New Guard Coatings Group

A global reputation to protect.

The information herewith is given with the best of New Guard Coatings Group knowledge.

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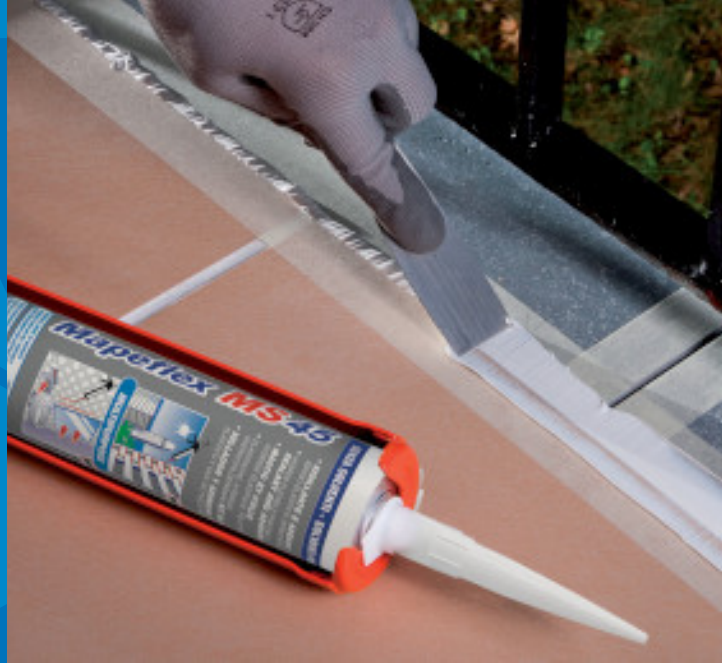
This information is not exhaustive and it is the user's responsibility to ensure that this data sheet is the most current by contacting their local New Guard Coatings Group branch prior to using the coating/product.

MAPEFLEX MS45

One-component flexible, thixotropic, quick-hardening sililated polymer-based hybrid sealant and adhesive with a high modulus of elasticity. Also suitable for damp substrates



WHERE TO USE

Mapeflex MS 45 has been specifically developed for sealing expansion, fillet and distribution joints on horizontal and vertical surfaces. It is also recommended to form internal and external flexible bonds between similar and dissimilar materials commonly used in the building industry and to replace or integrate mechanical fasteners.

Some application examples

Used as sealant:
Sealing expansion, fillet and distribution joints subject to movements of up to 20% of the average width of the joint.
It is most frequently used for the following applications:
· traditional façades;
· ventilated façades;
· civil and industrial floors, including those subject to heavy vehicular traffic;
· window and door fittings;
· cracks and splits;
· paintable joints;
· tin roofs and metalwork.

Used as flexible adhesive:
When applied at a thickness of 3 mm, it forms a flexible bond between most building materials, including many types of plastic.
Its high bond strength without primer and its rapid polymerisation make **Mapeflex MS 45** easy to use when installing building elements or bonding construction features, both internally and externally.
The product bonds on the following:
· cement and cement-based materials;
· bricks;
· steel;
· copper;
· aluminium;
· painted surfaces in general;
· glass and mirrors;
· gypsum;
· wood and wood-based materials;
· ceramic and klinker;
· insulating materials in general;
· many types of plastic.

