



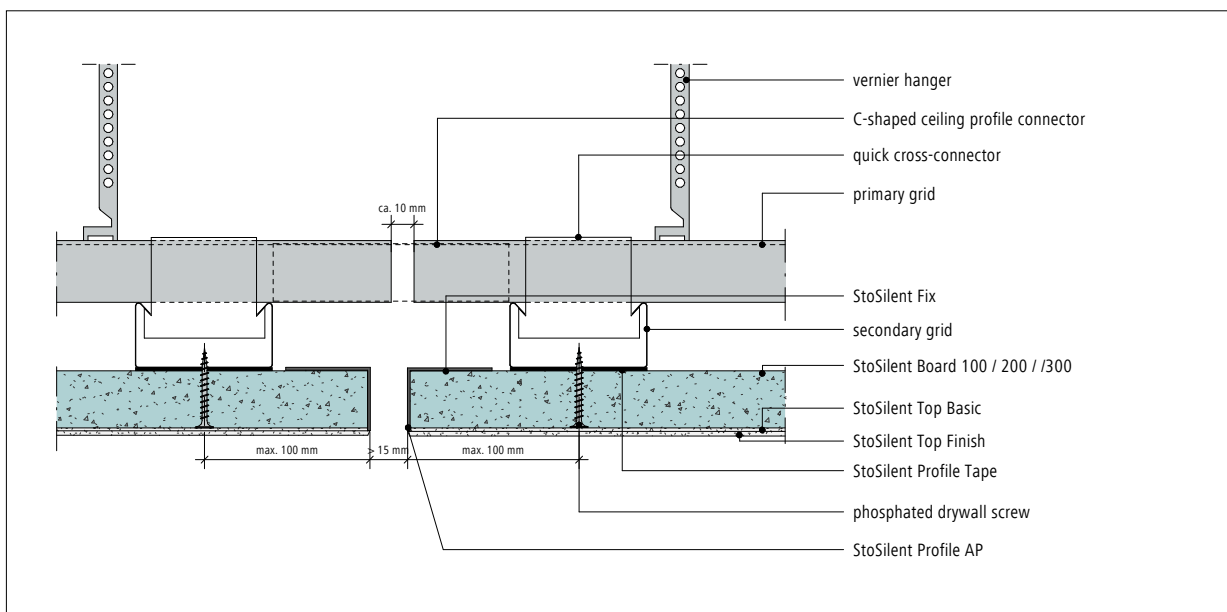
Note: This detail is a general, non-binding planning suggestion, which depicts the execution only schematically. The customer/planner/applicator is independently responsible for determining the suitability and completeness of the product for the particular construction project. Neighbouring works are only described schematically. All specifications and assumptions must be adjusted or agreed in the light of local conditions. Compliance with the technical specifications contained in the Technical Data Sheets, application guidelines, and system approvals is mandatory.



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



## Ceiling (vertical section): expansion joint formation



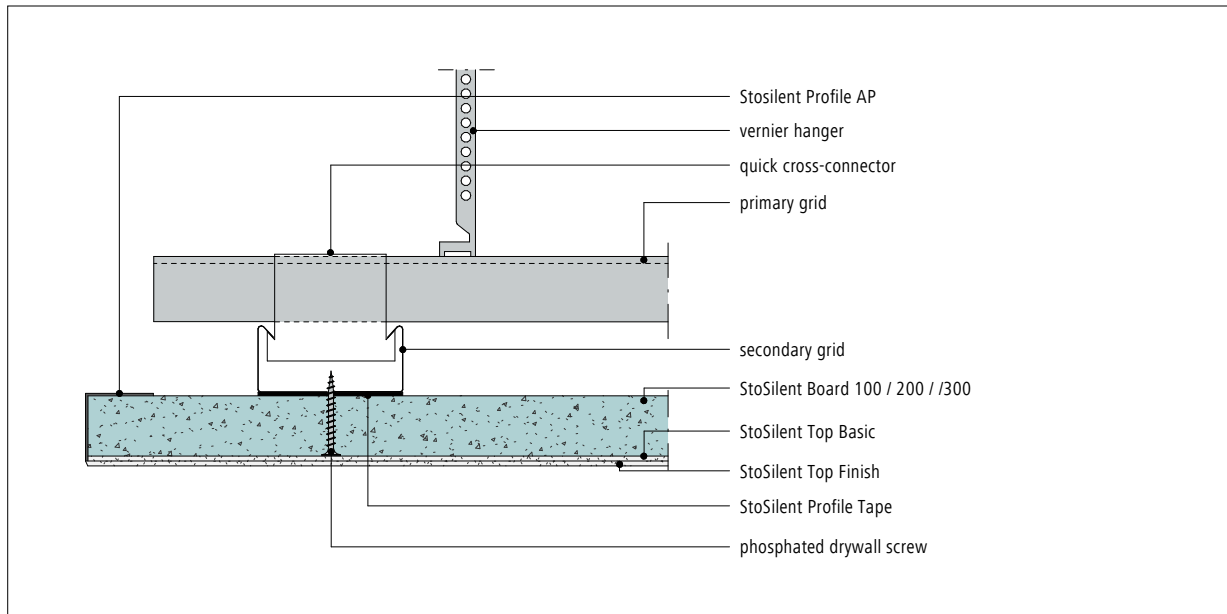
Note: This detail is a general, non-binding planning suggestion, which depicts the execution only schematically. The customer/planner/appliator is independently responsible for determining the suitability and completeness of the product for the particular construction project. Neighbouring works are only described schematically. All specifications and assumptions must be adjusted or agreed in the light of local conditions. Compliance with the technical specifications contained in the Technical Data Sheets, application guidelines, and system approvals is mandatory.

# StoSilent Distance

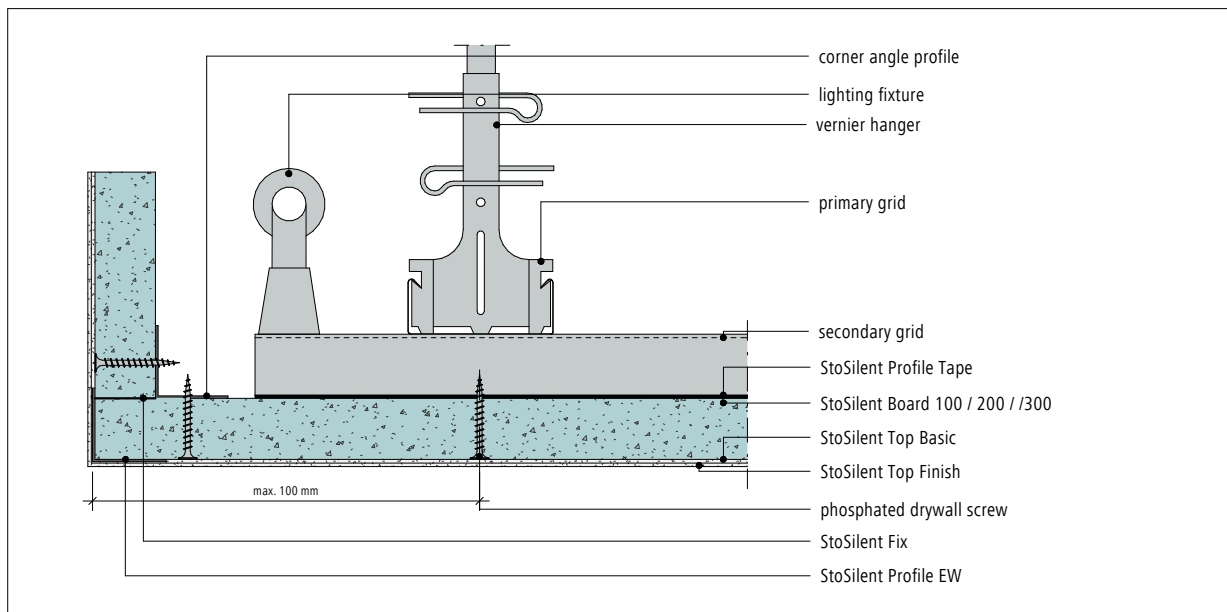
Construction details: ceiling

Coating: StoSilent Top

## Ceiling (vertical section): projection without load



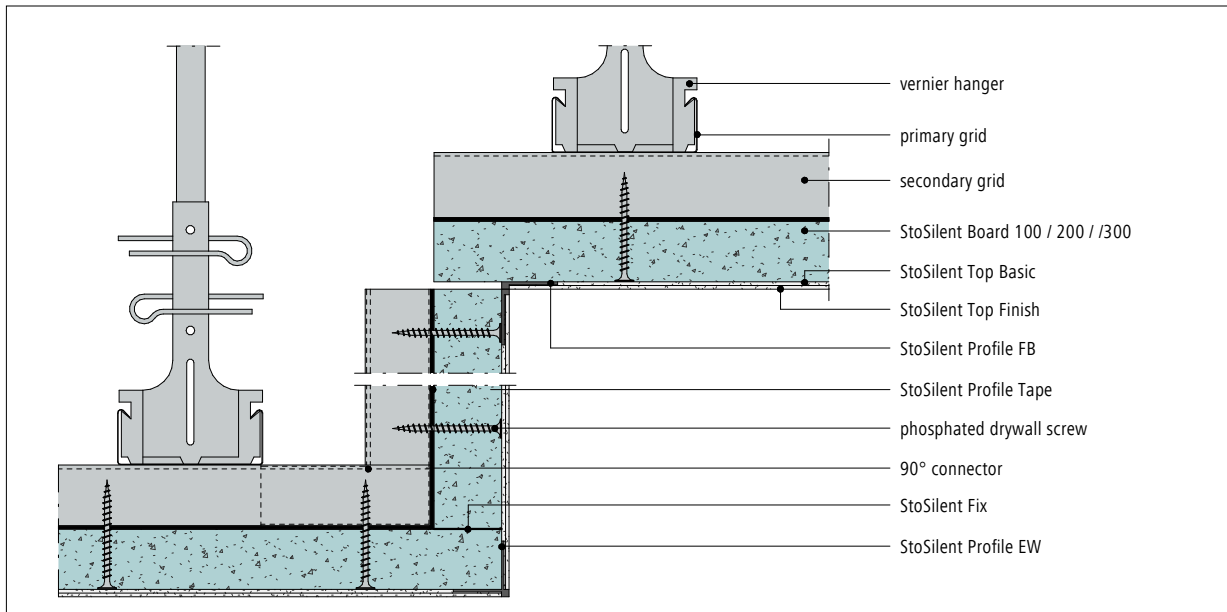
## Ceiling (vertical section): projection with load



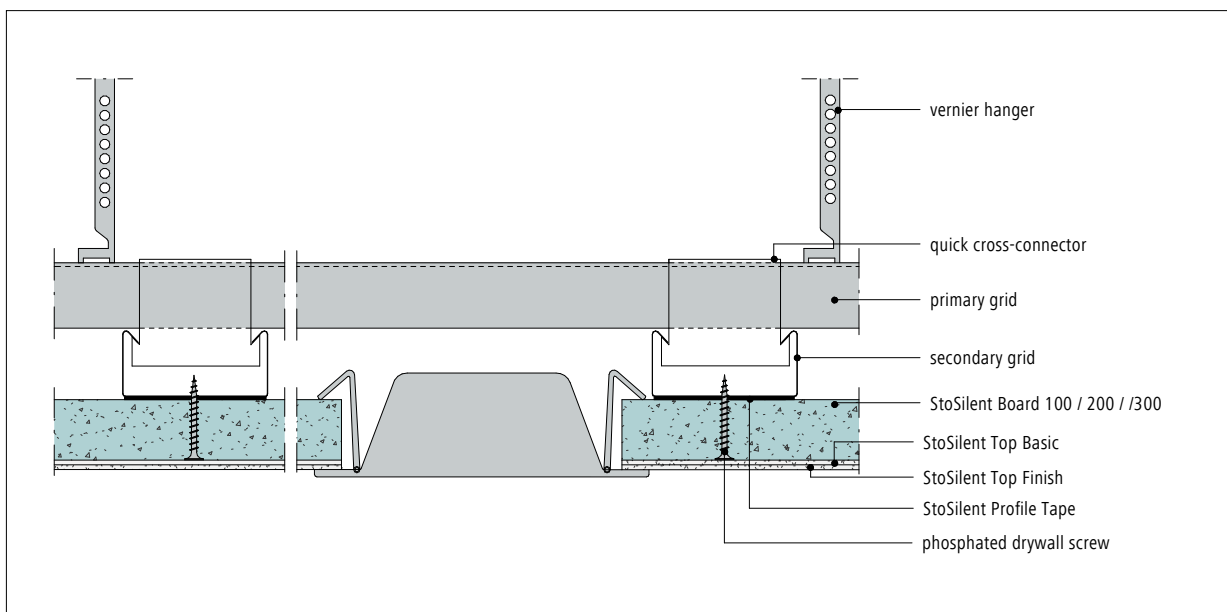
Note: This detail is a general, non-binding planning suggestion, which depicts the execution only schematically. The customer/planner/applicator is independently responsible for determining the suitability and completeness of the product for the particular construction project. Neighbouring works are only described schematically. All specifications and assumptions must be adjusted or agreed in the light of local conditions. Compliance with the technical specifications contained in the Technical Data Sheets, application guidelines, and system approvals is mandatory.



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



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



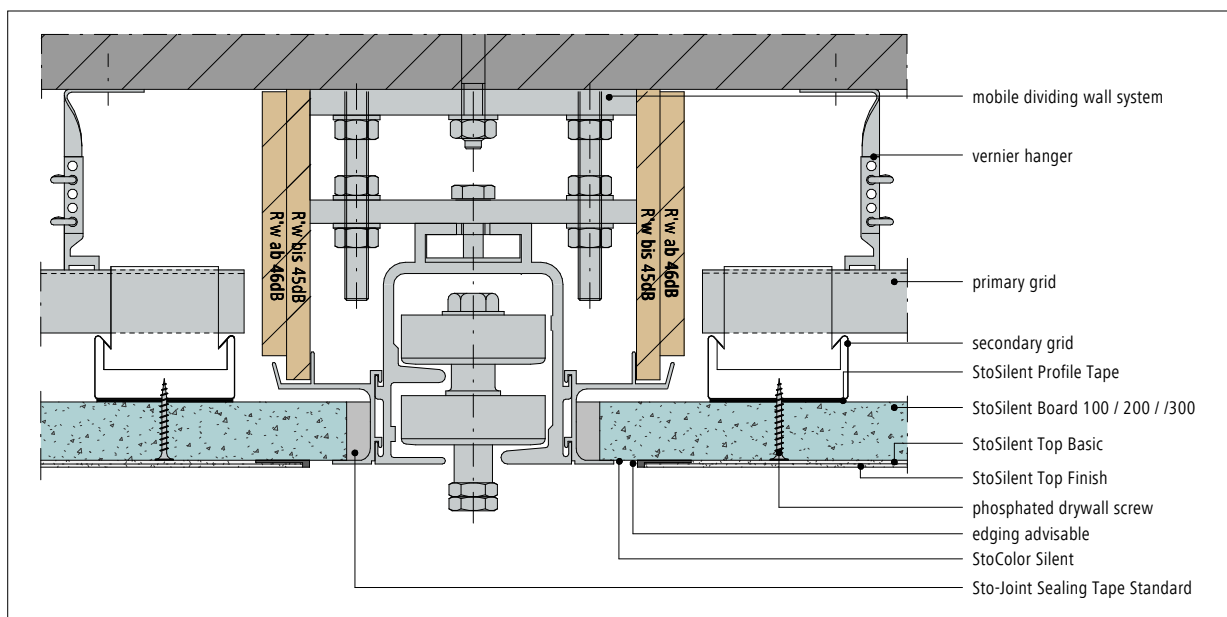
Note: This detail is a general, non-binding planning suggestion, which depicts the execution only schematically. The customer/planner/applicator is independently responsible for determining the suitability and completeness of the product for the particular construction project. Neighbouring works are only described schematically. All specifications and assumptions must be adjusted or agreed in the light of local conditions. Compliance with the technical specifications contained in the Technical Data Sheets, application guidelines, and system approvals is mandatory.

# StoSilent Distance

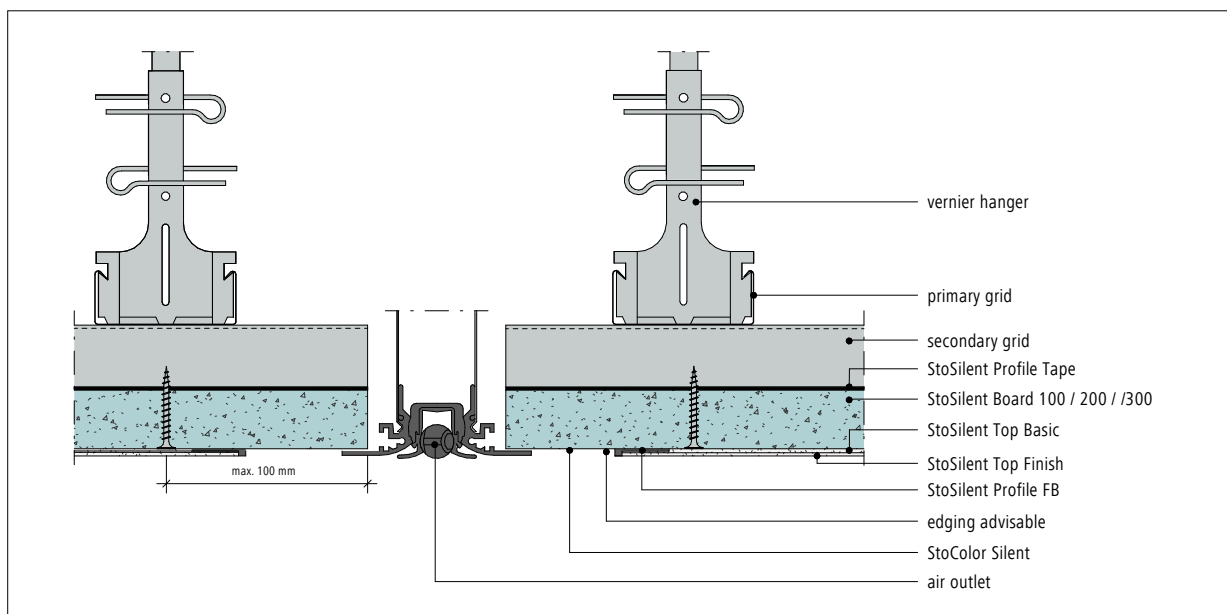
Construction details: ceiling

Coating: StoSilent Top

## Ceiling (vertical section): mobile separating wall



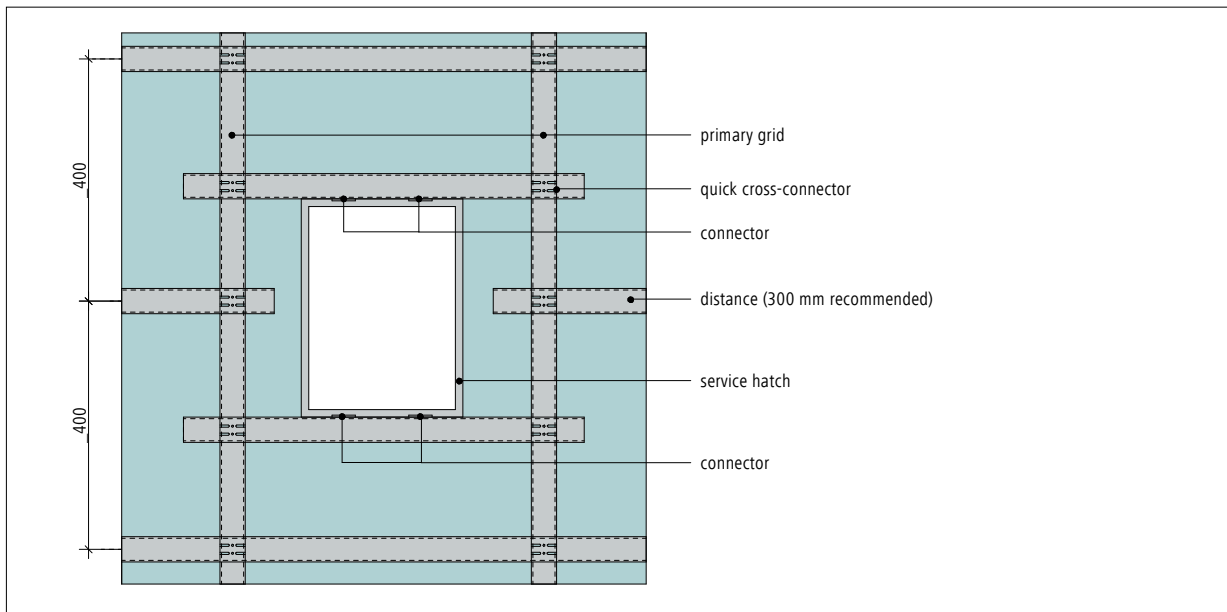
## Ceiling (vertical section): air outlet



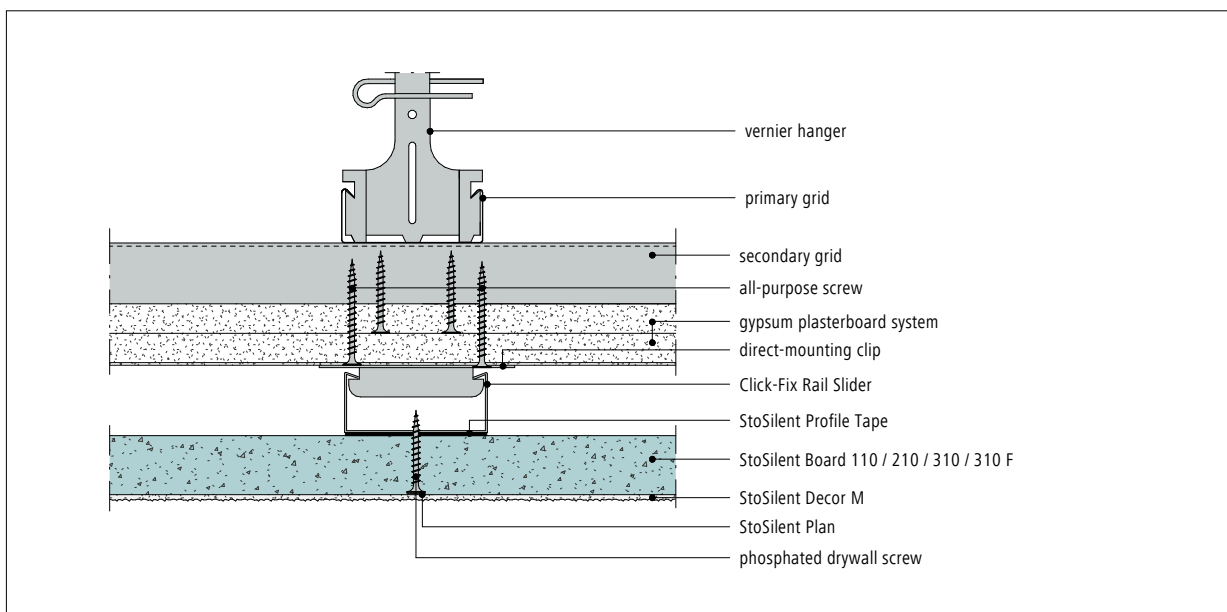
Note: This detail is a general, non-binding planning suggestion, which depicts the execution only schematically. The customer/planner/applicator is independently responsible for determining the suitability and completeness of the product for the particular construction project. Neighbouring works are only described schematically. All specifications and assumptions must be adjusted or agreed in the light of local conditions. Compliance with the technical specifications contained in the Technical Data Sheets, application guidelines, and system approvals is mandatory.



