



# Sanitary

SMART SANITARY SOLUTIONS FOR THE PROFESSIONAL





### **BOSTIK, SMART ADHESIVES**

The new logo and the new house style with the characteristic green gecko is more than just a visual appearance. "Smart Adhesives" is a reflection of our positioning with regard to the development of smart and innovative sealing and bonding solutions that are safe, flexible and efficient.

We develop innovative sealing and bonding solutions that, whatever is constructed, connected or built, are smarter and can adjust better to the forces and challenges in our daily life.

### **THE GECKO - INSPIRING ADHESION**

For centuries, scientists have been inspired by geckos because of their unique bonding mechanism. They can stick to almost any surface, can climb super-fast against smooth polished glass and can easily carry their entire body weight with just one toe.

The Bostik gecko is flexible, easy to adapt to environments, is open to new situations and is courageous. It symbolizes Bostik's smart and innovative sealing and bonding solutions for the challenges which today's market faces.

# 1. Introduction

### **Mould resistance of sealants**

Where products are used in wet areas like kitchens, bathrooms, swimming pools, abattoirs, cooling rooms, storage - and production rooms for food, mould growth can occur. As a result of temperature, humidity, soap residue and traces of fungi in the air mould can start growing on wet surfaces and is difficult to remove. This can happen on sealant joints. Mould can develop at a humidity of 60% and grow even faster at higher humidity.

### **Prevention of mould growth**

Good ventilation / climate control and prevention of soap residues can minimise mould growth. This is not always possible, making the use of mould resistant sealants in certain areas necessary.

### **The use of mould resistant sealants**

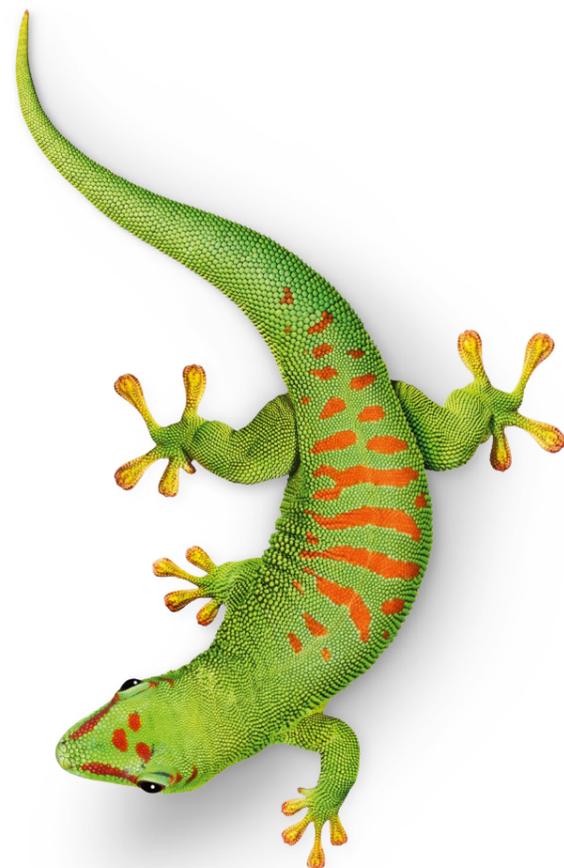
Mould resistant sealants contain fungicide. This fungicide slightly dissolves in water which is how it is spread over the sealant surface. Traces of mould that would settle on the surface of the sealant will be restricted in their growth and prevented from developing further. Because of the slight solubility in water the fungicide will leach from the sealant over time, allowing the mould resistant properties to be lost. This will be accelerated if the areas are cleaned with warm water or water under high pressure. By using chemical cleaning agents or dissolving agents for grease the fungicide can quickly be leached out of the sealant. If aggressive detergents are used (specifically chlorinated detergents like bleach or sodium-hypo chloride), the fungicide can be attacked and become useless.





## 2. Certification

The new Bostik sanitary range complies to many well-known industry standard certifications. Below we highlight and explain the certification in more detail.



## Contents

<b>1. Introduction</b>	page 3
<b>2. Certification</b>	page 5
<b>3. The route to a perfect sanitary joint</b>	page 6
<b>4. Application areas</b>	page 8
<b>5. Portfolio</b>	page 11
<b>6. Harmonized building standards</b>	page 16
<b>7. Service &amp; Support</b>	page 20
<b>7.1 How to calculate a joint dimension</b>	page 21
<b>7.2 Explanation of the icons</b>	page 24
<b>7.3 Technical training</b>	page 28

### CE CLASSIFICATION (Europe)

In today's world globalization and harmonization have become common and familiar terms. This is also true of building standards and regulations. Within Bostik we embrace this movement and strive for a globalized standard which provide transparency and simplicity in sealing and bonding.

### ASTM (America's)

The ASTM C920-18 'Standard Specification for Elastomeric Joint Sealants' covers the properties of a cured single- or multicomponent cold-applied elastomeric joint sealant for sealing, caulking, or glazing operations on buildings, plazas, and decks for vehicular or pedestrian use, and types of construction other than highways, airfield pavements and bridges. A sealant qualifying under this specification shall be classified as to type, grade and class.

