

Metal and Masonry Silicone Sealant

Technical Data Sheet

Product Information

Description

Z Bond® V-4 is a one component, non flowing, neutral cure, low modulus silicone sealant. It cures by absorption of atmospheric moisture to form a flexible and durable elastomeric sealant.

Special Features

Z Bond® V-4 is a highly elastic low modulus neutral cure silicone sealant. It therefore imparts the minimum stress on the adhesion bond, between the silicone and the substrate, in a working joint.

The thixotropic nature of this product ensures that it will not slump in typical construction joints.

Typical Uses

- Precast panels
- Concrete panels
- Anodized aluminium
- Coated copper & brass plaques.
- Sealing of polycarbonate sheeting.
- Splashbacks.
- Expansion joint on pavers.
- General-purpose building and construction sealant

One Part System

Being a one-part sealant **Z Bond® V-4** offers the confidences of consistent even cure. It also improves operator productivity, as time is not lost mixing the product, it is easy to use in difficult locations, and can be applied out of a standard cartridge gun.

Long Life Reliability

Z BOND® V-4 has excellent natural ageing stability. It will maintain its elastomeric joint sealant properties permanently, even under harsh conditions and temperature extremes.

Characteristics

System Properties

Property	Mean Result Achieved	Test Method
Skin Time	8 – 15 Minutes	BS 5889
Tack Free Time	2 - 3 Hours	ASTM C679
Tooling Time	15 Minutes	ASTM C679
Sag or Slump	Nil	BS5889

Cured Properties

Property	Mean Result Achieved	Test Method
Shore A Hardness	17 - 21	ASTM C 661
Modulus at 100% Elongation	0.25 MPa	ASTM D 412
Tensile Strength	0.80 MPa	ASTM D 412
Elongation at Rupture	600%	ASTM D 412
Peel Strength after UV through Glass	67N/25mm	BS5889
Dynamic Movement Capacity	+35-35%	ASTM C 920



Accelerated Aging and Weathering	Excellent	ASTM C 792
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Temperature

	Minimum	Maximum
Application Temperature	+ 5°C	+40°C
Service Temperature	-50°C	+150°C

Application of the sealant at - 5°C is permissible provided the surface to receive the silicone is dry and free of frost. The maximum service temperature listed is for transient temperature; the silicone sealant will deteriorate if subjected to these temperatures on a continuous basis.

Effect on Water Quality

Z Bond® V4 meets the requirements of Australian Standard AS 4020 "Products for use in contact with water intended for human consumption with regard to their effect on the quality of water". The Australian Water Quality Centre completed the testing to this standard.

Colours - Bostik Part Numbers

Charcoal 662070
 Light Grey 331937
 Dark Grey 662080
 Beige 662070
 White 662090
 Titanium 333239 - (600ML Sausage)

Packaging

370g plastic cartridge & 600ML Sausage (Titanium only).

Sealant Application

Joint Design

The sealant must be capable of withstanding the expected joint movement.

To calculate the joint width, establish the expected movement (expansion, contraction and shear movement) that the joint is required to withstand.

The dynamic movement capability of **Z BOND® V-4** is $\pm 35\%$.

The Data Sheet on Joint Design contains the formula for calculating the required joint width from the expected joint movement and dynamic movement capability of the sealant.

The joint design must avoid three-sided adhesion.

The sealant depth for a weather seal is **normally half the joint width**.

The minimum acceptable joint depth is 6mm; therefore, if the required joint width is 6mm the depth is also 6mm.

No warranty will be give for ZBond® V-4 unless Bostik has review all detail drawing of the project and a signed copy of the joint design and substrate testing has been carried out / approved by Bostik before commencing of any project.

Back up Material

Use a closed cell polyethylene-backing rod, 25% larger than the joint width, to control the depth of the joint.

Compatibility with Adjacent Substrates

Silicones are not always compatible with plasticised sealants, such as butyls. Also some backing rods and glazing tapes contain bitumen or other agents that are incompatible with the silicone. The incompatibility may cause discolouration, poor sealant cure or long term degradation of the sealant. Always carry out compatibility tests where contact with potentially incompatible materials occurs.



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Application

Always ensure that the surfaces to be sealed are dry and free from oil, dirt and grease. Use the two-wipe process for **Non Porous substrates**. Ensure the cloths are clean and changed frequently, and use a suitable cleaner/solvent such as Z Bond® R-40, IPA or 100% White Spirits.