TECHNICAL CHARACTERISTICS

Mapeflex MS 45 is a thixotropic adhesive and sealant made from sililated polymers and thus completely free of silicone and isocyanates.
Mapeflex MS 45 is easy to extrude and smooth over (even when applied at low temperatures), has a wide application temperature range, does not blister even during particularly damp conditions, is compatible with damp substrates during application, is resistant to UV rays, hardens quickly, has a long shelf life.
Furthermore, **Mapeflex MS 45** forms a better bond on compact and absorbent substrates, efficiently reduces the amount of dirt which collects on the surface, offers good mechanical properties such as tensile and shear strength. Before painting over **Mapeflex MS 45** it must be fully polymerised and the paint used must be flexible, such as **Elastocolor Paint**, elastomeric, crack-bridging, permanently flexible, protective paint with high resistance to chemicals for internal and external surfaces.
We recommend carrying out preliminary tests to make sure the sealant and paint are compatible.
Mapeflex MS 45 complies with EN 15651-1 ("*Sealants for façade elements*") with performance rating F-EXT-INT CC and EN 15651-4 ("*Sealants for pedestrian walkways*") with performance rating PW-EXT-INT-CC.
Mapeflex MS 45 contains no solvents, has a very low emission level of volatile organic compounds (EC1 Plus) and is characterised by high mechanical strength according to ISO 11600 (class F20 HM).
Mapeflex MS 45 may also be applied on substrates which are temporarily wet due to unsuitable surrounding conditions (recent rain, contact with water, atmospheric damp, etc.); for 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 and the adhesion of the product could be significantly lower compared to use in dry conditions.
Mapeflex MS 45 hardens by reacting with humidity in the surrounding air without giving significant levels of liquids or gases potentially hazardous for the user or the environment, which is why no safety warnings need to be applied on the packaging.
The product is ready to use and is available in plastic cartridges to be used with traditional extrusion guns.

RECOMMENDATIONS

· Do not apply on dusty or crumbling surfaces.
· Do not apply on surfaces with traces of oil, grease and stripping compound otherwise the bond may be compromised.
· Do not apply on bituminous surfaces where there may be traces of bleeding oil.
· Do not apply **Mapeflex MS 45** if the temperature is below +5°C.
· Before painting over the sealant make sure it is compatible with the type of paint used.
· Use **Mapeflex MS Crystal** for transparent sealing.

APPLICATION PROCEDURE

Preparation of the surface for bonding or sealing

Surfaces to be bonded or sealed must be clean, dry, sound and free of dust, loose parts, oil, grease, wax and old paintwork.
When used for sealing, **Mapeflex MS 45** must only bond to the sides of the joint and not to the bottom. Therefore, for joints subject to movement, insert **Mapefoam** compressible, closed-cell, polyethylene cord with a suitable diameter for the width of the joint to regulate the depth of the sealant according to the table below:

WIDTH OF JOINT	DEPTH OF SEALANT
Up to 10 mm	Same as width
From 11 to 20 mm	10 mm in all cases
More than 20 mm	Half the width

Mapeflex MS 45 withstands movement when in service of up to 20% of the average width of the sealed joint. If movement is higher than 20% when in service, use **Mapeflex PU40** polyurethane sealant or **Mapesil LM** neutral silicone sealant, both with a low modulus of elasticity.
To prevent the sealant from seeping out of the joint and to get a more attractive finish, we recommend applying masking tape along the edges of the joint which should then be removed immediately after smoothing over the surface of the sealant.
Mapeflex MS 45 bonds well to most absorbent or compact substrates used in the building industry, as long as they are free of traces of dust and stripping compound. We recommend applying **Primer FD** if absorbent surfaces are not sufficiently solid or compact, or when the joints are subjected to high mechanical stress or frequent, prolonged immersion in water.
If applied on plastic, we recommend using **Primer P** after roughening the surface. Because there is a very wide range of plastics available, we recommend carrying out a preliminary test or contacting MAPEI Technical Services Department beforehand.

Application of Primer FD or Primer P

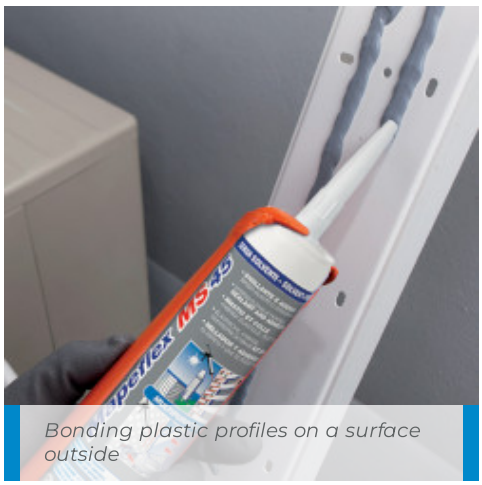
Apply the most suitable primer, according to the type of substrate, along the edges of the joints with a brush and wait until it completely dries before extruding **Mapeflex MS 45**.