### ISO 846 - Evaluation of the action of microorganisms

The ISO 846 evaluates the effects and propagation of bacteria on plastic materials that are exposed to the environment.

### ASTM G21 - Antifungal Test

ASTM G21 is a standard antifungal product test for determining the fungal resistance of plastics and polymeric materials. Synthetic polymers are generally resistant to fungi, but the additives (such as colorants, stabilizers, and plasticizers) used in the polymer may not be. These additives may contribute to fungal growth and unsightly conditions.

### ISEGA

ISEGA is the certified body that will test for our industry 'sealants and adhesive', the (direct) contact with food. ISEGA works closely with and in alignment with the requirements of the US-American authority FDA.

# 3. The route to a perfect sanitary joint

PRODUCT	CURING MECHANISM	CE PART 1	CE PART 2	CE PART 3	ASTM C-920	ECT		
<b>BOSTIK S960 SILICONE NON-STAINING</b>	NEUTRAL SILICONE	F-EXT-INT-CC 25 LM	G-CC 25 LM	XS2			●	●
<b>BOSTIK S945 SILICONE FOOD</b>	NEUTRAL SILICONE	F-EXT-INT-CC 25 LM		XS1	●		●	●
<b>BOSTIK S765 SILICONE PREMIUM N</b>	NEUTRAL SILICONE	F-EXT-INT-CC 25 HM		XS1	●			●
<b>BOSTIK S730 SILICONE PREMIUM A</b>	ACETOXY SILICONE	F-EXT-INT-CC 20 LM		XS1		●		●
<b>BOSTIK S545 SILICONE BATH &amp; KITCHEN N</b>	NEUTRAL SILICONE	F-EXT-INT-CC 12,5 E		XS2				●
<b>BOSTIK S520 SILICONE BATH &amp; KITCHEN A</b>	ACETOXY SILICONE	F-EXT-INT-CC		S1				●
<b>BOSTIK S300 SILICONE MULTI PURPOSE</b>	ACETOXY SILICONE	F-EXT-INT-CC		S1				●

### Sanitary sealants

Silicone sealants are construction sealants with excellent resistance to water, weathering and ageing. Used to seal all types of construction joints. Silicone sealants cure by absorbing moisture from the air to form a silicone rubber seal capable of extreme movement (±25% or more).

Despite the fact that each sealant technology has its specific characteristics making it ideal for certain applications, silicone sealants are still the most popular. By far the most important difference between silicone and other types of sealant is their excellent resistance to UV and water. Silicone sealants are also almost completely unaffected by temperature. Standard silicone sealants can withstand temperature fluctuations from -40°C to +180°C without any problems.

Silicone sealants are widely used in construction applications. Examples include glazing, facade, sanitary facilities and the refrigerated showcase industry. It can also be used where fire or heat resistance is required when sealing joints. Consequently, correctly applied silicone sealant can be considered the most durable seal for many joints.

### Advantages in general

- Excellent extensibility
- Excellent recovery
- Extreme resistance to weathering (including UV) and ageing
- Easily applied at all temperatures
- Good to excellent adhesion
- Stable shelf life

Silicone sealants come in so called acetoxy curing systems as well as neutral curing systems.

### Acetoxy silicone advantages

- Applicable to substrates such as glass, painted wood, enamel and ceramics
- Fast curing and skin formation
- Non-discolouring
- High temperature resistance
- Excellent UV resistance
- Long shelf life

### Acetoxy silicone points of attention

- Penetrating acid odour
- Limited application
- Possible corrosive effect on metals
- Paintability

### Neutral silicone advantages

- Excellent adhesion to wide range of substrates
- Fast curing
- High temperature resistance
- Excellent UV resistance
- Non-corrosive
- No strong odour

### Neutral silicone points of attention

- Discolouring possible (on dark places/in contact with chemicals or chemical fumes)
- Paintability

### Requirements

Choosing the correct sealant for a specific application can be complicated and dependent on a range of criteria. To make the correct decision we need to ask some questions:

- What type of substrates are we dealing with? (e.g. porous vs. non-porous, dark vs light coloured...)
- What is the expected movement of the adjacent substrates?
- What is the best sealant chemistry for the application?
- What material consists the adjacent substrates out of and are they compatible with the chosen sealant?
- Should it be compatible with paints and if so which paint type?
- Is substrate-staining a concern?
- What are the minimum required adhesion properties?
- What is the application environment?
- Should sealant be UV and weather resistance?
- Is the product applied outside (permeable) or inside (airtight)?
- Will resistance to unusual or specialist cleaning chemicals be required?

# 4. Application areas



**BOSTIK S545 SILICONE BATH & KITCHEN N**  
Low modulus silicone for sanitary and kitchen applications.

See page 14 for more details.