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



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



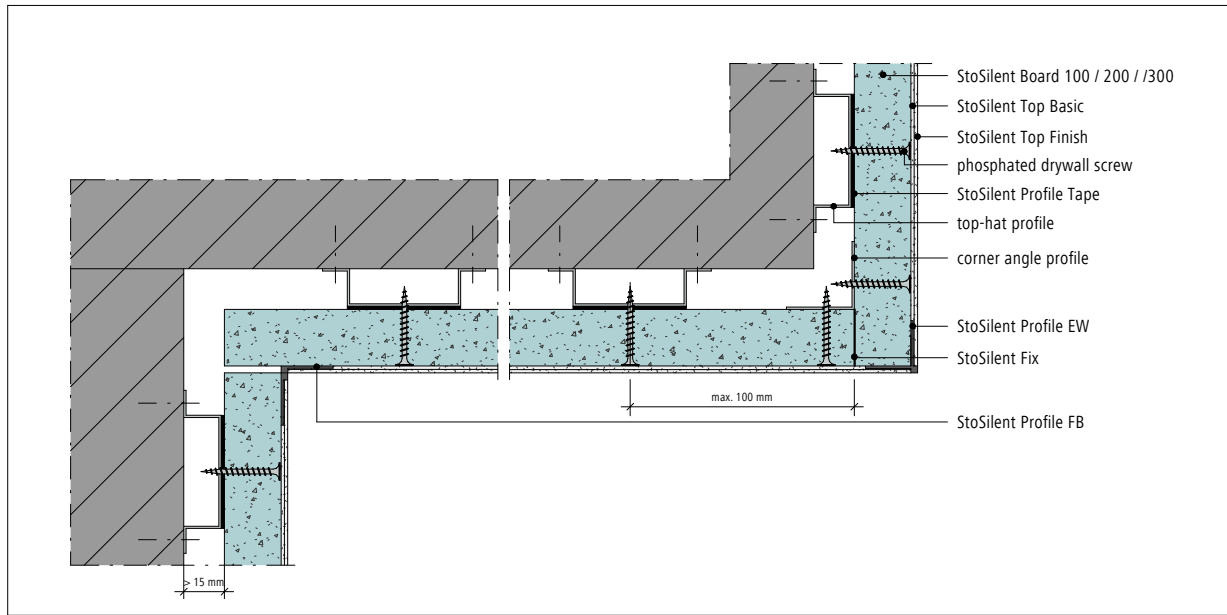
Note: This detail is a general, non-binding planning suggestion, which depicts the execution only schematically. The customer/planner/applicator is independently responsible for determining the suitability and completeness of the product for the particular construction project. Neighbouring works are only described schematically. All specifications and assumptions must be adjusted or agreed in the light of local conditions. Compliance with the technical specifications contained in the Technical Data Sheets, application guidelines, and system approvals is mandatory.

# StoSilent Distance

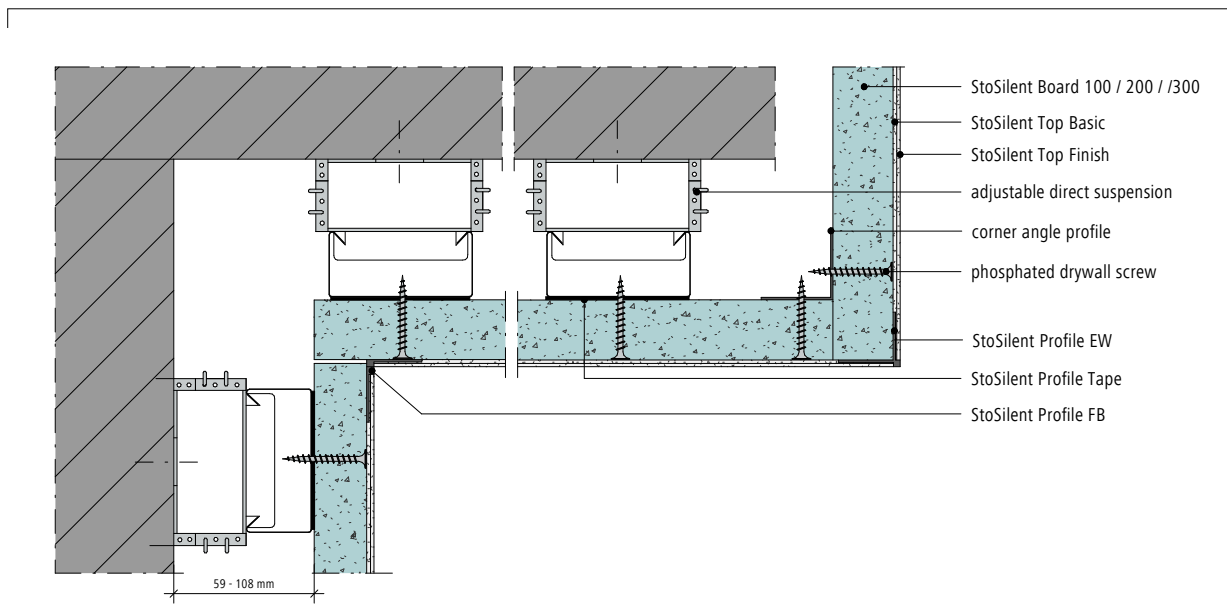
Construction details: wall

Coating: StoSilent Top

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

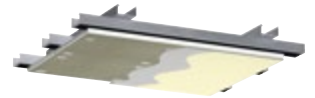


## Wall (vertical section): wall covering with adjustable direct suspension

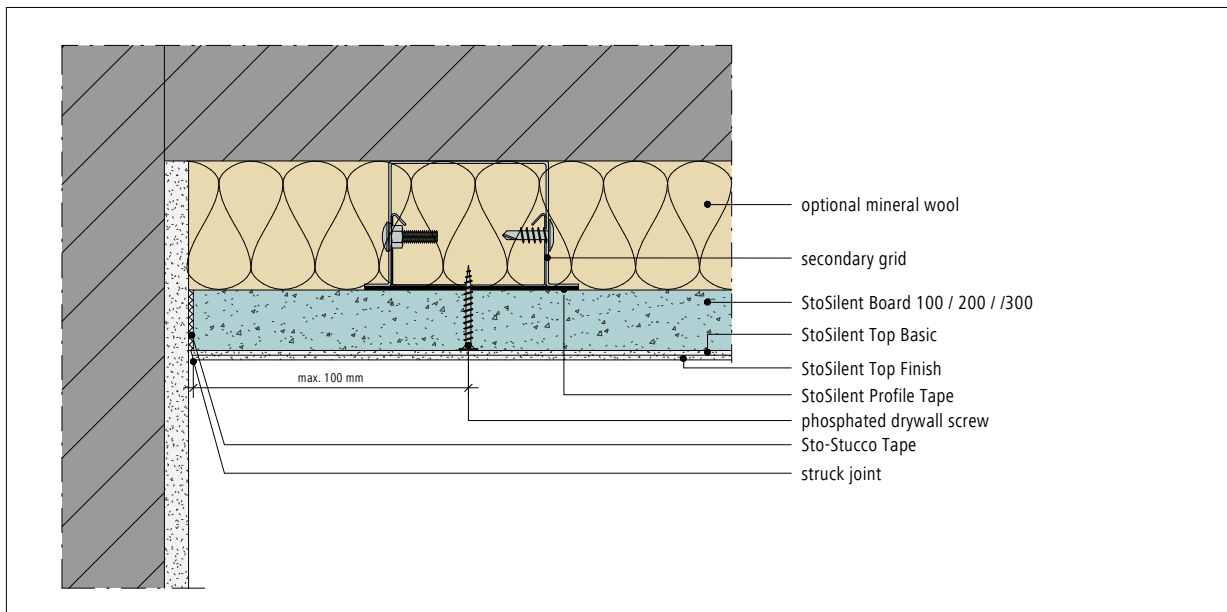


Note: This detail is a general, non-binding planning suggestion, which depicts the execution only schematically. The customer/planner/applicator is independently responsible for determining the suitability and completeness of the product for the particular construction project. Neighbouring works are only described schematically. All specifications and assumptions must be adjusted or agreed in the light of local conditions. Compliance with the technical specifications contained in the Technical Data Sheets, application guidelines, and system approvals is mandatory.

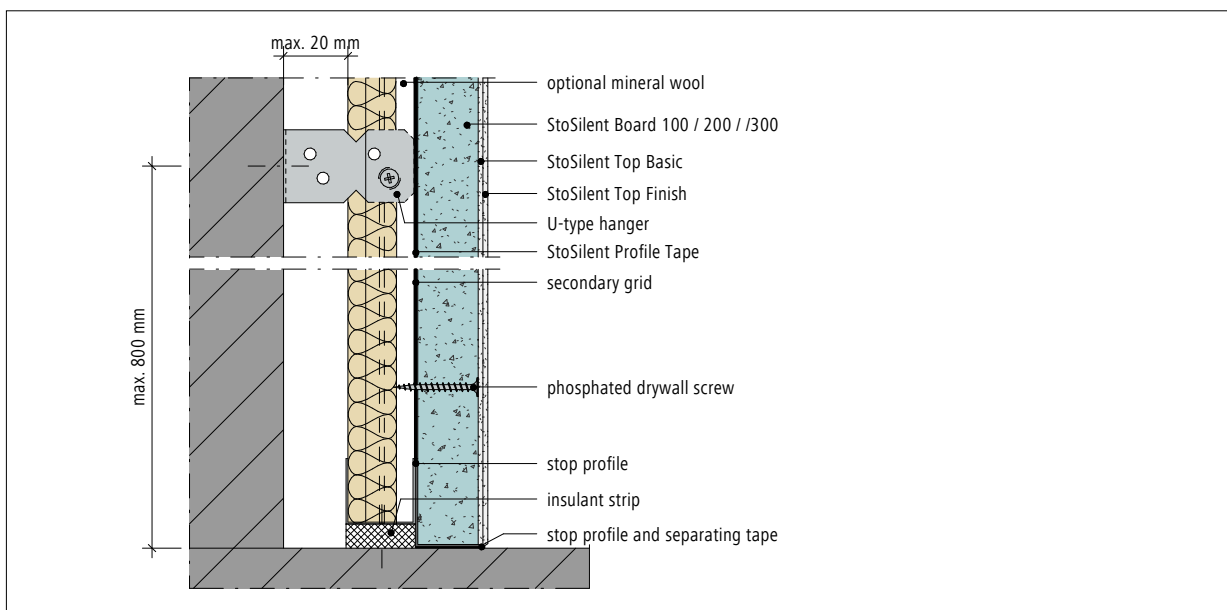




## Wall (horizontal section): lateral connection to wall covering



## Wall (vertical section): base point of wall covering



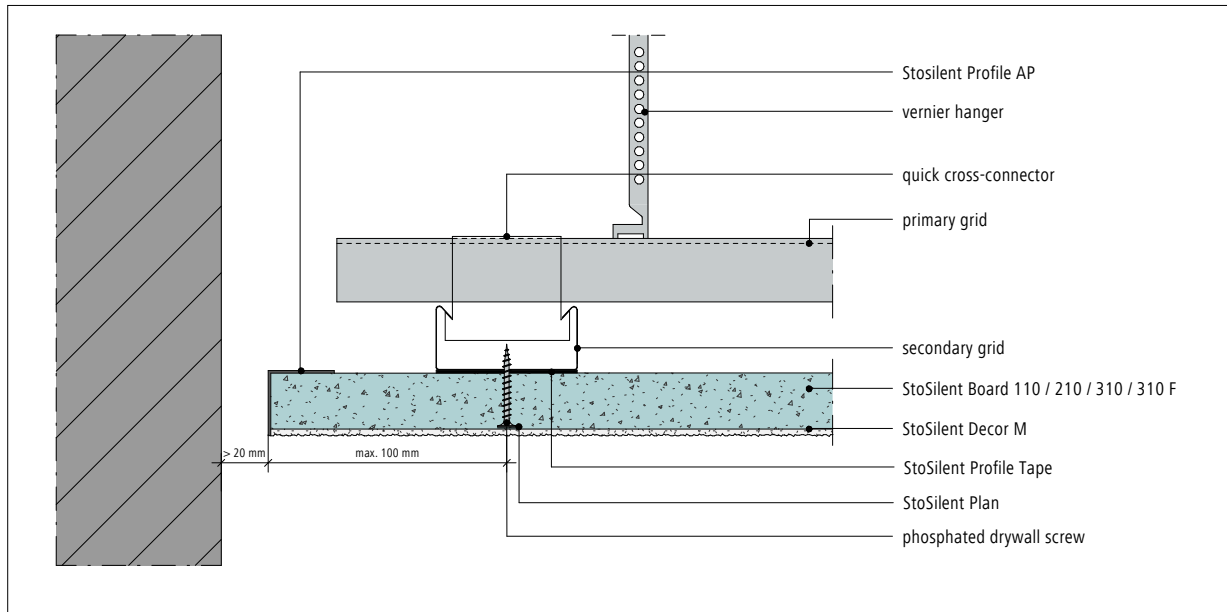
Note: This detail is a general, non-binding planning suggestion, which depicts the execution only schematically. The customer/planner/applicator is independently responsible for determining the suitability and completeness of the product for the particular construction project. Neighbouring works are only described schematically. All specifications and assumptions must be adjusted or agreed in the light of local conditions. Compliance with the technical specifications contained in the Technical Data Sheets, application guidelines, and system approvals is mandatory.

# StoSilent Distance

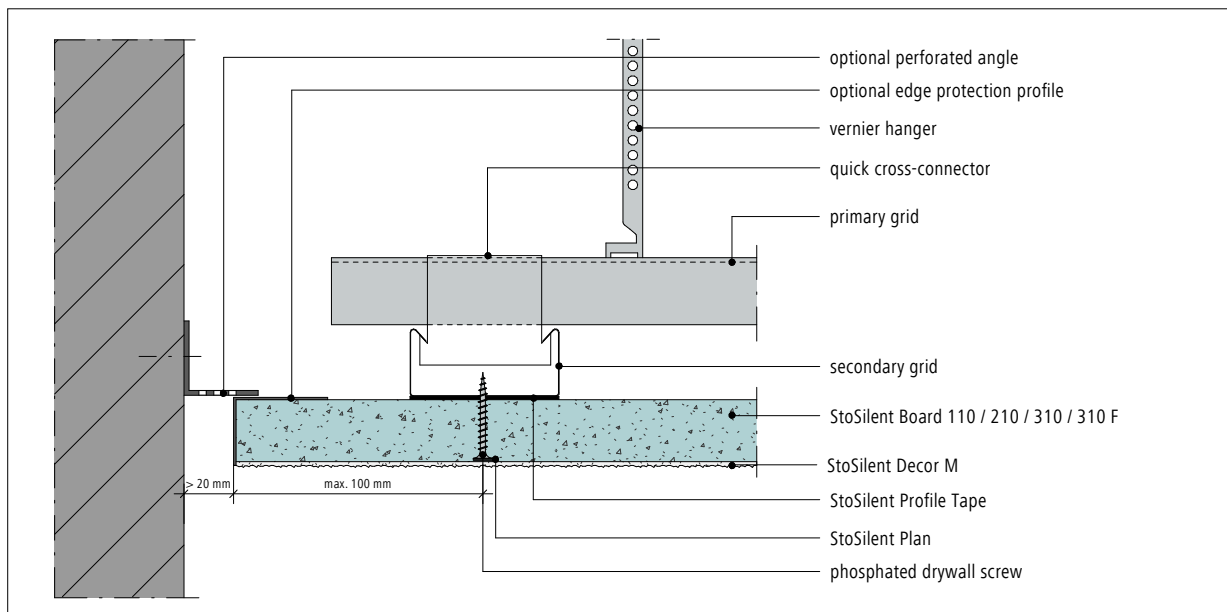
Construction details: ceiling

Coating: StoSilent Decor

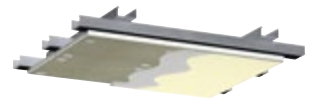
## Ceiling (vertical section): open wall junction



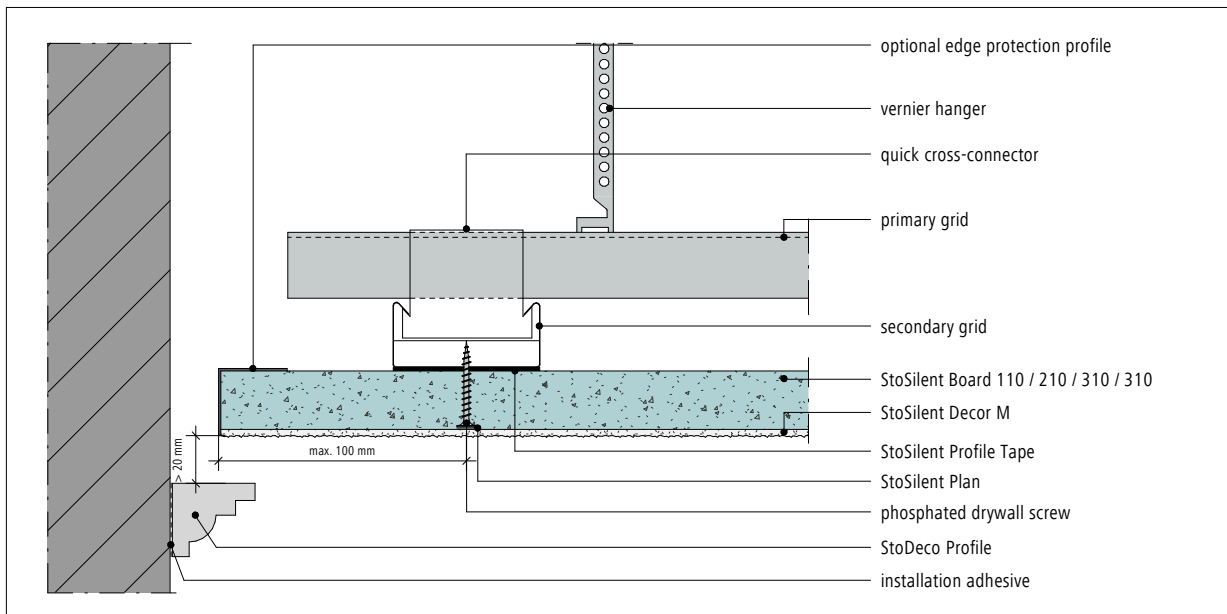
## Ceiling (vertical section): wall junction with hole angle



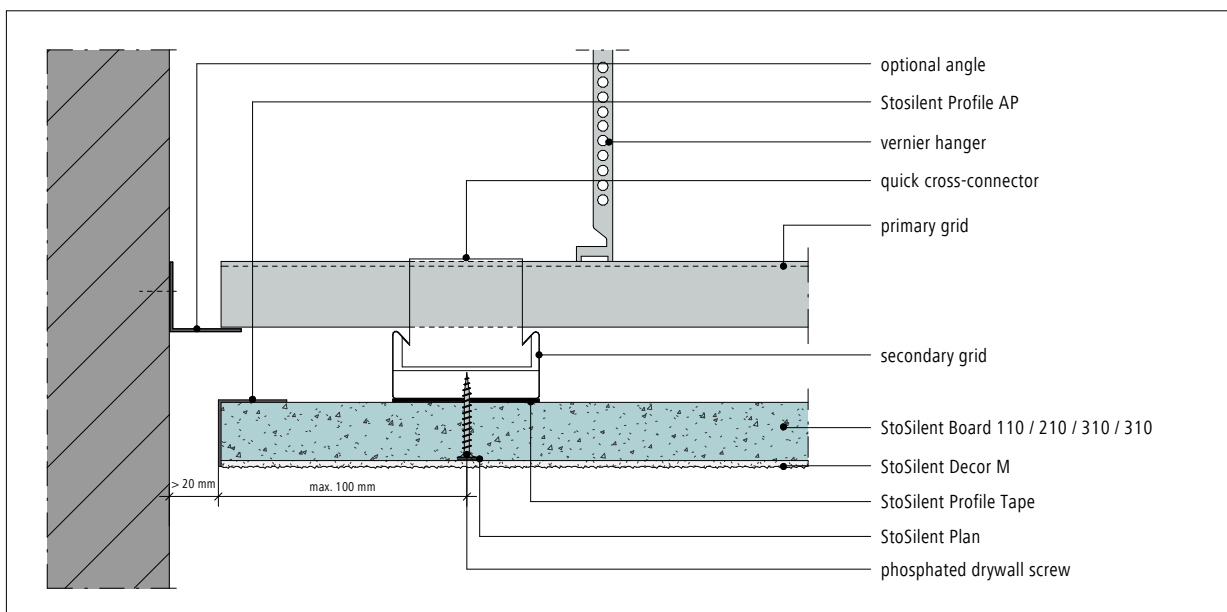
Note: This detail is a general, non-binding planning suggestion, which depicts the execution only schematically. The customer/planner/applicator is independently responsible for determining the suitability and completeness of the product for the particular construction project. Neighbouring works are only described schematically. All specifications and assumptions must be adjusted or agreed in the light of local conditions. Compliance with the technical specifications contained in the Technical Data Sheets, application guidelines, and system approvals is mandatory.



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



## Ceiling (vertical section): wall junction with hole angle



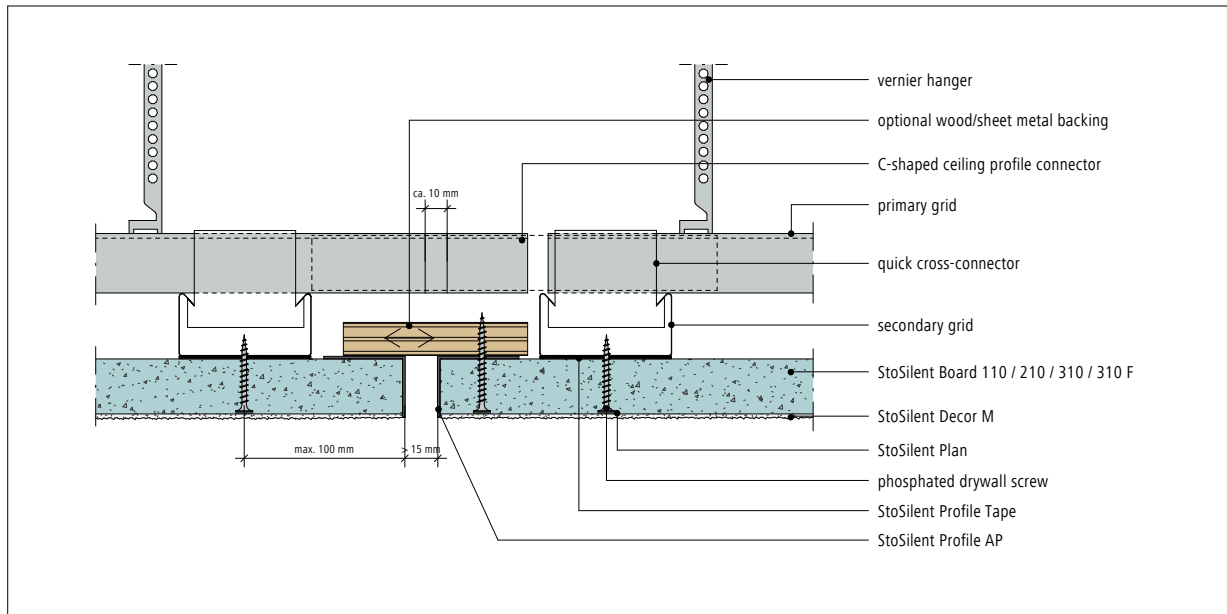
Note: This detail is a general, non-binding planning suggestion, which depicts the execution only schematically. The customer/planner/applicator is independently responsible for determining the suitability and completeness of the product for the particular construction project. Neighbouring works are only described schematically. All specifications and assumptions must be adjusted or agreed in the light of local conditions. Compliance with the technical specifications contained in the Technical Data Sheets, application guidelines, and system approvals is mandatory.

