Building with conscience.

StoSilent Distance C

Application guideline

Interiors

Acoustics

Acoustic systems

StoSilent Distance C is an acoustic ceiling system for level walls and ceilings with an innovative installation method: adhesive bonding instead of screws.
It is ideal for designing the shape of a room to be seamless and sound-absorbing without any restrictions. Aesthetic appeal and function in perfect harmony.

Contents

System information

General information

View this guideline as a film:
Simply scan the QR code or go to the YouTube channel.

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Application of the system

Details

StoSilent Distance C
The suspended panel system

System description

Suspended ceiling and wall coverings on level surfaces
This application guideline applies to the production of ceiling and wall coverings on level surfaces, without back ventilation, with normal dust pollution.

Low-pressure ceilings, rooms with high dust pollution, or curved surfaces
- See separate application guideline for StoSilent Distance S and StoSilent Distance F.
- See StoSilent planning manual.
- See the Technical Data Sheet.

Area of application
- Building interiors
- In buildings designed for people to reside in
- In buildings with the usual climatic conditions

In glancing light the ceilings are not free from visible unevenness.

The areas of application are extremely varied:
- Commercial buildings
- Offices
- Public buildings
- Cultural buildings
- Residential buildings
- Schools

Stress conditions, service life
The system fulfils the conditions of stress class B in accordance with EN 13964, Table 8. See application ranges in the StoSilent planning manual.
The stress conditions are as follows:
- Fluctuating relative humidity: maximum 90 %
- Fluctuating temperature: maximum +30 °C
- No corrosive contamination
- No condensate formation
- No splash water
- Swimming pool, fully climate-controlled, maximum +30 °C, and maximum 70 % relative humidity

If compliance with the stress conditions is maintained, then the system will fulfil the expected economic service life for easily replaceable products.

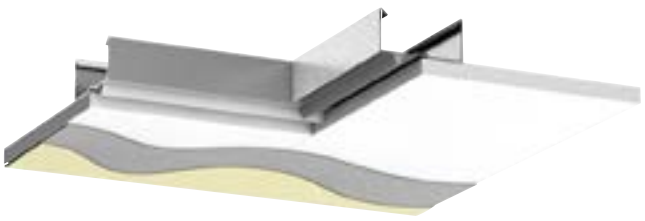
Durability, maintenance
Observe the specifications for the StoSilent Decor Decor and StoSilent Top Top coating build-ups:
- See technical documents.
- See StoSilent planning manual.

The maintenance requirements depend on the use and dust pollution in the room.

Suspended sub-construction in accordance with EN 13964 or EN 14195
The system build-up comprises a suspended sub-construction, StoSilent Board Board acoustic panels, and a force-transmitting adhesive bond. What really sets it apart is the fact that the acoustic panels do not need to be screwed onto the sub-construction. The acoustic panels are fixed with an adhesive compound with high initial adhesion.

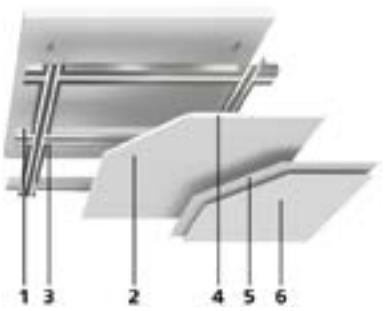
Provisions for the system components
The system is made up of the following components; see figure 1:
- Compression-proof vernier hanger or comparable compression-proof hanger
- Sub-construction at the same level made of galvanised metal profiles and connecting elements in accordance with EN 13964
- Adhesive compound with high initial adhesion: StoColl HT, hybrid-polymer basis with high initial adhesion
- Acoustic panels in the following variants:
  - StoSilent Board 105 C
  - StoSilent Board 205 C
- Intermediate coat: StoSilent Top Basic
- Finish in the following versions:
  - StoSilent Top Basic natural
  - StoSilent Top Basic tinted, white
  - StoSilent Top Finish white
  - StoSilent Top Finish tinted
  - StoSilent Decor M
  - StoSilent Decor MF

Figure 1: system build-up with StoSilent Board 205 C



System overview

Area of application:
- Interior
- For suspended ceiling and wall coverings on level surfaces



1 — Sub-construction
2 — Acoustic panel
3 — Bonding
4 — Edge finish
5 — Intermediate coat
6 — Finish

System description of StoSilent Distance

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

StoSilent Distance C
The suspended panel system

Acoustic panels

Example: StoSilent Board 205 C
Acoustic panel made of expanded glass granulate for suspended ceiling and wall coverings

Description
The StoSilent Board acoustic panels are made of expanded glass granulate. As a result, the panels boast an acoustically balanced, porous structure.
The open, nonwoven fabric facing on both sides ensures high levels of sound absorption in a wide frequency range. As a result of the special material properties and the construction type, the acoustic panels are extremely strong and give the entire construction stability.

Table 1: acoustic panels, technical properties

Acoustic panel	Panel formats	Reaction to fire (class) EN 13501-1
StoSilent Board 105 C	Thickness: 25 mm Length: 1,200 mm Width: 625 mm	A2-s1, d0
StoSilent Board 205 C	Thickness: 19 mm Length: 1,200 mm Width: 800 mm	

Reaction to fire
The system achieves class A2-s1, d0 in accordance with EN 13501-1.
Classification report: MA 39 – 21-00620
The following conditions must be met:
- Thickness of adhesive layer: < 1 mm
- Applied quantity of the adhesive: maximum 260 g/m²
- The final application must not have any open edges.

Surface design

StoSilent Decor M/StoSilent Decor MF white

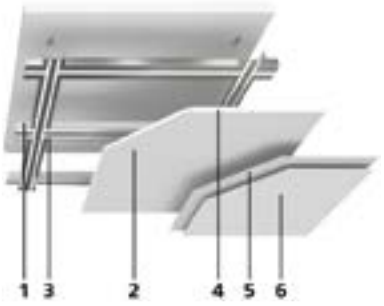
StoSilent Top Basic tinted white

StoSilent Top Finish white

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

StoSilent Distance C
StoSilent Board 105 C with finish, smooth or textured

Coating build-up
StoSilent Top Basic, StoSilent Top Finish



1 — Sub-construction at the same level
with vernier hanger

2 — Acoustic panel
StoSilent Board 105 C

3 — Bonding
StoColl HT

4 — Edge finish
StoSilent Profile AP

5 — Intermediate coat
StoSilent Top Basic natural

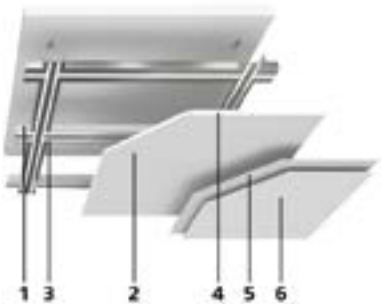
6 — Finish
StoSilent Top Basic or StoSilent Top Finish

System description

Area of application	· For suspended ceiling and wall coverings on level surfaces · Rooms with high visual standards, for balanced acoustics and good noise reduction · Examples: high-quality offices, living spaces, hotel rooms
Properties	· Weighted sound absorption coefficient α_w: max. 0.95 (L) · For smooth surfaces · Reaction to fire: class A2-s1, d0 in accordance with EN 13501-1 · Low system weight, with sub-construction: 13 kg/m²
Appearance	· Seamless · Surface: up to 200 m², longest side: max. 20 m · Smooth surface with fine or finest grain size, or with finely textured coating · Various colour designs · Dead-matt
application	· Application with shadow gap to all connecting building elements · Application to adjacent building elements also possible without shadow gap · Complete selection of detail solutions
Possible colour shades	· StoSilent Top: limited tintability in accordance with the StoColor System, marked with a hash in the colour fan · StoSilent Decor: tintable in accordance with the StoColor System
Products	· 00775-001 StoColl HT · 04779-008 StoSilent Board 105 C, format: 1,200 x 625 mm · 04075-023 StoSilent Profile AP (27.5 mm) · StoSilent Decor M white · StoSilent Decor M tinted · StoSilent Decor MF white · StoSilent Decor MF tinted · StoSilent Top Basic natural · StoSilent Top Basic tinted · StoSilent Top Finish white · StoSilent Top Finish tinted
Tools	· 08372-008 Sto-Spirit Level, length: 200 cm · 08290-016 Sto-Rounded Finishing Spatula with Soft Grip, width: 570 mm · 08288-039 Sto-Swiss Smoothing Trowel Notched, notching: 4 x 4 mm · 08289-002 Sto-Finishing Trowel Plastic, length x width x thickness: 280 x 135 x 1 mm · 08288-029 Sto-Special Smoothing Trowel, length x width: 800 x 120 mm · Optional: shadow gap saw
Supplementary products	00775-001 StoColl HT (for the stop profile)
Approval/standards	The relevant European and/or national test reports/certificates apply.