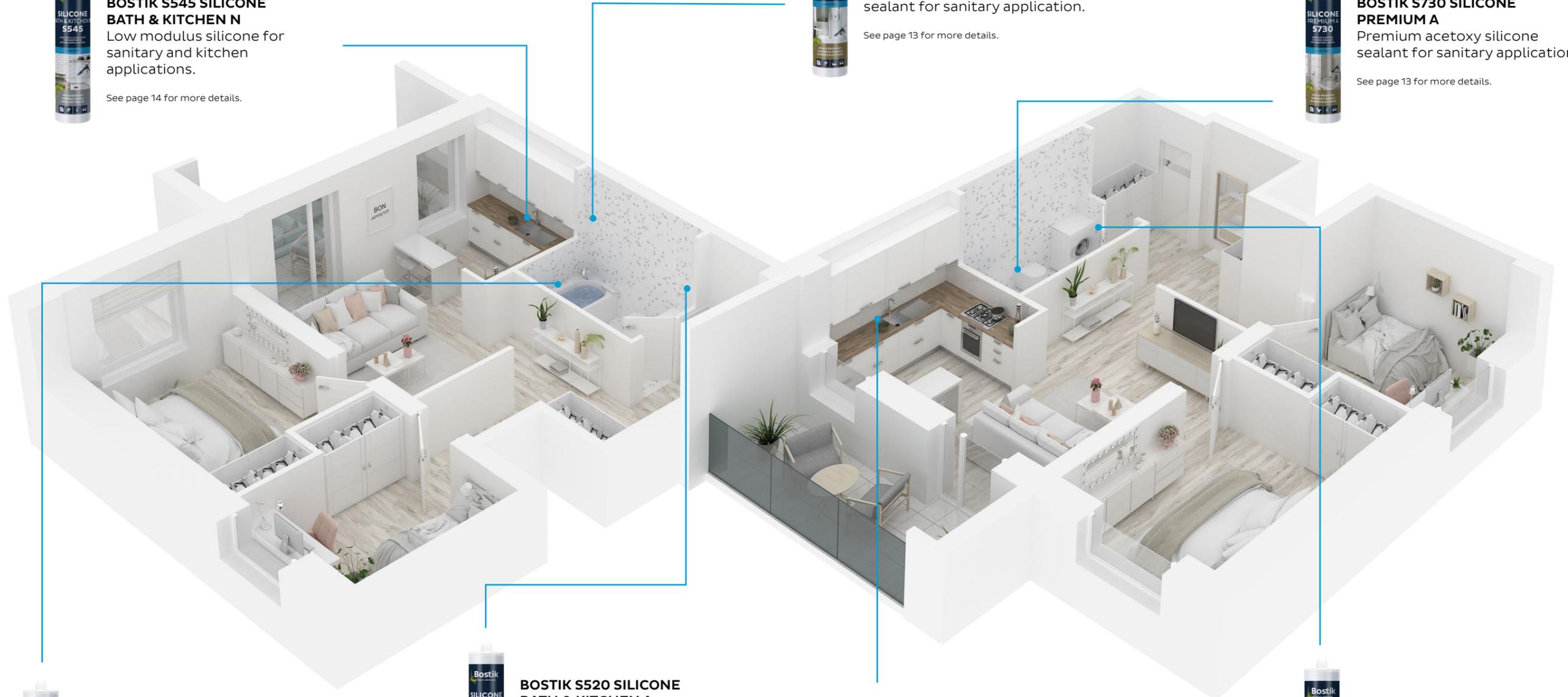
**BOSTIK S765 SILICONE PREMIUM N**  
Premium neutral silicone sealant for sanitary application.

See page 13 for more details.



**BOSTIK S730 SILICONE PREMIUM A**  
Premium acetoxy silicone sealant for sanitary application.

See page 13 for more details.



**BOSTIK S960 SILICONE NON STAINING**  
Premium low modulus all-round silicone sealant.

See page 12 for more details.



**BOSTIK S520 SILICONE BATH & KITCHEN A**  
Low modulus acetoxy silicone for sanitary and kitchen applications.

See page 14 for more details.



**BOSTIK S945 SILICONE FOOD SAFE**  
Neutral premium silicone sealant for food contact.

See page 12 for more details.



**BOSTIK S300 SILICONE MULTI PURPOSE**  
Low modulus acetoxy silicone sealant for sanitary applications.

See page 15 for more details.



## 5. Portfolio

For the professional workers in the sanitary industry Bostik is offering a wide portfolio to fulfil all needs and requirements at levels of innovation, technology, certifications and costs efficiency for sealing and bonding applications all the way till the most advanced type of job with smart innovative products and concepts.





### BOSTIK S960 SILICONE NON-STAINING

Premium low modulus all-round silicone sealant

#### Product description

BOSTIK S960 SILICONE NON STAINING is a plasticizer free neutral silicone sealant for sealing all types of joints in sanitary, glazing, facades and even in natural stone without the risk of edge soiling and staining on the substrates.

