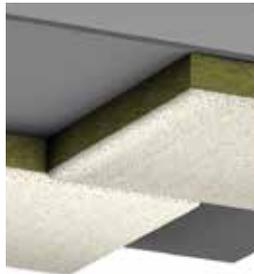




StoSilent Direct Application guideline

Please note that the details, illustrations, general technical information, and drawings contained in this brochure are only general proposals and details which merely describe the basic functions schematically. They are not dimensionally accurate. The applicator/customer is independently responsible for determining the suitability and completeness for the product in question. Neighbouring works are described only 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 in the Technical Data Sheets and in system descriptions/approvals must be observed.

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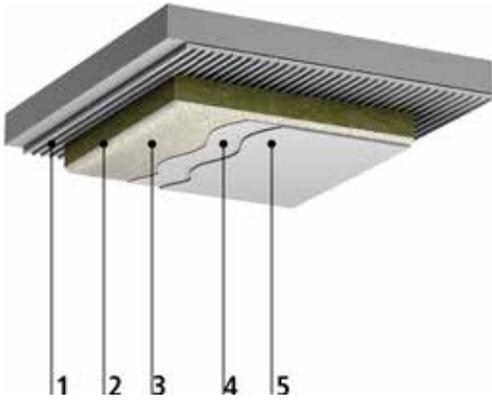


View this guideline as a film:
Simply scan the QR code or go to the
Sto YouTube channel.

System build-up

System description

StoSilent Direct, render-coated



- 1 Bonding:**
StoSilent Coll MW
- 2 Joint coating:**
StoSilent Filler sound-absorbing joint filler
- 3 Acoustic panel:**
sound-absorbing acoustic panel made of mineral wool
- 4 Intermediate coat:**
StoSilent Top Basic sound-permeable intermediate coat
- 5 Top coat:**
StoSilent Top Basic sound-permeable top coat or, if required, 1–3 layers of StoSilent Decor M textured, sound-permeable top coat

StoSilent Direct

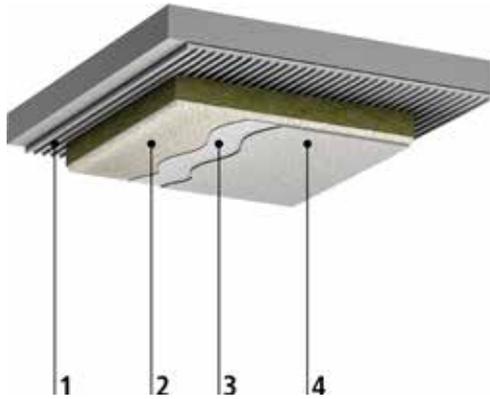
Seamless, directly bonded acoustic system with fine or textured surface

Area of application	<ul style="list-style-type: none"> • In interiors on walls and ceilings • Full-surface installation without sub-construction • Only of limited suitability for areas subject to mechanical stress • For smooth surfaces • Recommendation: apply to walls above a height of 2 m only
Properties	<ul style="list-style-type: none"> • Maximum sound absorption up to $\alpha_w = 0.8$ • Seamless up to 200 m² with a top coat of StoSilent Top Basic • Seamless up to 700 m² with a top coat of StoSilent Decor M • Building material class A2-s1, d0
Appearance	<ul style="list-style-type: none"> • Fine surface: StoSilent Top Basic, limited tintability in approx. 250 colour shades of the StoColor System • Textured surface: StoSilent Decor M, limited tintability in approx. 450 colour shades of the StoColor System
Application	<ul style="list-style-type: none"> • Panels fixed directly in the bond → offset ≥ 200 mm
Approval	<ul style="list-style-type: none"> • The relevant European and/or national approvals apply.