For Porous substrates must be sound, dry and free of contaminants such as oils and curing agents, loose material and laitance. The substrate must be sufficiently cured and dry before sealant application. May need to wire cut or wire brush surface before use.

When extruding the sealant cut the nozzle to the desired width, cut the tip off the cartridge, and apply the sealant firmly to ensure good contact between the sealant and the substrate. Before the sealant has skinned, tool it off to ensure a good finish, and to improve the wetting out of the sealant to the substrate.

To achieve satisfactory adhesion a primer may be required for some substrates. Consult Bostik or your distributor for more information.

Curing

Z bond® V-4 cures by absorbing atmospheric moisture, it will skin over in 8-15 minutes and cure to a depth of 7mm in 7 days.

(Subject to temperature & atmospheric moisture) lower the moisture reduces the curing times.

Co-operative Test Program

Effective sealant systems require the sealant to adhere to the substrates, and work in the joint without cohesive failure.

The intention of the program is to eliminate potential problems by pre-testing sealants with actual samples of the building materials to be used.

This test will provide detailed information about optimum surface preparation techniques, including recommendations for cleaning substrates, (cleaners / solvents), and primers if required.

We will also review the shop drawings - proposed joint designs for potential failures, such as three-sided adhesion.

For projects that incorporate Marble, Granite & stone substrates, we test (Stain Test) because of the variability of stone's, in terms of porosity and texture, we carry out these tests before commencement of each project.

Stain test must be carried out first before any warranty will be given.

(Test samples for stain test must be the same as will be used on the building).

To commence a test program contact your local Bostik office

Because of the importance of Surface Preparation, Sealant Application and Joint Design Bostik provide specific Data Sheets on these topics. These data sheets are available free of charge, and we strongly recommend that you consult these sheets before commencing application of the sealant.

Storage and Shelf Life

Always store the sealant in a cool dry place. Ideal storage temperature is not more than 25°C. Prolonged storage at high temperatures may affect shelf life and ultimate performance. The shelf life of **Z BOND® V-4** is 6 months from the date of manufacture when stored below 25°C and below 50% relative humidity.

Limitations

Z BOND® V-4 is **NOT** suitable for the following applications:-

- As the sealant requires atmospheric humidity to cure, it will not cure in totally confined spaces where it does not have access to atmospheric humidity.
- Aquariums
- Structural Applications for Glazing



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- Under Water Applications on concrete, some plastic materials ect (including swimming pools)
- **Note.** This product is suitable for some under water **non porous** substrates applications where the sealant is in contact with water for extended periods eg metal tanks. (Please contact Bostik to confirm your design details before commencing such an application).
- Some stone's (We recommend the completion of a stain testing program before using sealant on stone)
- Below Grade Applications
- Horizontal walkways.
- Do not clean or treat the sealant with materials, cleaning agents or solvents, that may affect or discolour the sealant, particularly during product curing.
- This product is neither tested nor can be used for medical or pharmaceutical use.
- Surfaces in contact with food.
- Where painting of the sealant is required.
- Where building materials may bleed oil, plasticisers or solvents, some vulcanized rubbers & tapes.
- Surfaces subject to corrosion / oxidisation -eg mill aluminium.(must cleaned and primed)

This silicone is not paintable. If there is a requirement to paint the sealant, our recommendation is to use our Bostik Multi Purpose silicone sealant or Z Bond® Gap Filler acrylic sealant products. Follow both the sealant and paint manufacturers painting instructions carefully, when painting sealants.

2.2 Health and Safety

Full product safety information required for safe use is not included in this data sheet. Before handling, read the separate Material Safety Data Sheet (MSDS) and packaging for safe use.

In case of product emergency refer to product labelling or MSDS and contact phone numbers. A copy of the product MSDS is available from Bostik or its distributors.

Important Notice for Users

Suggestions for use should not be taken as an inducement to infringe any particular patent. *Z Bond® is a registered trademark of Bostik Australia.

The representations and recommendations regarding the products are based on tests which we believe to be reliable. However, no guarantee of their accuracy can be made because of the great range of field conditions and variations encountered in raw materials, manufacturing equipment and methods. Thus, the products are sold with a limited warranty only, and on the condition that purchasers will make their own tests to determine the suitability of the product for their particular purposes. Under no circumstances will Bostik Australia Pty Ltd be liable to anyone except for replacement of the products or refund of the purchase price.

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