#### Most important characteristics

- Non-staining on natural stone
- Neutral curing
- Almost odourless
- Perfect adhesion without primer to most substrates
- UV, water, moisture and weather resistance
- Excellent toolability
- Mould resistant

#### Certificates

- EN 15651-1: F-EXT-INT-CC 25LM
- EN 15651-3: XS2
- A+ French VOC Regulation

Packaging	Packed per	Colours
cartridge of 300 ml	12 pieces per box	White, transparent, ivory, concrete grey, mid grey, anthracite, black



### BOSTIK S945 SILICONE FOOD SAFE

Neutral premium silicone sealant for food contact

#### Product description

BOSTIK S945 SILICONE FOOD SAFE is a dedicated premium quality silicone sealant for use in areas with food contact. BOSTIK S945 SILICONE FOOD SAFE is ISEGA certified.

#### Most important characteristics

- ISEGA food contact approval: suitable for use in the food industry
- Excellent resistance to UV, water and weather
- Perfect adhesion
- Permanently elastic
- Neutral curing
- Highly mould resistant
- Wide colour availability

#### Certificates

- ISEGA
- EN 15651-1: F-EXT-INT-CC 25LM
- EN 15651-3: XS1
- A+ French VOC Regulation

Packaging	Packed per	Colours
cartridge of 300 ml	12 pieces per box	White, crème, transparent, transparent grey, silver grey, grey, manhattan grey, aluminium, anthracite, black



### BOSTIK S765 SILICONE PREMIUM N

Premium neutral silicone sealant for sanitary applications

#### Product description

BOSTIK S765 SILICONE PREMIUM N is a versatile neutral silicone sealant for sanitary joints, which cures under the influence of humidity to form a durable elastic rubber.

#### Most important characteristics

- Neutral curing, almost odourless
- Perfect adhesion to most common building substrates
- Excellent resistance to UV, water and weather
- Highly mould resistant
- Non corrosive towards metals
- Wide adhesion spectrum
- Wide colour availability

#### Certificates

- EN 15651-1: F-EXT-INT-CC 25LM
- EN 15651-3: XS1
- EN1026 / EN 1027
- ASTM C-920
- A+ French VOC Regulation

Packaging	Packed per	Colours
cartridge of 300 ml	12 pieces per box	White, crème, transparent, transparent grey, silver grey, grey, manhattan grey, aluminium, brown, anthracite, black



### BOSTIK S730 SILICONE PREMIUM A

Premium acetoxy silicone sealant for sanitary applications

#### Product description

BOSTIK S730 SILICONE PREMIUM A is a versatile acetoxy silicone sealant for sanitary joints, which cures under the influence of humidity to form a durable elastic rubber.

#### Most important characteristics

- Excellent toolability
- EC1 Plus certified
- Excellent resistance to UV, water and weather
- Excellent adhesion to glass, painted wood, ceramic, enameled substrates
- Highly mould resistant
- Colourfast
- Fast skin formation

#### Certificates

- EN 15651-1: F-EXT-INT-CC 20LM
- EN 15651-2: G-CC 20LM
- EN 15651-3: XS1
- Ecodecode EC1 Plus
- A+ French VOC Regulation

Packaging	Packed per	Colours
cartridge of 300 ml	12 pieces per box	White, transparent, ivory, concrete grey, mid grey, anthracite, black



### BOSTIK S545 SILICONE BATH & KITCHEN N

Low modulus silicone for sanitary and kitchen applications

#### Product description

BOSTIK S545 SILICONE BATH & KITCHEN N is a versatile neutral silicone sealant for sanitary and kitchen applications which cures by reacting to moisture to form a durable elastic rubber seal. The product is UV and weather resistant.

#### Most important characteristics

- Neutral curing
- Wide adhesion spectrum
- Permanently elastic
- Mould resistance
- UV and weather resistance

#### Certificates

- EN 15651-1: F-EXT-INT-CC 12.5E
- EN 15651-3: XS2
- A+ French VOC Regulation

Packaging	Packed per	Colours
cartridge of 300 ml	12 pieces per box	White, transparent, concrete grey, mid grey, black



### BOSTIK S520 SILICONE BATH & KITCHEN A

Low modulus acetoxy silicone for sanitary and kitchen applications

#### Product description

BOSTIK S520 SILICONE BATH & KITCHEN A is a versatile acetoxy silicone sealant for sanitary joints, which cures under the influence of humidity to form a durable elastic rubber.

#### Most important characteristics

- Excellent resistance to water
- Mould resistant
- Colourfast
- Excellent adhesion to glass, painted wood, ceramic, enameled substrates
- For interior and exterior use

#### Certificates

- EN 15651-1: F-EXT-INT-CC
- EN 15651-3: S1
- A+ French VOC Regulation

Packaging	Packed per	Colours
cartridge of 300 ml	12 pieces per box	White, transparent, concrete grey, brown, black

### BOSTIK S300 SILICONE MULTI PURPOSE

Low modulus acetoxy silicone sealant for sanitary applications

#### Product description

BOSTIK S300 SILICONE MULTI PURPOSE is a versatile acetoxy silicone sealant for sanitary and kitchen applications which cures by reacting to moisture to form a durable elastic rubber seal. The product is UV and weather resistant.