System build-up

System description

StoSilent Direct, colour-coated



- 1 Bonding:**
StoSilent Coll MW
- 2 Acoustic panel:**
sound-absorbing acoustic panel made of mineral wool
- 3 Intermediate coat:**
StoColor Climasan sound-permeable colour coating
- 4 Top coat:**
StoColor Climasan sound-permeable colour coating

StoSilent Direct

Directly bonded acoustic system with visible joints and textured surface – colour-coated/odour-eliminating function provided by StoColor Climasan

Area of application	<ul style="list-style-type: none"> • In interiors on ceilings and walls • Full-surface installation without sub-construction • Only of limited suitability for areas subject to mechanical stress • For smooth surfaces • Recommendation: apply to walls above a height of 2 m only
Properties	<ul style="list-style-type: none"> • Maximum sound absorption up to $\alpha_w = 0.95$ • Up to 700 m² over one area • Building material class A2-s1, d0 • StoColor Climasan provides odour-eliminating function
Appearance	<ul style="list-style-type: none"> • Textured surface • Dead-matt colour coating • Limited tintability in approx. 250 colour shades of the StoColor colour system • Visible V-joints
Application	<ul style="list-style-type: none"> • Panels fixed directly in the bond → offset ≥ 200 mm • Joint pattern must be planned in advance. • With misted colour coating
Approval	<ul style="list-style-type: none"> • The relevant European and/or national approvals apply.

General information

Procedure

- The applicator is to take part in a training or introduction before applying the product for the first time.
- Ensure that the acoustic panels are always protected against humidity and weathering influences.
- Always store the acoustic panels on a level surface.
- Leave the panels and system components to rest for at least 24 hours before application to allow them to adjust to the climatic installation conditions.
- Due to the fact that application is carried out manually, uneven patches may become visible in unfavourable light conditions (glancing light).

Construction site requirements

- The lowest permitted application and substrate temperature is +12 °C.
- The recommended application temperature is between +15 and 20 °C.
- The maximum relative air humidity and building element moisture level must not exceed 70 %.
- An areal scaffolding which is adapted to suit the system build-up must be provided (for top coats with StoSilent Top Basic).
- The drying process can be accelerated using a condensate dryer if necessary.

Notes on use after application

- After installing the acoustic system, treat the surface carefully to retain the acoustic effect, and to prevent its aesthetic appeal from being adversely affected. Ensure the following are avoided:
 - Damage caused by assembly work
 - Soiling caused by dirty hands and hand perspiration
 - Dust resulting from grinding down wooden floors, cleaning work, etc.

Note

When installing lights, mounting parts, etc., always wear clean gloves.

Substrate preparation

Note

Uneven patches in the substrate can affect the appearance of the surface.

The substrate must be able to bear a load of ≥ 5 kPa.

The substrate must be flow-proof. Openings etc. must have an airtight seal.

New substrates

Remove soiling and clean surfaces; remove any sinter skin.

Old substrates

Remove loose paint remnants as well as non-load bearing old (paint) coats and subsequently clean the substrate (mechanically or using a suitable paint remover). In the case of absorbent substrates, apply StoPrim Plex as a substrate coating. Overcoat old paint coats with the bonding agent StoSilent Prep Quarz.

Concrete substrate

The concrete surface must be free of formwork oils. Remove formwork ridges with a suitable tool. Level out uneven patches, small gaps, and shrinkage holes using StoSilent Coll MW. The substrate preparation with StoPrim Plex depends on the absorption behaviour of the substrate. We recommend applying StoSilent Prep Quarz as a bonding agent.

Gypsum plasterboard substrate

Maximum approved carrier rail distance: 60 cm
Level out uneven patches in the substrate. Substrate preparation with StoPrim Plex and StoSilent Quartz as a bonding agent.

Lime-gypsum plaster substrate

Level out uneven patches in the substrate. Substrate preparation with StoPrim Plex and StoSilent Prep Quartz as a bonding agent.

Board installation



1 To prevent crack formation, separate off neighbouring surfaces or structures (wall junctions, columns, window or door frames made from metal, timber, etc.) using Sto-Stucco Tape.

Alternatively, form a shadow joint with profiles.



2 Mask ceiling installations such as lights, speakers, fire alarms, and service hatches with StoSeal Band BK sealing tape so that they are airtight.