# StoSilent Distance

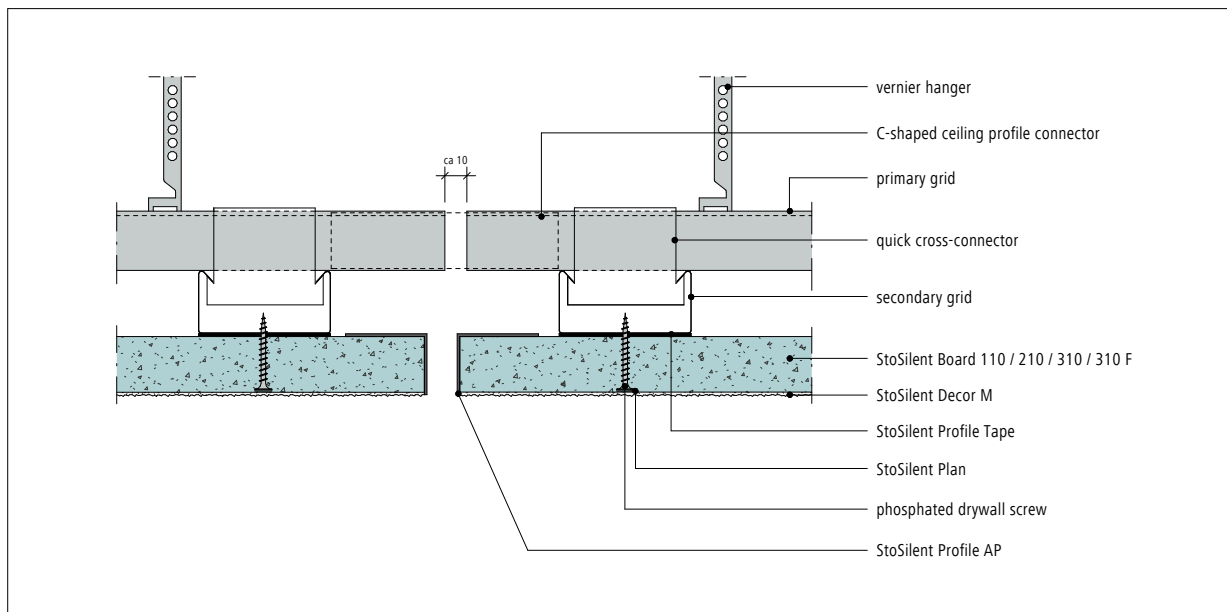
Construction details: ceiling

Coating: StoSilent Decor

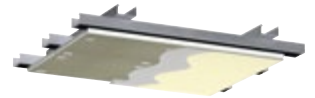
## Ceiling (vertical section): expansion joint formation, backed



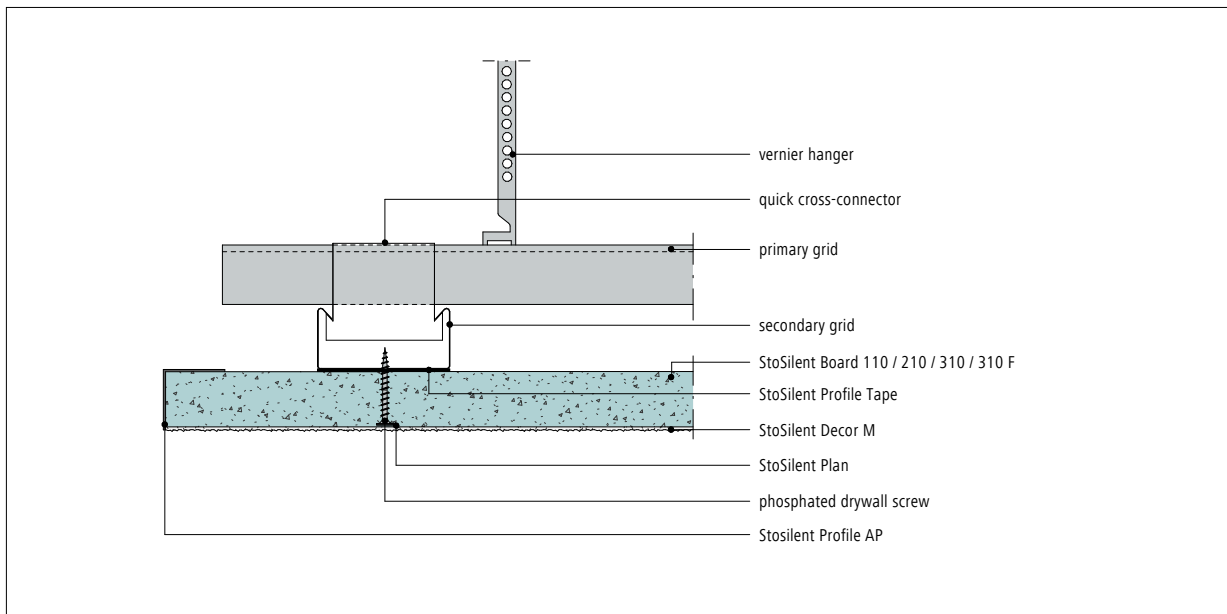
## Ceiling (vertical section): expansion joint formation, open



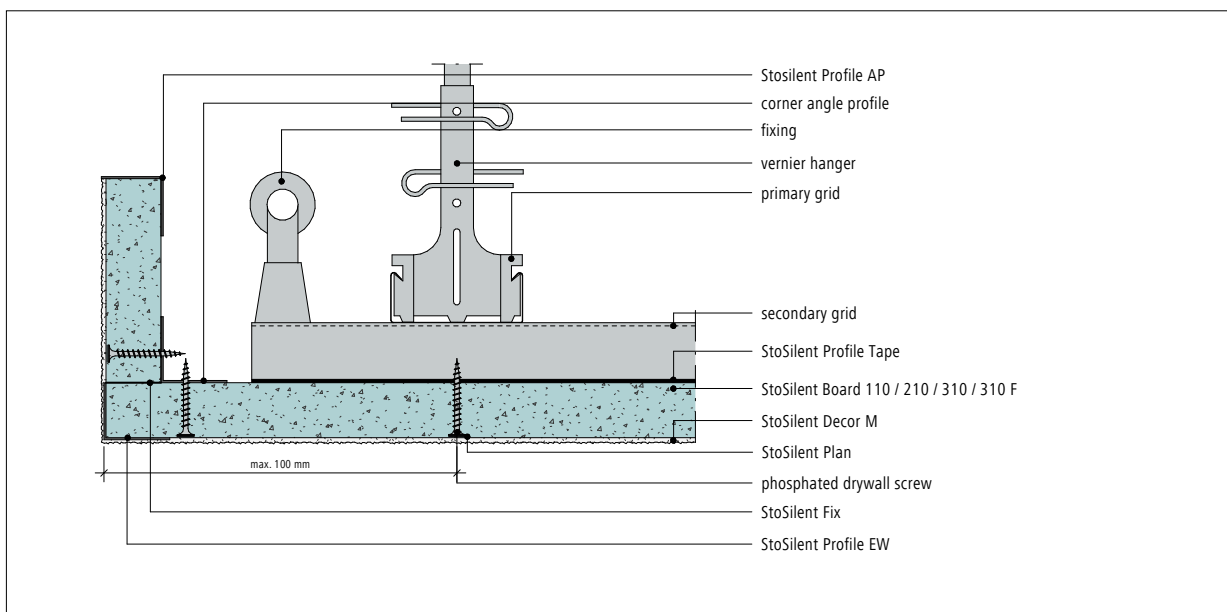
Note: This detail is a general, non-binding planning suggestion, which depicts the execution only schematically. The customer/planner/applicator is independently responsible for determining the suitability and completeness of the product for the particular construction project. Neighbouring works are only described schematically. All specifications and assumptions must be adjusted or agreed in the light of local conditions. Compliance with the technical specifications contained in the Technical Data Sheets, application guidelines, and system approvals is mandatory.



## Ceiling (vertical section): projection without load



## Ceiling (vertical section): projection with load



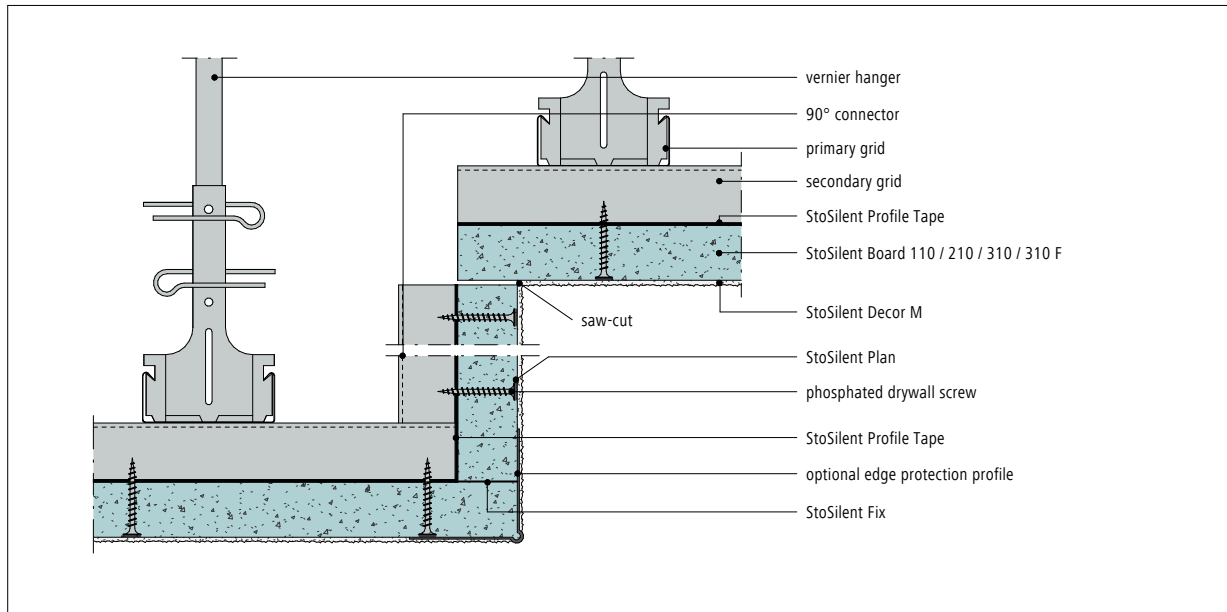
Note: This detail is a general, non-binding planning suggestion, which depicts the execution only schematically. The customer/planner/applicator is independently responsible for determining the suitability and completeness of the product for the particular construction project. Neighbouring works are only described schematically. All specifications and assumptions must be adjusted or agreed in the light of local conditions. Compliance with the technical specifications contained in the Technical Data Sheets, application guidelines, and system approvals is mandatory.

# StoSilent Distance

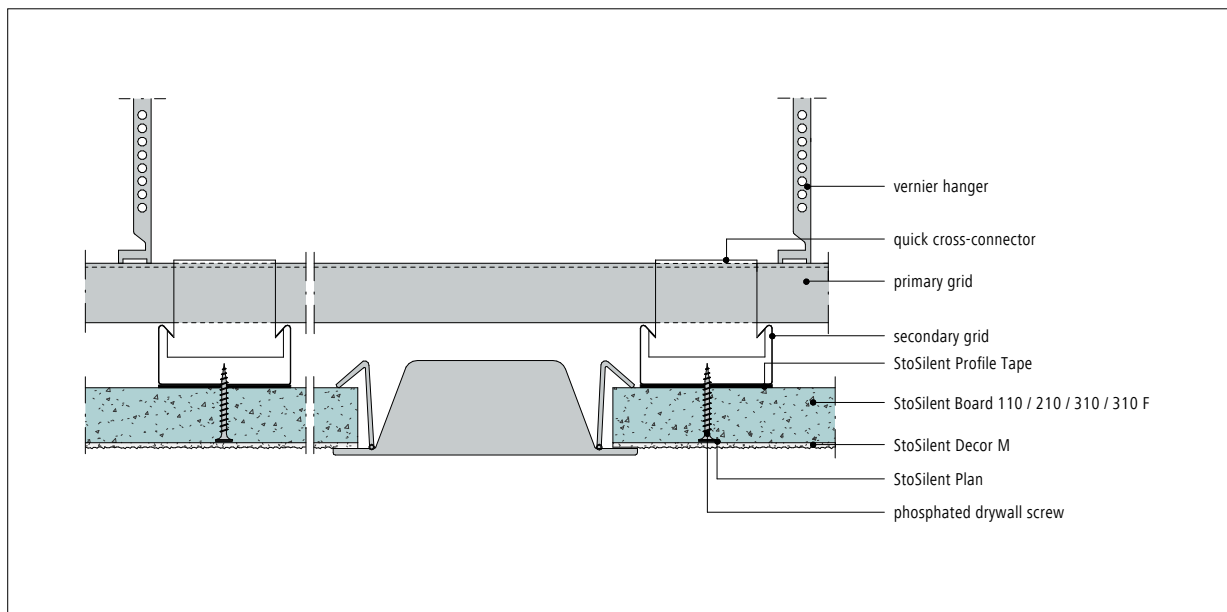
Construction details: ceiling

Coating: StoSilent Decor

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



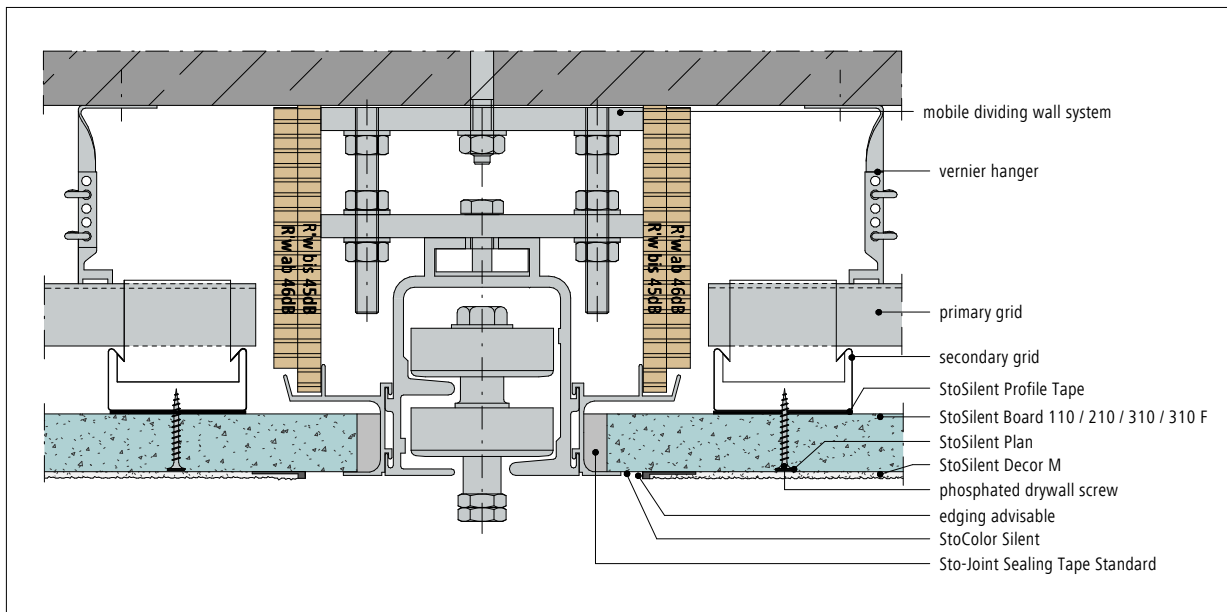
## Ceiling (vertical section): installation of lamps



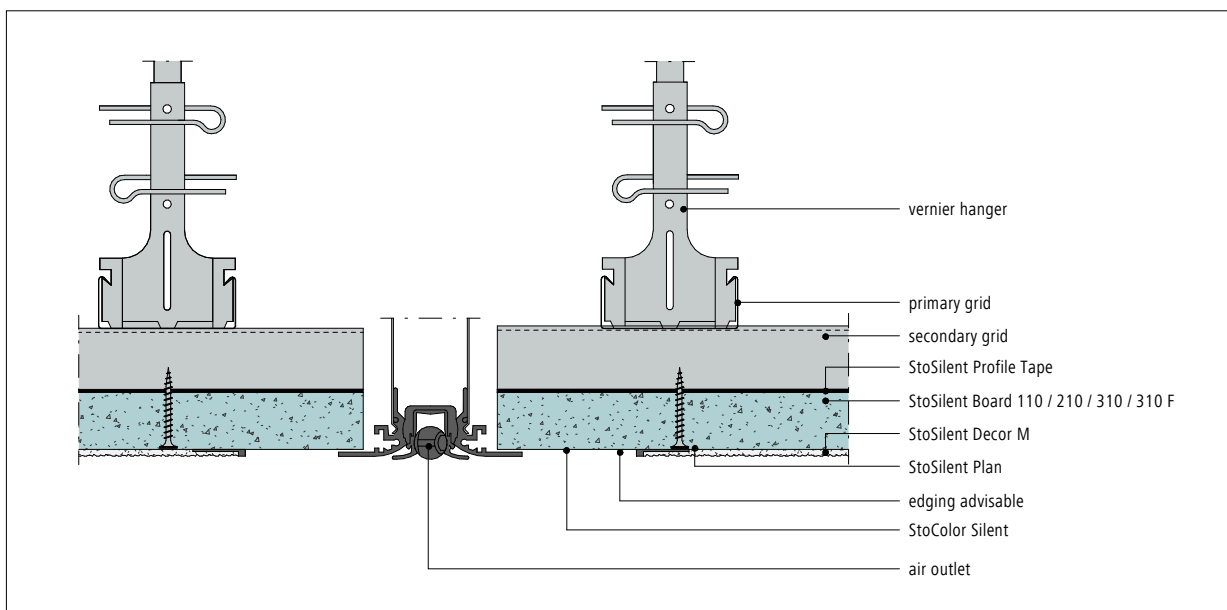
Note: This detail is a general, non-binding planning suggestion, which depicts the execution only schematically. The customer/planner/applicator is independently responsible for determining the suitability and completeness of the product for the particular construction project. Neighbouring works are only described schematically. All specifications and assumptions must be adjusted or agreed in the light of local conditions. Compliance with the technical specifications contained in the Technical Data Sheets, application guidelines, and system approvals is mandatory.



## Ceiling (vertical section): mobile separating wall



## Ceiling (vertical section): air outlet



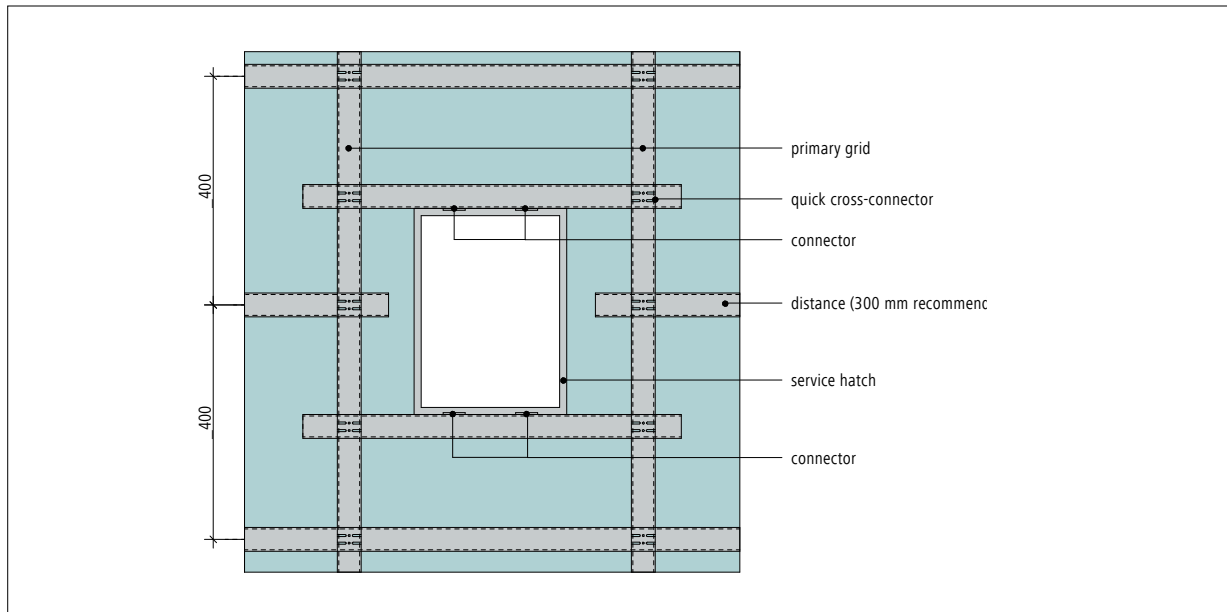
Note: This detail is a general, non-binding planning suggestion, which depicts the execution only schematically. The customer/planner/applicator is independently responsible for determining the suitability and completeness of the product for the particular construction project. Neighbouring works are only described schematically. All specifications and assumptions must be adjusted or agreed in the light of local conditions. Compliance with the technical specifications contained in the Technical Data Sheets, application guidelines, and system approvals is mandatory.

# StoSilent Distance

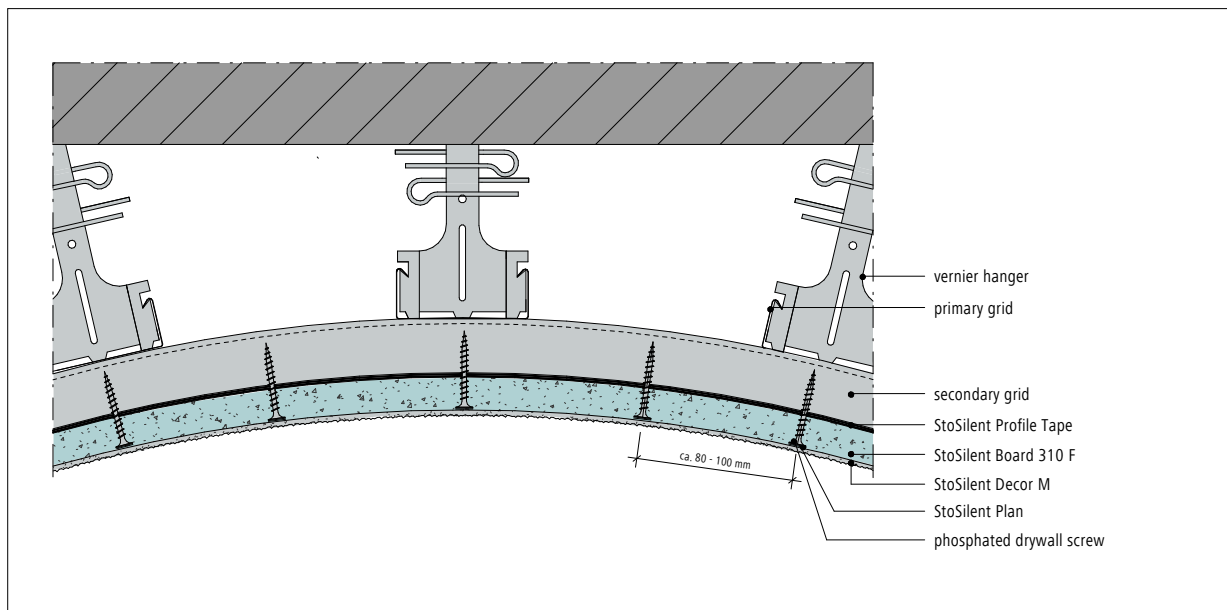
Construction details: ceiling

Coating: StoSilent Decor

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



## Ceiling (vertical section): curved ceiling and wall surface areas for R > 5 m

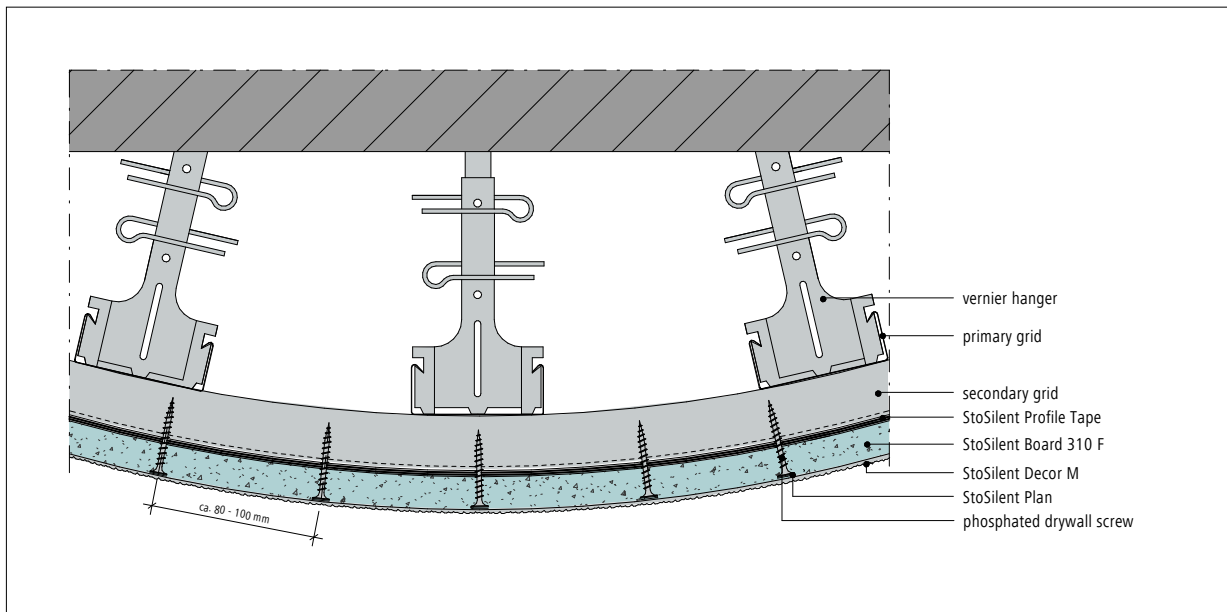


Note: This detail is a general, non-binding planning suggestion, which depicts the execution only schematically. The customer/planner/applicator is independently responsible for determining the suitability and completeness of the product for the particular construction project. Neighbouring works are only described schematically. All specifications and assumptions must be adjusted or agreed in the light of local conditions. Compliance with the technical specifications contained in the Technical Data Sheets, application guidelines, and system approvals is mandatory.