#### Most important characteristics

- Perfect adhesion to glass, painted wood, ceramic and enameled substrates
- Colourfast
- Mould resistant

#### Certificates

- EN 15651-1: F-EXT-INT-CC
- EN 15651-3: S1
- A+ French VOC Regulation

Packaging	Packed per	Colours
cartridge of 300 ml	12 pieces per box	White, transparent, grey, black



### BOSTIK FINISHING SOAP

Joint sealant finishing additive

#### Product description

BOSTIK FINISHING SOAP is a ready-mixed neutral universal additive for the wet tooling of sealants in joints. BOSTIK FINISHING SOAP is more than 99% biodegradable.

#### Most important characteristics

- Ready to use
- Pre-mixed to the correct ratio
- 99% Biodegradable

# 6. Harmonized Building Standards



## Testing & Certifications

In today's world globalization and harmonization have become commonly used and familiar terms. This is also true in the building standards and regulations. Within Bostik we embrace and empower this movement and strive for a globalized standard which provide transparency and simplicity sealing and bonding.

## CE CLASSIFICATION (Europe)

One of the most familiar (and for Europe mandatory) standards in the sealant industry is the CE Classification, or also known as the standard EN 15651. This norm is divided into 4 categories:

- EN 15651-1 Sealants for Facade
- EN 15651-2 Sealants for Glazing
- EN 15651-3 Sealants for Sanitary
- EN 15651-4 Sealants for Pedestrian Walkways

## TYPE TESTING

The objective of type testing is to determine the type of product as set out in EN 15651 and, where applicable, to define the intended use in more detail. Type testing consists of a complete series of tests that are to be executed according to the standard for a certain product type.

Type testing must be executed by a notified testing laboratory. The only exception to this are Type F-INT sealants ("interior facade applications"). This is the only case in which the manufacturer carries out type testing and determines product type.

Type testing must be carried out to determine the performance of the product placed on the market according to the specifications of the applicable European harmonized product standard (i.e. EN 15651-1, EN 15651-2, EN 15651-3 or EN 15651-4).

## EN 15651-3 SEALANTS FOR SANITARY

EN 15651-3 deals with joints in sanitary areas inside buildings exposed to non-pressurized water. This includes joints in:

- Bathrooms
- Toilets
- Showers
- Domestic kitchens

**Please note** applications for service and drinking water, underwater (swimming pools, sewer systems, etc.) and applications in contact with food do not fall under the scope of this standard!

## Sealants for sanitary application

This European Standard specifies definitions and requirements for products used when sealing interior or sanitary joints exposed to non-pressurized water. It covers joints in:

- Bathrooms
- Toilets
- Showers
- Domestic kitchens
- Prefabricated elements in sanitary areas, e.g. shower cubicles

Industrial, drinking water, underwater (swimming pools, sewage systems, etc), food contact applications and sealing of glass-ceramic cooktop panels (stove tops, ceramic hobs) are excluded from the scope.

## There are two main classes within the scope of the EN 15651-3:

- The 'S' class, which refers to a maximum shrinkage of  $\leq 55\%$  of the applied sealant
- And the 'XS' class, which refers to a shrinkage of the applied sealant  $\leq 20\%$ .
- The resistance to flow shall be measured accordingly EN ISO 7390.

Within both classes 'Type S' and 'Type XS' a range between 1 and 3 provides information on the mould growth intensity. When combined this will give the following table:

Application	Class	Shrinkage	Mould growth intensity	Resistance to flow
Type S	S1	$\leq 55\%$	0 - 1	< 3 mm
	S2		2	
	S3		3 - 5	
Type XS	XS1	$\leq 20\%$	0 - 1	< 5 mm
	XS2		2	
	XS3		3 - 5	

Mould growth intensity:  
 0 No growth apparent under the microscope  
 1 No growth visible to the naked eye, but clearly visible under the microscope  
 2 No growth visible to the naked eye, covering up to 25% of the test surface  
 3 No growth visible to the naked eye, covering up to 50% of the test surface  
 4 No growth visible to the naked eye, covering more than 50% of the test surface  
 5 Heavy growth, covering the entire test surface



**ASTM INTERNATIONAL (American Society for Testing and Materials)**

The ASTM C920-18 ‘Standard Specification for Elastomeric Joint Sealants’ covers the properties of a cured single- or multicomponent cold-applied elastomeric joint sealant for sealing, caulking, or glazing operations on buildings, plazas, and decks for vehicular or pedestrian use, and types of construction other than highway and airfield pavements and bridges. A sealant qualifying under this specification shall be classified as to type, grade and class.