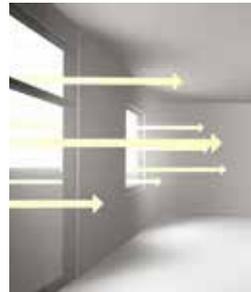
3 If necessary, mark the cutting pattern on the rear side of the mineral wool. Cut the edges with a suitable piece of equipment. Cut out recesses with a keyhole saw, handsaw, or cutting knife.



4 Stir StoSilent Coll MW for approx. 2 minutes, allow to mature for approx. 3 minutes and then stir again for approx. 30 seconds.



5 Apply StoSilent Coll MW over the entire rear surface of the panel (full-surface wetting) and tooth with a 10 x 10 mm toothed trowel at an angle of 45°. Then apply an all-around adhesive bead (approx. 5 mm thicker than the combed adhesive).



Note

Always install the panels so the short side is facing the main source of light.



6 Fix the panels in the bond with an offset of at least 200 mm. They should be flush over the area and tightly butt-joined. Avoid cross joints. Avoid contaminating the visible side of the panel.

There should be no height offset between adjacent panels when bonded. Use a level if necessary to ensure that the surface is even. After approx. 5 minutes, check the surface again with a level and apply more pressure if necessary.

Joint coating



1

Mix StoSilent Filler in a ratio of 2 : 1 (joint filling compound : water): stir for two minutes, leave to rest for five minutes, then stir again briefly.

Caution: Always mix an entire container.



2

Fill the joints with StoSilent Filler using a small-sized plastering trowel until they are completely filled.



3

Leave the joint filling compound to dry for up to 48 hours at a recommended ambient room temperature of +15 °C or above. A condensate dryer can be used to accelerate the drying process.

Make sure that the joint filling compound is completely dry after no more than 48 hours.



4

Sand the joints and uneven patches evenly with a fine emery board or a suitable sanding device. P 100 or P 120 grainings are suitable for sanding. Then remove any dust from the surface. We recommend using an automatic sanding device with an integrated vacuum cleaner.



5

Check the homogeneity of the surface using the Sto-Spirit Level (recommended length 2 m). Touch up any gaps using StoSilent Filler.

Note

Joint coating is not required for the StoColor Climasan top coat.

Intermediate coat

StoSilent Top Basic

Notes

- We recommend applying StoSilent Top Basic to a test surface of at least 5 m² and having it approved by the planner/building owner representative.
- There must be a sufficient number of employees available to apply StoSilent Top Basic (1 person per 1.0–1.5 m of work width; increase the manpower accordingly in case of difficult connection details, for example).
- An areal scaffolding is required for the coating.
- When coating walls in rooms that are subject to a strong draught, drying times might differ due to the different surface temperatures. Therefore pay particular attention when carrying out the levelling step.

Drying times and amounts of material

	Amount of material	Subsequent drying time
StoSilent Top Basic	2.5 kg/m ²	natural: 36 hours; white, tinted: up to 48 hours



1

Adjust material to application consistency in accordance with the Technical Data Sheet. Add as little water as possible. For white and tinted StoSilent Top Basic, a smaller quantity of water is required to achieve an optimal application consistency.

Note: in order to avoid waiting times, mix all necessary containers prior to coating.



2

Apply StoSilent Top Basic on to the carrier boards starting from the corner or the edge. At this stage, the appearance is of secondary importance. It is much more important to apply a sufficient amount of material for the next step.



3

Tooth in a criss-cross pattern using a 4 x 4 mm toothed trowel, whereby the 2nd tooothing runs parallel to the main incidence of light. Press on the toothed trowel strongly and uniformly at an angle of approx. 30°, ideally until you hear scraping on the board.

Tip: leave approx. 3 cm of material un-toothed in the rim zone in order to enable visually perfect smoothing.



4

Run the second tooothing parallel to the main incidence of light.

Tip

In order to ensure as even a layer thickness as possible, always perform tooothing in one direction. The application cycle should also be carried out by the same person.



5

Applying uniform pressure, smooth the material using a wide smoothing trowel, holding it at an angle of approx. 10°. In doing so, trowel off as little material as possible. First smooth the areas along the edge, and then work on the entire surface. Deburr the entire area again afterwards.

