

# MAPEFLEX MS CRYSTAL

Elastic high modulus, flexible, crystal clear, paintable, hybrid sealant and adhesive. Also suitable for damp surfaces.



## WHERE TO USE

**Mapeflex MS Crystal** is specifically formulated to form a highly transparent sealant and adhesive with the capacity to seal and bond without affecting the appearance of elements on which it is used.

### Some application examples

#### Used as sealant:

Elastic sealant and filler for internal and external gaps, such as cracks and crevices, fillet and expansion joints subject to movement of up to 20%. It is most frequently used for the following applications:

- façades;
- internal partition walls;
- glass partition walls;
- filling gaps between skirting boards and floors;
- window and door fittings;
- shower booths.

#### Used as elastic adhesive:

A thin layer is sufficient to form an elastic bond on the most commonly used building materials. Ideal for bonding transparent glass and plastic objects\*. Ideal for bonding glass shelves and tops and glass objects in general.

**Mapeflex MS Crystal** also adheres to many other types of building material, such as:

- cement and cement-based materials;
- bricks;
- metals such as copper, aluminium and pre-painted surfaces;
- glass and mirrors;
- gypsum;
- wood and wood-based materials;
- ceramic and klinker;
- insulating materials in general;
- many types of plastic\*.

*\* This product generally forms a good bond on plastics even if primer is not applied beforehand: please contact MAPEI Technical Services before using the product.*

## TECHNICAL CHARACTERISTICS

**Mapeflex MS Crystal** is a thixotropic adhesive and sealant made from silitated polymers and, therefore, contains no silicone or isocyanates.

In comparison with polyurethane products, **Mapeflex MS Crystal** is easier to apply and smooth over (especially when applied at low temperatures), has a wider application temperature range, does not blister even in particularly damp

conditions, is more resistant to UV rays, its surface sets more quickly, it has a longer shelf life and is supplied in standard plastic cartridges.

Compared to neutral silicone products, **Mapeflex MS Crystal** adheres better to compact and absorbent substrates, drastically reduces the amount of dirt which collects on the surface, has higher tensile and shear strength and may be painted over with normal elastomeric paints.

**Mapeflex MS Crystal** may also be applied on substrates which are temporarily damp due to unsuitable surrounding conditions (just after rainy weather, when in contact with water, if there is humidity in the atmosphere, etc.). If there is continuous capillary rising damp, apply a coat of **Primer FD** beforehand. If applied on damp substrates or on substrates continuously immersed when in service, the mechanical performance of the product could be significantly lower compared with use in dry conditions.

**Mapeflex MS Crystal** does not contain solvent, has very low emission of volatile organic compounds and is characterised by its high mechanical strength according to ISO 11600 standards (class F20 HM).

**Mapeflex MS Crystal** sets by reacting with the moisture in the air without giving off significant levels of liquids or gases which could be potentially hazardous for the user or the environment; no hazard warning labels, therefore, are required on the packaging.

The product is supplied ready to use and is available in plastic cartridges for use with standard sealant guns.

**Mapeflex MS Crystal** complies with EN 15651-1 ("*Sealants for internal and external façades*") with performance rating F-EXT-INT and EN 15651-3 ("*Sealants for sanitary joints*") with performance rating XSI.

## RECOMMENDATIONS

- Do not apply on dusty or crumbling surfaces.
- Do not apply on wet surfaces.
- Do not use on surfaces with traces of oil, grease or form-release compound; adhesion may be affected.
- Do not apply on bituminous surfaces where there may be traces of bleeding oil.
- Do not apply if the temperature is lower than +5°C.
- Use elastomeric paint to paint over the sealant.
- If exposed to UV rays the surface could yellow.

## APPLICATION PROCEDURE

### Preparation of the surface for sealing or bonding

Surfaces to be sealed or bonded must be clean, dry, solid and free of dust, loose parts, oil, grease, wax and old paint. When used for sealing, **Mapeflex MS Crystal** must only adhere to the sides of the joint without touching the bottom. Therefore, for joints subject to movements when in service, place **Mapefoam** compressible, closed-cell expanded polyethylene cord with a suitable diameter along the bottom of the joint to leave a gap according to the table below:

width/depth ratio of sealant	
width of joint	depth of sealant
up to 10 mm	equal to the width
from 10 to 20 mm	10 mm in all cases
from 20 to 40 mm	half the width

**Mapeflex MS Crystal** withstands movements when in service of up to 20% of the average width of the sealed joint. For larger movements when in service, use **Mapeflex PU40** one-component, low modulus polyurethane sealant, **Mapesil LM** neutral silicone sealant or **Mapesil AC** acetic silicone sealant.