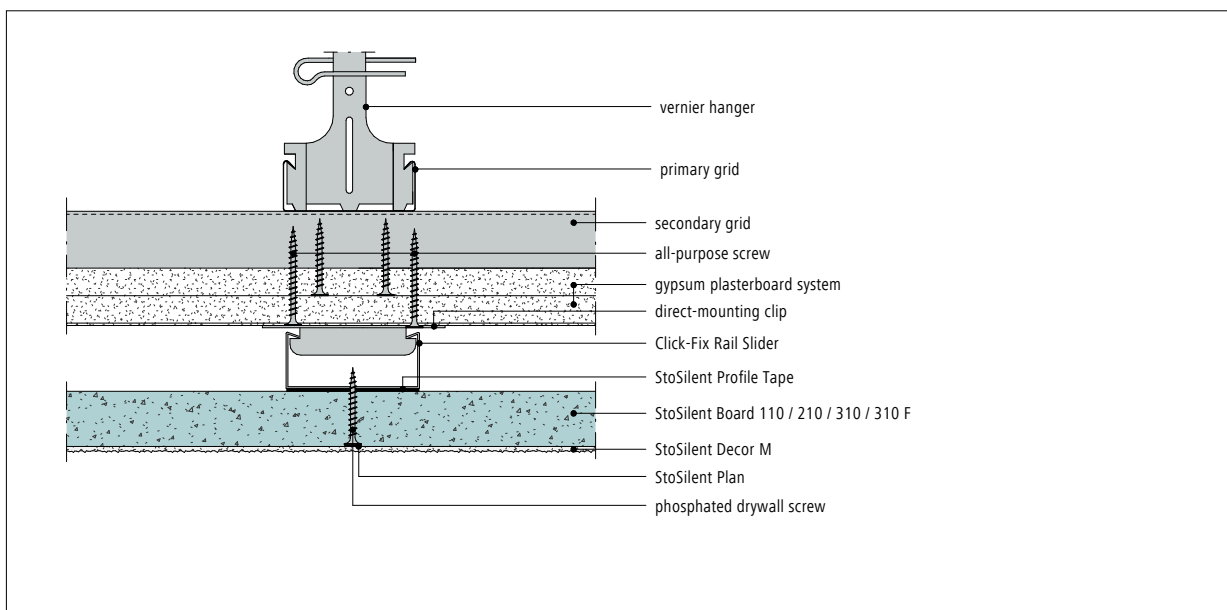




## Ceiling (vertical section): curved ceiling and wall surface areas for $R > 5\text{ m}$



## Ceiling (vertical section): ceiling under ceiling

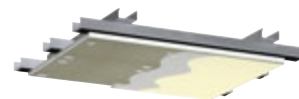


Note: This detail is a general, non-binding planning suggestion, which depicts the execution only schematically. The customer/planner/applicator is independently responsible for determining the suitability and completeness of the product for the particular construction project. Neighbouring works are only described schematically. All specifications and assumptions must be adjusted or agreed in the light of local conditions. Compliance with the technical specifications contained in the Technical Data Sheets, application guidelines, and system approvals is mandatory.

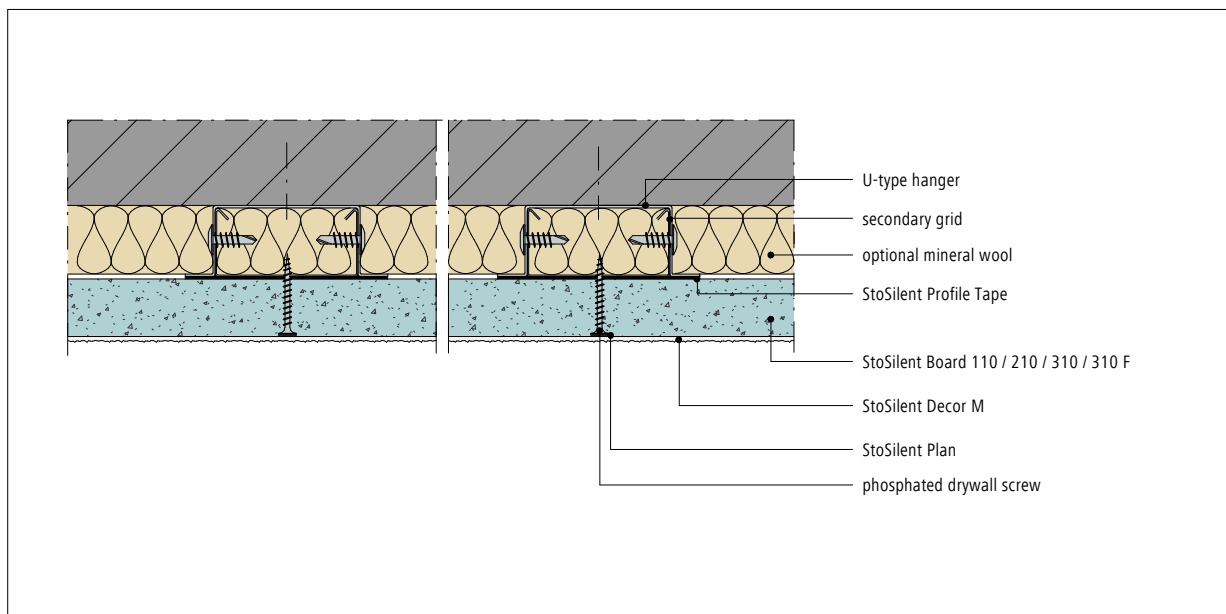
# StoSilent Distance

Construction details: wall  
Coating: StoSilent Decor

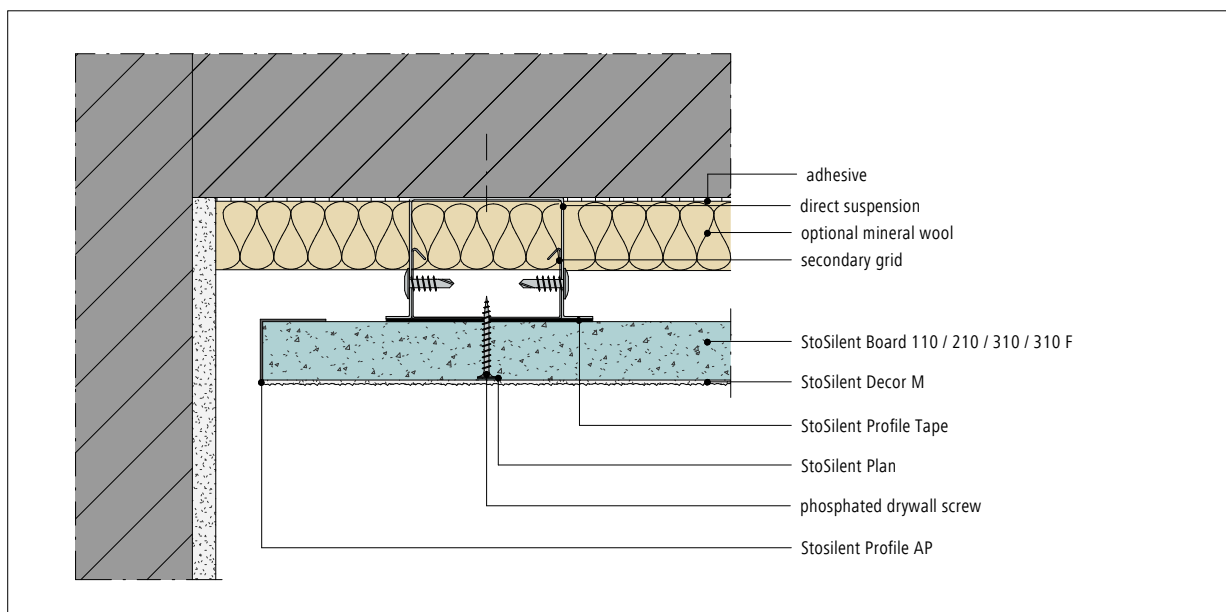
StoSilent Distance  
The suspended panel system



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



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

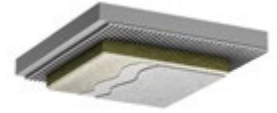


Note: This detail is a general, non-binding planning suggestion, which depicts the execution only schematically. The customer/planner/applicator is independently responsible for determining the suitability and completeness of the product for the particular construction project. Neighbouring works are only described schematically. All specifications and assumptions must be adjusted or agreed in the light of local conditions. Compliance with the technical specifications contained in the Technical Data Sheets, application guidelines, and system approvals is mandatory.

# StoSilent Direct

## The easy direct system

StoSilent Direct  
The easy direct system



Sto Logistics Centre, DE-Stühlingen



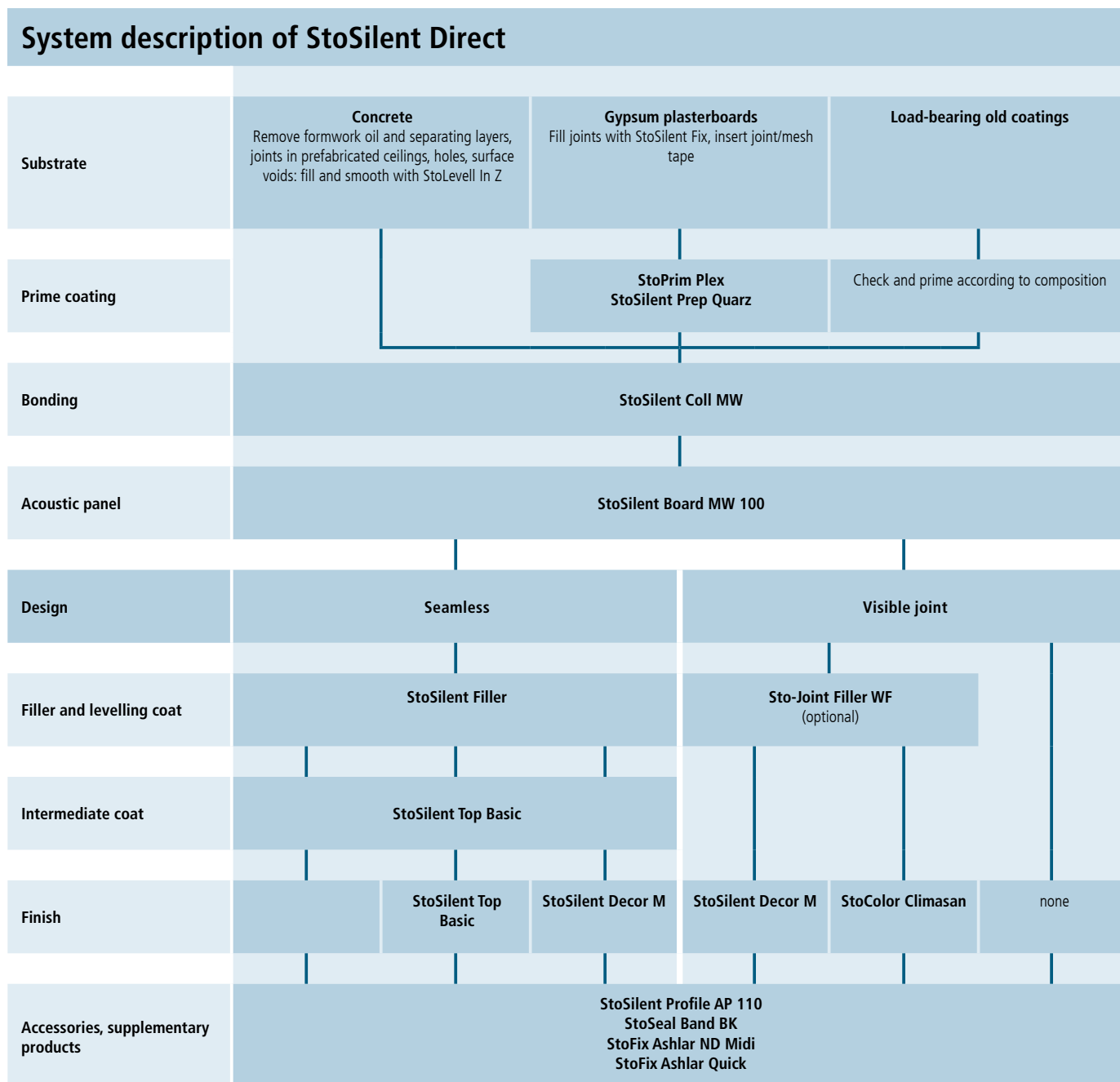
**This space-saving direct system is very easy to assemble, manages without a sub-construction, and is suitable for virtually any substrate. This makes StoSilent Direct particularly suitable for old building fabrics. StoSilent Direct does not just have outstanding sound-absorbing properties, it also 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 notes

- Primarily suited to interior ceilings and walls (see table in "Application fields arranged by ambient interior climate" section)
- Fixing by bonding
- For level and curved surfaces, min. radius 5 m (convex and concave)
- For direct bonding onto ceilings and walls
- Up to 700 m<sup>2</sup> possible without expansion joints, using StoSilent Decor M and StoColor Climasan as a finish
- Up to 200 m<sup>2</sup> possible without expansion joints, using StoSilent Top Basic as a finish (max. side length: 20 m)
- Not suitable for areas subject to mechanical stress
- 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.
- Lowest application and substrate temperature: +12 °C at max. 70 % relative humidity; installation after adjusting the equilibrium humidity in the room
- In order to avoid an uncontrolled occurrence of condensate in the system build-up, building physical verification must be provided in the planning phase for use on external walls and exterior ceilings.

# StoSilent Direct

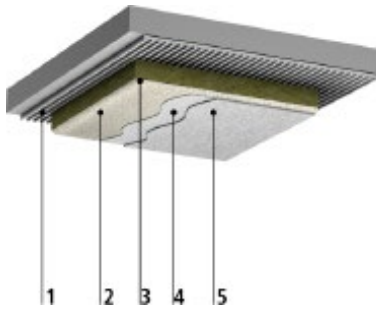
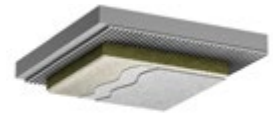
The easy direct system



# StoSilent Direct

## System overview

StoSilent Direct  
The easy direct system



1. Bonding
2. Acoustic panel
3. Filler and levelling coat
4. Intermediate coat
5. Finish

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

#### System advantages

- Non-combustible, class A2-s1, d0, in accordance with EN 13501-1  
**BRANZ fire tested in accordance with ISO 5660, AS/NZS 3837**
- Shortened reverberation time, reduced noise
- Installation without sub-structure
- Easy to apply

#### Areas of application

- Interior
- For ceilings and upper wall areas
- Not suitable for wall areas which can be reached by hand or which are exposed to other types of mechanical stress
- Especially suited for ceilings and upper wall areas of escape routes, corridors, staircases, or meeting places

- Full-surface bonding directly to substrate

#### Reaction to fire

- Class A2-s1, d0, in accordance with EN 13501-1
- BRANZ fire tested in accordance with ISO 5660, AS/NZ 3837

#### Sound absorption

- StoSilent Top Basic coating  $\alpha_w$  in accordance with EN 11654 max. 0.75, NRC in accordance with ASTM C 423 max. 0.85, 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 C 423 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 C 423 max. 1.00, values depend on the thickness of the system

StoSilent Top Basic coating  $\alpha_w$  in accordance with EN 11654 max. 1.00, NRC in accordance with ASTM C 423 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 C 423 max. 1.00, values depend on the thickness of the system
- No coating (visible joints)  $\alpha_w$  in accordance with EN 11654 max. 1.00, NRC in accordance with ASTM C 423 max. 1.00, values depend on the thickness of the system

#### Design options

- Fine surface
- Textured surface

#### Application

- By trained specialists

#### Fixing

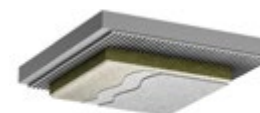
The detailed technical specifications and information on the products contained in the Technical Data Sheets and approvals must be observed.

# Sound characteristics

It's all about the right sound absorption

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

System	Board/product	Coating	Build-up acc. to ISO 354	Structural height in mm
StoSilent Direct	StoSilent Board MW100, 36 mm	Without finish (visible joints)	Type A	36
	StoSilent Board MW100, 36 mm	Without finish (visible joints)	E-200	200
	StoSilent Board MW100, 46 mm	Without finish (visible joints)	Type A	46
	StoSilent Board MW100, 46 mm	Without finish (visible joints)	E-200	200
	StoSilent Board MW100, 66 mm	Without finish (visible joints)	Type A	66
	StoSilent Board MW100, 66 mm	Without finish (visible joints)	E-200	200
	StoSilent Board MW100, 46 mm	StoColor Climasan (visible joints)	Type A	46
	StoSilent Board MW100, 46 mm	StoColor Climasan (visible joints)	E-200	200
	StoSilent Board MW100, 66 mm	StoColor Climasan (visible joints)	Type A	66
	StoSilent Board MW100, 66 mm	StoColor Climasan (visible joints)	E-200	200
	StoSilent Board MW100, 36 mm	StoSilent Decor M (visible joints)	Type A	36
	StoSilent Board MW100, 36 mm	StoSilent Decor M (visible joints)	E-200	200
	StoSilent Board MW100, 46 mm	StoSilent Decor M (visible joints)	Type A	46
	StoSilent Board MW100, 46 mm	StoSilent Decor M (visible joints)	E-200	200
	StoSilent Board MW100, 66 mm	StoSilent Decor M (visible joints)	Type A	66
	StoSilent Board MW100, 66 mm	StoSilent Decor M (visible joints)	E-200	200
	StoSilent Board MW100, 46 mm	StoSilent Top Basic & StoSilent Decor M	Type A	46
	StoSilent Board MW100, 46 mm	StoSilent Top Basic & StoSilent Decor M	E-200	200
	StoSilent Board MW100, 66 mm	StoSilent Top Basic & StoSilent Decor M	Type A	66
	StoSilent Board MW100, 66 mm	StoSilent Top Basic & StoSilent Decor M	E-200	200
	StoSilent Board MW100, 36 mm	StoSilent Top Basic & Top Basic, white	Type A	36
	StoSilent Board MW100, 36 mm	StoSilent Top Basic & Top Basic, white	E-200	200
	StoSilent Board MW100, 46 mm	StoSilent Top Basic & Top Basic, white	Type A	46
	StoSilent Board MW100, 46 mm	StoSilent Top Basic & Top Basic, white	E-200	200
	StoSilent Board MW100, 66 mm	StoSilent Top Basic & Top Basic, white	Type A	66
	StoSilent Board MW100, 66 mm	StoSilent Top Basic & Top Basic, white	E-200	200



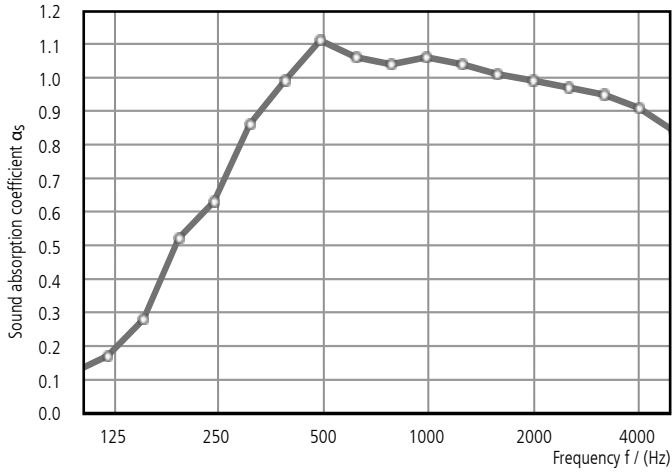
	Thickness of board/ plaster in mm	$a_w$ EN ISO 11654	<i>NRC</i> ASTM C 423	<i>SAA</i> ASTM C 423	Absorber class EN ISO 11654	Test report
	36	0.80	0.85	0.85	-	-
	36	0.80	0.85	0.84	-	-
	46	0.95	0.95	0.94	A	M100960/15
	46	0.95	0.90	0.90	A	M100960/15
	66	1.00	1.00	1.01	A	M100960/15
	66	1.00	0.95	0.96	A	M100960/15
	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	-	-
	36	0.85	0.85	0.86	-	-
	46	1.00	0.90	0.92	A	M100960/14
	46	0.90	0.85	0.89	A	M100960/14
	66	1.00	0.95	0.97	A	M100960/14
	66	1.00	0.95	0.95	A	M100960/14
	46	0.75 (M)	0.85	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	0.60	0.65	0.62	-	-
	36	0.65	0.60	0.60	-	-
	46	0.75 (M)	0.80	0.82	C	M100960/15
	46	0.75	0.75	0.77	C	M100960/15
	66	0.75 (L)	0.85	0.85	C	M100960/15
	66	0.75	0.80	0.80	C	M100960/15

# StoSilent Direct

## Sound absorption in detail

**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW100, 46 mm  
**Coating:** Without finish (visible joints)  
**Thickness:** 46 mm

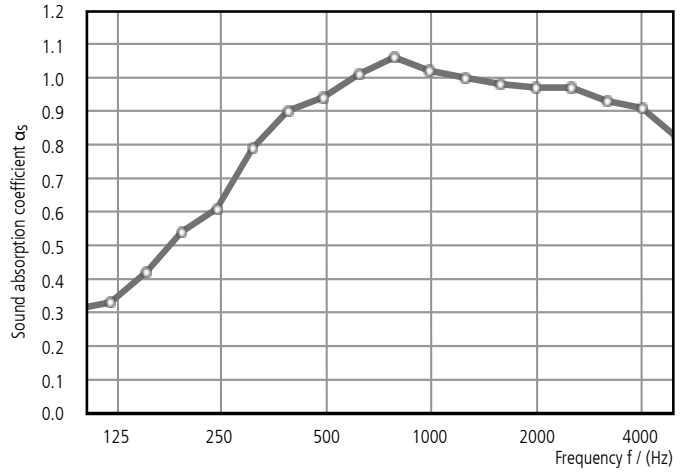
**Structural height:** 46 mm  
 $a_w$ : 0.95  
**NRC:** 0.95



Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.12	0.52	0.99	1.04	1.01	0.95
Octave band	0.17	0.63	1.11	1.06	0.99	0.91
Third-octave band	0.28	0.86	1.06	1.04	0.97	0.84
$a_p$	0.20	0.65	1.00	1.00	1.00	0.90

**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW100, 46 mm  
**Coating:** Without finish (visible joints)  
**Thickness:** 46 mm

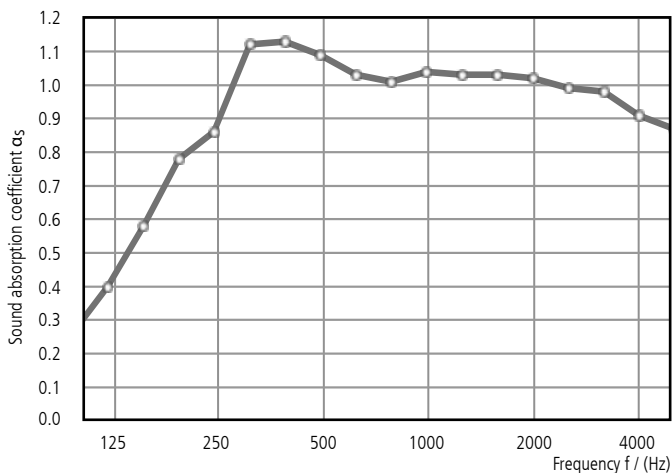
**Structural height:** 200 mm  
 $a_w$ : 0.95  
**NRC:** 0.90



Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.31	0.54	0.90	1.06	0.98	0.93
Octave band	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
$a_p$	0.35	0.65	0.95	1.00	0.95	0.90

**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW100, 66 mm  
**Coating:** Without finish (visible joints)  
**Thickness:** 66 mm

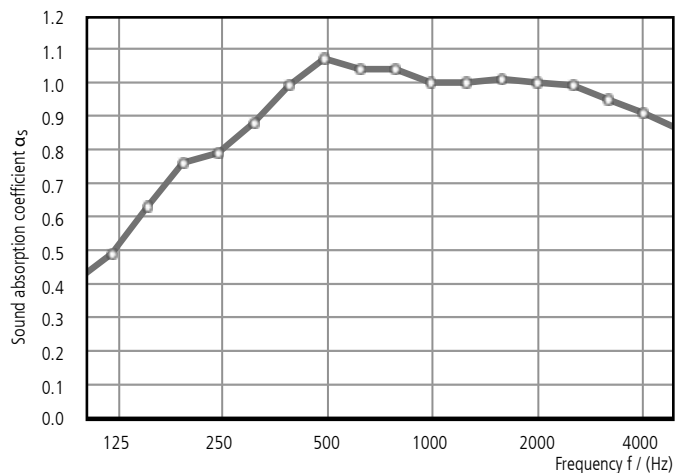
**Structural height:** 66 mm  
 $a_w$ : 1.00  
**NRC:** 1.00



Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.26	0.78	1.13	1.01	1.03	0.98
Octave band	0.40	0.86	1.09	1.04	1.02	0.91
Third-octave band	0.58	1.12	1.03	1.03	0.99	0.87
$a_p$	0.40	0.90	1.00	1.00	1.00	0.90

**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW100, 66 mm  
**Coating:** Without finish (visible joints)  
**Thickness:** 66 mm

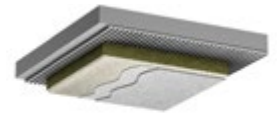
**Structural height:** 200 mm  
 $a_w$ : 1.00  
**NRC:** 0.95



Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.41	0.76	0.99	1.04	1.01	0.95
Octave band	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
$a_p$	0.50	0.80	1.00	1.00	1.00	0.90

