



ALCO-FLEX POLYURETHANE ADHESIVE & SEALANT

Description

ALCO-FLEX POLYURETHANE is a low odour, single component, multipurpose polyurethane based adhesive and sealant suitable for indoor and outdoor applications. It forms a strong, permanently elastic bond to a wide variety of materials used in construction. It is neutral curing and is therefore compatible with alkaline surfaces such as concrete and plaster, and is non-corrosive to metals. ALCO-FLEX POLYURETHANE does not lose any volume on curing and forms bubble free finish, ideal for sealing. The cured product is paintable.

Features & Benefits

- Neutral curing
- Permanently elastic
- Movement accommodation of 25%
- No primer needed
- Heat resistant
- Flexible at low temperatures
- Gap filling properties
- Non-shrinking on curing
- not corrosive to metals. Suitable for alkaline surfaces.
- ideal for shock and vibration resistant bonding.
- ideal for expansion joints and movement joints.
- excellent adhesion to most modern construction materials.
- heat resistant up to +80°C.
- as low as -30°C.
- ideal for sealing.
- no pulling away from joints.

Applications

- Sealing of movement and static joints in walls and floors, in paving joints, facades, roofs, between building elements, between building carpentry and masonry, sealing of cracks in plaster, sealing of air conditioning, ventilation and ducting joints, and weather sealing between door and window frames and plaster.
- Bonding of wall and floor tiles, roof tiles, parquet flooring, panels, signs, wallboards, skirting boards, cornices, dado rails, insulation sheets, decorative frames, cladding, house numbers, stair nosing and grips, electrical boxes, etc. Ideal for elastic bonding and for the bonding of dissimilar substrates.

Adhesion

ALCO-FLEX POLYURETHANE provides excellent primerless adhesion to natural stone, marble, slate, granite, ceramics, carpet, brickwork, plaster, concrete, drywall, metals such as stainless steel, copper, iron, ferrous metal and aluminium, painted surfaces, GRP, glass, melamine, epoxy, fiberglass, polyester, rubber, some plastics (e.g acrylics, polycarbonates, fibreglass and rigid PVC), cork, and wood (coated and uncoated).

Limitations

- Not suitable for use on bituminous surfaces, natural rubber, plasticized PVC, EPDM rubber or on building materials which might bleed oils, plasticizers or solvents which could attack the sealant.
- Will not bond to polyethylene, polypropylene and Teflon.
- Do not apply to damp surfaces as this may cause bubbling of the sealant.
- Not suitable for permanently submerged / underwater applications.
- Polyurethane based adhesive and sealants discolour on exposure to UV. Where colour stability is a concern we recommend painting over the sealant with a flexible paint.



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- Not resistant to alcohols, organic acids, concentrated alkalis and concentrated acids, chlorinated hydrocarbon fuels. Avoid contact with solvents during cure.
- Not suitable for expansion joints greater than 25mm.
- Maximum depth of sealant must not exceed 12mm, minimum depth 0,5mm.

Safety instructions

ALCO-FLEX POLYURETHANE is non-toxic, however, it is advisable to wear gloves in order to avoid direct skin contact. In the event of skin or eye contact, rinse thoroughly and immediately with water. Seek medical assistance if irritation or discomfort persists. Always work in a well ventilated area. Keep out of reach of children! Cured polyurethane rubber can be handled without any health risk. Refer to our Safety Data Sheets for further toxicological information and comprehensive handling instructions.

Surface preparation

- Ensure surfaces are clean, dry and free of loose materials, dust, grease, rust and other contaminants. Surfaces such as metals and glass should be degreased with a solvent e.g. acetone.
- Gaps exceeding 5mm should be half-filled with backing material before application.
- The optimum temperature for substrate when applying the sealant is between 15°C and 25°C.
- Poor surface preparation may result in the delamination of the silicone.
- Joint preparation
Use grinding equipment to remove paint and concrete, taking care that the joints do not become “V” shape. All loose dirt and concrete must be removed by brush or vacuuming. Remove any oil or grease with suitable solvents.
- Concrete and grout
New concrete and grouting must be allowed to cure for at least 3 weeks before sealing.
- Fixing panels
We recommend mechanical cleaning and oil-free air blasting in order to thoroughly clean the surface and remove dust and mud, and cleaning with solvent to remove grease and oils.

Joint design

ALCO-FLEX POLYURETHANE may be used for expansion joints as well as normal joints from 5 mm to 25 mm. **Their width must be at least 4 times greater than the maximum expected movement.** Sealing depth will be chosen depending on the width of the joint. For widths greater than 16mm, the depth must be equal to half the width. The following table (value in mm) should be followed:

Sealing width/depth ratio

WIDTH	5/6 mm	7/9 mm	10/12 mm	12/15 mm	20 mm
DEPTH	5 mm	6 mm	7 mm	8 mm	10 mm

It is necessary that a filler material or bond breaking tape is used in order to avoid adhesion of ALCO-FLEX POLYURETHANE to the bottom of the joint which would exercise unnecessary tension on the sealant. Regulation of its depth is then achieved as well as greater yields. The material to be used must be inert, mechanically stable, homogeneous, corrosion-resistant, and must not adhere to either the sealant or contiguous materials i.e. closed cell polyethylene foam-backing strip in thicknesses to match the joint width.

