

How to make a perfect job of mould prevention



The founder of the Persian Empire, Cyrus (559–529 BC), had among his troops a few mule-drawn carts which transported silver water vessels. They contained boiled water and only the king was allowed to drink from them ... The antiseptic effect of silver was well known even in those days. Towards the end of the nineteenth century, doctors used silver and silver compounds for the active treatment of burns and as a disinfectant. And even our great-grandmothers appreciated having the precious metal around the house: they would place a silver coin in the churn to extend the life of the milk.

A high degree of sterility is also important in other places: in public and private swimming pools and also in spas and wellness areas. To guarantee prolonged sterility when grouting tiles and natural stone, OTTO uses the active agent ionic silver as a fungicide in these places. The effectiveness of silver is based on silver ions working on three levels to combat microorganisms with simple cell structures, such as bacteria and fungi. They inhibit the cellular respiration of microorganisms, prevent cell production and destroy the cell walls.

New OTTO Fungitect® Silver Technology in OTTOSEAL® S 130 and OTTOSEAL® S 140 extends maintenance intervals.

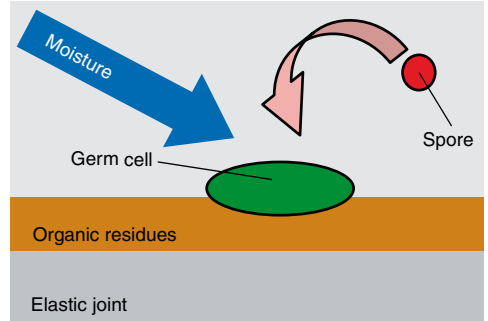
In contrast to conventional fungicides, OTTO Fungitect® Silver Technology will not wash off, even with heavy water loads, and is therefore effective for longer. This means that it protects elastic joints in sanitary areas subject to heavy stress on the silicon jointing (e.g. in wet rooms, public shower and bathing areas, swimming pools, sports facilities, fitness studios, hospitals, thermal baths, wellness areas, hotel bathrooms, etc.) against mildew for longer than ever before. Depending on application and environmental conditions, the hitherto usual maintenance interval can be extended considerably – a factor that significantly influences running costs.

What's more, OTTO Fungitect® Silver Technology is harmless to health and environmentally benign!



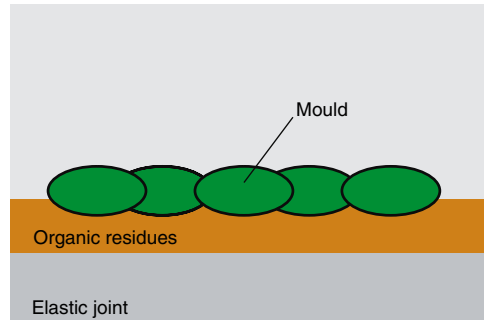
Causes for mould attack

- Moisture paired with poor ventilation
- Heat (above +20 °C)
- Sustention for moulds, e. g. organic deposits in the form of body care products, soap residue and scurf



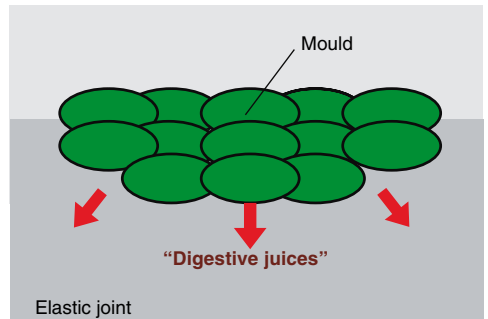
Primary attack

In the case of primary attack the mould initially grows only in the organic deposits on the surface of the sealant and can be combated with [OTTO Anti-Schimmelspray \(OTTO Anti-mould spray\)](#)



Secondary attack

In the case of secondary attack the mould grows into the sealant. In this case the sealant must first be removed by mechanical means and then completely eliminated with [OTTOSEAL® SilOut \(OTTOSEAL® SilOut silicone remover\)](#). Before installing new joints the areas of the joints affected should first be thoroughly cleaned and then treated with [OTTO Anti-Schimmelspray \(OTTO Anti-mould spray\)](#)