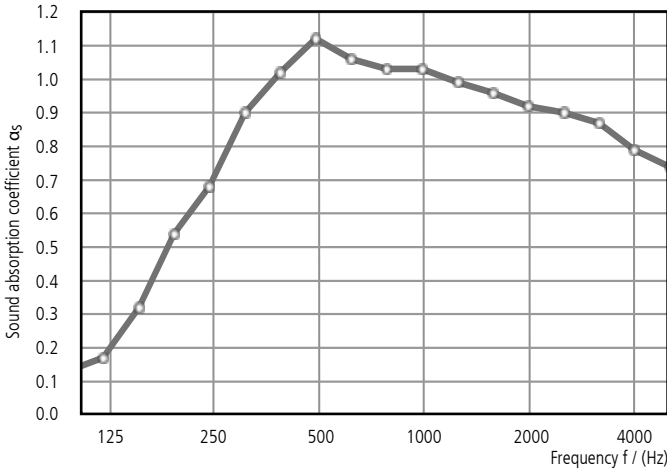


**StoSilent Direct**  
The easy direct system



**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW100, 46 mm  
**Coating:** StoColor Climasan (visible joints)  
**Thickness:** 46 mm

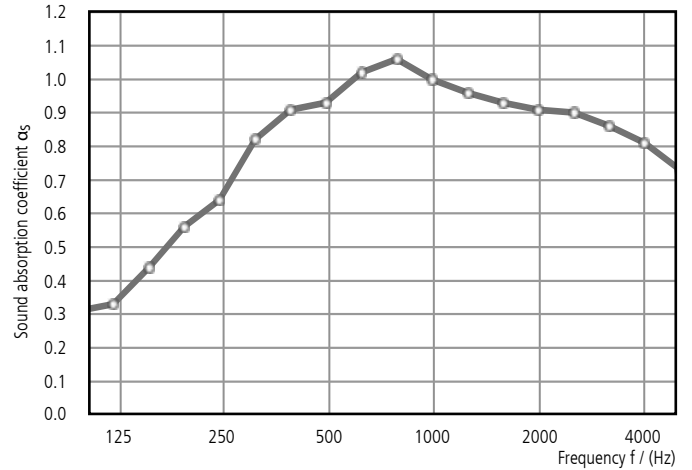
**Structural height:** 46 mm  
**a<sub>w</sub>:** 0.95  
**NRC:** 0.95



Frequency <i>f</i> 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
a <sub>p</sub>	0.20	0.70	1.00	1.00	0.95	0.80

**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW100, 46 mm  
**Coating:** StoColor Climasan (visible joints)  
**Thickness:** 46 mm

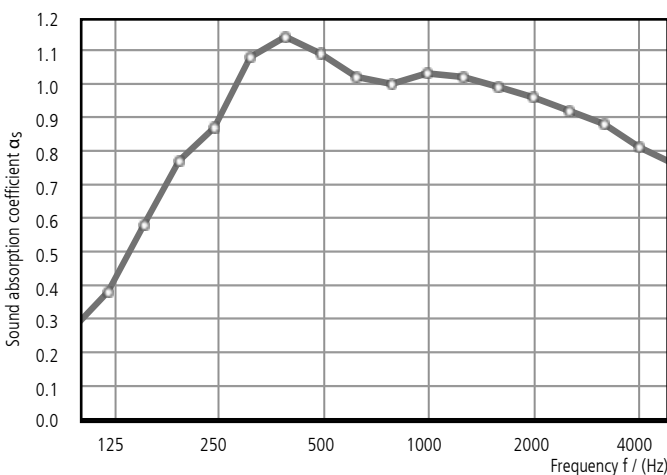
**Structural height:** 200 mm  
**a<sub>w</sub>:** 0.90  
**NRC:** 0.85



Frequency <i>f</i> 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
a <sub>p</sub>	0.35	0.65	0.95	1.00	0.90	0.80

**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW100, 66 mm  
**Coating:** StoColor Climasan (visible joints)  
**Thickness:** 66 mm

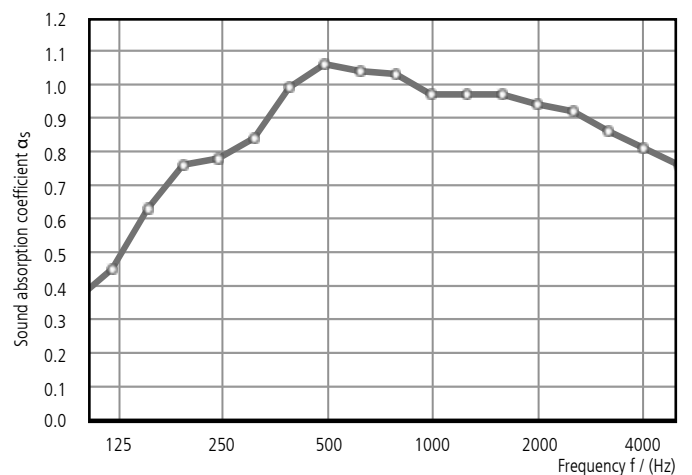
**Structural height:** 66 mm  
**a<sub>w</sub>:** 0.95  
**NRC:** 1.00



Frequency <i>f</i> 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	0.38	0.87	1.09	1.03	0.96	0.81
Third-octave band	0.58	1.08	1.02	1.02	0.92	0.76
a <sub>p</sub>	0.40	0.90	1.00	1.00	0.95	0.80

**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW100, 66 mm  
**Coating:** StoColor Climasan (visible joints)  
**Thickness:** 66 mm

**Structural height:** 200 mm  
**a<sub>w</sub>:** 0.95  
**NRC:** 0.95



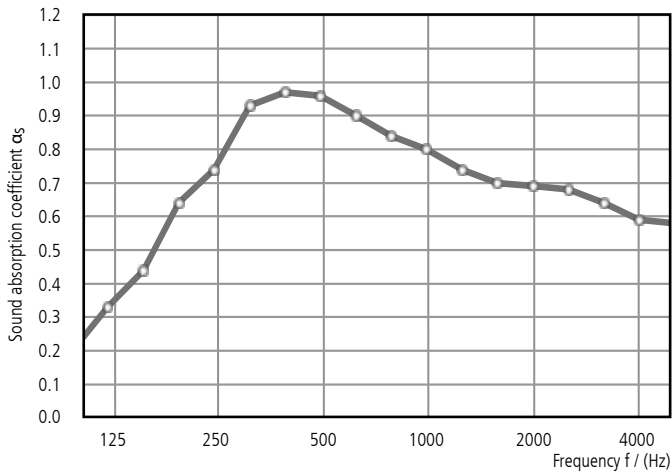
Frequency <i>f</i> in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.36	0.76	0.99	1.03	0.97	0.86
Octave band	0.45	0.78	1.06	0.97	0.94	0.81
Third-octave band	0.63	0.84	1.04	0.97	0.92	0.76
a <sub>p</sub>	0.50	0.80	1.00	1.00	0.95	0.80

The detailed technical specifications and information on the products contained in the Technical Data Sheets and approvals must be observed.

# StoSilent Direct

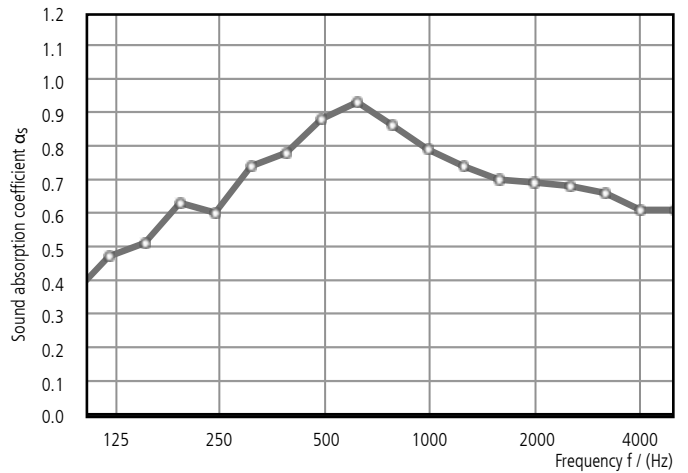
## Sound absorption in detail

**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW100, 46 mm  
**Coating:** StoSilent Top Basic & StoSilent Decor M  
**Thickness:** 46 mm  
**Structural height:** 46 mm  
 $a_w$ : 0.75  
**NRC:** 0.85



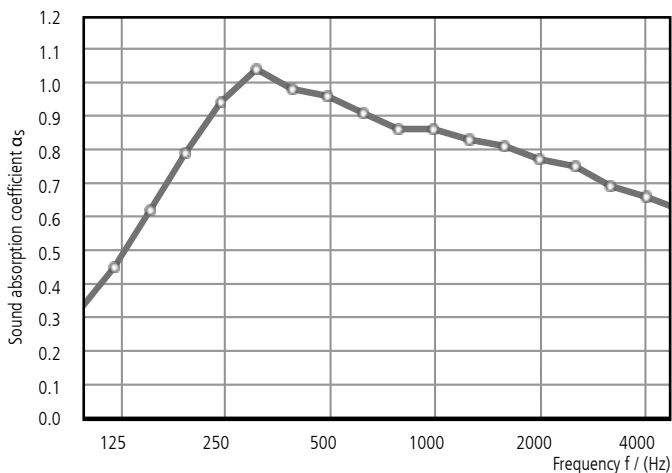
Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.20	0.64	0.97	0.84	0.70	0.64
Octave band	0.33	0.74	0.96	0.80	0.69	0.59
Third-octave band	0.44	0.93	0.90	0.74	0.68	0.58
$a_p$	0.30	0.75	0.95	0.80	0.70	0.60

**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW100, 46 mm  
**Coating:** StoSilent Top Basic & StoSilent Decor M  
**Thickness:** 46 mm  
**Structural height:** 200 mm  
 $a_w$ : 0.75  
**NRC:** 0.75



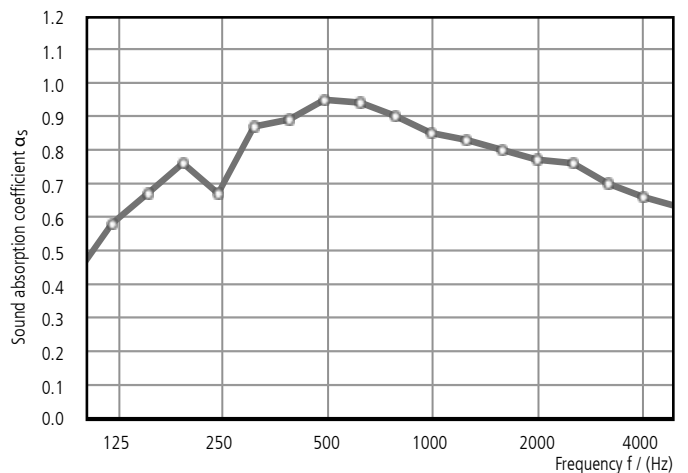
Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.36	0.63	0.78	0.86	0.70	0.66
Octave band	0.47	0.60	0.88	0.79	0.69	0.61
Third-octave band	0.51	0.74	0.93	0.74	0.68	0.61
$a_p$	0.45	0.65	0.85	0.80	0.70	0.65

**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW100, 66 mm  
**Coating:** StoSilent Top Basic & StoSilent Decor M  
**Thickness:** 66 mm  
**Structural height:** 66 mm  
 $a_w$ : 0.80 (L)  
**NRC:** 0.90



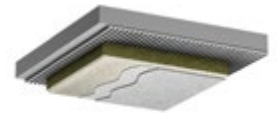
Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.32	0.79	0.98	0.86	0.81	0.69
Octave band	0.45	0.94	0.96	0.86	0.77	0.66
Third-octave band	0.62	1.04	0.91	0.83	0.75	0.62
$a_p$	0.45	0.90	0.95	0.85	0.80	0.65

**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW100, 66 mm  
**Coating:** StoSilent Top Basic & StoSilent Decor M  
**Thickness:** 66 mm  
**Structural height:** 200 mm  
 $a_w$ : 0.80  
**NRC:** 0.80

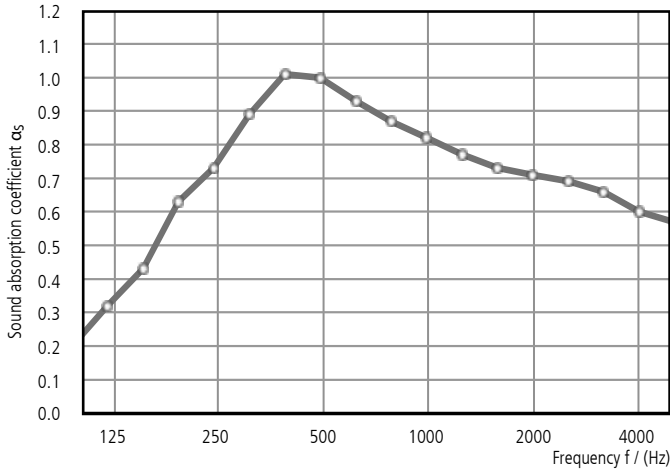


Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.43	0.76	0.89	0.90	0.80	0.70
Octave band	0.58	0.67	0.95	0.85	0.77	0.66
Third-octave band	0.67	0.87	0.94	0.83	0.76	0.63
$a_p$	0.55	0.75	0.95	0.85	0.80	0.65

**StoSilent Direct**  
The easy direct system

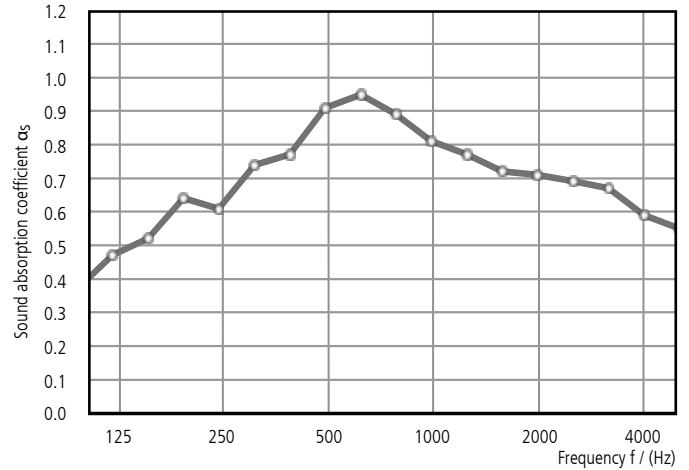


**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW100, 46 mm  
**Coating:** StoSilent Top Basic & Top Basic, white  
**Thickness:** 46 mm  
**Structural height:** 46 mm  
**a<sub>w</sub>:** 0.75 (M)  
**NRC:** 0.80



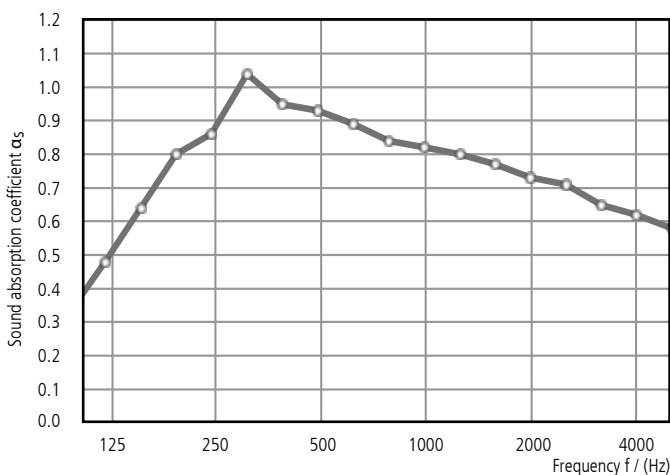
Frequency <i>f</i> in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.20	0.63	1.01	0.87	0.73	0.66
Octave band	0.32	0.73	1.00	0.82	0.71	0.60
Third-octave band	0.43	0.89	0.93	0.77	0.69	0.57
a <sub>p</sub>	0.30	0.75	1.00	0.80	0.70	0.60

**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW100, 46 mm  
**Coating:** StoSilent Top Basic & Top Basic, white  
**Thickness:** 46 mm  
**Structural height:** 200 mm  
**a<sub>w</sub>:** 0.75  
**NRC:** 0.75



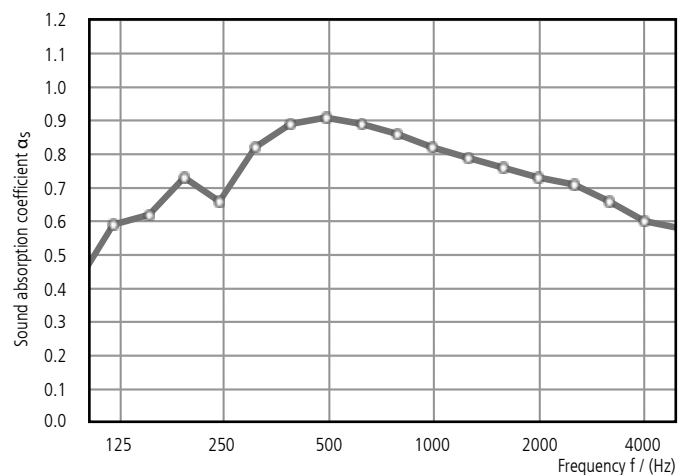
Frequency <i>f</i> in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.37	0.64	0.77	0.89	0.72	0.67
Octave band	0.47	0.61	0.91	0.81	0.71	0.59
Third-octave band	0.52	0.74	0.95	0.77	0.69	0.55
a <sub>p</sub>	0.45	0.65	0.90	0.80	0.70	0.60

**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW100, 46 mm  
**Coating:** StoSilent Top Basic & Top Basic, white  
**Thickness:** 66 mm  
**Structural height:** 66 mm  
**a<sub>w</sub>:** 0.75 (L)  
**NRC:** 0.85



Frequency <i>f</i> in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.33	0.80	0.95	0.84	0.77	0.65
Octave band	0.48	0.86	0.93	0.82	0.73	0.62
Third-octave band	0.64	1.04	0.89	0.80	0.71	0.58
a <sub>p</sub>	0.50	0.90	0.90	0.80	0.75	0.60

**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW100, 66 mm  
**Coating:** StoSilent Top Basic & Top Basic, white  
**Thickness:** 66 mm  
**Structural height:** 200 mm  
**a<sub>w</sub>:** 0.75  
**NRC:** 0.80



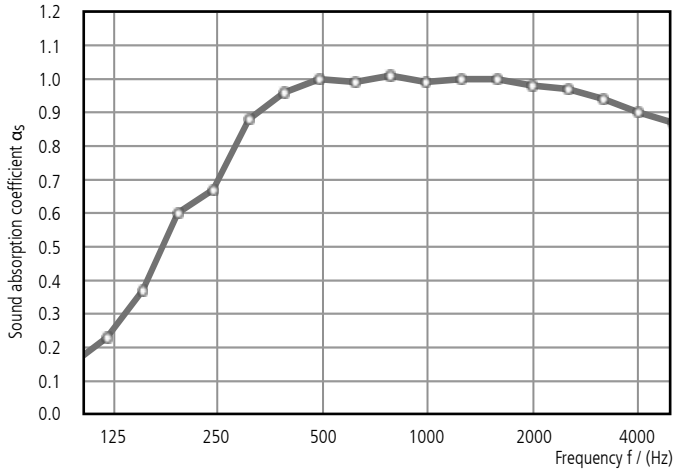
Frequency <i>f</i> in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.42	0.73	0.89	0.86	0.76	0.66
Octave band	0.59	0.66	0.91	0.82	0.73	0.60
Third-octave band	0.62	0.82	0.89	0.79	0.71	0.58
a <sub>p</sub>	0.55	0.75	0.90	0.80	0.75	0.60

The detailed technical specifications and information on the products contained in the Technical Data Sheets and approvals must be observed.

# StoSilent Direct

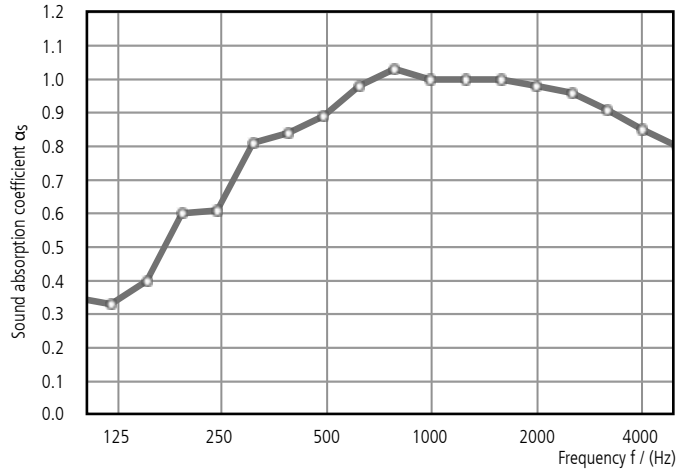
## Sound absorption in detail

**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW100, 46 mm  
**Coating:** StoSilent Decor M (visible joints)  
**Thickness:** 46 mm  
**Structural height:** 46 mm  
 $a_w$ : 1.00  
**NRC:** 0.90



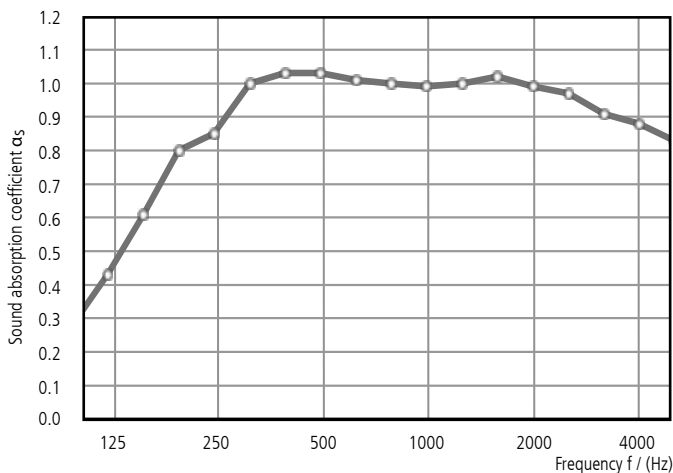
Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.15	0.60	0.96	1.01	1.00	0.94
Octave band	0.23	0.67	1.00	0.99	0.98	0.90
Third-octave band	0.37	0.88	0.99	1.00	0.97	0.87
$a_p$	0.25	0.70	1.00	1.00	1.00	0.90

**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW100, 46 mm  
**Coating:** StoSilent Decor M (visible joints)  
**Thickness:** 46 mm  
**Structural height:** 200 mm  
 $a_w$ : 0.90  
**NRC:** 0.85



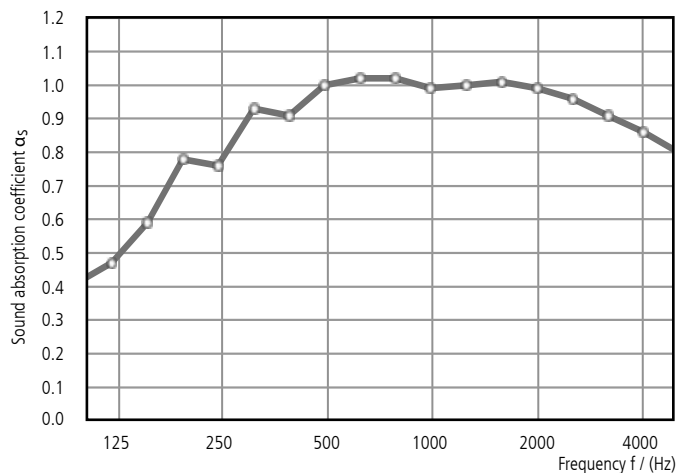
Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.35	0.60	0.84	1.03	1.00	0.91
Octave band	0.33	0.61	0.89	1.00	0.98	0.85
Third-octave band	0.40	0.81	0.98	1.00	0.98	0.80
$a_p$	0.35	0.65	0.90	1.00	1.00	0.85

**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW100, 66 mm  
**Coating:** StoSilent Decor M (visible joints)  
**Thickness:** 66 mm  
**Structural height:** 66 mm  
 $a_w$ : 1.00  
**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	0.43	0.85	1.03	0.99	0.99	0.88
Third-octave band	0.61	1.00	1.01	1.00	0.97	0.83
$a_p$	0.45	0.90	1.00	1.00	1.00	0.85

**System:** StoSilent Direct  
**Build-up:** StoSilent Board MW100, 66 mm  
**Coating:** StoSilent Decor M (visible joints)  
**Thickness:** 66 mm  
**Structural height:** 200 mm  
 $a_w$ : 1.00  
**NRC:** 0.95

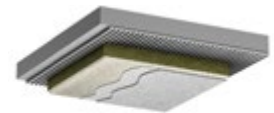


Frequency $f$ in Hz	Sound absorption coefficient $\alpha_s$					
	125	250	500	1000	2000	4000
Third-octave band	0.41	0.78	0.91	1.02	1.01	0.91
Octave band	0.47	0.76	1.00	0.99	0.99	0.86
Third-octave band	0.59	0.93	1.02	1.00	0.96	0.80
$a_p$	0.50	0.80	1.00	1.00	1.00	0.85

