

## MOLD AND FUNGUS INFORMATION MAXISIL SILICONE SEALANT

Mold and fungus on sealants - causes, counter-measures and prevention

The attack on elastic sealants by mold is a constant concern.

Mold attacks can be recognised from the incidence of mainly dark spots on the surface of the sealant. The spots are usually black, as in the case of the well-known mold 'Aspergillus Niger,' but can also be brown, yellow, violet, red or pink.

Fungi are a large group of micro-organisms. There are estimated to be about 250,000 different types of fungus with around 50,000 of them being mold fungi. The visible spots on the sealant are metabolic products of these micro-organisms. For removal of mold, mildew and algae view our Maxisil Mold Remover.

### CAUSES

The following conditions help to form mold on sealants:

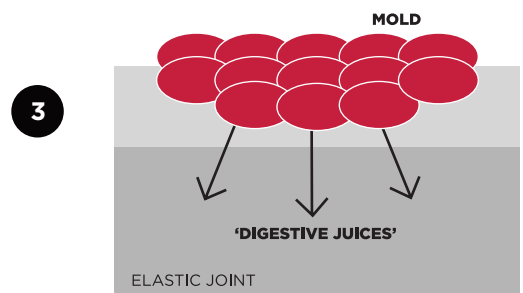
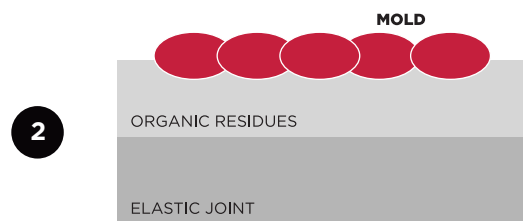
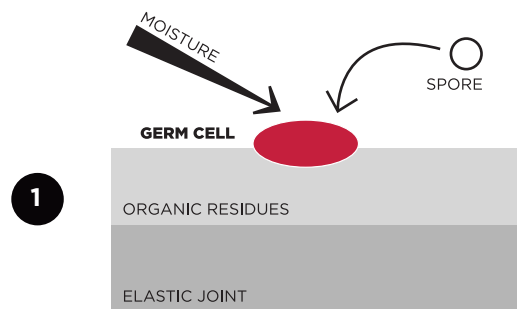
- High air humidity with little movement of air, eg: in bathrooms, showers, kitchens etc.
- Warmth
- Nutrients in the form of organic deposits. e.g. residues from body care materials such as soap, shower gel etc.

Since elastic silicone joints have low thermal conductivity they are the warmest part of a tiled surface and where mold thrives best, in combination with organic residues and moisture.

Mold fungus spreads through spores. Spores are mostly small round cells with a diameter of a fraction of a millimetre and a mass of a billionth of a gram. They are spread by the wind like dust particles and are very resistant. When they first land on a silicone joint where the three factors for growth exist (humidity, warmth and nutrients), the spores initially absorb water and enlarge by swelling in volume (see illustration 1).

Then a thread-like filament grows out of the spore and spreads by branching in a circle around the germinating spore. A network of filaments forms. These so-called mycelia (networks of filaments) can grow very rapidly and thrive under favourable conditions. If mold is only growing on the organic deposits on the sealant surface, it is called a primary attack (see illustration 2).

These mold fungi secrete a type of digestive juice which is able to break the sealant down into usable decomposition products for the mold. If this occurs, the mold can grow into the sealant. This is called a secondary attack, which in the end results in the unattractive spots on the silicone joint (see illustration 3).



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### COUNTER-MEASURES

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**Maxisil contains fungicidal (mold resistant) properties in all its silicone sealant products.**

By using a fungicidal formulation, mold attack is prevented as far as possible. To ensure the sealants are physiologically safe, Maxisil only uses fungicides that do not contain any toxic heavy metal compounds or other toxic substances.

The anti-fungal effect cannot be guaranteed permanently since the protective agents can be inactivated over time by the mold/fungi.

### PREVENTION

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The best means of prevention against mold on sealants is good ventilation and regular cleaning and disinfection of the elastic joints. Nothing can be done about the spores occurring naturally everywhere in the air. However, the colonisation and multiplication of micro-organisms on the sealant can be prevented if the rooms are well ventilated and the elastic joints are properly looked after.

In addition to regular cleaning, the elastic joints should be treated at definite intervals (e.g. weekly) with a commercial disinfectant. For cleaning, preferably neutral or alkaline cleaning agents should be used, since mold spreads more vigorously under acid conditions.

If a mold attack occurs, as long as it is just limited to the surface (primary attack), it should be treated with anti-fungal spray. If the mold has already entered into the sealant (secondary attack), the sealant must be removed completely.

Before replacing the sealant, the affected joint areas should be treated with anti-fungal spray in order to remove any fungus spores. Otherwise, if any spores are still present around the joints, fungal attack may rapidly reoccur in spite of the new sealant having fungicidal properties.

**The best means of prevention against mold on sealants is good ventilation and regular cleaning and disinfection of the elastic joints.**