OTTOSEAL® S 130**The bathroom and natural stone silicone with prolonged mould protection****Characteristics**

- Neutral-curing 1-component silicone sealant based on alkoxy
- Does not cause any migratory staining on natural stone
- Contains the **OTTO FUNGITECT® Silver Technology**, harmless-to-health and environmentally benign
- Excellent weathering, ageing and UV-resistance
- Low odour
- Stress expansion modulus at 100 % (DIN 53 504, S3A): 0,5 N/mm²

Fields of application

- Sealing and jointing in bathroom area with high stress on the silicone joints, e.g. in wetrooms, in public shower and bathing areas, in swimming pools, in stadiums, gymnasiums, hospitals, thermal baths, spa areas, hotel bathrooms etc.
- For jointing on ceramic tiles and natural stone in constantly wet areas

Standards and tests

- Declaration of no objection when in contact with food (ISEGA Forschungs- und Untersuchungs-Gesellschaft mbH, Aschaffenburg, Germany)
- "Highly recommendable non-hazardous building product" according to building material list (TOXPROOF) of the TÜV Rheinland, Germany
- Suitable for applications according to IVD instruction sheet no. 14+21+23+27 (IVD = German industry association sealants)
- Quality seal of the IVD (Industrial association for sealants, registered society), tested by the ift Rosenheim (Institute of window engineering, registered society)
- According to regulation (EG) Nr. 1907/2006 (REACH)
- French VOC-emission class A+
- Certified according to GOS
- Declaration in "baubook" Austria

OTTOSEAL® S 140**The swimming pool and natural stone silicone with prolonged mould protection****Characteristics**

- Neutral-curing 1-component silicone sealant
- Guarantee - does not cause any migratory staining on natural stone
- Contains the **OTTO FUNGITECT® Silver Technology**, harmless-to-health and environmentally benign
- Excellent weathering, ageing and UV-resistance
- High notch strength
- Stress expansion modulus at 100 % (DIN 53 504, S3A): 0,6 N/mm²

Fields of application

- Sealing and jointing in bathroom area with high stress on the silicone joints, e.g. in wetrooms, in public shower and bathing areas, in swimming pools, in stadiums, gymnasiums, hospitals, thermal baths, spa areas, hotel bathrooms etc.
- For jointing on ceramic tiles and natural stone in constantly wet areas
- Well suitable for floor joints
- Sealing of swimming pools and -baths as well as elastic jointing on the pool edges
- Sealing and bonding of PVC-pond liners

Standards and tests

- "Highly recommendable non-hazardous building product" according to building material list (TOXPROOF) of the TÜV Rheinland, Germany
- Suitable for applications according to IVD instruction sheet no. 14+17+23+27 (IVD = German industry association sealants)
- Quality seal of the IVD (Industrial association for sealants, registered society), tested by the ift Rosenheim (Institute of window engineering, registered society)
- According to regulation (EG) Nr. 1907/2006 (REACH)
- French VOC-emission class A+
- Certified according to GOS
- Declaration in "baubook" Austria

The improved protection against mildew is of particular relevance to joints that require maintenance. Despite the improved protection against mildew, however, these should still be regularly inspected and replaced if necessary.

The benefits of **OTTO Fungitect® Silver Technology**:

- Silver has been a well-known antimicrobial agent for centuries and is now used in a number of ways in ointments and creams for healing wounds as well as in eye drops
- Silver is harmless to health and environmentally benign
- It is well known that microorganisms are unable to build up any resistance to silver, which means they are unable to 'accustom' themselves to the active agent, so it remains effective
- In contrast to conventional fungicides, **OTTO Fungitect® Silver Technology** will not wash out of the sealing material, even with heavy water loads, and is therefore effective for longer
- The intervals for maintaining and replacing the elastic joints can be extended considerably