To avoid leaving traces of sealant along the edges of the joint during application and finishing operations, apply masking tape along the edges and then remove it immediately after smoothing over the sealant.

**Mapeflex MS Crystal** adheres well to most absorbent or compact substrates used in the building industry, as long as they are solid and have no traces of dust or form-release compound. We recommend applying **Primer FD** if absorbent surfaces are not sufficiently solid or compact, or when the joints are subject to high mechanical stress or frequent, prolonged immersion in water.

If applied on plastic, sand the surface and apply a coat of **Primer P**. Because of the wide range of plastics used in the building industry, we recommend carrying out a preliminary test beforehand or contacting MAPEI Technical Services prior to using the product.

### Application of primer

Brush-apply suitable primer for the type of substrate to be sealed along the edges of the gaps or joints and wait until it completely dries before applying **Mapeflex MS Crystal**.

### Preparation and application of the sealant

Used as a sealant:



Insert the cartridge in a sealant gun, cut off the tip of the cartridge, screw on the extrusion nozzle, trim the nozzle at an angle of 45° according to the bead width required and apply the product in a continuous flow into the gap or joint; avoid entraining air into the joint.

Immediately after applying the product, smooth over the surface with a suitable tool or implement dipped in soapy water. We recommend smoothing over the surface in one go to prevent the formation of ripples that could reduce the transparency of the sealant.

Used as an elastic adhesive:

When bonding elements with a small surface area, extrude single drops of the product on the back of the element and press down well onto the substrate to spread the adhesive uniformly. When bonding elements with a large surface area, apply a series of vertical, parallel beads around 10-15 cm apart and press down well to spread the adhesive uniformly. The position of the bonded element may be adjusted within 10 minutes at +23°C.

For heavy loads or in critical bonding conditions, extra support such as clamps or props may be required for the first 24 hours at +23°C.

Do not apply layers thicker than 3 mm when used for bonding.



*Crystal clear transparency of Mapeflex MS Crystal vs. opaque transparency of traditional silicone*

## CONSUMPTION

Used as a sealant:

According to the size of the joint. See consumption table below:

Size of joint in mm	Metres 300 ml. cartridge
5 x 5	12
10 x 10	3
15 x 10	2
20 x 10	1.5
25 x 12.5	0.9
30 x 15	0.6

Used as an adhesive:

According to the bonding technique used (spot bonding or in beads).

## Cleaning

Remove **Mapeflex MS Crystal** from surfaces, tools, clothing, etc. with toluene or alcohol before it sets. Once set it must be removed mechanically or with **Pulicol 2000**.

## PACKAGING

Boxes of 12 x 300 ml cartridges.

## COLOUR

**Mapeflex MS Crystal** is crystal clear.

## STORAGE

**Mapeflex MS Crystal** may be stored for 18 months in its original packaging in a cool, dry area at +5°C to +25°C and 50% R.H.

## SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

**Mapeflex MS Crystal** is not considered hazardous according to current norms and guidelines regarding the classification of mixtures. It is recommended to use protective gloves and goggles and to take the usual precautions for handling chemicals.

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

PRODUCT FOR PROFESSIONAL USE.

TECHNICAL DATA (typical values)	
PRODUCT IDENTITY	
Classification according to EN 15651-1:	F-EXT-INT
Classification according to EN 15651-3:	XS1
Appearance:	thixotropic paste
Colour:	crystal clear
Density (g/cm <sup>3</sup> ):	1.00
Dry substances content (%):	100
Brookfield viscosity at +23°C (mPa·s):	1,500,000 ± 200,000 (rotor F - 5 revs)
EMICODE:	EC1 Plus - very low emission
APPLICATION DATA (at +23°C and 50% R.H.)	
Application temperature:	from +5°C to +40°C
Dust dry:	35 ± 5 min.
Complete hardening:	4.5 mm/24 hours
FINAL PERFORMANCE	
Shore A hardness (ISO 868):	35
Tensile strength (ISO 37) (N/mm <sup>2</sup> ): – after 7 days at +23°C:	1.5
Elongation at failure (ISO 37) (%): – after 7 days at +23°C:	200
Resistance to UV rays:	good
In-service temperature range:	from -20°C to +80°C
Elongation in service (continuous service) (%):	20
Modulus of elasticity at +23°C (ISO 37) (N/mm <sup>2</sup> ):	0.6

## WARNING

Although the technical details and recommendations contained in this product data sheet 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 application; 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 website [www.mapei.com](http://www.mapei.com)

## LEGAL NOTICE

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