Note

Smooth in no fixed smoothing direction, but so that it results in a visually neat appearance. In order to avoid forming trowelling ridges, slightly bend the tool's corners in one direction. Mark the relevant side if necessary. If there is not enough material on a certain area, take some from the surrounding area where possible. If clusters form, level them slowly while applying more pressure.



6

Leave it to dry for 36 or 48 hours, then carefully remove protruding material and ridges.

Top coat

StoSilent Top Basic on intermediate coat

Drying times and amounts of material

	Amount of material	Subsequent drying time
StoSilent Top Basic	2.5 kg/m ²	natural: 36 hours; white, tinted: up to 48 hours

Tip

In order to ensure as even a layer thickness as possible, always perform tooothing in one direction. The application cycle should also be carried out by the same person.



1 Adjust material to application consistency in accordance with the Technical Data Sheet. Add as little water as possible. For white and tinted StoSilent Top Basic, a smaller quantity of water is required to achieve an optimal application consistency.
Note: in order to avoid waiting times, mix all necessary containers prior to coating.



2 Apply StoSilent Top Basic onto the dry StoSilent Top Basic intermediate layer starting from the corner or the edge. At this stage, the appearance is of secondary importance. It is much more important to apply a sufficient amount of material for the next step.



3 Tooth in a criss-cross pattern using a 4 x 4 mm toothed trowel, whereby the 2nd tooothing runs parallel to the main incidence of light. Press on the toothed trowel strongly and uniformly at an angle of approx. 30°, ideally until you hear scraping on the intermediate coat.
Tip: leave approx. 3 cm of material un-toothed in the rim zone in order to enable visually perfect smoothing.



4 Run the second tooothing parallel to the main incidence of light.



5 Applying uniform pressure, smooth the material using a wide smoothing trowel, holding it at an angle of approx. 10°. In doing so, trowel off as little material as possible. First smooth the areas along the edge, and then work on the entire surface. Deburr the entire area again afterwards.

Note: the StoSilent Profile AP stop profile serves as a smoothing edge for StoSilent Top Basic.

Note

Smooth in no fixed smoothing direction, but so that it results in a visually neat appearance. In order to avoid forming trowelling ridges, slightly bend the tool's corners in one direction. Mark the relevant side if necessary. If there is not enough material on a certain area, take some from the surrounding area where possible. If clusters form, level them slowly while applying more pressure.



Levelling

Depending on the ambient room temperature and humidity, level the surface using the plastic trowel or the Sto-Special Smoothing Trowel after approx. 15–45 minutes.

Top coat

StoSilent Decor M on intermediate coat



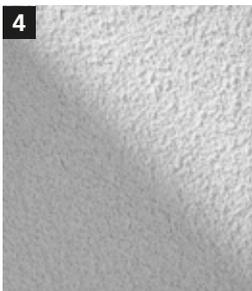
1 Stir StoSilent Decor M prior to application (if applying by machine, no additional water is necessary).



2 Set the output. Use a test surface (paper or paper board) to adjust the spray pattern by adapting the air quantity and material feed amount.



3 Spray StoSilent Decor M onto the dry StoSilent Top Basic intermediate layer using circular movements. Alternatively use a hopper gun in accordance with the Technical Data Sheet.



4 After the spray application and 24 hours of drying time, the StoSilent Decor M textured surface is finished. The joint filling underneath is no longer visible. Carefully sweep the ceiling afterwards to remove loose or poorly adhering particles.

Notes

- Lower the scaffold accordingly in order to achieve an ideal working position for the spray coatings.
- Depending on the colour shade, additional spray layers may be necessary.
- We recommend wearing safety goggles and a P1 dust mask when spraying.
- High humidity and/or low temperatures prolong the drying time.

