



Mapesil Z

**Acetic-based
silicone sealant
for general use**



APPLICATIONS

Mapesil Z is used to waterproof seals and joints between construction elements in the building, mechanical, naval, automobile and industrial sectors. After polymerisation, it forms a perfect, flexible seal which adheres to glass, ceramic and painted metals.

Some application examples

- Sealing glass with a U profile (U-glass).
- Sealing windows and frames.
- Sealing air ducts or water pipes.
- For making general seals in the building, automobile, naval and industrial sectors (portholes, window frames, etc.).

TECHNICAL CHARACTERISTICS

Mapesil Z is an acetic-reticulation silicone sealant available in soft, thixotropic paste form and is easy to apply on vertical and horizontal surfaces. Reticulation takes place at room temperature through the humidity present in the air to form a flexible sealant which allows joints to expand and contract by up to 20% of their original size. **Mapesil Z** offers permanent resistance to inclement weather, industrial environments, temperature changes and immersion in water. It adheres perfectly to glass, ceramic, enamelled surfaces, aluminium, certain plastics and impregnated, coated and varnished wood without the use of a primer. **Mapesil Z** also bonds well to concrete, wood, metal, a

wide range of plastics, rubber etc. after treating them with **Primer FD**. If in doubt, please contact MAPEI Technical Assistance Department.

RECOMMENDATIONS

- Do not apply **Mapesil Z** on alkaline substrates without a prior application of **Primer FD**.
- Do not use **Mapesil Z** for external joints when in presence of light color substrates (ceramic tiles, natural stone, etc.), because exposure to atmospheric agents may cause an accumulation of dirt near the joint.
- Do not apply **Mapesil Z** on rubber or highly plasticised materials or bituminous surfaces, because oils and plasticisers could migrate to the surface compromising the adhesion and penetrating into the sealant altering the colour and resistance.
- Do not use **Mapesil Z** for sealing sinks, sanitary ware and ceramic tiles in kitchens, bathrooms and showers. In these cases, use **Mapesil AC** or **Mapesil Z Plus**, products which offer high resistance against the formation of surface mould.
- Do not use **Mapesil Z** for sealing aquariums and containers used for aquatic creatures.

Cross-linking

As soon as **Mapesil Z** is exposed to the air it crosslinks as a result of the humidity, and becomes

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elastic. This reaction occurs even at low temperatures.

The speed of crosslink of **Mapesil Z** depends only slightly on temperature but is fundamentally linked to the humidity in the atmosphere.

Fig. 1 shows the cross-linking graph at +23°C and 50% R.H.

N.B. During the process of cross-linking 4% of acetic acid is given off by evaporation (equivalent to 25 mg/m³).

These vapours should not be inhaled for extended periods of time or in high concentrations. It is therefore important to provide good ventilation in the work area. Fresh silicone is irritant to the eyes and mucous membranes. In case of direct contact, wash with abundant water and consult a doctor.

APPLICATION PROCEDURE Preparation and calculation of joint size

All the surfaces that need to be sealed must be dry, sound and free from dust and loose particles, oil, grease, wax, old paint and rust.

In order that the sealant can carry out its function after it has been injected into the joint, provision must be made for it to expand and compress freely.

It is therefore essential that:

- it adheres perfectly only to the side walls of the joint and not to the base;
- the width of the joint must be correctly sized so that the estimated maximum extension is not greater than 20% of the initial width (calculated at +23°C);
- the thickness of the **Mapesil Z** seal should always be less than or equal to the width. To control the depth of the joint and also prevent **Mapesil Z** from adhering to the base, the bottom of the joint should be filled with polyethylene foam (such as **Mapefoam**).

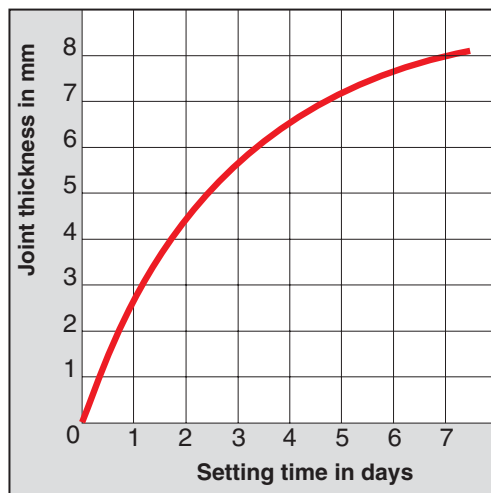


Fig. 1

Applying Primer FD

Where the use of **Primer FD** is required, it must be applied with a small brush onto the appropriate areas of the joints and left to dry for some minutes allowing the solvent to evaporate.