Preparation and application of Mapeflex MS 45 when used for sealing

Insert the cartridge in an extrusion gun, cut the tip of the cartridge, screw on the extrusion nozzle, cut the nozzle at an angle of +45°C and according to the extruded width required and squeeze out the product in a continuous flow into the joint to avoid entrapping air in the process.
Immediately after extruding the product, smooth over the surface with a tool with a suitable size and shape while keeping it continuously wet with soap and water.

Preparation and application of Mapeflex MS 45 when used for flexible bonds

When bonding elements with a small surface area, extrude single drops of the product on the back of the element and press it well down onto the substrate to spread the adhesive uniformly. When bonding elements with a large surface area, extrude a series of vertical, parallel beads around 10-15 cm apart and press on well to spread the adhesive uniformly.
The bonded element may be adjusted within 20 minutes of laying at a temperature of +23°C.
When bonding heavy loads or in critical laying conditions, extra support such as clamps, props etc. may be necessary for the first 24 hours at +23°C.
Do not bond with layers of product more than 3 mm thick.



Bonding plastic profiles on a surface outside

CONSUMPTION

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

CONSUMPTION TABLE	
Size of joint in mm	Linear metres of product per 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

For bonding:
According to the bonding technique used (spot bonding or with beads).

CLEANING

Mapeflex MS 45 may be removed from surfaces, tools, clothing etc. with toluol or alcohol before it hardens. Once hardened, it must be removed mechanically or with **Pulicol 2000**.

PACKAGING

300 ml cartridges (boxes of 12 units) and 600 ml sausages (boxes of 20 units).

COLOURS AVAILABLE

Mapeflex MS 45 is available in white, 113 grey, brown and black.

STORAGE

Mapeflex MS 45 may be stored for up to 15 months (300 ml cartridges) and 12 months (600 ml sausages) in its original packaging in a dry, cool place.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Instructions for the safe use of our products can be found on the latest version of the Safety Data Sheet, available from our website www.mapei.com.
PRODUCT FOR PROFESSIONAL USE.

TECHNICAL DATA (typical values)	
PRODUCT IDENTITY	
Classification according to EN 15651-1:	F-EXT-INT-CC, class 20 HM
Classification according to EN 15651-4:	PW-EXT-INT-CC, class 20 HM
Appearance:	thixotropic paste
Colour:	white, grey 113, brown and black
Density (g/cm³):	1.50
Dry solids content (%):	100
Brookfield viscosity at +23°C (mPa·s):	1,900.000 ± 200,000 (rotor F - 5 revs)
EMICODE:	EC1 Plus - very low emission
APPLICATION DATA (at +23°C and 50% R.H.)	
Application temperature range:	from +5°C to +35°C
Dust dry:	35 minutes
Complete hardening:	3.5 mm/24 hours - 4.5 mm/48 hours - 8.5 mm/7 days
Set to light foot traffic:	according to the depth of the joint
FINAL PERFORMANCE	
Shore A hardness (DIN 53505):	43
Tensile strength (ISO 37 type 3) (N/mm²): **– after 28 days at +23°C:**	1.85

Elongation at failure (ISO 37 type 3) (%): – after 28 days at +23°C:	500
Resistance to UV rays (ASTM C793):	excellent
In-service temperature range:	from -40°C to +90°C
Elongation in service (continuous service) (%):	20
Modulus of elasticity at +23°C (ISO 8339) (N/mm²):	0.85
Springback (%):	90

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

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The most up-to-date TDS can be downloaded from our website www.mapei.com.
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