**Type**

Type defines whether products are premixed or require mixing at the jobsite as follows:

- Type S products are those supplied in pre-packaged cartridges or other forms in which no jobsite mixing is required.
- Type M products are those supplied in two or more parts for mixing at the jobsite. Multicomponent products include those with two components consisting of a base and a catalyst or with three components consisting of not only a base and catalyst but also a separate colour component. Multicomponent products cure faster than their single-component counterparts.

	USE	MOVEMENT CAPABILITY	
<b>Type S</b> Single Comp.	<b>T</b> Traffic	Class 100/50	100% expansion / 50% compression
<b>Type M</b> Multi Comp.	<b>NT</b> Non Traffic	Class 50	50% expansion / 50% compression
	<b>I</b> Immersed	Class 35	35% expansion / 35% compression
<b>Grade NS</b> Non sag	<b>M</b> Mortar	Class 25	25% expansion / 25% compression
<b>Grade P</b> Pourable	<b>G</b> Glass	Class 12,5	12,5% expansion / 12,5% compression
	<b>A</b> Aluminum		
	<b>O</b> Other		

**Grade**

Grade defines the flow characteristics of the sealant as follows:

- Grade P products have sufficient flow to fill joints in horizontal surfaces and remain level and smooth at temperatures as low as 40 deg. F (5°C). This designation generally applies to products rated for traffic use.
- Grade NS products are suitable for installation in joints in vertical surfaces without sagging at temperatures between 40 and 122 deg. F (5 and 50°C). This designation can apply to sealants classified for both traffic and nontraffic uses. They can be installed in traffic joints in sloping horizontal surfaces where a self-levelling type would flow downhill.

**Use**

Use classifications related to joint substrates are designated as follows:

- Use T classifies sealants designed for joints in surfaces subject to pedestrian and vehicular traffic.
- Use NT classifies sealants designed for nontraffic exposures.
- Uses M, G, and A refer to sealants that remain adhered, within given parameters, to various standard specimens including, respectively, mortar (M), glass (G), and aluminium (A) when tested for cyclic movement and adhesion-in-peel. It is important to understand that the specimens related to these designations are not those specified for the Project but those that comply with restrictive material specifications in the ASTM test methods. Mortar is always Portland cement mortar, glass is clear float glass, and aluminium is clear anodized aluminium of a specific alloy. These standard substrates are covered in ASTM C 1375, Guide of Substrates Used in Testing Building Seals and Sealants.
- Use O refers to substrate materials other than M, G, and A. Unless it is definitely known that the joint substrate materials for the Project are identical to the materials designated by M, G, and A, retain Use O.

Movement capability related to joint as follows:

Classes 12-1/2, 25, 35, 50, and 100/50 are the five designations in ASTM C 920 for rating movement capability. Although sealants ought to perform in the field as well as they do during testing, it is more prudent to design joints that impose lesser extremes of movement than that demonstrated in the laboratory because of the unknowns present in the field relative to qualities of joint preparation, sealant application, construction tolerances producing varying joint widths, and the effect of installation temperatures on joint widths. With the recognition of new Classes 35, 50, and 100/50, the sealant industry has finally acknowledged sealants with this higher movement capability after years of resistance by manufacturers who did not offer products with these extra movement capabilities.

**ASTM G21 – Antifungal Test**

ASTM G21 is a standard antifungal product test for determining fungal resistance of plastics and polymeric materials. Synthetic polymers are generally resistant to fungi, but the additives (such as colorants, stabilizers, and plasticizers) used in the polymer may not be. These additives may contribute to the fungal growth and unsightly conditions.

Products made of plastics and foam are commonly tested with ASTM G21 but the method can also be used for a wide range of other materials and products.

ASTM G21 is useful for interior products including vinyl, foam, gaskets, and rubber and is often used for materials in plumbing, baths, and bedding. ASTM G21 is also used for outdoor products such as sidings, shingles, pool covers, marine plastics, fishing and boating gear, footwear, sporting goods and polymeric coatings.

ASTM G21 consists of exposing plastics and other materials to a fungal inoculum over 28 days of testing. A mixed fungal inoculum is standard, but individual fungi can be requested as an alternative.

The ASTM G21 test method challenges materials with a wide variety of fungal species, ranging from common environmental fungi to agricultural pathogens and even antibacterial compound producing fungi, all of which have different growth requirements and enzymatic properties.

**ISO 846 - Antimicrobial Test**

The ISO 846 evaluates the effects and propagation of bacteria on plastic materials that are exposed to the environment. The 4 options for ISO 846 (A, B, C, and D) include tests for fungi, bacteria separately and in the mixed inoculum. The ISO 846 test method is often used for plastic exposed to the environment but is not intended to test porous materials like plastic foams.

ISO 846 determines deterioration of plastics due to fungi and bacteria and other soil microorganisms. However, this method does not determine the biodegradability of plastics. Volume of testing and test strains used should be determined before testing and should reflect the intended application for the plastic.