StoSilent Distance C
StoSilent Board 205 C with finish, smooth or textured

Coating build-up
StoSilent Top Basic, StoSilent Top Finish



1 — Sub-construction at the same level
with vernier hanger

2 — Acoustic panel
StoSilent Board 205 C

3 — Bonding
StoColl HT

4 — Edge finish
StoSilent Profile AP

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StoSilent Top Basic natural

6 — Finish
StoSilent Top Basic or StoSilent Top Finish

System description

Area of application	· For suspended ceiling and wall coverings on level surfaces · Rooms with high visual standards, for balanced acoustics and good noise reduction · Examples: high-quality offices, living spaces, hotel rooms
Properties	· Weighted sound absorption coefficient α_w: max. 0.70 (L) · For smooth surfaces · Reaction to fire: class A2-s1, d0 in accordance with EN 13501-1 · Low system weight, with sub-construction: 12 kg/m²
Appearance	· Seamless · Surface: up to 200 m², longest side: max. 20 m · Smooth surface with fine or finest grain size, or with finely textured coating · Various colour designs · Dead-matt
application	· Application with shadow gap to all connecting building elements · Application to adjacent building elements also possible without shadow gap · Complete selection of detail solutions
Possible colour shades	· StoSilent Top: limited tintability in accordance with the StoColor System, marked with a hash in the colour fan · StoSilent Decor: tintable in accordance with the StoColor System
Products	· 00775-001 StoColl HT · 04935-008 StoSilent Board 205 C, format: 1,200 x 800 mm · 04075-022 StoSilent Profile AP (21.5 mm) · StoSilent Decor M white · StoSilent Decor M tinted · StoSilent Decor MF white · StoSilent Decor MF tinted · StoSilent Top Basic natural · StoSilent Top Basic tinted · StoSilent Top Finish white · StoSilent Top Finish tinted
Tools	· 08372-008 Sto-Spirit Level, length: 200 cm · 08290-016 Sto-Rounded Finishing Spatula with Soft Grip, width: 570 mm · 08288-039 Sto-Swiss Smoothing Trowel Notched, notching: 4 x 4 mm · 08289-002 Sto-Finishing Trowel Plastic, length x width x thickness: 280 x 135 x 1 mm · 08288-029 Sto-Special Smoothing Trowel, length x width: 800 x 120 mm · Optional: shadow gap saw
Supplementary products	00775-001 StoColl HT (for the stop profile)
Approval/standards	The relevant European and/or national test reports/certificates apply.

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

Safety

Basic safety instructions

Knowledge of the application guideline

Improper use will lead to damage to property and personal injury. Knowledge of this application guideline is a prerequisite for the safe application of the products.

- Read through this application guideline carefully.
- Always carry out any work in line with the instructions in this application guideline.
- Observe the Technical Data Sheets.
- Observe the Safety Data Sheets.

Training personnel

The personnel are considered to be trained when they have completed training and been instructed on how to use the product correctly, and are aware of the dangers of improper use.

- Train the personnel on the following subjects: application guideline, application, dangers in the event of improper use.
- Only trained personnel may carry out work.

Intended use

The acoustic system is suitable exclusively for fabricating suspended ceiling and wall coverings on level surfaces.
Installation:

- Under concrete covers
- Under solid ceilings

Under wooden beam ceilings

Foreseeable misuse

The acoustic system is **not** suitable for the following application ranges:

- Curved surfaces
- Low-pressure ceilings
- Rooms with high levels of dirt and dust pollution
- Outdoors
- In wet rooms, in the splash zone

If the acoustic system is applied outside the specified uses, this is considered to be improper. Improper use can lead to damage to property and personal injury.

Personal protective equipment

Personal protective equipment provides protection from injuries.

- Wear suitable personal protective equipment depending on the work to be performed.
- Check that the personal protective equipment works correctly.

The personal protective equipment is made up of:

	**Ear protectors** Protect the ears and hearing from high noise levels. Protect the ears from mechanical, chemical, or thermal effects. - Use ear protectors from volumes of 80 dB(A) and above.
	**Eye protection, safety glasses** Protect the eyes and face from mechanical, visual, chemical, or thermal effects. - Wear safety glasses in accordance with DIN EN 166. - When working with lasers, wear safety glasses in accordance with DIN EN 207.
	**Foot protection, safety footwear** Protects the feet from mechanical, chemical, or thermal effects. Protects against tripping, slipping, twisting your ankle, and misstepping. - Wear safety footwear with an anti-puncture sole and a protective toecap. Protection class: S3
	**Hand protection, safety gloves** Protect the hands from mechanical, chemical, or thermal effects. - Wear cut-proof safety gloves in accordance with DIN EN 388. - Category II, cut resistance: min. class 3.
	**Body protection, protective clothing** Protects the body from mechanical, chemical, or thermal effects. - Wear closed protective clothing.
	**Head protection, safety helmet** Protects the head from mechanical, chemical, or thermal effects. - Wear a safety helmet.
	**Respiratory protection, respirator mask** Protects the airways from harmful dusts and particles. - Wear a respirator mask. Protection class: FFP2

Safety

Tools

Note

Tools
Damage as a result of improper and incorrect use

1) Use the specified tools.
2) Check and examine the tools regularly.

This section describes the tools to be used in the relevant work steps.

Setting up the construction site
- Mobile scaffold
- Double ladder
- Step ladder
- Height-adjustable work trestles
- Assembly table, board for work trestles

Planning, preparing, measuring, and checking the sub-construction
- Folding rule
- Measuring tape
- Steel square
- Straightedge, length: 2 m
- Spirit level, length: 1 m
- Sharp pencil
- Level, cross-line laser
- Working scaffold, height-adjustable, approx. 2 x 3 m

Cutting the sub-construction to size and fixing it
- Tin snips for cutting the sheet metal profiles to size
- Shears for cutting the sheet metal profiles to size
- Length stop

Installing the fixings and hangers
- Hammer drill for drilling into concrete
- Drill, cordless screwdriver, accessories
- Stone drill set, various diameters
- Twist drill bit set, various diameters
- Set of bits
- Hammer

Cutting the acoustic panel to size
- Keyhole saw, with guide rail, saw blade for timber, fine notching for curves and details
- Circular hand saw, plunge saw, with guide rail, Z48 notching for straight cuts and details
- Handsaw
- Abrasive paper, graining 120
- Sanding block
- Knife with flexible blade

Fixing the acoustic panels
- Cartridge gun
- Battery-powered cartridge gun for the tubular bag
- Sanding board
- Abrasive grid
- Clean, dry cloths

Coating the acoustic panels
- 08290-016 rust-free Sto-Rounded Finishing Spatula with Soft Grip, width: 570 mm
- 08288-039 Sto-Swiss Smoothing Trowel Notched, notching: 4 x 4 mm
- 08289-002 Sto-Finishing Trowel Plastic, length x width x thickness: 280 x 135 x 1 mm
- 08288-029 Sto-Special Smoothing Trowel, length x width: 800 x 120 mm
- Peristaltic conveying pump, e.g. inoBEAM M8

General information

Notes prior to application

Transporting and storing acoustic panels
- Ensure that the acoustic panels are protected against humidity and the effects of the weather.
- Store the acoustic panels on a level surface.
- Handle the acoustic panels carefully.
- Protect the acoustic panels from damage when transporting and applying them.