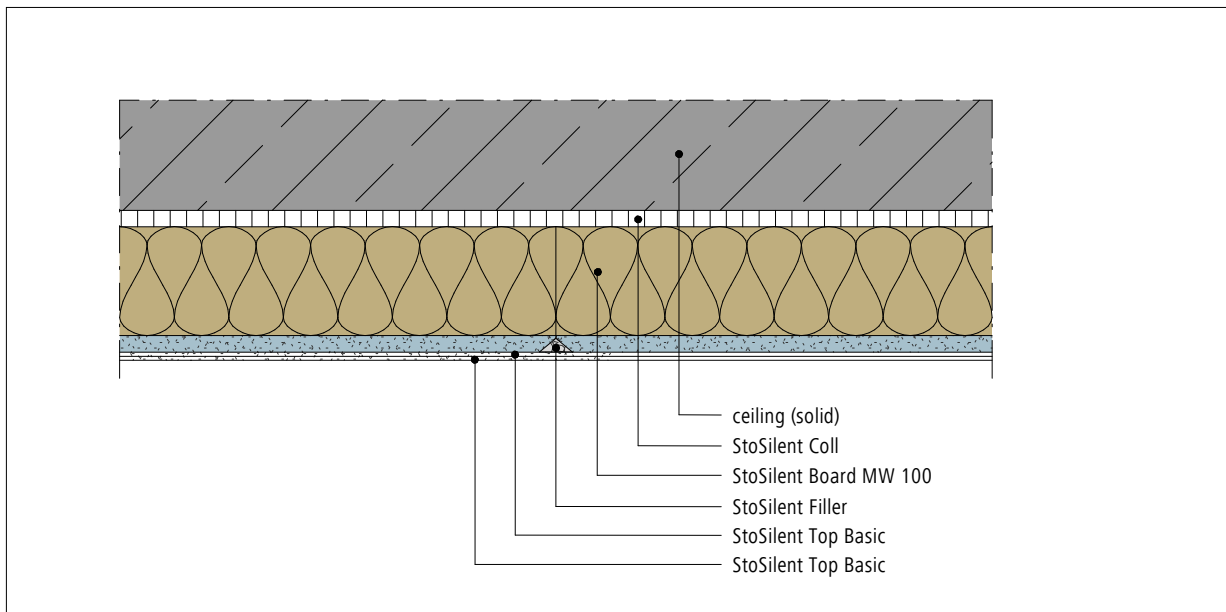
# StoSilent Direct

## Construction details – ceiling

StoSilent Direct  
The easy direct system

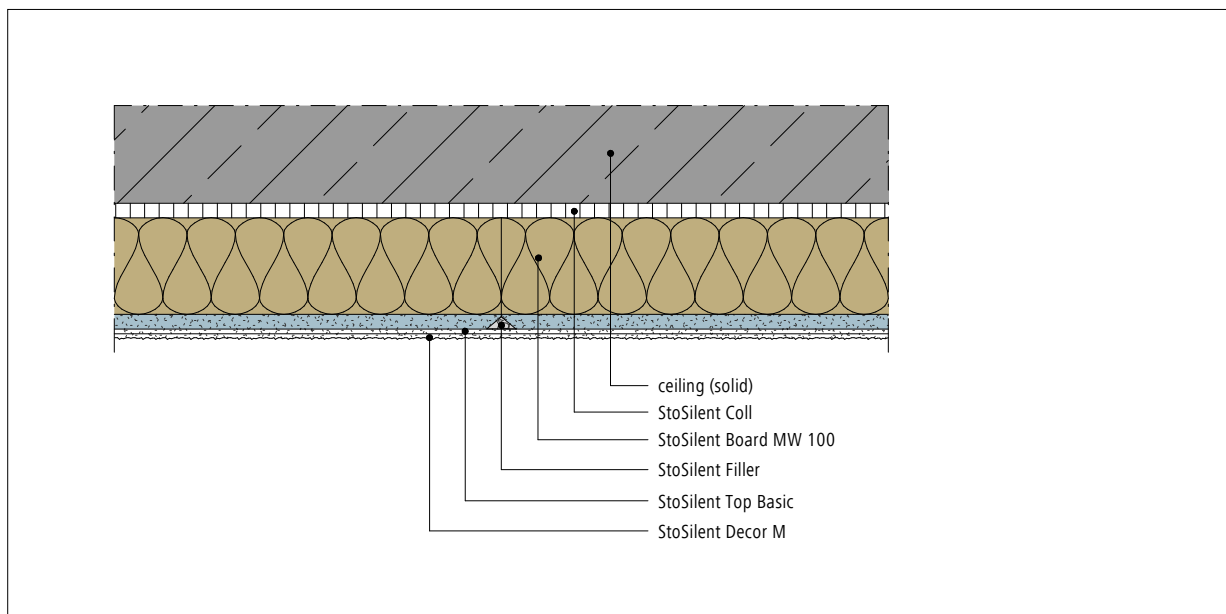


### Ceiling (section): system build-up with bonding

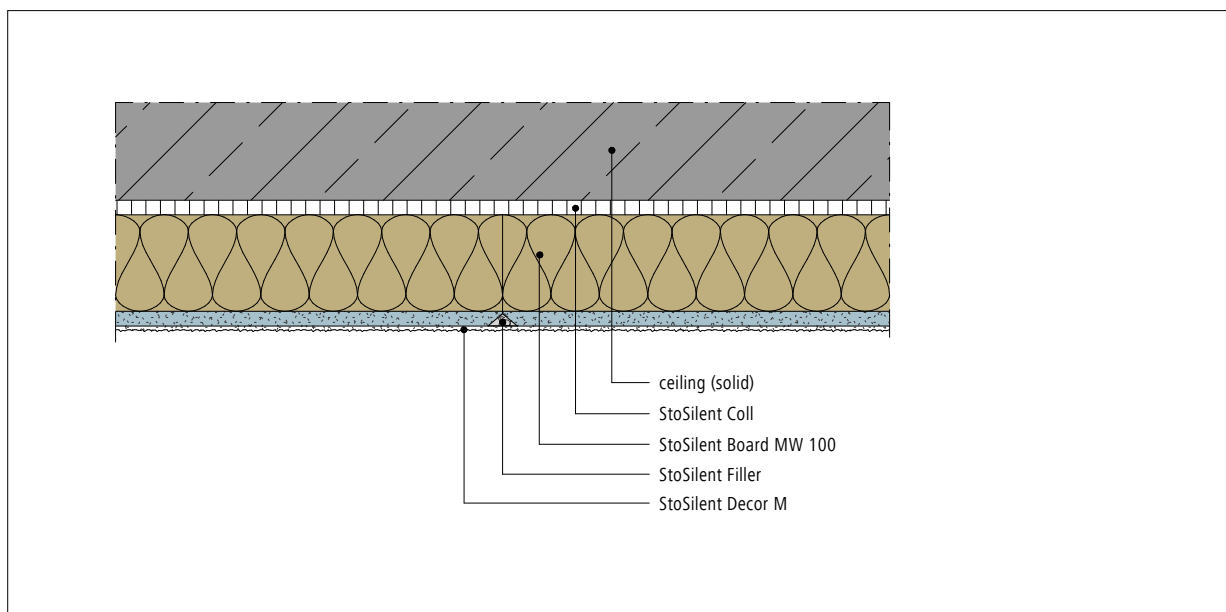


Note: This detail is a general, non-binding planning suggestion, which depicts the execution only schematically. The customer/planner/applicator is independently responsible for determining the suitability and completeness of the product for the particular construction project. Neighbouring works are only described schematically. All specifications and assumptions must be adjusted or agreed in the light of local conditions. Compliance with the technical specifications contained in the Technical Data Sheets, application guidelines, and system approvals is mandatory.

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



## Ceiling (section): system build-up with bonding, with StoSilent Decor M coating

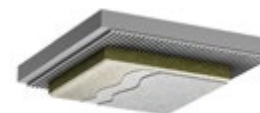


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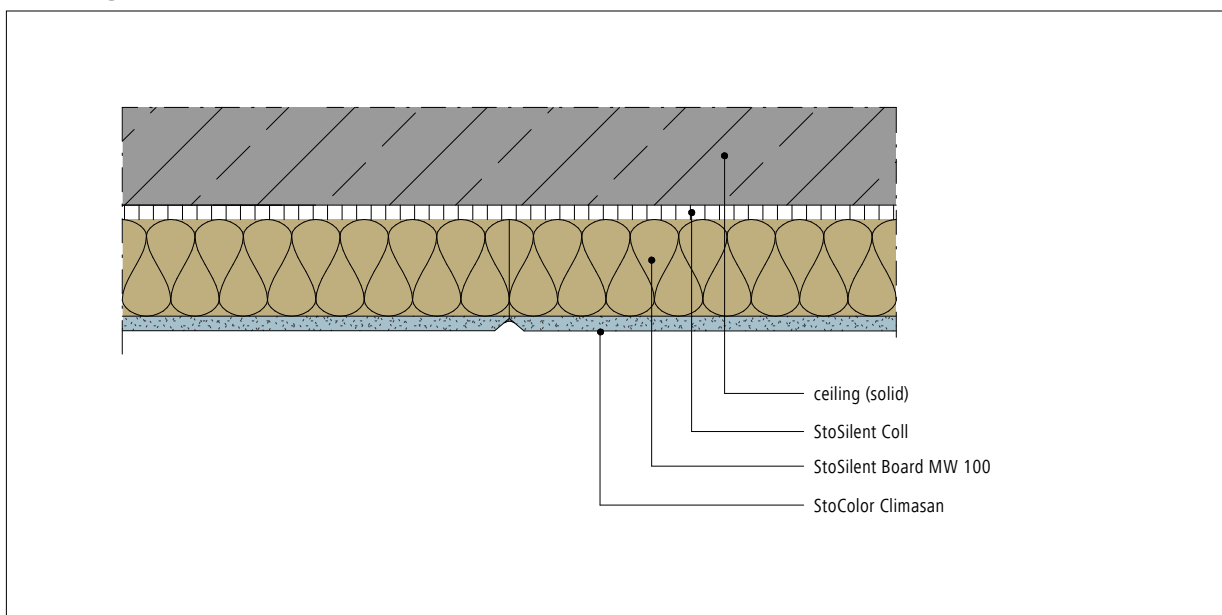
# StoSilent Direct

## Construction details – ceiling

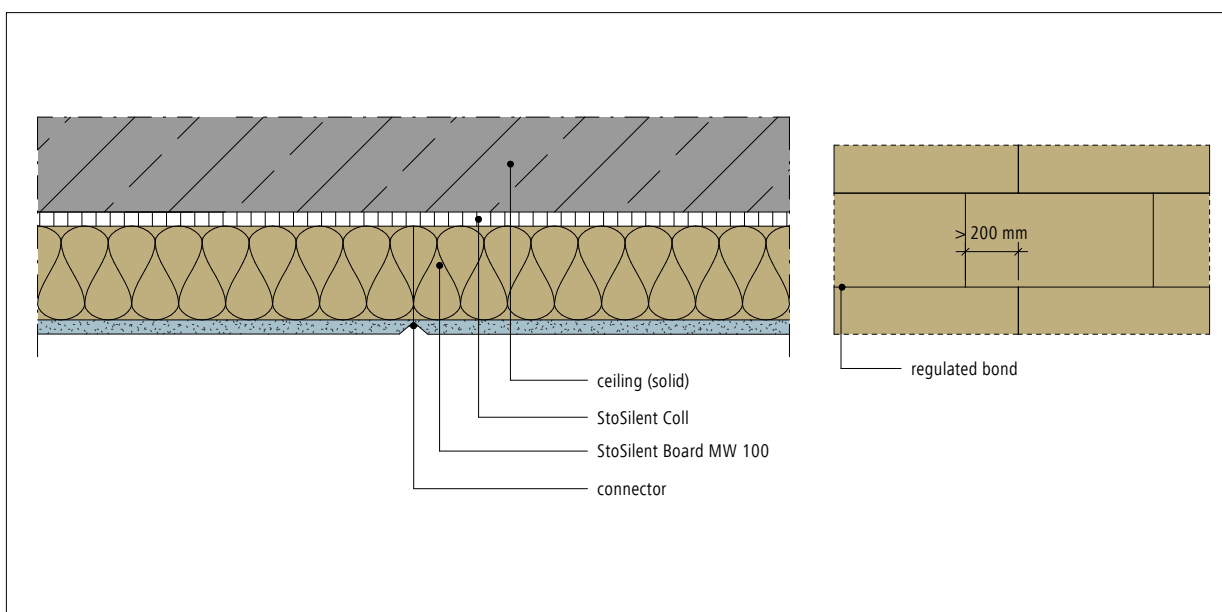
StoSilent Direct  
The easy direct system



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

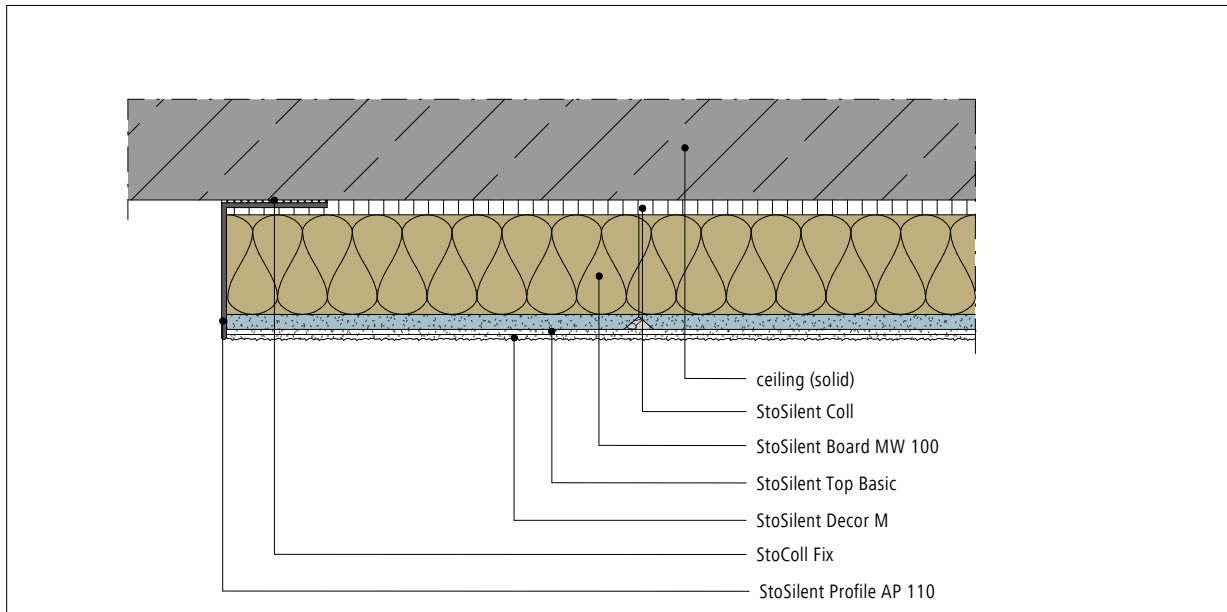


### Ceiling (section): system build-up with bonding, without coating

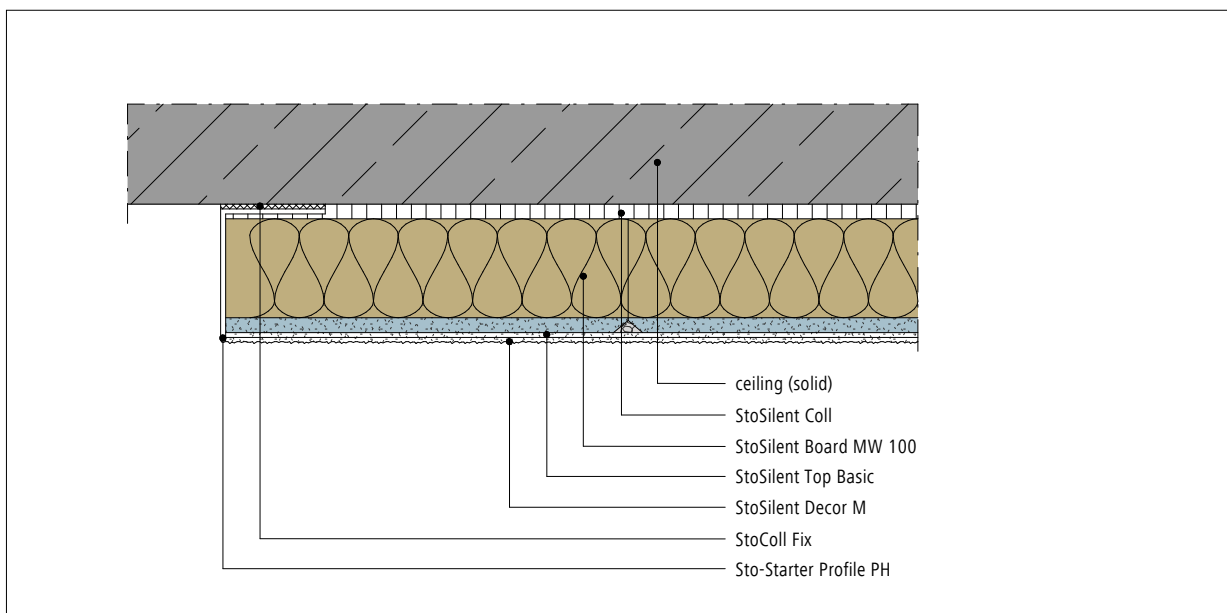


Note: This detail is a general, non-binding planning suggestion, which depicts the execution only schematically. The customer/planner/applicator is independently responsible for determining the suitability and completeness of the product for the particular construction project. Neighbouring works are only described schematically. All specifications and assumptions must be adjusted or agreed in the light of local conditions. Compliance with the technical specifications contained in the Technical Data Sheets, application guidelines, and system approvals is mandatory.

## Ceiling (section): connection to a partially insulated ceiling with StoSilent Profile AP 110



## Ceiling (section): connection to a partially insulated ceiling with Sto-Starter Profile PH



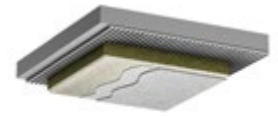
Note: This detail is a general, non-binding planning suggestion, which depicts the execution only schematically. The customer/planner/applicator is independently responsible for determining the suitability and completeness of the product for the particular construction project. Neighbouring works are only described schematically. All specifications and assumptions must be adjusted or agreed in the light of local conditions. Compliance with the technical specifications contained in the Technical Data Sheets, application guidelines, and system approvals is mandatory.



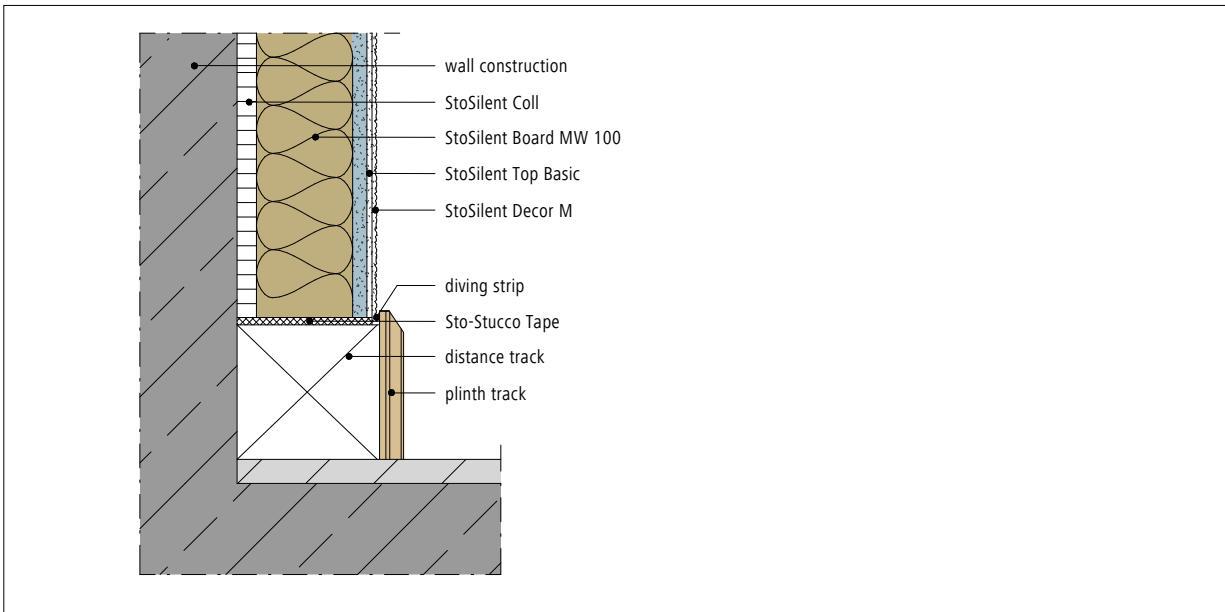
# StoSilent Direct

## Construction details – ceiling/wall

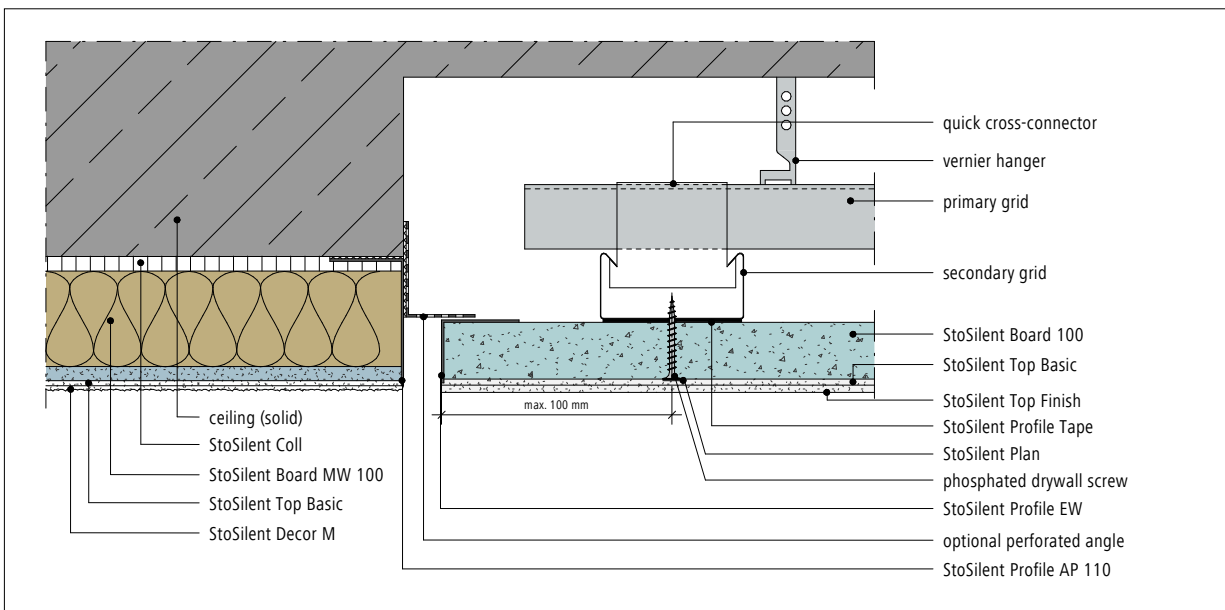
StoSilent Direct  
The easy direct system



### Wall (section): connection of base point

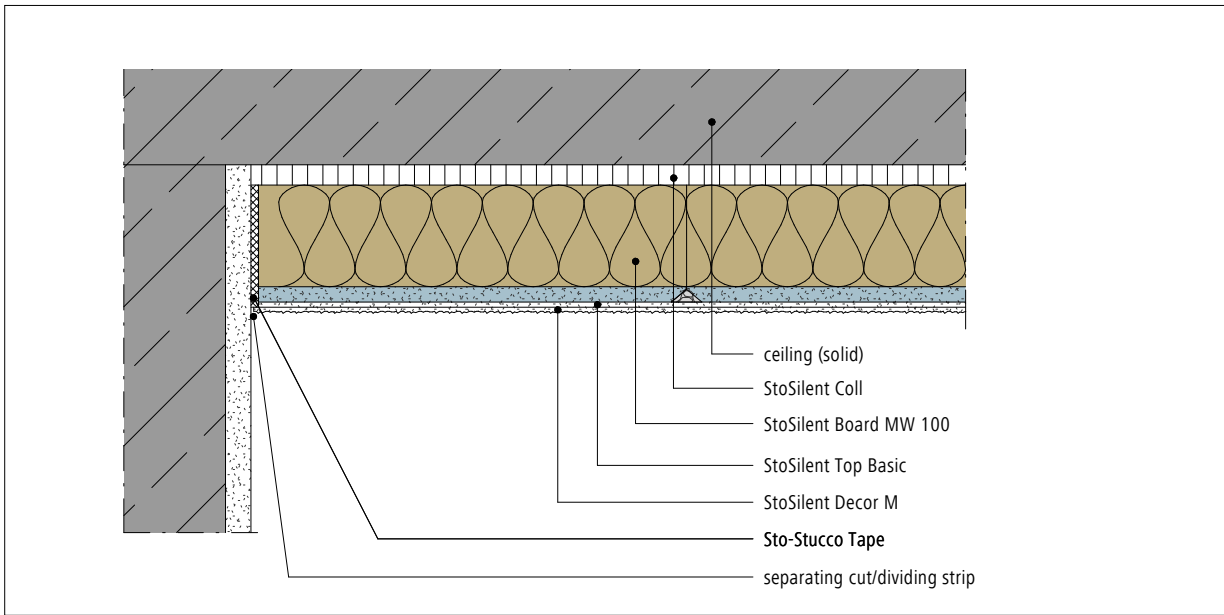


### Ceiling (section): connection to a suspended ceiling

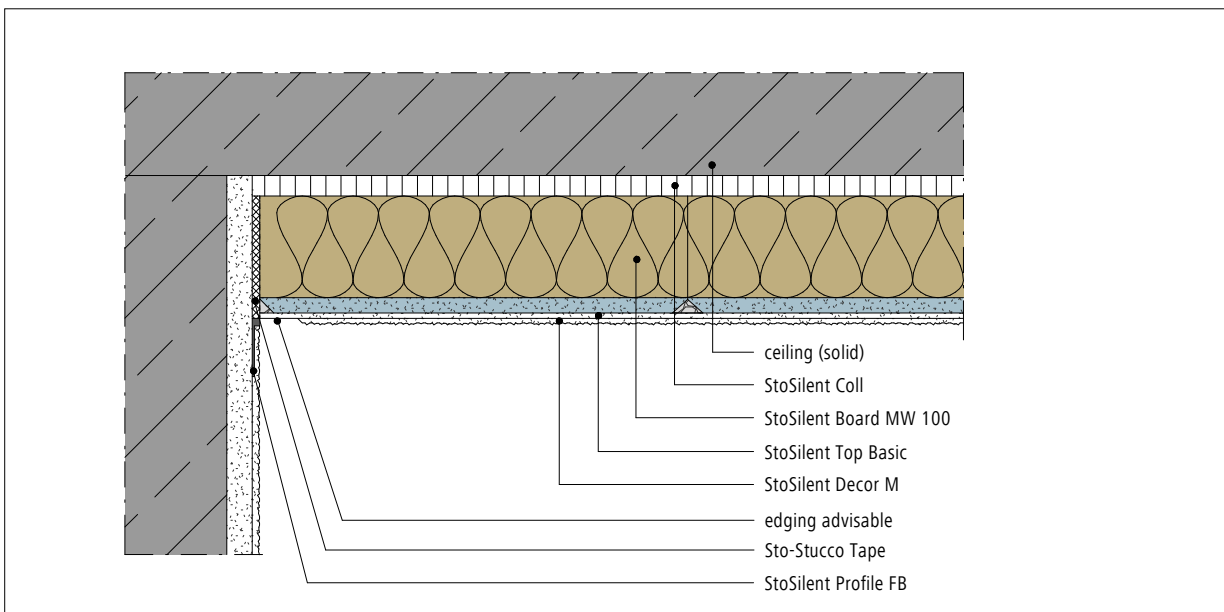


Note: This detail is a general, non-binding planning suggestion, which depicts the execution only schematically. The customer/planner/applicator is independently responsible for determining the suitability and completeness of the product for the particular construction project. Neighbouring works are only described schematically. All specifications and assumptions must be adjusted or agreed in the light of local conditions. Compliance with the technical specifications contained in the Technical Data Sheets, application guidelines, and system approvals is mandatory.