Specifications for machinery equipment

- Screw casing device or peristaltic pump
- Nozzle size: 4–6 mm
- Flow: 0–15 l/min
- Spraying distance: approx. 70–90 cm
- Optimum air quantity: 1.5–2 bar
- Compressor performance: min. 600 l/min

Drying times and amounts of material

	Amount of material	Subsequent drying time
Spray application 1	approx. 0.7 kg/m ²	min. 5 hours
Spray application 2*	approx. 0.7 kg/m ²	min. 5 hours
Spray application 3*	approx. 0.5 kg/m ²	min. 5 hours

*Optional

Top coat

StoColor Climasan on panel surface



1 Adjust StoColor Climasan to application consistency according to the Technical Data Sheet. Add as little water as possible.



2 We recommend applying the coating with a hopper gun. Use a test surface (paper or paper board) to adjust the spray pattern by adapting the air quantity and material feed amount.



3 Spray StoColor Climasan directly onto the acoustic panels in two to three spray applications using circular movements at a distance of 50 to 70 cm. Observe the drying times between the spray application cycles.



4 After the second spray application and 24 hours of drying time, the StoColor Climasan surface is finished. The substrate is now only slightly visible.

Notes

- Lower the scaffold accordingly in order to achieve an ideal working position for the spray coatings.
- We recommend wearing safety goggles and a P1 dust mask when spraying.
- High humidity and/or low temperatures prolong the drying time.
- There may be batch-related differences in the colour shades of the panels.

Colour spraying specifications

- Nozzle size: 4 mm
- Spraying distance: approx. 50–70 cm
- Air pressure: 0.5–1 bar
- We recommend using 2 application cycles.
- We recommend creating a test surface of 5 m² before application.

Installation elements



1 Mark StoFix Zyrillo on the acoustic panel. Then mill the marked area out of the acoustic panel.



2 Remove any remnants of the acoustic panel and the adhesive from the opening.



3 Apply adhesive to the full surface of the StoFix Zyrillo and press approx. 2 mm into the opening.



4 Finally, fill the surface with the joint filling compound StoSilent Filler so that it is smooth.

Notes

- Once the acoustic panels are fixed in place, install the installation elements as described on the left.
- Alternatively, they can be installed at the same time as bonding the acoustic panels.



1 Apply adhesive to the full surface of the StoFix Quader and press approx. 2 mm into the ceiling.

Mask the installation element using StoSeal Band BK so that it is airtight.



2 Then bond acoustic panels to the rest of the surface and fill with the joint filling compound StoSilent Filler so that it is smooth.

Tip

StoFix Quader ND Midi

Installation underlay for fixing lightweight loads; compression underlay for medium-weight loads.

StoFix Zyrillo

Installation underlay for fixing lightweight loads.

Checklist

Notes, tools and aids, building site facilities

This checklist is a general aid for applicators when performing a self-check on a building evaluation with Sto products, during calculation, and when carrying out application steps. The following notes make no claim to being exhaustive. The particular project-specific conditions must be taken into consideration and it is the responsibility of the user to make their own checks.

Tools/aids for the board installation

- Chalk line
- Keyhole saw, handsaw, circular hole saw
- Cartridge
- Cutting knife
- Spatula, narrow
- Emery board
- Rotary laser, spirit level, straight edge (min. 2 m)
- Dust protection mask, safety goggles, overall
- Broom
- Construction or industrial vacuum
- Building spotlight

Tools/aids for coating with StoSilent Top Basic

- Compressor (min. 350 l permanent air capacity)
- Duo stirrer
- Smoothing trowel, toothed, 4 mm (rust-free; per employee)
- Smoothing trowel, plastic (thickness: 1 mm; per employee)
- Wide smoothing trowel, 60 cm (rust-free)
- Special smoothing trowel (rust-free)
- Measuring beaker
- Building spotlight
- Sponge

Tools/aids for coating with StoSilent Decor M

- Compressor (min. 350 l permanent air capacity)
- Duo stirrer
- Hopper gun with 4/6 mm nozzles
- Rotor and stator pump with Vario drive and 4 or 6 mm spray gun
- Measuring beaker
- Building spotlight

Building site facilities

- Areal scaffolding
- Condensate dryer
- Sufficient manpower (compulsory for coating with StoSilent Top Basic; guiding value: length of the longest side of the ceiling divided by 2 = number of employees on the areal scaffolding)
- Dehumidifiers (optional)
- Building spotlight
- Mobile scaffold
- Panel lift
- Masking material
- Create test surface (compulsory for StoSilent Top Basic coating).