Preparing the acoustic panels for application
- Remove the polythene film and the edge protection profile before removing the acoustic panels from the pallet.
- Leave the acoustic panels and all system components to rest for at least 24 hours before application. Do not install the acoustic panels until they have adjusted to the application temperature and humidity. Application temperature: min. + 12 °C, relative humidity during application: max. 70 %
- Only hold and transport a maximum of two acoustic panels at a time to avoid damage.

Establishing a plan for the ceiling system, installing the vernier hanger
- Establish a plan of the sub-construction and the acoustic panels for the ceiling or wall area.
- The system can be implemented in consideration of the guide values from table 2.
- Ceiling installations are possible in consideration of the specification from table 3.
- If the carrier profile is cut through, install a reversible profile (e.g. in the case of ceiling installations).
- Seal the cavities in adjacent walls to prevent negative pressure.

Finishing coat
- Colour shade differences between the batches are possible due to the use of natural raw materials. Therefore, only use products from the same batch over a single surface.

Structural expansion joints
Incorporate the existing structural expansion joints.

Special geometries of the construction works
- Allow for the required expansion joints.
- Implement the expansion joints in accordance with EN 13964.

System connections
- System connections: walls, ceilings, supports
- Implement system connections and transitions to gypsum plasterboard or other building elements in the drywall construction in accordance with the planning details.

Notes

Applications to adjacent building elements are also possible without a shadow gap.

Width of a surrounding joint: min. 20 mm

Surfaces from 200 m^2:
Divide the surfaces with expansion joints.

Install the system on walls above 2 m in height.

Table 2: guide values for seamless acoustic panel systems from Sto

Surface	Max. 200 m^2
Leg length	Max. 20 m

Table 3: specifications for ceiling installations

Load cases	Fixing
Loads ≤ 2.0 kg point load	Fixing with suitable hollow wall anchors. Check the installation for suitability. Observe the manufacturer's specifications.
Loads ≤ 10.0 kg/m^2	Fix directly in metal sub-construction or convert into distributed load, e.g. by placing a multi-layer board behind it.
Loads > 10.0 kg/m^2	Directly to the bare ceiling

General information

Requirements for the construction site conditions and for application

Avoiding damage and soiling before the ceiling system is fixed.
- Coordinate the timeframe of the ceiling system installation with the construction process.
- Complete the construction work. Lay the screed and leave it to dry. Plaster the walls. Prepare the walls for the paint coat and finish. Sand the parquet floor. Complete the drywall construction work.
- Maintain the substrate and application temperature. See the Technical Data Sheet for the individual products.
- Substrate and application temperature: min. + 12 °C, relative humidity during application: max. 70 %
- Avoid quick heating or cooling during the installation and drying time to prevent cracks in the system.
- Force-transmitting connections between the acoustic panels and adjacent building elements are not permitted.

In the case of lightweight structures, limit the structural calculation and assessment and the transverse deformation to a maximum of l / 500.
In the case of load-bearing lightweight ceilings, collar beam ceilings, roof undersides, and extensive wooden beam ceilings, observe the following:
- If the ceiling is butt-jointed to the adjacent wall or building elements with a closed joint, use Sto-Stucco Tape, 2 x 3 mm.

Optional: install a shadow gap.

Cleaning, renovating
- See StoSilent planning manual.

Further information
- Observe the application details.
- See StoSilent planning manual.
- See the Technical Data Sheet.
- See Safety Data Sheet.
- See www.sto.com.

Notes

Avoid damage caused by assembly work.

Avoid soiling caused by dirty hands and hand perspiration. Wear clean white gloves. Example: when installing lamps. An aluminium conductor causes metal abrasion on the gloves and therefore soiling on the surface of the acoustic panel.

Avoid dust formation.

Patent protection

The method presented in this application guideline for the StoSilent Distance system is protected by the European patent EP 2 589 722 B1. The patent covers the production of a suspended ceiling with panel-type building elements fixed to a sub-construction of a load-bearing ceiling using an adhesive bond instead of mechanical fixings.

Planning the sub-construction

Components of the sub-construction and installations

Components of the sub-construction
- All components of the sub-construction meet the requirements of EN 13964 or EN 14195.
- Use a metal sub-construction at the same level.
- To increase the stability of the sub-construction, additional carrier profiles may be installed with cross-connectors above the profiles fitted at the same level.
- Only use components which are from the same manufacturer, have a CE marking, and are compliant with the system.

Installations, e.g. lamps, ventilation openings, access panels
- Take into consideration installations in the ceiling when planning the sub-construction.
- Allow for replacements and additional hangers and fix them correctly if the structural requirements necessitate this.

Note
Always arrange a profile behind every acoustic panel joint.

Panel formats and grid dimension

Two panel types are used in the system in different panel formats. The grid dimension of the sub-construction is generated from the panel formats.

Layout of the sub-construction for the panel format 1,200 x 800 x 19 mm
- Panel type: StoSilent Board 205 C
- Grid dimension of the sub-construction: 600 x 800 mm
- See table 4.

Layout of the sub-construction for the panel format 1,200 x 625 x 25 mm
- Panel type: StoSilent Board 105 C
- Grid dimension of the sub-construction: 600 x 625 mm
- See table 4.

Table 4: panel formats and grid dimensions of the sub-construction

Panel type StoSilent Board C	Panel format		Sub-construction Grid dimension	
	Length in mm	Width in mm	Length in mm	Width in mm
205	1,200	800	600	800
105	1,200	625	600	625

Planning the sub-construction

Aligning the sub-construction

Notes

The long sides of the acoustic panels run in the direction of the incidence of light.

The short sides of the acoustic panels run perpendicular to the incidence of light.

The eliminates cast shadows in the glancing light when the sun is low.