Directions for use

1. Ensure surfaces are prepared as above.
2. In cold weather, store package at about 20°C for 24 hours before use.
3. Pierce tip of cartridge and screw the nozzle onto the cartridge. Cut the tip of nozzle at an angle to achieve the desired bead size. Apply with a caulking gun in a continuous bead to the prepared joint. Use masking tape to get a clean, even adhesive line and to eliminate cleaning difficulties on porous surfaces. Be sure to remove the tape before sealant begins to skin.
4. Smooth down after application (within 30 minutes) before skin formation occurs, by using a flat or rounded tool. One can also use a finger, dipped in soapy water.

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5. Adhesive dries to touch in 60 – 90 minutes and reaches full cure after approximately 24 hours. Please note that the ALCO-FLEX POLYURETHANE cures by reaction with atmospheric moisture. At low temperatures, the moisture in the air is generally low, which may retard the curing speed.
6. ALCO-FLEX POLYURETHANE requires no protection from the weather. Nevertheless, it can be easily painted over with any acrylic paint so long as the paint is sufficiently elastic. The hardness and thickness of the paint may impair the flexibility of the adhesive and result in cracking of the paint film.
7. For external applications we recommend over-painting to extend bond durability.
8. It is recommended to use the cartridge or sausage within 24 hours of opening.

- **Fixing panels**

Apply ALCO-FLEX POLYURETHANE to one of the surfaces to be joined in 5mm, parallel, short and non-continuous vertical strips that will allow air flow through the joint. Press the panel onto the surface. It is advisable to hold the panel with chocks or other system for at least 24 hours.

- **Yield**

The following formula is an approximate guideline to calculate foreseen yield for a standard cartridge:

280	Where:	L	= Length of sealant in meters obtained per cartridge
$L = \frac{\quad}{W \times D}$		W	= Width of the joint in mm
		D	= Depth of the joint in mm
A joint of 5mm width and 5mm depth yields 11.2 meters per 280 ml cartridge			

Cleaning

- Uncured adhesive can easily be removed from the hands or tools using a clean solvent soaked cloth, e.g. turpentine, paraffin, alcohol or acetone. If removing uncured adhesive from clothing, check fabric colour-fastness before applying the above mentioned solvents.
- Cured adhesive must be mechanically removed i.e. with a sharp knife / abrasion.

Storage stability

ALCO-FLEX POLYURETHANE can be stored for 18 months if stored in a cool dry place between 5°C to 25°C in its original moisture-tight container. Keep away from heat sources and direct sunlight. If the material is kept beyond the recommended shelf life, it is not necessarily unusable, but a check should be performed to observe whether the product is still workable. To maximize the shelf life of the opened cartridge, it is advisable to create an airtight environment by removing the nozzle and wiping down the opening, and placing a piece of plastic over it before finally screwing the nozzle back on.

Product packaging

- 280ml aluminium cartridge
- 600ml sausage

Product data

i. Physical data

	280ml	600ml
Appearance	Homogenous white, grey and black paste	
Chemical Base	Polyurethane	
Curing System	Atmospheric Moisture	
Skin over time / Tack free time (25°C and 50% RH)	60 – 90 min.	60 – 90 min.
Curing Rate (25°C and 50% RH)	2mm/24hr	3mm/24hr
Application Temperature	+5°C to 35°C	+5°C to 35°C
Specific gravity (DIN 53479)	1.15± 0.03 gr/cm ³	n/a
VOC level solvent content	64.8g/l	4.80%

ii. Cured data

	280ml	600ml
Elastic modulus at %100	>0.6N/mm ²	n/a
Elastic Recovery	85%	n/a
Elongation at break	>500% (ASTM 53504)	>500% (ISO 8339)
Hardness Shore A	35 – 45 (ASTM 53505)	30 (ASTM 868)
Modulus 100%	>0,4 MPA (ASTM 53504)	0,4 MPA (ISO 7389)
Movement accommodation factor	25%	25%
Service temperature range	-30°C to +80°C	-30°C to +80°C
Tensile Strength	10N/mm (ASTM 53504)	1.2N/mm ² (ISO 8339)
Coverage (5mm x 5mm joint)	11 linear meters	22 linear meters
Chemical resistance : Mineral oil, grease, gasoline, organic solvents, inorganic diluted acids and alkalis	Good	Good

The above information is only offered, as a guide to the use of this product. Furthermore, users should satisfy themselves that it is suitable for their needs. Since we have no control over the conditions under which it is used, we cannot accept responsibility for problems caused by the use and/or application of this product.

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