OTTOSEAL® S 70



The premium natural stone silicone



Characteristics:

- Neutral-curing 1-component silicone sealant
- Guarantee - does not cause any migratory staining on natural stone
- High resistance to notches, tension and tearing
- Excellent weathering, ageing and UV-resistance
- Non-corrosive
- Contains fungicides
- Also in "structure" colours with a stonelike surface
- Also available in "matt-finished" colours
- Matt colours are only to be smoothed off dry
- Stress expansion modulus at 100 % (DIN 53 504, S3A): 0,5 N/mm²

Fields of application:

- Sealing and jointing on marble and all natural stones, e.g. sandstone, quartzite, granite, gneiss, porphyry etc. in interior and exterior areas
- Sealing of expansion joints in wall and façade areas
- Movement-compensating bonding of natural stone on metal, e.g. stairs on a metal construction
- Sealing and jointing of marble / natural stone swimming pools, also underwater joints
- Sealing of lacquered and enamelled glass
- For the external sealing of mirrors in connection with natural stone

Standards and tests:

- Tested according to ISO 16938-1 of SKZ Würzburg (Testing for migratory staining of sealants on natural stone)
- Tested according to ASTM C 1248 by DL Laboratories, New York (Testing for migratory staining of sealants on natural stone)
- "Highly recommendable non-hazardous building product" according to building material list (TOXPROOF) of the TÜV Rheinland, Germany
- Suitable for applications according to IVD instruction sheet no. 14+23+25+27+30 (IVD = German industry association sealants)
- Quality seal of the IVD (Industrial association for sealants, registered society), tested by the ift Rosenheim (Institute of window engineering, registered society)
- According to regulation (EG) Nr. 1907/2006 (REACH)
- Conform to LEED® IEQ-credits 4.1 (Indoor Environmental Quality) adhesives and sealants
- Fulfills DGNB-characteristics 06 (DGNB e.V. = German Organisation for sustainable building)
- French VOC-emission class A+
- Certified according to GOS
- Declaration in "baubook" Austria

OTTOSEAL® S 100



The premium bathroom silicone



Characteristics:

- 1-component acetate-curing silicone sealant
- Excellent weathering, ageing and UV-resistance
- Contains fungicide and bacteriostatic
- Unique processing characteristics
- Surface can be smoothed very easily
- Very good adhesion on ceramic substrates
- Stress expansion modulus at 100 % (DIN 53 504, S3A): 0,3 N/mm²

Fields of application:

- Expansion joints in bathroom areas
- Sealing of expansion joints in floor and wall areas

Standards and tests:

- "Highly recommendable non-hazardous building product" according to building material list (TOX-PROOF) of the TÜV Rheinland, Germany
- Suitable for applications according to IVD instruction sheet no. 3+14 (IVD = German industry association sealants)
- Quality seal of the IVD (Industrial association for sealants, registered society), tested by the ift Rosenheim (Institute of window engineering, registered society)
- According to regulation (EG) Nr. 1907/2006 (REACH)
- Conform to LEED® IEQ-credits 4.1 (Indoor Environmental Quality) adhesives and sealants
- Fulfills DGNB-characteristics 06 (DGNB e.V. = German Organisation for sustainable building)
- French VOC-emission class A+
- Certified according to GOS
- Declaration in "baubook" Austria
- EMICODE® EC 1 Plus - very low emission

OTTOSEAL® S 121

The low odour premium bathroom silicone



Characteristics:

- Neutral-curing 1-component silicone sealant based on alkoxy
- Excellent processing characteristics
- Low odour
- Very good adhesion on ceramic substrates
- Contains fungicides
- Excellent weathering, ageing and UV-resistance
- Stress expansion modulus at 100 % (DIN 53 504, S3A): 0,4 N/mm²

Fields of application:

- Expansion joints in bathroom areas
- For the external sealing of mirrors in connection with materials such as ceramic, metal, glass etc.