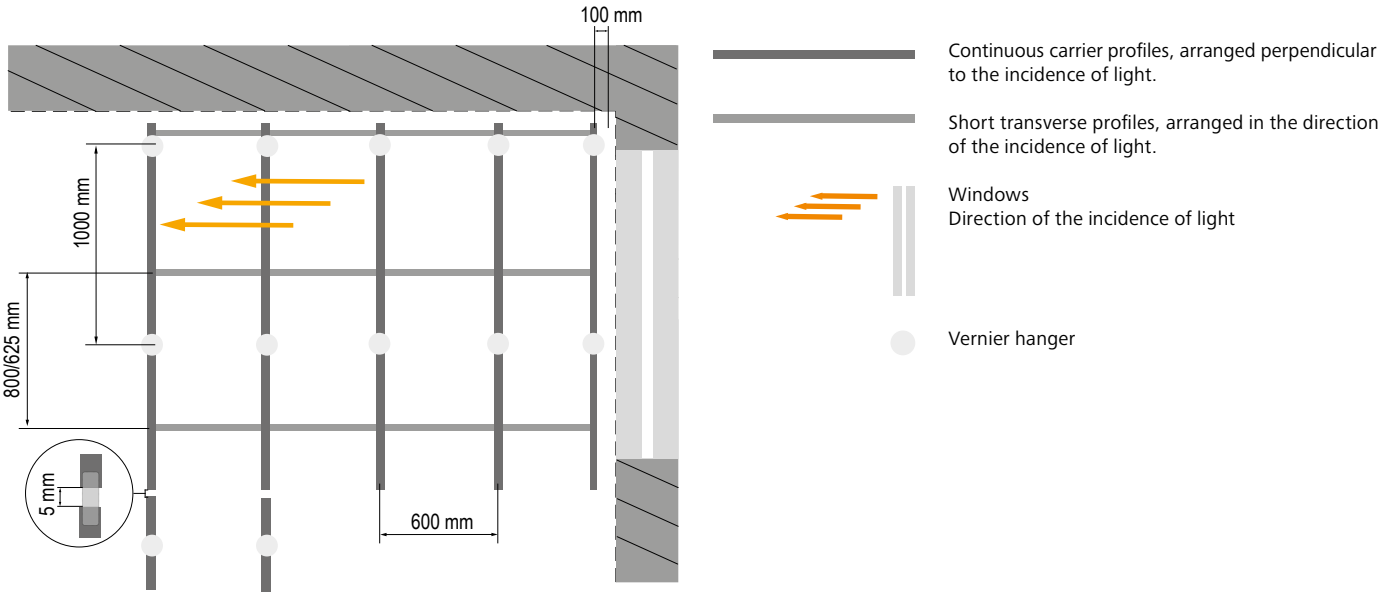
Hangers, carrier profiles

- Always arrange the hangers in the carrier profiles.
- Distance between the hangers: maximum 1,000 mm
- Distance between the carrier profile and the wall: maximum 100 mm

Acoustic panels

- If there is glazing on several sides, install the longitudinal joints of the panels in an east-west direction.
- Width of the panel cut: min. 100 mm

Figure 3: preparing the sub-construction



Note: this drawing is a general, non-binding planning suggestion, which depicts the application in schematic form only. The specific technical specifications and information on the products contained in the Technical Data Sheets and approvals must be observed.

Installing the acoustic panels

- The long sides of the acoustic panels run in the direction of the incidence of light.
- Depending on the construction site: install the acoustic panels perpendicular to the continuous carrier profiles in accordance with figure 3 or along the continuous carrier profiles in accordance with figure 5.
- Fix the acoustic panels at an offset of at least 400 mm up to a half panel length from one another in a bond. See fig. 5.
- Back every panel joint in the middle with a profile.
- Do not install any stack bonds. Only install T-joints.

Shadow gap, StoSilent Profile AP

- Fix the StoSilent Profile AP to form a shadow gap all the way round.
- The edge of the carrier profile must be at least 40 mm from the shadow gap so that the StoSilent Profile AP can be installed. See fig. 4.
- Width of the shadow gap: approx. 25 mm
- See the section on shadow gaps.

Figure 4: shadow gap, distance for StoSilent Profile AP

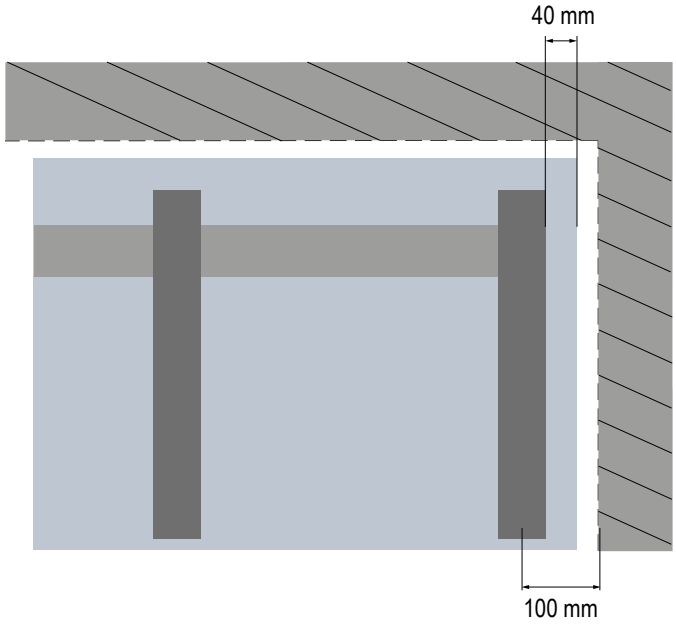
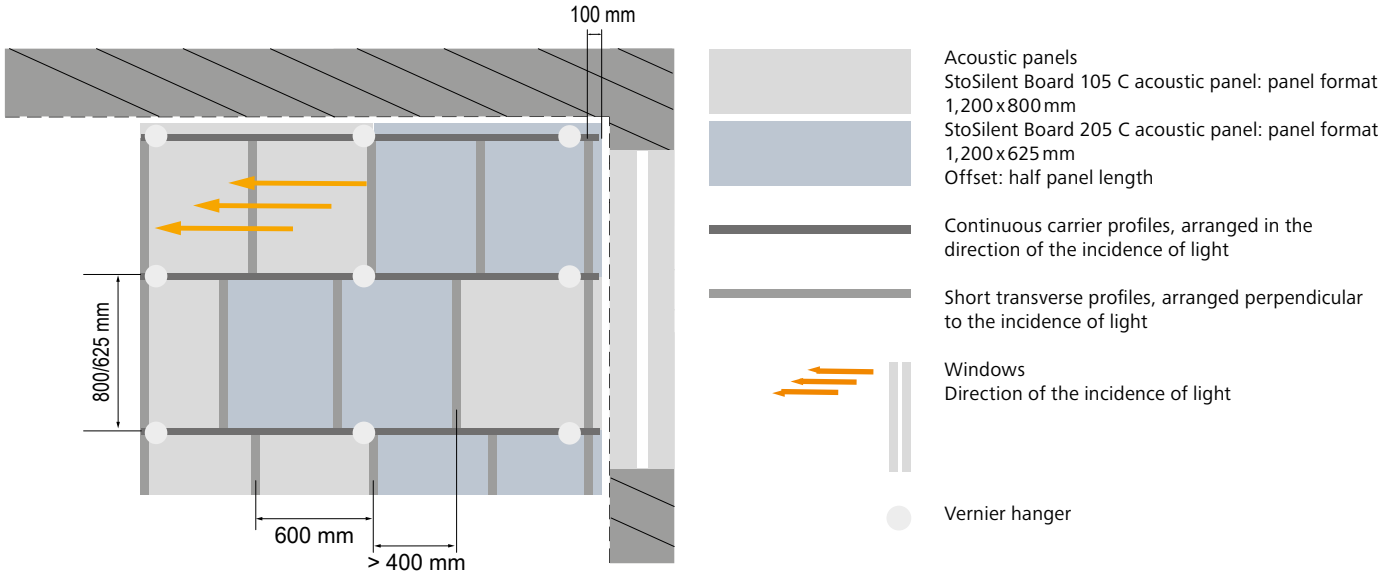


Figure 5: acoustic panels at an offset



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Installation of the sub-construction

Section safety messages

The following warning messages apply to the entire "Installation of the sub-construction" chapter.
The basic safety notes must also be observed. See the "Safety" section.

Warning

No fall protection, incorrect use of the fall protection
Consequences: serious injuries from slipping and falling

1) Wear slip-resistant safety footwear.
2) Use fall protection and ladders that work properly.
3) Fix a railing from a fall height of one metre.
4) Secure openings in the floor with a railing or barrier.
5) Access high workplaces via suitable stairs and ladders.

Warning

Moving and rotating machine parts
Consequences: serious injuries from being pulled in, crushing, shearing, cutting, jabbing

1) Wear cut-proof safety gloves and safety glasses.
2) Do not wear any jewellery that dangles or watches.
3) Wear your hair up. Wear a hair net. Wear close-fitting workwear.
4) Use fault-free tools and clamping devices.
5) Comply with the safety distances.

Warning

Sanding work and sawing work
Consequences: serious injuries from bursting and flying parts

1) Wear cut-proof safety gloves and safety glasses.
2) Use protection against chips.
3) Use protective covers.
4) Observe the speed indications for grinding wheels.

Caution

Sharp knife blades, corners, edges, tips
Consequences: cuts

1) Wear cut-proof safety gloves.
2) Deburr sharp edges.