## Ceiling (section): connection to old plaster with dividing strip/separating cut



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

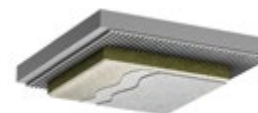


Note: This detail is a general, non-binding planning suggestion, which depicts the execution only schematically. The customer/planner/applicator is independently responsible for determining the suitability and completeness of the product for the particular construction project. Neighbouring works are only described schematically. All specifications and assumptions must be adjusted or agreed in the light of local conditions. Compliance with the technical specifications contained in the Technical Data Sheets, application guidelines, and system approvals is mandatory.

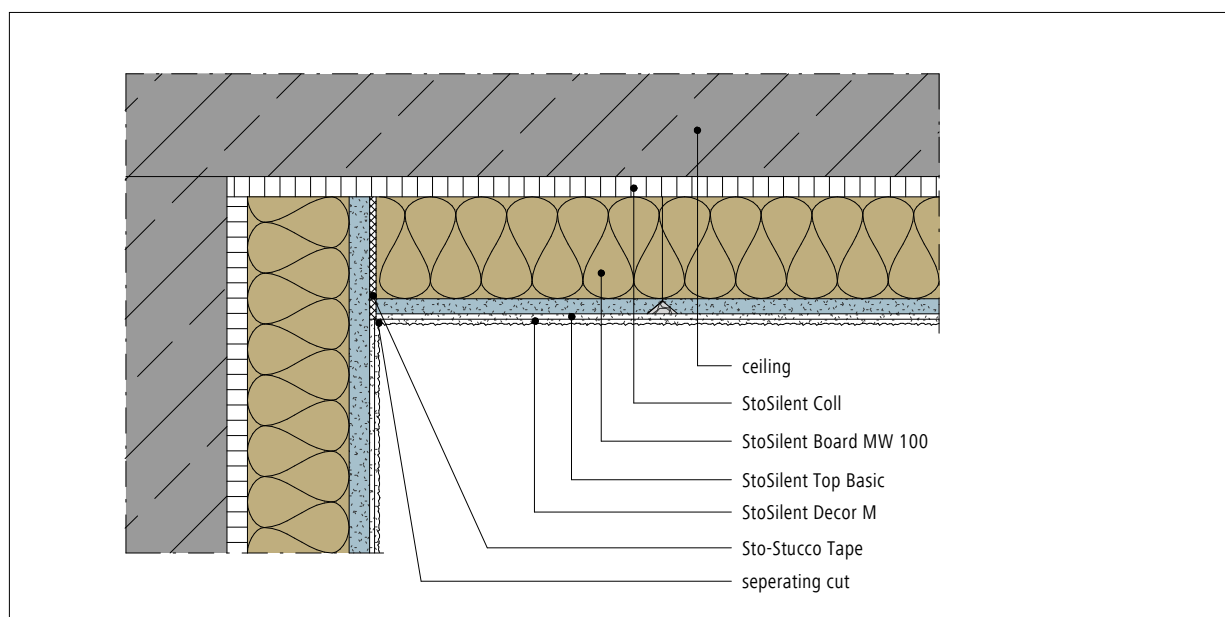
# StoSilent Direct

## Construction details – ceiling

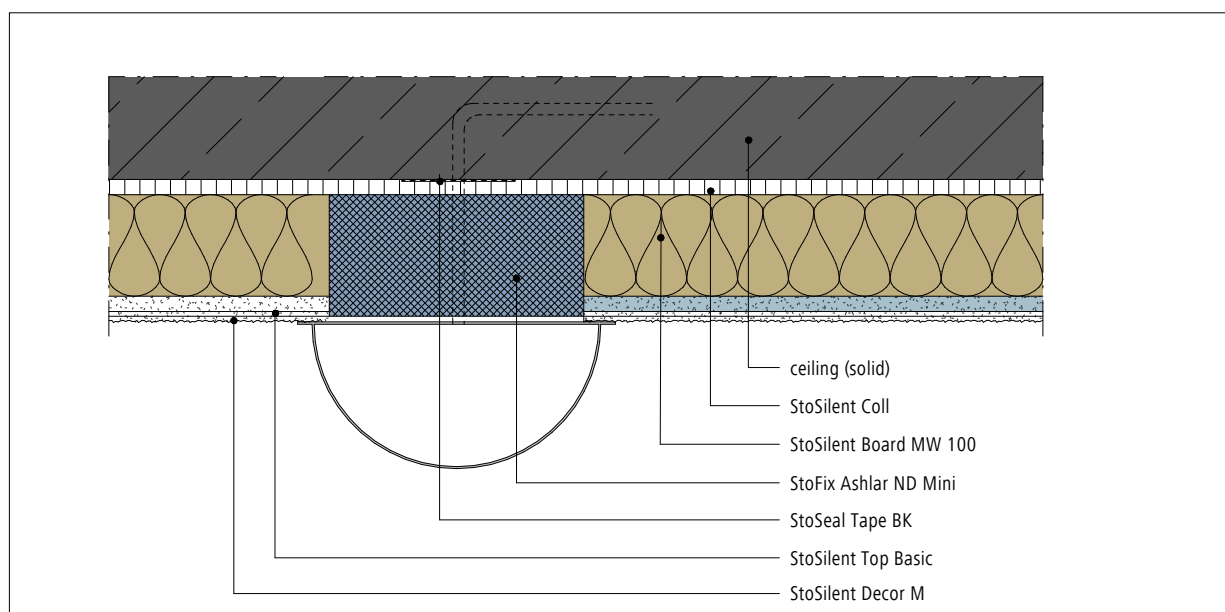
StoSilent Direct  
The easy direct system



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

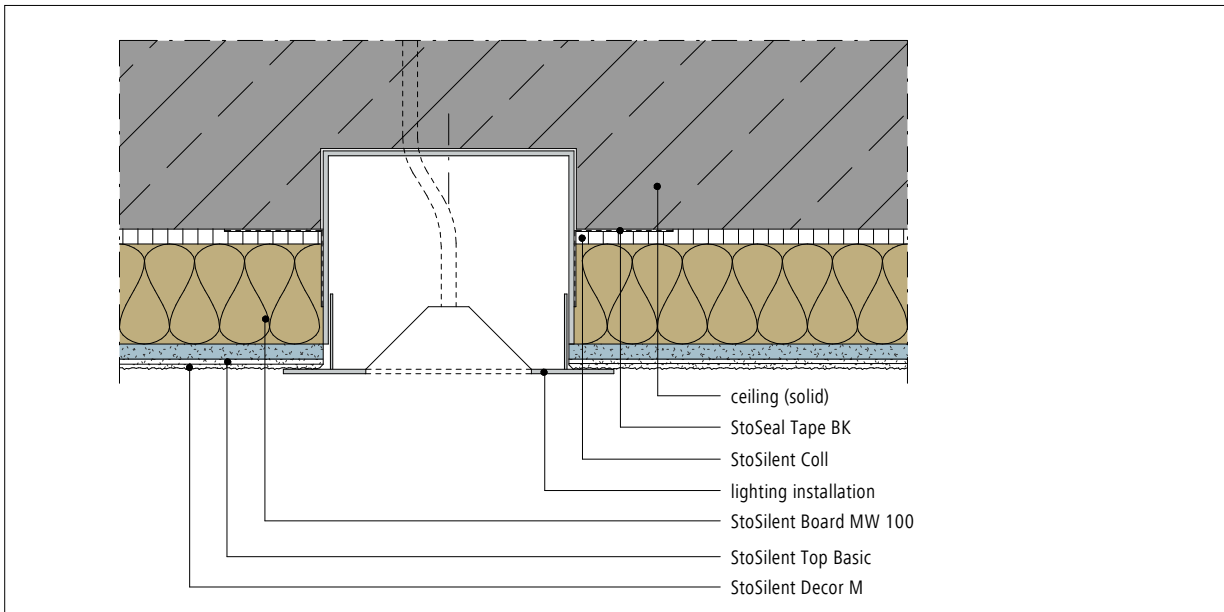


### Ceiling (section): lamp fixing

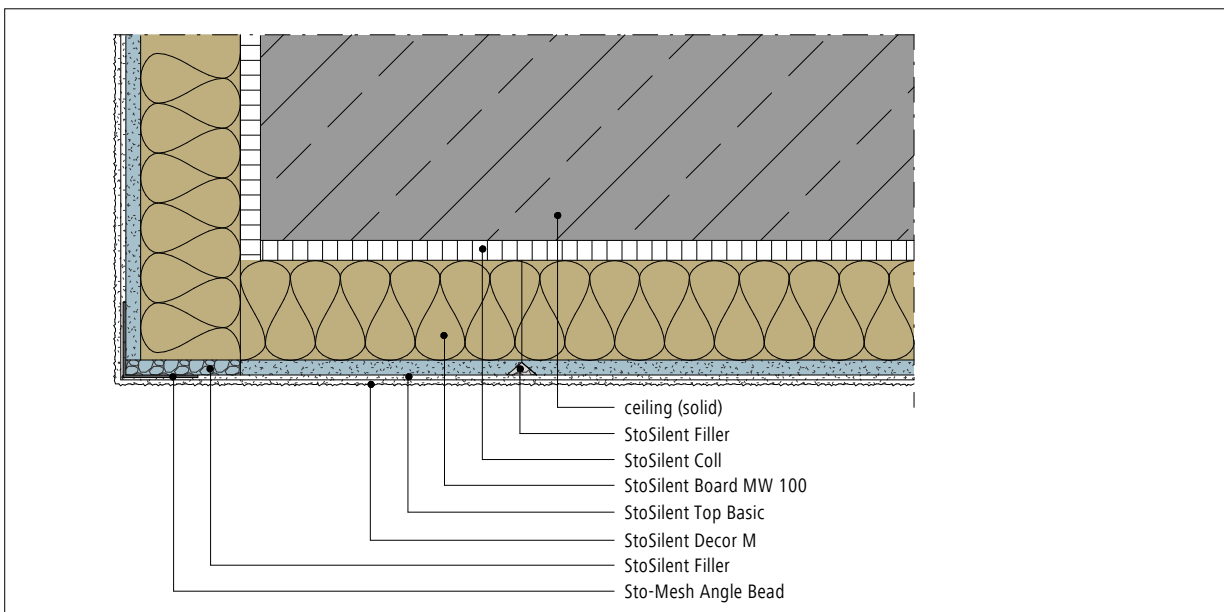


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## Ceiling (section): lamp fixing



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

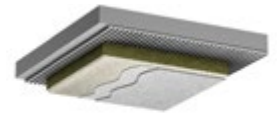


Note: This detail is a general, non-binding planning suggestion, which depicts the execution only schematically. The customer/planner/applicator is independently responsible for determining the suitability and completeness of the product for the particular construction project. Neighbouring works are only described schematically. All specifications and assumptions must be adjusted or agreed in the light of local conditions. Compliance with the technical specifications contained in the Technical Data Sheets, application guidelines, and system approvals is mandatory.

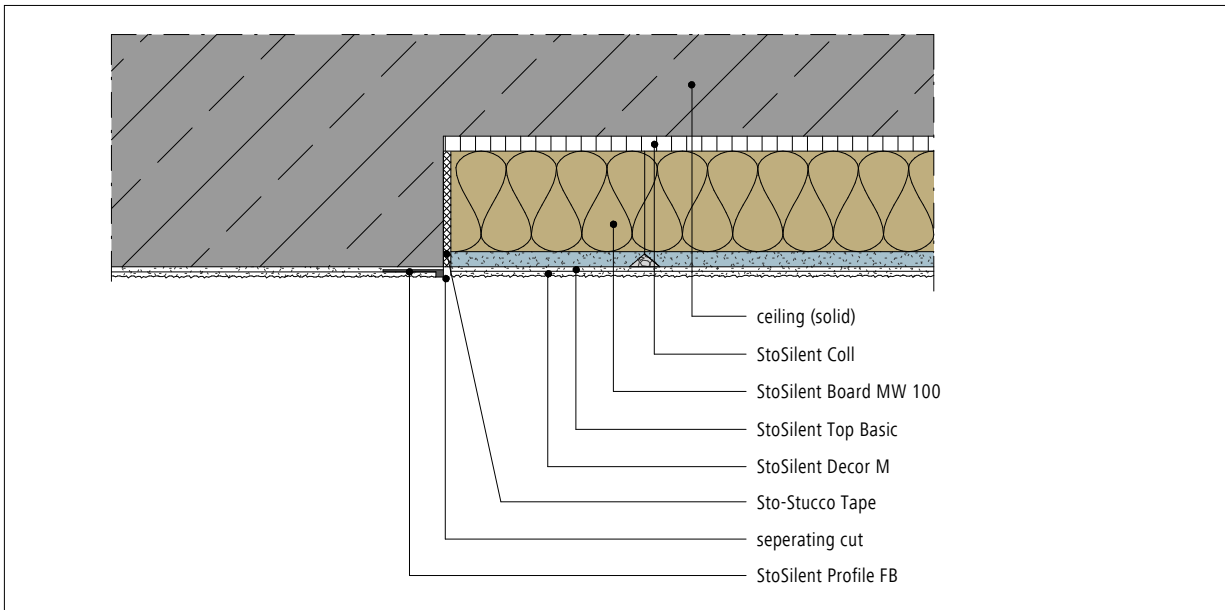
# StoSilent Direct

## Construction details – ceiling

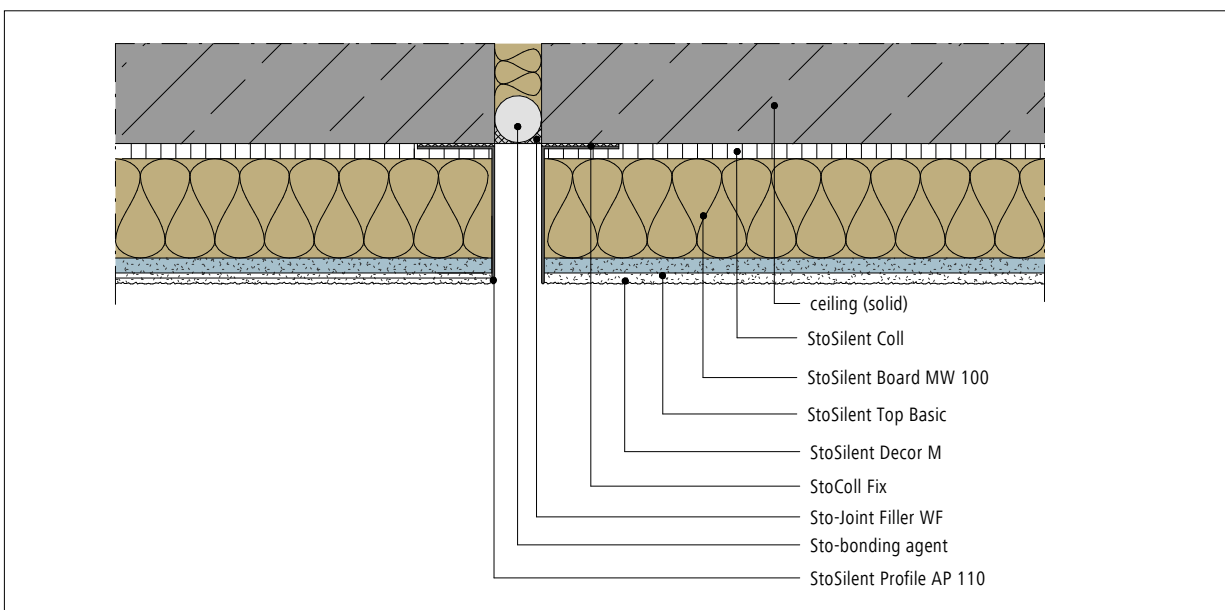
StoSilent Direct  
The easy direct system



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

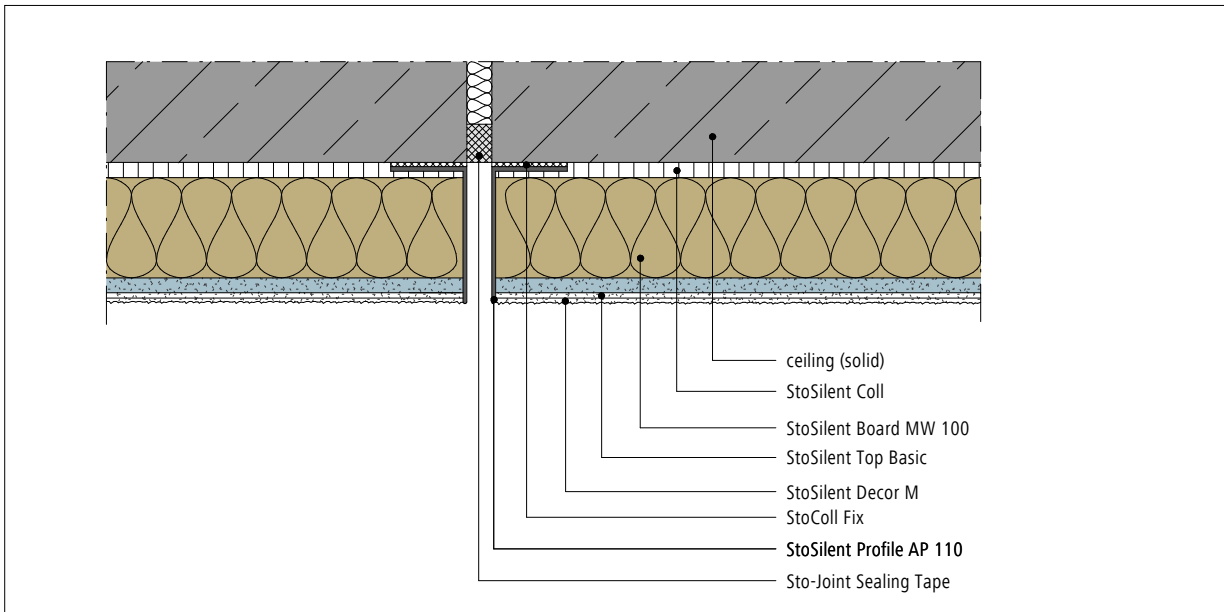


### Ceiling (section): structural expansion joint with Sto-Backing Rod

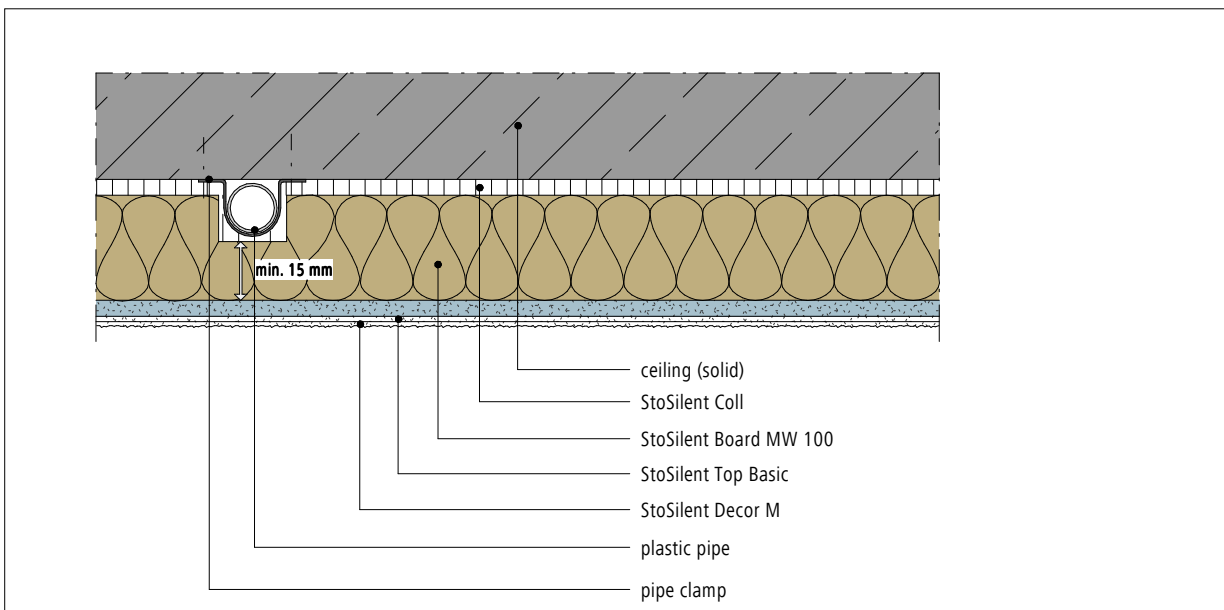


Note: This detail is a general, non-binding planning suggestion, which depicts the execution only schematically. The customer/planner/applicator is independently responsible for determining the suitability and completeness of the product for the particular construction project. Neighbouring works are only described schematically. All specifications and assumptions must be adjusted or agreed in the light of local conditions. Compliance with the technical specifications contained in the Technical Data Sheets, application guidelines, and system approvals is mandatory.

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



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

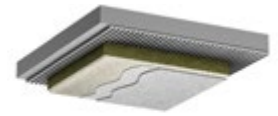


Note: This detail is a general, non-binding planning suggestion, which depicts the execution only schematically. The customer/planner/applicator is independently responsible for determining the suitability and completeness of the product for the particular construction project. Neighbouring works are only described schematically. All specifications and assumptions must be adjusted or agreed in the light of local conditions. Compliance with the technical specifications contained in the Technical Data Sheets, application guidelines, and system approvals is mandatory.