Standards and tests:

- “Highly recommendable non-hazardous building product” according to building material list (TOX-PROOF) of the TÜV Rheinland, Germany
- Suitable for applications according to IVD instruction sheet no. 3+14 (IVD = German industry association sealants)
- Quality seal of the IVD (Industrial association for sealants, registered society), tested by the ift Rosenheim (Institute of window engineering, registered society)
- According to regulation (EG) Nr. 1907/2006 (REACH)
- Conform to LEED® IEQ-credits 4.1 (Indoor Environmental Quality) adhesives and sealants
- Fulfills DGNB-characteristics 06 (DGNB e.V. = German Organisation for sustainable building)
- French VOC-emission class A+
- Certified according to GOS

Cleaning

It is recommended to rinse the silicone joints briefly with the shower after using the bath and to dry them with a cloth. A neutral cleaning agent should preferably be used for the regular cleaning work. Acid cleaning agents are less suitable because mould multiplies faster in an acid environment. It is also recommended to thoroughly clean the silicone joint once a week with a disinfectant sanitary cleaner.

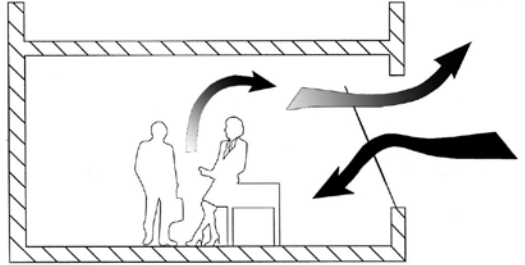
Regular ventilation

Regular ventilation supports the aforementioned measures. The entire room air should be exchanged within a short time. You will find some tips on how to ventilate correctly on the following pages.

Ventilation via a window

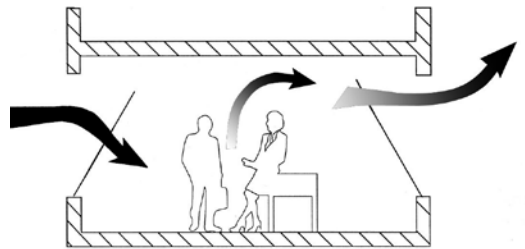
When rooms are ventilated via a window the fresh air and the spent air flow in and flow out through the same window.

This is a customary way to ventilate and is the most generally practiced. The air flow through the window depends on the free cross section, the difference in temperature and the wind speed. For the purpose of rush airing the casement is opened wide. Slow airing via tilted windows requires much longer for the same air exchange and it can cause high energy loss.



Transverse ventilation

Transverse ventilation makes use of the differences in pressure between the side of the building facing the wind and that facing away from the wind. The fresh air flows in on one side of the façade and out on the other. Transverse ventilation facilitates the fastest and most effective air exchange in the rooms.

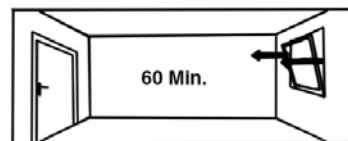
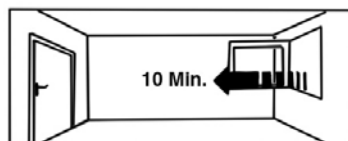
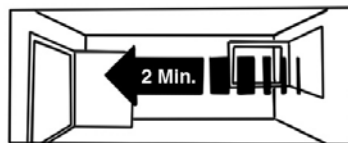


Duration of ventilation

The optimal length of time for ventilation depends on the season of the year. Cooler outdoor air contains less moisture than warm room air. If the external air is heated in the room it can absorb additional moisture. Owing to the big difference in temperature between outside air and room air in winter the exchange of air is very effective and fast, i.e. the greater the difference in temperature, the higher the capacity of the outside air flowing in to absorb the moisture. Generally speaking the following guide values can be assumed for the times for ventilation from one side:

December to February	5 minutes
March + November	10 minutes
April, May + September, October	15 minutes
June, July, August	25 minutes

To get rid of moisture in living quarters it is necessary to ventilate via the window several times a day, depending on how the respective room is used.