Planning documents, general checklist

Planning documents

- Ceiling plan
- Lighting plan
- Climate plan
- Approximate price calculations
- Installation instructions/application guidelines for Sto products

Substrate checklist

- Is the substrate load-bearing?
- Is the substrate absorbent?
- Has the substrate been primed with StoPrim Plex?
- Has the substrate been pre-coated with the bonding agent StoSilent Prep Quarz?

Checklist for the board installation

- Have the panels been stored in dry and tempered conditions on the construction site?
- Have the panels been installed in an offset pattern? (Cross joints are not permissible.)
- Has panel installation been carried out so that the longitudinal joints are parallel to the main direction of light, and has the installation been done starting from the centre of the room?
- Do the colours of the panels look the same?
- Has the StoSilent Filler joint filling compound dried sufficiently?

Checklist

StoSilent Top Basic checklist

Checklist for coating with StoSilent Top Basic

- Are there enough employees to do the coating?
- Are sufficient tools available for each employee?
- Is there an areal scaffolding on site, and has it been adjusted to the correct working height?
- Has the material been diluted and stirred according to the instructions?
- Have the required drying times been adhered to?
 - StoSilent Top Basic: natural 36 hours; white and tinted up to 48 hours
- Is the application and substrate temperature ≥ 12 °C?
- Has a humidity and building element moisture level of max. 70 % been adhered to?
- Do the applied quantities correspond to the specifications?
 - Layer 1 with StoSilent Top Basic approx. 2.5 kg/m²
 - Layer 2 with StoSilent Top Basic approx. 2.5 kg/m²
- Has the material been toothed in a criss-cross pattern? Does the second application cycle run in the direction of the main source of light?
- Tip: collect toothed off material separately and redistribute into the pails when applying the intermediate coat on subsequent construction sites.

StoSilent Decor M checklist

Checklist for coating with StoSilent Decor M

- Has the material been stirred without adding water?
- Has the correct nozzle been used?
 - Hopper gun: 4 or 6 mm
 - Screw casing devices: 4 or 6 mm
 - Inomat: 4 or 6 mm
- Have the air quantity and the material feed amount been matched in such a way that the binder did not run when test-spraying it onto a box?
- Has the correct spraying distance been observed?
 - 50–70 cm for a hopper gun
 - 70–90 cm for a screw casing device or Inomat
 - If not, lowering the scaffolding may be necessary to achieve the required distance.
- Does the spraying texture correspond to the sample (coarser spraying textures may increase the consumption values)? If using rotor and stator pumps with Vario drive by other manufacturers, check if the screw casing with a diminished flow rate has been used (so that the available quantity of compressed air can sufficiently disperse the conveyed material). Output 0–15 l/min.
- Has the spraying been done in circular movements (not pointing at one spot or spraying in strips)?
- Have the required drying times been adhered to?
 - Spray application 1: min. 5 hours
 - Spray application 2: min. 5 hours
 - Spray application 3: min. 5 hours
- Is the application and substrate temperature ≥ 12 °C?
- Has a humidity and building element moisture level of max. 70 % been adhered to?
- Do the applied quantities correspond to the specifications?
 - Spray layer 1 approx. 0.7 kg/m²
 - Spray layer 2 approx. 0.7 kg/m²
 - Spray layer 3 approx. 0.5 kg/m²
- For intense colour shades, expect longer drying times as otherwise there is a risk of clouding. Additional spray application layers may be necessary depending on the colour shade.

Climasan checklist

- Are sufficient tools available for each employee?
- Is there an areal scaffolding on site, and has it been adjusted to the correct working height?
- Has the material been diluted and stirred according to the instructions?
- Have the required drying times been adhered to?
- Is the application and substrate temperature ≥ 12 °C?
- Has a humidity level of max. 70 % been adhered to?
- Has a test surface of 5 m² been created and approved by the building owner?

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