Antimicrobial testing aids product development and supports a well-structured Quality Control program. It can be challenging and time consuming knowing which antimicrobial test method to use for product testing; with a variety of antimicrobial test methods available, Situ Biosciences' product test laboratory can assist with the planning process and initiate testing based on the project requirements and the intended use or application of the product.

Inquire with the lab for guidance on the different available antimicrobial test methods and to determine which method is most appropriate for a product's testing requirements.

Method A is a fungal growth test that challenges materials against a mixed fungal inoculum. This ISO 846 method evaluates the inherent resistance of plastics to fungal attack without exposure to organic matter.

Method B is an inhibition test that is composed of two components that determine the fungistatic activity of treated plastics. Similar to Method A, Method B exposes the test samples to a mixed fungal inoculum; however method B includes a carbon source in the testing media. It is recommended to perform Method A and both components of Method B simultaneously for testing.

Method C determines a materials resistance to bacteria using an incomplete media. If there is no growth in the agar around the test sample, then the test sample does not contain any nutrients.

Method D determines a materials resistance to microbially active soil in a soil burial test. This component was included in the ISO standard, because many plastics are used in environments where they are constantly exposed to soil and high humidity's.

# 7. Service & Support

## 7.1 How to calculate a joint dimension

Joint movement can be caused by many factors: wind loading, deformation or displacement of the building frame, vibrations and, of course, thermal expansion and contraction as well as subsequent movement from moisture absorption and evaporation. It is generally recognized that the movement expected in a sealant joint determines the design dimensions and frequency of the joints.



Joint movement, caused by thermal expansion and contraction, can be determined by a coefficient of linear expansion formula. The coefficient of expansion is simply defined as the amount a given material increases or decreases in size with temperature changes. The composition of building materials, their length, and the temperature gradient (or rate of change) all determine the degree of expansion and contraction. The amount of expected movement in a substrate is one of the factors that determines which sealant should be used on a specific job. In other words, which sealant will be most compatible with the degree of movement and the substrate used.

### Expansion

Coefficient of expansion is simply defined as the amount a given material increases and decreases in size with temperature changes. The difference in the coefficient of expansion between different building materials must be considered when determining which sealant should be used.

For example, the most popular metal used in storefronts and curtain walls is aluminium. Aluminium expands 2.5 times more than glass under the same conditions. Looking at the expansion table, it is evident that when using aluminium the best sealant choice must:

- Remain elastic when extended
- Adhere to the glass and substrate
- Return to its original shape



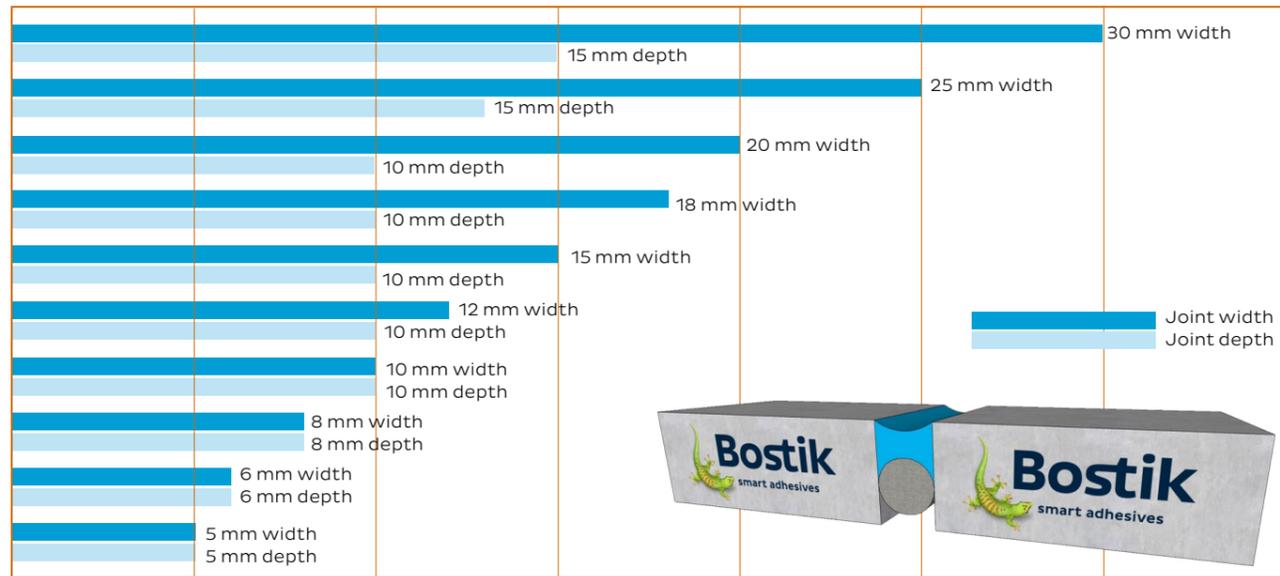
Example 1: Proper applied flexible and elastic joint sealant on a backer rod with the correct installation depth and width.