Preparing the ceiling

Notes

Recommendation: use vernier hangers.

Use compression-proof hangers.

Do not use hangers with quick-clamping springs or wire hangers.

Do not use hangers with elastic elements for acoustic decoupling.
Distance between the hangers: maximum 1,000 mm

Distance between the carrier profile and the wall: maximum 100 mm

Warning

Laser beam
Consequences: retina damage, risk of visual impairment

1) Wear suitable laser eye-protectors.
2) Never aim the laser beam at people.
3) Never aim the laser beam at reflective surfaces.

Determine the angularity of the ceiling area.
Check whether the walls are straight all the way round.

Define the suspension height.
Determine the lowest point of the ceiling.

Align the rotating laser to the suspension height determined.

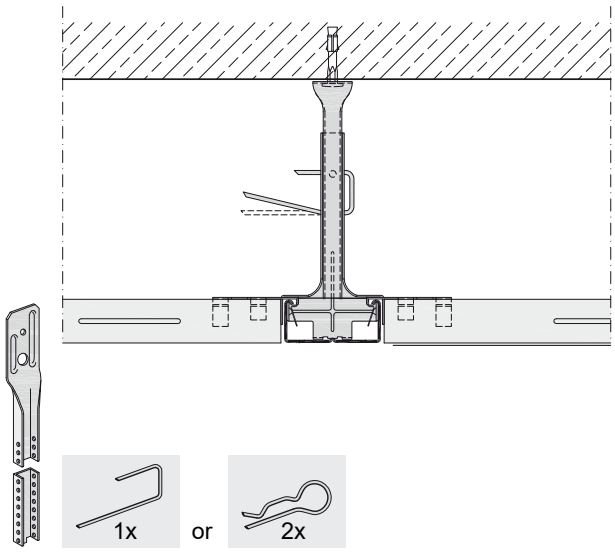
If necessary:
Mark the planned suspension height on the wall.

Measure the fixing point grid for the hangers and mark on the substrate.
Distance between the hangers in the longitudinal direction of the carrier profiles: max. 1,000 mm

Select the fixings for the available substrate and the required load-bearing capacity.
Fix the top vernier part with the fixing.

Note:
Implement the profile joints with straight connectors. Place the hanger max. 150 mm from the joint. Observe the manufacturer's specifications.

Figure 6: vernier hanger



Installation of the sub-construction

Installing the profiles

Caution

Sharp edges on the sheet metal profiles
Consequences: cuts

1) Wear cut-proof safety gloves.
2) Deburr sharp edges.

Note

Unsuitable tools
Consequences: corrosion in the cut edges of the sheet metal profiles

1) Cut the sheet metal profiles to size properly.
2) Use tin snips, shears, nibblers, or an angle grinder running slowly.

Cut the length of the carrier profiles to size.

Note:
- The distance between the first carrier profile and the wall must be 100 mm.
- The distance between the head end of the carrier profile and the wall must be the width of the shadow gap plus 40 mm.

Insert the bottom vernier part in the carrier profile.
Adjust the lower edge of the carrier profile to the height.
Secure the bottom vernier part to the top vernier part with two split pins.
See page 17, figure 6.

Insert the straight connector.

Insert the next carrier profile on the straight connector.
Note: maintain a distance of approx. 5 mm between the carrier profiles.

Finish the next rows of the carrier profiles.

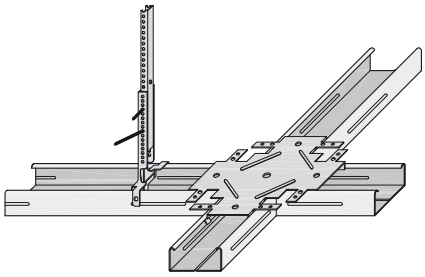
In the wall area:
Measure the field width between the carrier profiles.

In the grid:
Cut the transverse profiles to size consistent with the field width.
Observe the required centre to centre distance in the process to ensure that the acoustic panels fit in the grid dimension on the carrier grid.

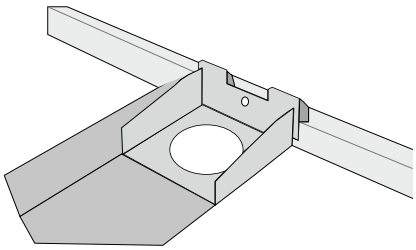
Mark the transverse profile spacing on the carrier profile.

Figure 7: profile connectors

Version 1



Version 2



Use the profile connectors depending on the connection type.
Version 1: level connectors
Version 2: safety cross-connectors

Version 1: insert the level connectors into the carrier profile from above at the marked locations.

Version 2: insert the safety cross-connectors into the traverse profiles and insert into the carrier profile from above.

Notes

The StoSilent Profile AP stop profile can already be fixed on the sub-construction for the shadow gap.

Fixing:
StoColl HT adhesive compound with high initial adhesion or blind rivets

Insert the traverse profiles.
Distance to the wall: max. 100 mm

To reduce the movement of the cross-connectors in the carrier profile, crimp the lugs on the safety cross-connectors with pliers.

When all carrier profiles and traverse profiles are inserted, readjust the entire sub-construction.

For application with butt joints
Stick stucco tape to the wall.

For application with shadow gap
See the section on shadow gaps.

Tips

Use the level connectors in the grid.

Use the safety cross-connectors in the edge zone or at the positions of the hangers.

Acoustic panels

Cutting the acoustic panels to size

Notes

Cut the acoustic panels for the edge zone of the ceiling exactly to size.

Take the joint sealant into account when forming a shadow gap.

Tool: circular hand saw with guide rail, length ≥ 1,400 mm

Caution

Incorrect and improper use of machines when cutting the acoustic panels to size
Consequences: cuts

1) Wear cut-proof safety gloves.
2) Use ear protectors.
3) Wear safety glasses.
4) Only use machines in perfect working order.
5) Use a circular hand saw with guide rail to cut the acoustic panels to size.
6) Suction clean the dust.

Lay the acoustic panels with the visible side down.
Cut the acoustic panels to size.

Mark the cut edges.

Note:
Only fix the cut edges in the wall area, not on the surface.

Cuts without imprint of the rear side from the factory
Mark the rear side so that acoustic panels are fixed correctly all the way round.

Cut curves to size.
Tool: keyhole saw

Rework the cut edges if necessary.
Tool: sanding block
Abrasive paper: graining 120

Bonding the acoustic panels

Notes

Only decant the adhesive for one acoustic panel.

Only use the supplied nozzle with the V-shaped detail 8 x 8 mm to apply the adhesive.

Position the acoustic panels immediately within 5 minutes and push into the adhesive to prevent a skin forming on the adhesive.

Perform horizontal and vertical corrections within 10 minutes.

Tool: battery-powered cartridge gun with adjustable feed

Remove the dust. Clean the profile surfaces. Degrease the profiles if they are heavily soiled.
Tool: clean and dry cloth, acetone

Measure the acoustic panel.
Cut the acoustic panel to size.

Mark the triangular opening with a marker pen.

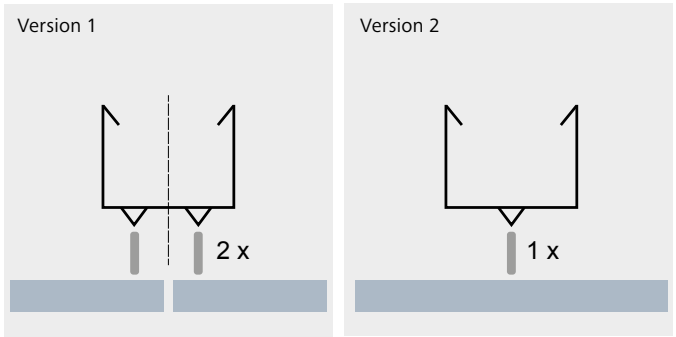
Position the nozzle with the V-shaped detail vertically on the sub-construction profile to apply the adhesive.