Then apply **Mapesil Z**.

Applying Mapesil Z

Mapesil Z is packed in cartridges of 280 ml; to use, cut the cartridge above the end of the thread and screw on the nozzle, which should be cut at 45° to produce a hole corresponding to the size of the joint. Insert the cartridge into the gun and extrude the sealant.

Apply on adhesive tape on the border of the joint in order to obtain a better finishing.

The surface finishing of **Mapesil Z** must be carried out with a damp tool, preferably moistened with soapy water, before a superficial skin has formed.

Cleaning

To clean the partially cross-linked **Mapesil Z** from tools and dirtied surfaces, common

CONSUMPTION TABLE (linear metres per cartridge)

END JOINT

joint size in mm (axb)	linear metres per cartridge
5x5	11
10x5	5.5
10x10	2.8
15x10	1.8
20x10	1.4
25x10	1.1
30x15	0.6
40x20	0.4

TRIANGULAR JOINT

joint size in mm	linear metres per cartridge
5	22
10	5.5
15	2.4
20	1.4

Fillet seal between glass and a window frame

Blending in and smoothing the sealant

TECHNICAL DATA (typical values)

PRODUCT IDENTITY

Consistency:	thixotropic paste
Colour:	transparent, black
Density (g/cm³):	1.0
Storage:	18 months in original unopened cartridges
Hazard classification according to EC 1999/45:	none. Before using refer to the "Safety instructions for preparation and application" paragraph and the information on the packaging and Safety Data Sheet
Customs class:	3214 90 00

APPLICATION DATA (at +23°C - 50% R.H.)

Application temperature range:	from +5°C to +40°C
Extrusion speed from a 3.5 mm nozzle at a pressure of 0.5 MPa:	80-130 g/min.
Time for formation of skin:	25 minutes
Speed of cross-linking:	1 day: 3 mm 7 days: 8 mm

FINAL PERFORMANCE DATA

Tensile strength (N/mm²): – acc. to ISO 8339:	0.6
Elongation at breaking point (%): – acc. to ISO 8339:	200
Shear strength ISO 34-1, Die C (N/mm):	4.0
Maximum permissible movement (%):	20
Shore-A-hardness (DIN 53 505):	18
Modulus of elongation measured (N/mm²): – acc. to DIN 53 504-S3A at 100%:	0.36
Density at +23°C (DIN 53 476) (g/cm³):	1.01
Resistance to water:	excellent
Resistance to ageing:	good
Resistance to atmospheric agents:	good
Resistance to temperature:	from -30°C to +120°C

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solvents may be used (e.g. ethyl acetate, petrol, toluene); once the cross-linking is complete, the silicone rubber can only be removed mechanically.

PACKAGING

Mapesil Z is available in cartridges of 280 ml in transparent and black.

STORAGE

Mapesil Z is stable for 18 months when stored in original packing and a dry place.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Mapesil Z is not considered as dangerous according to the European regulation regarding the classification of preparations. It is however recommended to use gloves, eyes protection and to take the usual precaution taken when handling chemical products are recommended.

For further and complete information about a safety use of our product please refer to our latest version of the Material Safety Data Sheet.

FOR PROFESSIONALS.

WARNING

Although the technical details and recommendations contained in this report correspond to the best of our knowledge and experience, all the above information must, in every case be taken as merely indicative and subject to confirmation after long-term practical applications; for this reason, anyone who intends to use the product must ensure beforehand that it is suitable for the envisaged application. In every case, the user alone is fully responsible for any consequences deriving from the use of the product.

Please refer to the current version of the Technical Data Sheet, available from our web site www.mapei.com

All relevant references for the product are available upon request and from www.mapei.com