Supplementary ventilation

Compared to other rooms, bedrooms show the highest relative air humidity. This also means that the danger of mould formation also rises. A favourable ventilation option in terms of mould prevention is to keep the window tilted at night. However this involves disadvantages in relation to energy and the ambient conditions frequently do not permit this method of ventilation. In principle it is possible to ventilate again accordingly the next day to prevent mould from forming.

Early in the morning the window should be opened to the full for a period of approx. 30 minutes. If supplementary ventilation is not possible until the evening, double the amount of time is required.

Correct ventilation: Source:

VFF (Association of window and façade manufacturers leaflet ES,05,
January 2004
Ventilation of residential buildings – health,
Damage prevention and energy conservation;
Association of window and façade manufacturers, Frankfurt/Main.

OTTO Anti-Mildew-Spray

OTTO Anti-Mildew Spray



Characteristics:

- Removes mildew, fungus, algae and moss reliably and permanently
- Glazings, paints, varnishes, masonry, plastics and wallpapers are not affected
- Acts as a disinfectant and eliminates odours

Fields of application:

- For pre-treatment of the substrates when redoing mould-infested joints
- Special spray against mildew, fungus, moss and algae growth
- For application on tile joints, elastic joints and walls in living rooms, kitchens, bathrooms, cellar, as well as protective substance for masonry, terraces and façades

Standards and tests:

- OTTO Anti-Mildew Spray has been registered according to the German and Austrian law on biocides only (product group 2, BAuA Reg.-Nr.: N - 12215)
- Use OTTO Anti-Mildew Spray safely. Read product information and labelling before application

OTTOSEAL® SilOut

The silicone remover

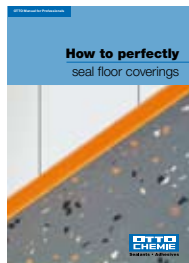


Characteristics:

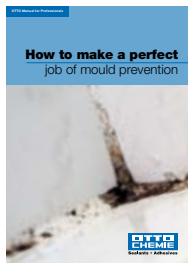
- Thixotropic paste for removing of cured silicone sealants and adhesives
- Removes silicone from wood, masonry, plastering, concrete, glass, porcelain, metal and plastics
- Compatible with a very wide variety of substrates in structural engineering and window construction as well as for sanitary areas
- Application leads to silicone-free surfaces

Fields of application:

- Removing silicone residues from joints and soiled surfaces



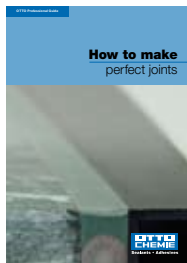
Part n° 9999533



Part n° 9999557



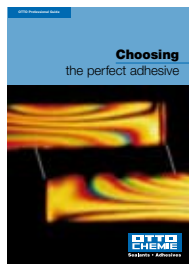
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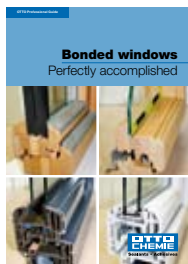
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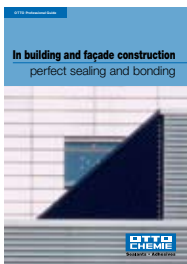
Part n° 9999551



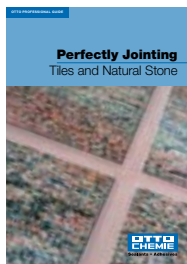
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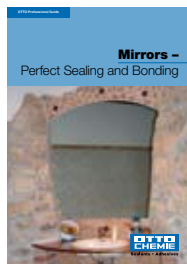
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Part n° 9999801



Part n° 9999711



Part n° 9999596

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Notes:

The information in the present document corresponds to the status quo on going to print, refer to the index. With a new edition this edition becomes invalid. Due to the many possible influences during and after application, the customer always has to carry out trials first. Please observe the respective technical data sheet! This information is available on the Internet at www.otto-chemie.com. Errors and typographical errors are excepted.

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