Note:
When applying the adhesive, hold the triangular opening perpendicularly to the direction of application.

Decant the adhesive for one acoustic panel.
Note:
- Adjust the applied quantity to the battery-powered cartridge gun.
- Applied quantity: max. 260 g/m²
- Apply the adhesive bead uniformly, seamlessly, and without any gaps.
- Apply the adhesive bead with 1 mm thickness and 20 mm width so that half of the profile width is covered with adhesive when pressure is applied.

Figure 8: nozzle with V-shaped detail

Figure 9: adhesive bead



Version 1: apply adhesive to the board joint.
Version 2: apply adhesive in the middle of the panel.

Acoustic panels

Bonding the acoustic panels

Notes

Put on clean gloves.

Align the acoustic panels in such a way that the edges lie on the centre line of the profiles.

Figure 10: correct acoustic panel bonding

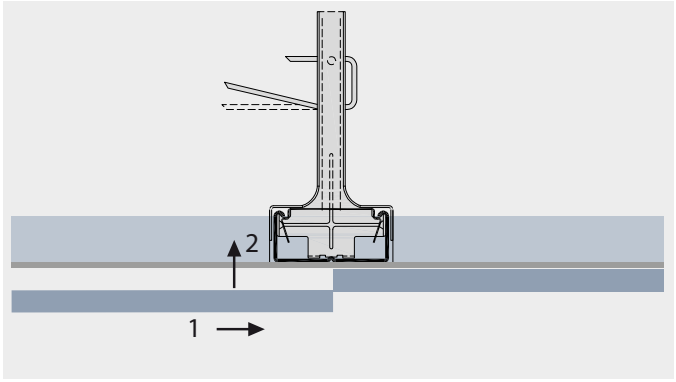
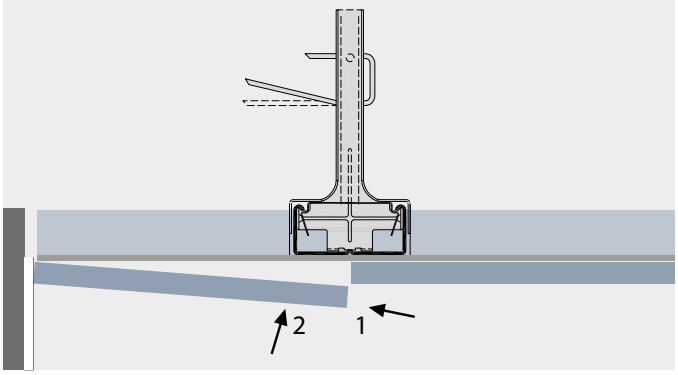


Figure 11: panel installation in the edge zone and butt joints



Notes

Install the acoustic panels within 5 minutes.
If a skin has already formed on the adhesive, remove the adhesive. Clean the profile and reapply the adhesive.

Note:
Keep the panel edges free from adhesive.
Ensure that no adhesive ends up on the panel surface or in the panel joint.

If too much adhesive has been applied, remove it, as long as it is still wet.
Clean the surface. Cleaning agent: e.g. acetone
Then apply new adhesive.

Position the acoustic panel in the adhesive with the rear side facing the sub-construction and gently press all the way round until the adhesive bears the weight of the acoustic panel.
See fig. 10.

Apply the adhesive for further acoustic panels. Position further acoustic panels at the edge of an acoustic panel that has already been stuck down. Press the acoustic panel into the adhesive until the adhesive bears the weight of the acoustic panel.
See fig. 10.

In the edge zone and on the butt joint:
- Press the acoustic panel that has been cut to size against the stucco tape.
- Insert and bond the acoustic panel appropriately.

See fig. 11.

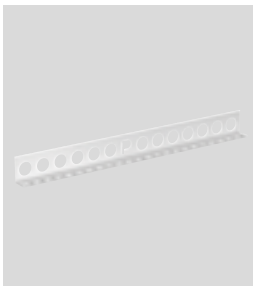
Align the acoustic panel. Press all panel joints so they are at the same level.
Tools: straightedge, spirit level

If necessary, bring the panels into position with props and support for around 30 minutes until the adhesive bears the weight of the panels.
Example: with protruding panels in the edge zone

Cut off the excess dry adhesive along the panel edge.

Shadow gap

StoSilent Profile AP



The StoSilent Profile AP is a stop profile for completing the finish cleanly at the edges.

Depending on the panel thickness, different profile heights are available:
- Panel thickness 19 mm, profile height 21.5 mm
- Panel thickness 25 mm, profile height 27.5 mm

Create a template or moulded piece. Cut out a shadow gap.
Tools: shadow gap saw, handsaw, knife with flexible blade

Apply adhesive fixing dabs to the inner side of the stop profile.

Adhesive compound with high initial adhesion:
StoColl HT

Turn the stop profile over into the shadow gap and apply some pressure. Ensure that the bottom edge of the stop profile with projection ends with the acoustic panel.

Fix the stop profile with spacer lugs until the adhesive is dry.

Spacer lugs: e.g. wedge-shaped strips of the acoustic panel

Remove the excess adhesive.
Tool: Sto-Spatula Trowel

Notes

Use the StoSilent Profile AP stop profile to implement a shadow gap.

With round or curved ceiling or wall constructions, connections on columns:
Use special profiles for drywall construction to implement a shadow gap.

Cover all adjacent building elements.

Intermediate coat

Section safety messages

The following warnings apply to the entire “Intermediate coat” section.
The basic safety notes must also be observed. See the “Safety” section.

Warning

The product comes into contact with eyes.
Consequences: severe damage to the eyes

1) Wear safety glasses.
2) If the product comes into contact with your eyes, rinse out your eyes with plenty of water for 15 minutes. Also rinse under your eyelids. Remove any contact lenses. Rinse out your eyes again.
3) Do not rub your eyes.
4) Seek medical attention immediately.

Caution

Skin contact
Consequences: skin irritation

1) Wear safety gloves.
2) Avoid contact with skin. Wear impermeable protective clothing.
3) Remove and wash contaminated clothing and gloves, including the insides, before reusing them.
4) If the product comes into contact with your skin, wash thoroughly.

General information

- Use a working scaffold at the correct height.
- Use the right tools.
- Make sure there are enough people to apply the intermediate coat. Recommendation: 1 person per 1.5 to 2.0 m work width
- Increase the amount of people if there are complicated connection details.
- We recommend applying the coating to a test surface of at least 5 m² and having it approved by the planner/building owner representative.

Preparation

Dilute the intermediate coat with max. 5 % water and stir well.

To avoid waiting times, mix all necessary containers prior to coating.

See the Technical Data Sheet for StoSilent Top Basic.

Notes

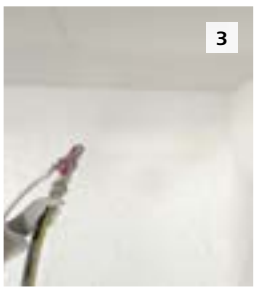
There are two ways of applying the intermediate coat with StoSilent Top Basic:
1) Spray process:
- With StoSilent Decor finish
- With sound absorption limited to max. $\alpha_w = 0.70$ (L) in accordance with EN ISO 11654

2) Bucket trowel and plastering trowel:
- With the StoSilent Decor or StoSilent Top finish
- With sound absorption limited to max. $\alpha_w = 0.95$ in accordance with EN ISO 11654

Silent Top Basic – spray process application

Spray StoSilent Top Basic on the surface. Begin with the edge zone with movements parallel to the wall.
Then spray the coating onto the surface with circular motions.
· Application cycles: 1
· Distance: approx. 70 cm
· Amount of material: approx. 0.70 kg/m²

Overcoat the dry coating with a spatula and slight pressure in order to scrape off any protruding tips and level the surface.
Remove dust from the surface.
Tool: rust-free Sto-Rounded Finishing Spatula with Soft Grip, width: 570 mm



Fill the surface with StoSilent Top Basic natural. Spray the coating on the surface using circular motions.
· Application cycles: 1
· Distance: approx. 70 cm
· Amount of material: approx. 2.0 kg/m²

Notes

Drying time:
Leave the mottled intermediate coat with StoSilent Top Basic natural to dry for at least 12 hours.