Example 2: Expansion of the building materials due to temperature absorption. Result is that the joint in between the adjacent building materials will be 'smaller'.



Example 3: Contraction of the building materials due to temperature remittance. Result is that the joint in between of the adjacent building materials will be 'wider'.



**Application considerations**

- The joint substrate surfaces should be clean, dry, frost-free, and free of contaminants and surface tension reducing materials such as water repellents and other coatings.
- The sealant should be installed using proper tools to result in a consistent and uniform application.
- The sealant should be tooled as soon as possible after application. Tooling is a critical step to compact the sealant, thereby providing an appropriate profile and ensuring adhesion to the substrates.
- All sealant materials have a shelf-life. Always confirm that the sealants are within their shelf life limit before being used.
- Once the cartridge or sausage is opened and placed in the gun, the nozzle is cut at the right width. Normally the width of the nozzle should correspond to the width of the joint. The nozzle is cut at an angle of 45°, as the caulking gun should be held at this angle during application.
- Apply the sealant with care. It is important to fill the entire joint. This can be done by applying sufficient sealant to the back of the joint or the backer rod. This causes the sealant to be pressed to both sides of the joint, creating a good surface for bonding between sealant and joint.
- Once applied the sealant surface must be finished smoothly. This can be done with BOSTIK FINISHING SOAP diluted with water. The surface of the sealant and adjacent materials are then moistened with BOSTIK FINISHING SOAP.

**Recommendations once the joint sealant is in use**

- After every shower Bostik recommends strongly rinsing the joints thoroughly with water to remove soap residues and then dry the silicone joints immediately. Following this method any residue will be removed and due to lack of moisture, microorganisms will have no chance forming mould.
- Silicone joints in sanitary applications should be cleaned on a regular base with neutral cleaning agents.
- Acidic and chloride based cleaning agents are not recommended for cleaning.
- Bostik will also recommends to keep sanitary areas well ventilated.



Proper applied sealant with the correct shape and dimension.



Incorrect applied sealant. The sealant joint is not sufficiently applied and finished, which may cause an adhesion problem.



Incorrect applied sealant. The rounded shape of the joint sealant ensures a minimal adhesion to the substrate.



Incorrect applied sealant. The rounded shape of the joint sealant ensures a minimal adhesion to the substrate.



## 7.2 Explanation of the icons

The brand new packaging of the Bostik Sanitary range comes with icons that tell something about the properties of the product. Below we explain in detail what these icons mean.



### Outside and indoor use

The product can be used indoor and outside.



### Outside use

The product can be used outside.



### Indoor use

The product can only be used indoor.



### Flexible

The cured product is flexible.



### 25% flexible

The cured product has a flexibility of 25%.



### Classic sanitary

The product is suitable for use with classic ceramic sanitary.



### Showers

The product is very well suitable for use in showers.



### Bathroom

The product is suitable for general use in bathrooms or other wet areas.



### General sanitary

The product is suitable for use in sanitary areas like bathrooms, toilets or kitchens.



### Commercial food contact

The product is suitable for use in professional areas where food is used extensively.



### No staining

The product is stain-free. The adjacent surfaces will not be contaminated.



### Construction

The product is very suitable for various construction applications.



### UV resistant

The product has excellent resistance against ultra violet beams.



### Food contact

The product is suitable for use in areas where food is used such as kitchentops.



### Easy to apply

The product has excellent application properties and is easy to use.



### Easy to use

The product is very easy to use.

# 7.3 Technical Training

# Bostik professional product portfolio

The rest of the Bostik professional product portfolio you can find at [bostik.com](http://bostik.com) and read more about them in the product application brochures

End-users expect up-to-date knowledge and technical support from shop-employees. Bostik supports with training programs focusing on products and applications. We co-develop training programs with producers and resellers to combine the knowledge of paint products with knowledge on dedicated Bostik products.



### Better results through Knowledge

Sanitary is a serious market segment which deserves a dedicated approach. Bostik constantly gathers knowledge about sanitary applications upstream and downstream, from chemical supplier to end-user. The collection of this knowledge is a continuous process and provides us with the latest insights.

### Centre of Excellence

In our recently built Centre of Excellence we share knowledge within the Bostik group, with our customers and with end-users. We are pleased to receive our partners and end-users to provide them with the latest knowledge and new insights. This new information enables our partners to achieve higher efficiency and better results.





**Smart help**  
**+31 (0) 162 491 000**

**Bostik Benelux B.V.**  
P.O.Box 194, 4900 AD Oosterhout,  
The Netherlands  
Phone: + 31 (0)162 491 000  
Fax: + 31 (0)162 451 217  
[www.bostik.com](http://www.bostik.com)

Disclaimer: Bostik cannot be held responsible for printing and typographical errors. Although the information in this brochure has been compiled with the utmost care, it is subject to change. Therefore always consult the most recent instructions for use, available on the website or via your account manager. For these reasons, Bostik accepts no liability for direct or indirect damage resulting from the use of information in this brochure.