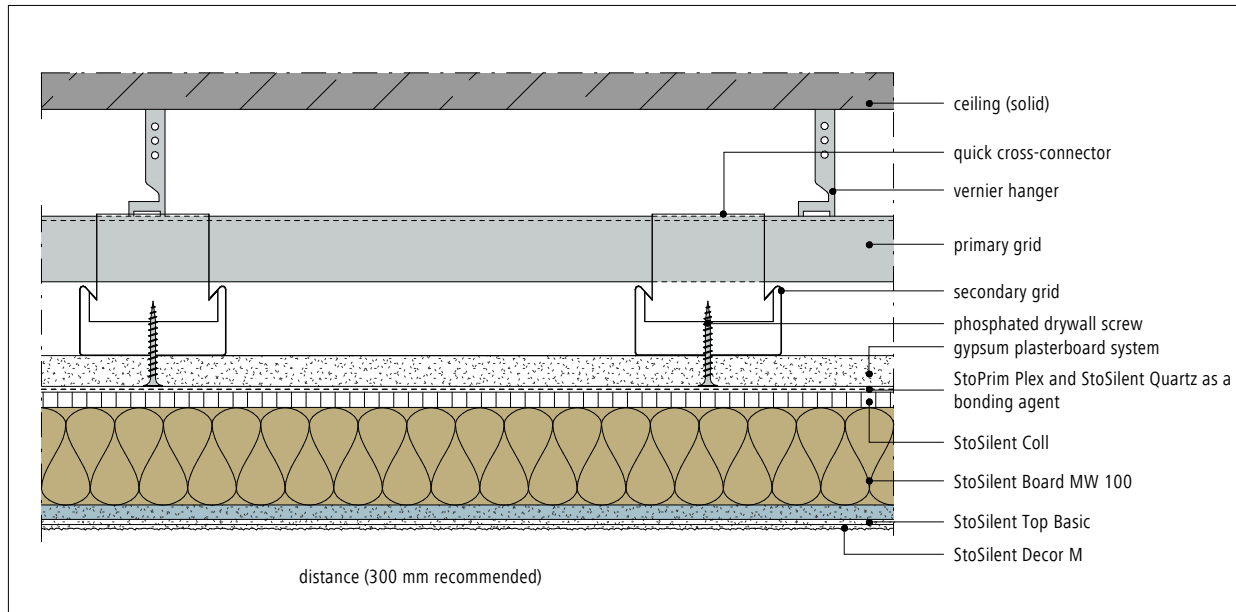
# StoSilent Direct

## Construction details – ceiling

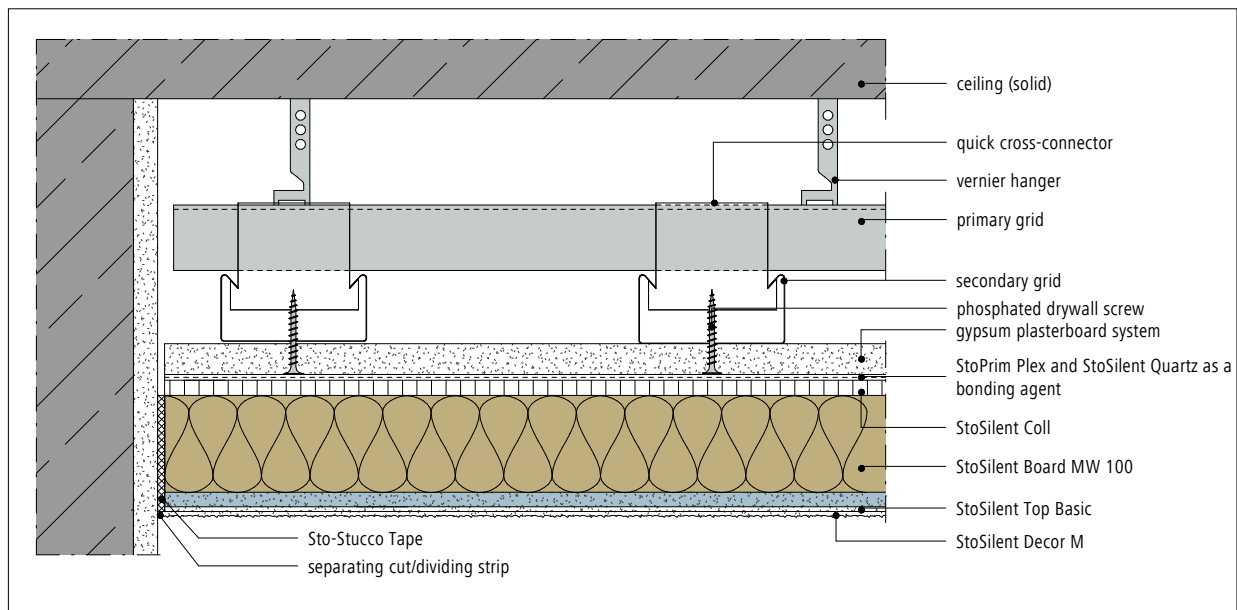
StoSilent Direct  
The easy direct system



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

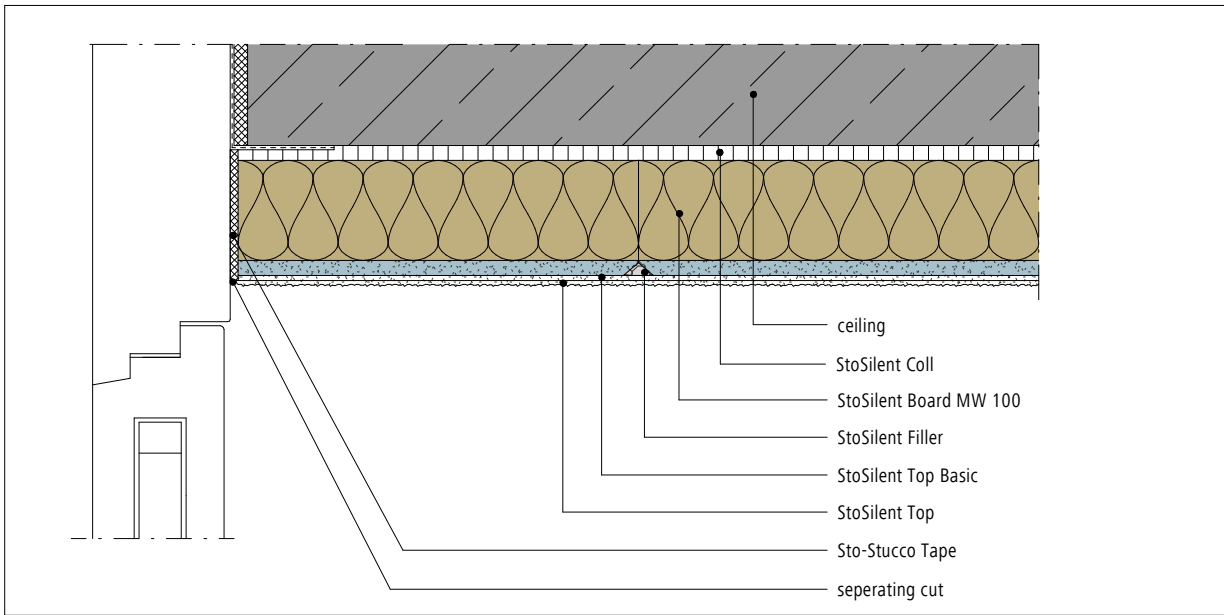


### Ceiling (section): wall junction for a suspended concrete ceiling

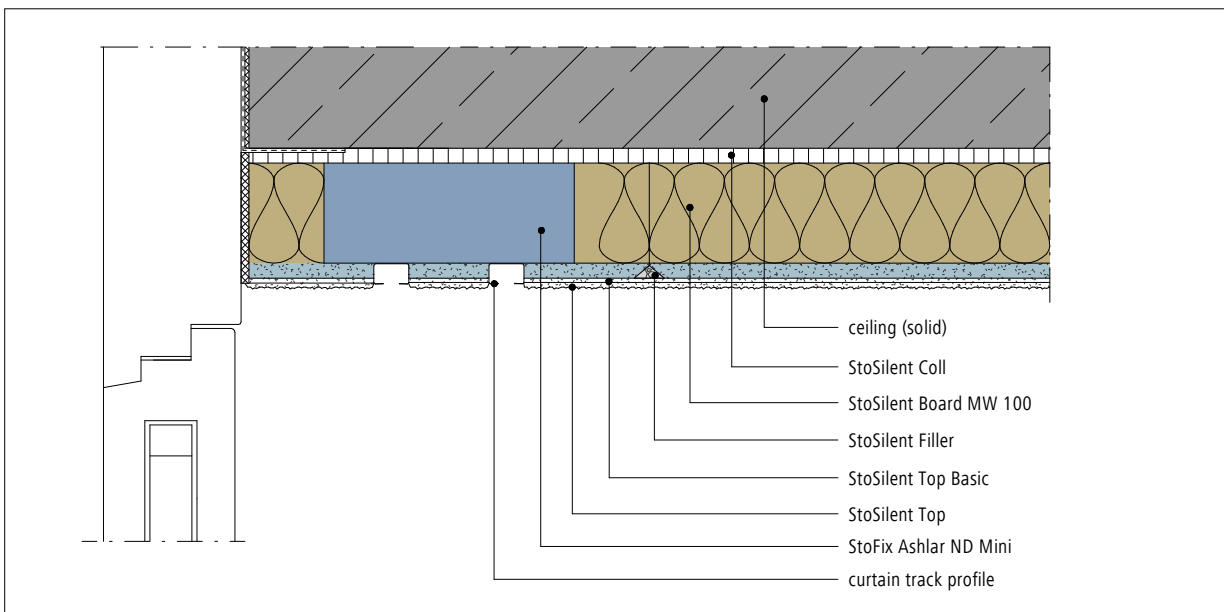


Note: This detail is a general, non-binding planning suggestion, which depicts the execution only schematically. The customer/planner/applicator is independently responsible for determining the suitability and completeness of the product for the particular construction project. Neighbouring works are only described schematically. All specifications and assumptions must be adjusted or agreed in the light of local conditions. Compliance with the technical specifications contained in the Technical Data Sheets, application guidelines, and system approvals is mandatory.

## Ceiling (section): connection to a window



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



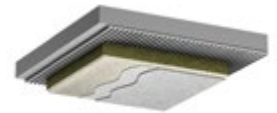
Note: This detail is a general, non-binding planning suggestion, which depicts the execution only schematically. The customer/planner/applicator is independently responsible for determining the suitability and completeness of the product for the particular construction project. Neighbouring works are only described schematically. All specifications and assumptions must be adjusted or agreed in the light of local conditions. Compliance with the technical specifications contained in the Technical Data Sheets, application guidelines, and system approvals is mandatory.



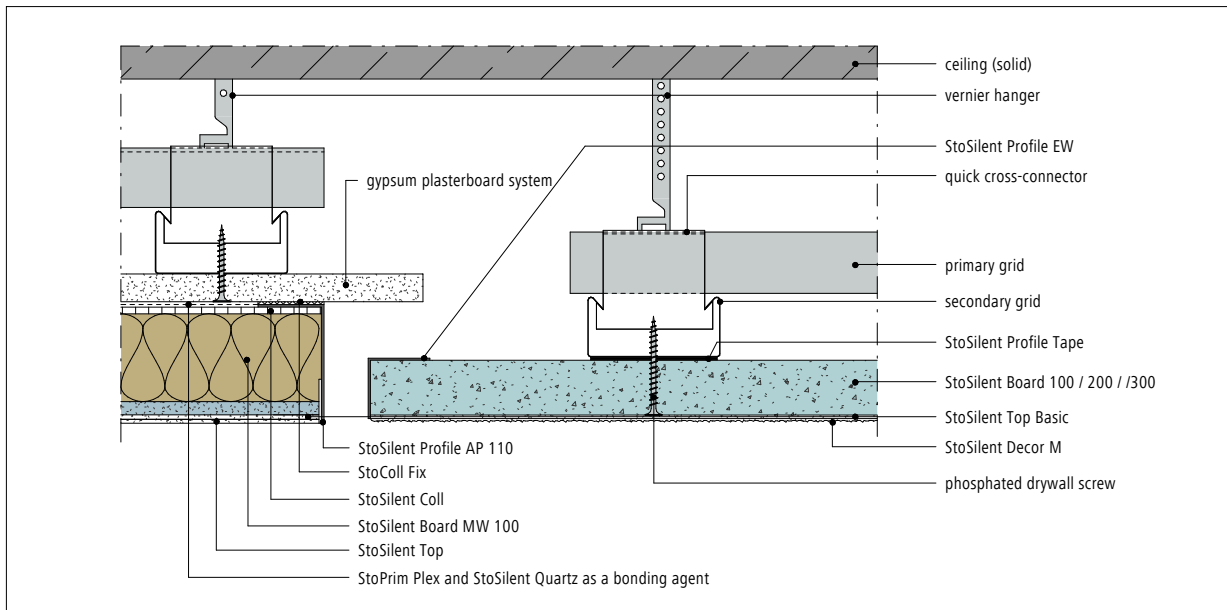
# StoSilent Direct

## Construction details – ceiling

StoSilent Direct  
The easy direct system



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



Note: This detail is a general, non-binding planning suggestion, which depicts the execution only schematically. The customer/planner/applicator is independently responsible for determining the suitability and completeness of the product for the particular construction project. Neighbouring works are only described schematically. All specifications and assumptions must be adjusted or agreed in the light of local conditions. Compliance with the technical specifications contained in the Technical Data Sheets, application guidelines, and system approvals is mandatory.

# StoSilent

## Application fields, challenges, benefits, solutions

Overview			
Category	Areas 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>• 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>
Office	Individual office	<ul style="list-style-type: none"> <li>• Reduction of reverberation time to ensure good speech intelligibility in meetings and telephone calls</li> </ul>	<ul style="list-style-type: none"> <li>• Room damping</li> <li>• Level reduction</li> </ul>
Office	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>• Level reduction</li> </ul>
Office	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>• 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>
Office	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 against harmful reflections</li> <li>• Reflectors act as sound mirrors for targeted sound direction</li> </ul>

	Benefits	Solutions	Product/system suggestions
	<ul style="list-style-type: none"> <li>• Highly effective in the 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 as coating</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> </ul>	<ul style="list-style-type: none"> <li>• StoSilent Distance</li> <li>• StoSilent Direct</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>• Highly effective in the 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 as coating system</li> </ul> <p>Alternative:</p> <ul style="list-style-type: none"> <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 as coating</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> </ul> <p>Coating system:</p> <ul style="list-style-type: none"> <li>• StoSilent Top</li> <li>• StoSilent Decor</li> </ul>

# StoSilent

## Application fields, challenges, benefits, solutions

Overview			
Category	Areas of application	Challenge	Technical background
Office	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 against harmful reflections</li> <li>• Reflectors act as sound mirrors for targeted sound direction</li> </ul>
Office	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>
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>
Education	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>
Education	Lecture halls	<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>• 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> </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> </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>• 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 enable foreign-language learning.</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 building in question.</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</li> <li>• Mid-frequency absorber</li> <li>• High-frequency absorber</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> </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> </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 enable foreign-language learning.</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 building in question.</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</li> <li>• Mid-frequency absorber</li> <li>• High-frequency absorber</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> </ul>

# StoSilent

## Application fields, challenges, benefits, solutions

Overview			
Category	Areas 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>
Leisure	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>
Leisure	Shopping mall	<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>
Leisure	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>
Leisure	Hotel lobby	<ul style="list-style-type: none"> <li>• Entrance halls and foyers serve as the business cards of companies, institutes, administrative offices, and hotels. The architectural features will vary according to the purpose of the building.</li> <li>• The reception area should preserve the anonymity of customers and visitors. It is therefore important to regulate the reverberation at close range.</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>
Leisure	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> <li>• No fixed normative specifications; planning according to theoretical knowledge/practical experience and based on model measurements and computer simulations</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> </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>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> </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>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> </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>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>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> </ul> <p>Coating system:</p> <ul style="list-style-type: none"> <li>StoSilent Decor</li> <li>StoSilent Top</li> </ul> <p>Condition:</p> <ul style="list-style-type: none"> <li>Operational test by Sto in individual cases</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>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> </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>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>	<p>The products and systems must be tailored to the specific requirements of the building in question. 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</li> <li>Mid-frequency absorber</li> <li>High-frequency absorber</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> </ul>

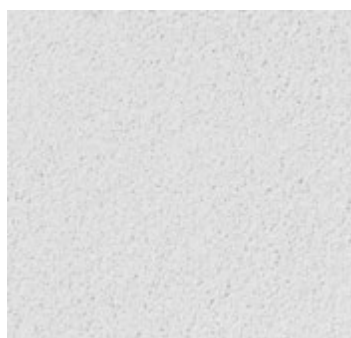
# Complete design freedom

## StoSilent paints 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.



StoSilent Top Basic (white)



StoSilent Top Finish



StoSilent Decor M



## StoSilent surfaces

### StoSilent Decor

With this thin-layer spray plaster, almost all StoSilent acoustic systems can be coated by machine.

- StoSilent Decor M: textured, silicate-bound coating, low-emission, eco-certified (natureplus®)

### StoSilent Top

This finish on an emulsion base makes for the finest possible surfaces.

- StoSilent Top Basic: porous intermediate coat and finish
- StoSilent Top Finish: porous finish, very popular with architects

### 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:

- (Visible side)
- StoSilent Decor, 2 to 3 layers
- StoSilent Fleece
- StoSilent Fleece Coll
- StoSilent Prim
- StoSilent Fix
- (Perforated gypsum plasterboard)

### StoSilent paints

#### StoColor Silent

The renovation paint was specially developed for the StoSilent acoustic systems and can be tinted in any colour from the Sto colour spectrum.

### StoColor Climasan

This paint coating gets rid of odours and breaks down harmful substances. As the only interior paint on the market and compared to other paints with similar claims, StoColor Climasan requires no sunlight whatsoever and even works under artificial light! Conventional interior lighting is sufficient to activate the catalyst in the interior paint.

- Noticeably better air, even in highly utilised rooms
- Limited tintability

# StoSilent system accessories

Thought through to the last detail

	Product	Art. no.	Areas 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 Profile EW	04075-012	Corner protection angle	24.0 x 24.0 mm, L 200 cm, K 3.0 mm	StoSilent Board 100/200 StoSilent Board 300
	StoSilent Profile FB	04075-011	Stop profile	W 24.0 mm, L 200 cm, K 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 mm, L 250 cm	StoSilent Board 100/200 StoSilent Board 110/210
StoSilent Direct	StoSilent Profile AP 110	04075-013	Stop profile	50.0 x 30.0 mm, L 200 cm	StoSilent Board MW 100
	StoSilent Profile AP 110	04075-014	Stop profile	70.0 x 30.0 mm, L 200 cm	StoSilent Board MW 100

# StoSilent surfaces

## StoSilent Decor cleaning and renovation

### Care and use instructions for StoSilent Decor M

#### General information

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

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

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

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

If, despite implementing all the precautionary measures, work is required on the system, this work must only be performed by special-

ists 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.

#### Renovation

**The cause of any damage or soiling must be ascertained prior to undertaking any renovation, particularly in the event of pressure marks from ceiling ventilation. 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 for full-surface and even soiling

Soiling on the entire ceiling surface area must be removed carefully with the aid of an industrial vacuum cleaner with a brush attachment. The entire ceiling surface area should then be overcoated with StoSilent Decor M. In accordance with the up-to-date technical documentation from Sto SE & Co. KGaA, StoSilent Decor M 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 in accordance with the StoSilent Decor M Technical Data Sheet must be strictly observed.

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

The existing finish must be carefully removed by sanding or wetting, and then by knocking off the material from a small area in order to remove the surrounding damage.

In the event of damage to the board surface (nonwoven or mesh surface on StoSilent boards), 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 M finish surrounding the damaged areas must then be covered.

Apply StoSilent Decor M 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.

After drying the touched-up area, StoSilent Decor M must be sprayed over larger areas. After drying, carefully break the tips of the finish in the touched-up area using a large tool (wide smoothing trowel). 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 on the entire ceiling surface area with StoSilent Decor M.

# StoSilent surfaces

## StoSilent Top Basic cleaning and renovation

### Care and use instructions StoSilent Top Basic

#### General information

StoSilent Top Basic is only approved as a finish in the colour shade version.

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 causes the open pores required for room acoustics to become blocked. This would destroy the acoustic effectiveness of the ceiling. Renovations are to be performed solely in accordance with the specifications of Sto SE & Co. KGaA.

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

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

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

If, despite implementing all the precautionary measures, work is required on the system, 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 right on the surface of StoSilent Top Basic can 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 as described in the paragraph "Renovation for full-surface soiling" must be performed.

### Applying a StoSilent Decor M overcoat

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

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

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

### **Renovation**

The cause of any damage or soiling must be ascertained prior to undertaking any renovation, particularly in the event of pressure marks from ceiling ventilation. 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 performing local renovation work. 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 plastering 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 in cases of full-surface soiling**

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

# StoSilent surfaces

## StoSilent Top Finish cleaning and renovation

### Care and use instructions StoSilent Top Finish

#### General information

The StoSilent Top Finish 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 causes the open pores required for room acoustics to become blocked. This would destroy the acoustic effectiveness of the ceiling. Renovations are to be performed solely in accordance with the specifications of Sto SE & Co. KGaA.

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

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

If, despite implementing all the precautionary measures, work is required on the system, 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 right on the surface of StoSilent Top Finish can 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 as described in the paragraph "Renovation for full-surface soiling" must be performed.

##### Applying a StoSilent Decor M overcoat

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

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

## Renovation

The cause of any damage or soiling must be ascertained prior to undertaking any renovation, particularly in the event of pressure marks from ceiling ventilation. 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 performing local renovation work. 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 plastering 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 perimeter area; this generally results in the area that has been touched up remaining slightly visible (similar to the appearance of a water stain).

### Renovation in cases of full-surface soiling

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

# Glossary

## Acoustics

The study of sound. In common parlance, "acoustics" refers to how sound is perceived in a defined environment.

## Equivalent sound absorption area $A$

Defined as the product of surface  $S$  and the degree of absorption  $\alpha$  of this surface.

## Weighted sound absorption coefficient

Frequency-independent single number which corresponds to the value of the reference curve once it has been shifted according to the procedure defined in EN ISO 11654. This procedure is based on the determination of the practical sound absorption coefficients  $a_p$ .

## Direct sound

The proportion of sound in a closed room which arrives first at the point of hearing or measuring without any sound reflections in between.

## Frequency ( $f$ )

The frequency  $f$  designates the number of oscillations per second in a sound. The faster the air particles oscillate, the higher the frequency. The unit of frequency is the hertz (Hz). A sound that oscillates at 500 cycles per second has a frequency of 500 hertz (Hz). The human range of audibility is between approx. 20 Hz and 20,000 Hz.

## Echo chamber

Special room in an acoustic laboratory which is built in such a way that a very high proportion of the sound is reflected at all room peripheries and is distributed evenly throughout the room. This results in a high level of reverberation with a long reverberation time. In the echo chamber in accordance with EN ISO 354, various parameters are examined including the sound absorption coefficient  $\alpha_s$  of materials.

## Hertz (Hz)

The SI unit for frequency indicates the number of oscillations per second, and more generally also the number of repetitive processes per second.

## Acoustic quality

Generic term covering the impact of acoustic properties in a room designed for sound reproduction, e.g. music or speech, as perceived at the location of the listener.

## Noise

Undesirable sound, evaluated by the individual perception of the listener.

## Reverberation time

Time in seconds that the sound pressure level would take to drop by 60 dB after the acoustic source is switched off.

## NRC

In accordance with ASTM C 423, the noise reduction coefficient (NRC) is averaged from the third-octave values of the sound absorption coefficient  $\alpha_s$  at 250, 500, 1000, and 2000 Hz and rounded to 0.05.

## Room acoustics

Field of acoustics which addresses the impact the structure of a room has on the sound events that take place within it.

## Sound

Mechanical oscillations of elastic media (gaseous, fluid, or solid). In building and room acoustics, sound processes in the air which surrounds us as a medium and via which our ear perceives the sound are of primary importance.

## Sound absorption

This means that sound energy is converted into mechanical vibrational energy and/or into thermal energy. It is expressed by the sound absorption coefficient  $\alpha$  or by the sound absorption class (A to E) in accordance with EN ISO 11654.

## Sound absorption coefficient $\alpha_s$

Indicates how well a given material at an individual frequency (third) is able to absorb sound. This factor is measured in the echo chamber in accordance with EN ISO 354.

## Sound pressure level

The pressure fluctuations caused by sound waves moving through the air is known as the sound pressure. The lowest sound pressure level audible to the human ear is 0 dB. This is known as the hearing threshold. The highest level that can be heard by the human ear is approx. 120 dB, which is identified as the pain threshold.

## 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 250 Hz to 500 Hz and rounded to 0.05.

## Shape indicators L, M, H

Reference to practical sound absorption coefficients  $a_p$  which exceed the values of the shifted reference curve in accordance with EN ISO 11654 by at least 0.25 in various 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





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