Intermediate coat

StoSilent Top Basic – application with bucket trowel and plastering trowel

Apply the intermediate coat to the acoustic panels from the edge of the ceiling.
Tool: Sto-Swiss Smoothing Trowel

Note:
Apply enough material for full-faced combing 4 x 4 mm.
See table 5.

Leave approx. 3 cm of material without notching in the edge zone in order to ensure visually perfect smoothing.
- The first notching must run perpendicular to the incidence of light.
- Press on the notched side of the trowel firmly and uniformly at an angle of approx. 30°.
- Ideally, you will hear a scraping sound on the surface.
- Tool: Sto-Swiss Smoothing Trowel Notched, notching: 4 x 4 mm

Second notching crosswise:
The second notching must run parallel to the incidence of light.
- Press on the notched side of the trowel firmly and uniformly at an angle of approx. 30°.
- Ideally, you will hear a scraping sound on the surface.
- Tool: Sto-Swiss Smoothing Trowel Notched, notching: 4 x 4 mm

StoSilent Top Basic – smoothing the intermediate coat

- Smooth the ceiling, applying uniform pressure and holding the tool at an angle of approx. 10°.
- First smooth the areas along the edge, and then smooth the entire surface.
- Trowel off as little material as possible.
- The StoSilent Profile AP stop profile acts as a smoothing ridge.
- Finally, deburr the entire surface.
- Tool: rust-free Sto-Rounded Finishing Spatula with Soft Grip, width: 570 mm

Smoothing:
- Smooth the entire surface.
- Start in the edge zone.
- Tool: Sto-Special Smoothing Trowel, length: 800 mm

Leave the intermediate coat to dry for approx. 36–48 hours after smoothing.

Clean surplus material from the ceiling edge. Remove any burrs in the process.

Table 5: amount of material and drying time

	Amount of material	drying time
StoSilent Top Basic natural	2.0–3.0 kg/m²	36 hours

Notes

Consistent layer thickness:
Notch in one direction. One person carries out the application cycle.

Avoiding trowelling ridges:
Gently bend down the corners of the tools for smoothing. Mark the side.

If there is not enough StoSilent Top Basic on a surface:
Take material from the surrounding area where possible and level it slowly while applying more pressure.

Combed material:
Collect the material separately and do not put it back in the container. To reuse the combed material, dispense it into a full container and stir well.

Finishing coat

Section safety messages

The following warnings apply to the entire “Finish” section. The basic safety notes must also be observed. See the “Safety” section.

Warning

The product comes into contact with eyes.
Consequences: severe damage to the eyes

1) Wear safety glasses.
2) If the product comes into contact with your eyes, rinse out your eyes with plenty of water for 15 minutes. Also rinse under your eyelids. Remove any contact lenses. Rinse out your eyes again.
3) Do not rub your eyes.
4) Seek medical attention immediately.

Caution

Skin contact
Consequences: skin irritation

1) Wear safety gloves.
2) Avoid contact with skin. Wear impermeable protective clothing.
3) Remove and wash contaminated clothing and gloves, including the insides, before reusing them.
4) If the product comes into contact with your skin, wash thoroughly.

General information

- Use a working scaffold at the correct height.
- Use the right tools.
- Make sure there are enough people to apply the finish. Recommendation: 1 person per 1.5 to 2.0 m work width
- Increase the amount of people if there are complicated connection details.
- We recommend applying the coating to a test surface of at least 5 m² and having it approved by the planner/building owner representative.

Finishing coat

Finish in the versions StoSilent Top Basic, StoSilent Top Finish

After the intermediate coat with StoSilent Top Basic has completely dried, cut off the Sto-Stucco Tape so that it is flush with the surface.

Dilute StoSilent Top Basic with max. 5 % water and stir well.
Dilute StoSilent Top Finish with max. 2 % water and stir well.

To avoid waiting times, mix all necessary containers prior to coating.

See the Technical Data Sheet for StoSilent Top Basic and StoSilent Top Finish.

Apply the finish to the acoustic panels from the edge of the ceiling.
Tool: Sto-Swiss Smoothing Trowel

Note:
Apply enough material for full-faced combing 4 x 4 mm.
See table 6.

Leave approx. 3 cm of material without notching in the edge zone in order to ensure visually perfect smoothing.
- The first notching must run perpendicular to the incidence of light.
- Press on the notched side of the trowel firmly and uniformly at an angle of approx. 30°.
- Ideally, you will hear a scraping sound on the surface.
- Tool: Sto-Swiss Smoothing Trowel Notched, notching: 4 x 4 mm

Second notching crosswise:
The second notching must run parallel to the incidence of light.
- Press on the notched side of the trowel firmly and uniformly at an angle of approx. 30°.
- Ideally, you will hear a scraping sound on the surface.
- Tool: Sto-Swiss Smoothing Trowel Notched, notching: 4 x 4 mm

Note:
- First smooth the areas along the edge, and then smooth the entire surface.
- Trowel off as little material as possible.

Smoothing:
- Smooth the ceiling, applying uniform pressure and holding the tool at an angle of approx. 10°.
- Finally, deburr the entire surface.
- Tool: rust-free Sto-Rounded Finishing Spatula with Soft Grip, width: 570 mm

- Smoothing:
- Smooth the surface after approx. 15 – 45 minutes.
- Smooth the entire surface.
- Start in the edge zone.
- Tool: Sto-Special Smoothing Trowel, length: 800 mm

Clean surplus material from the ceiling edge. Remove any burrs in the process.

Precision work:
- Check the surface for unevenness after fully smoothing.
- Perform precision smoothing selectively on the surface.
- Start in the edge zone.
- Tool: Sto-Finishing Trowel Plastic, thickness: 1 mm

Notes

Strong draughts and different surface temperatures can extend or reduce the drying time.

Start working when the surface is starting to become matt.

Table 6: amount of material and drying time

	Amount of material	drying time
StoSilent Top Basic	2.5–3.0 kg/m²	Natural: 36 hours White, tinted: 48 hours
StoSilent Top Finish	3.0 kg/m²	36 hours

Notes

Consistent layer thickness:
Notch in one direction. One person carries out the application cycle.

Avoiding trowelling ridges:
Gently bend down the corners of the tool. Mark the side.

If there is not enough StoSilent Top Basic on a surface:
Take material from the surrounding area where possible and level it slowly while applying more pressure.

StoSilent Top Basic:
To reuse the combed material, dispense it into a full container and stir well.

StoSilent Top Finish:
Do not reuse the combed material.

Finish in the versions StoSilent Decor M, StoSilent Decor MF

Notes

Apply the finish with either a peristaltic conveying pump or a Sto-Hopper Gun.
A peristaltic conveying pump or a conveying pump with a stator is recommended in the case of surfaces that are larger than around 20 m².

Creating a test surface:
Apply the coating to a test surface of at least 5 m² and have it approved by the planner/building owner representative.

Peristaltic conveying pump:
Set the air quantity and conveying output.
Sto-Hopper-Gun: set the air pressure.

Caution

The product gets into the airways.
Consequences: irritation of the airways

1) Wear a respirator mask.

Stir StoSilent Decor M or StoSilent Decor MF well.

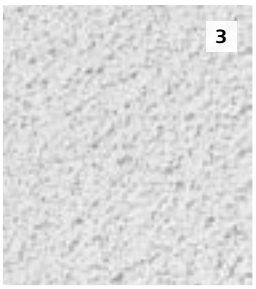
Note:
If the product is applied with the Sto-Hopper Gun, add max. 3 % water.

- Application cycles: 1–2
- Distance: approx. 70 cm
- See table 7.

Begin with the edge zone with movements parallel to the wall.
Then spray the coating onto the surface with circular motions.

Finishing coat

Finish in the versions StoSilent Decor M, StoSilent Decor MF



Allow the surface to dry.
See table 7.

Carefully sweep the ceiling before the second application cycle to remove loose or poorly adhering particles using a brush with soft bristles.

Peristaltic conveying pump

Sto-Hopper Gun

Clean surplus material from the ceiling edge. Remove any burrs in the process.

Drying time:
- High humidity and/or low temperatures prolong the drying time.
- More intense colour shades have a longer drying time. Otherwise, there is a risk of mottling.
- Additional application cycles may be required depending on the colour shade.

Machine technology settings:
- Peristaltic conveying pump (e.g. inoBEAM M8), conveying pump with stator (e.g. STROBOT 406 RS), or Sto-Hopper Gun, compressor (e.g. V-Meko 400)
- Nozzle size: 4–6 mm
- Flow: 0–15 l/min
- Spraying distance: approx. 70 cm
- Air pressure: 1.5–2.5 bar
- Compressor performance: min. 360 l/min, constant

Table 7: amount of material and drying time

	Amount of material	drying time
1st application cycle	Approx. 0.7 kg/m²	Min. 12 hours
2nd application cycle	Approx. 0.9 kg/m²	Min. 12 hours
3rd application cycle	Approx. 0.9 kg/m²	

Notes

The appearance will dictate whether the third application cycle is required.

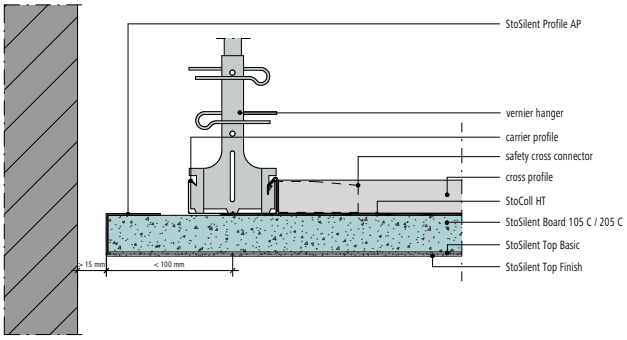
The drying time depends on the climatic conditions and may be up to 24 hours.

Connection details

Wall junction

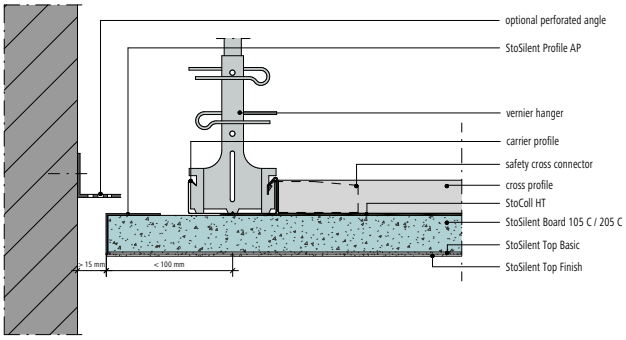
Ceiling (vertical section): open wall junction

Sto-HQ-EN_SSDI C-BT-0100_2020-09-01



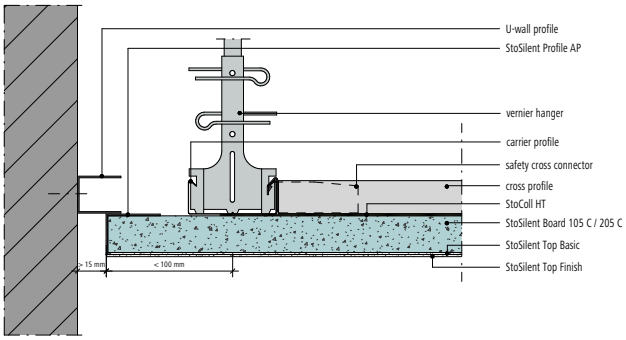
Ceiling (vertical section): wall junction with perforated angle bracket

Sto-HQ-EN_SSDI C-BT-0110_2020-09-01



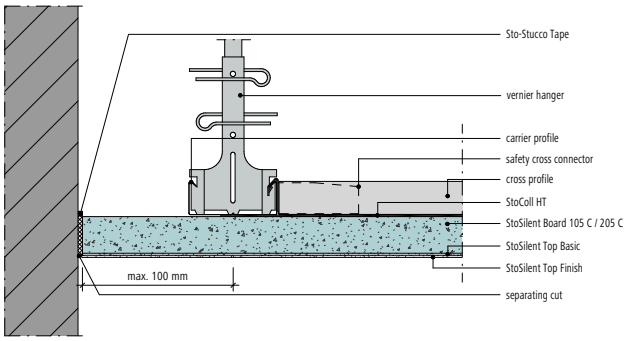
Ceiling (vertical section): wall junction with U-wall profile

Sto-HQ-EN_SSDI C-BT-0112_2020-09-01



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

Sto-HQ-EN_SSDI C-BT-0115_2020-09-01



Notes

Heavy and large installations:
Fix heavy and large installations to a separate sub-construction and suspend. Separate the acoustic panels from the installations structurally. Observe the load case specifications. See table 3.

Access panels:
Install access panels directly at the trimmer in the sub-construction to avoid damage to the acoustic panel and to ensure the load-bearing capacity. Then cut out the panel accordingly and bond to the frame precisely.

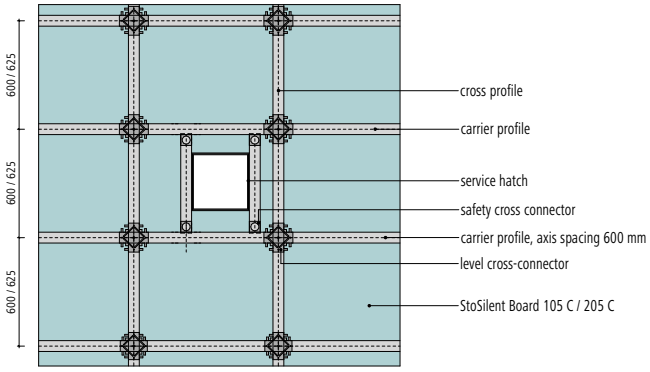
Recessed lamps:
If there are any recessed lamps in the area of an open, surrounding shadow gap, the ceiling cavity can be illuminated with scattered light. In this case, encase the lighting fixtures in the ceiling cavity using a box so that light cannot leak.

Connection details

Access panels and installations

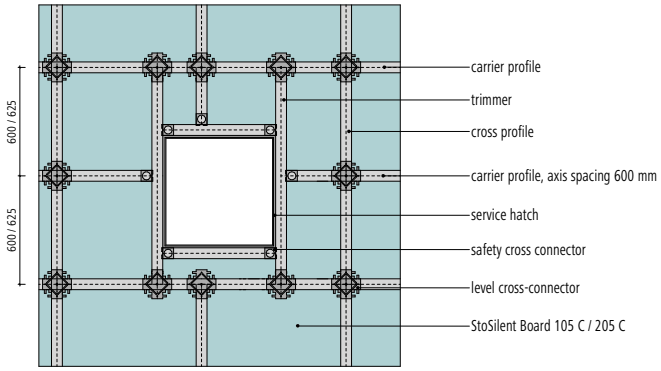
Access panel without trimmer in the sub-construction

Sto-HQ-EN_SSDI C-BT-0640_2020-09-01



Access panel with trimmer in the sub-construction

Sto-HQ-EN_SSDI C-BT-0641_2020-09-01



Note: this drawing is a general, non-binding planning suggestion, which depicts the application in schematic form only. The specific technical specifications and information on the products contained in the Technical Data Sheets and approvals must be observed.

Notes

Notes

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