

MAPEFLEX PU 45 FT

Paintable, rapid, high modulus polyurethane sealant
and adhesive



WHERE TO USE

Mapeflex PU 45 FT has been specially developed for sealing expansion and distribution joints in horizontal and vertical surfaces, including those which are subject to occasional chemical attack by hydrocarbons. It is also recommended for flexible bonds between similar and different materials most commonly used in the building industry for both internal and external applications and as a replacement or to compliment mechanical fasteners.

Some application examples

Used as a sealant

- Sealing expansion and distribution joints subject to movements up to 20% of the average width of the joint in:
 - industrial floors subject to vehicular traffic, including heavy vehicles;
 - concrete floors for internal and external car-parks, supermarkets, shopping centres and warehouses;
 - ceramic flooring and coatings, including in areas subject to intense traffic such as supermarkets and industrial environments where fork-lifts are in use;
 - concrete walls and general internal and external vertical structures where the use of a thixotropic product is required;
 - old concrete floors which are to be covered with a **Mapefloor System**.
- Sealing cracks.
- Sealing pipe-work systems for air-conditioning and electric cables.
- Sealing sheet-steel sections, such as flashing and guttering.
- Sealing general fillet joints.

Used as an adhesive at thicknesses up to 3 mm

The high bonding characteristics and rapid-hardening properties of **Mapeflex PU 45 FT** make it suitable for joining various materials and for bonding on a wide range of substrate materials.

Mapeflex PU 45 FT may be used to bond most building materials, for example cement and cement-based products, cellular concrete, bricks, steel, copper, aluminium, general pre-painted surfaces, glass, mirrors, gypsum, wood and wood-based materials, ceramics, clinker, insulating material, plastics such as PVC, acrylic glass and fibreglass.

When used to form flexible bonds, **Mapeflex PU 45 FT** is a multi-purpose product for constructing and finishing building works such as:

- tinwork and flashing;
- skirting boards, cable beads, beading rods and corner guards;
- pre-formed decorative elements;
- bathroom fittings;
- window sills;
- roofing tiles, concave roofing tiles, covering panels and insulation panels.

TECHNICAL CHARACTERISTICS

Mapeflex PU 45 FT is a one-component, thixotropic, easy-to-apply, polyurethane-based sealant and adhesive with a high modulus of elasticity, made according to a formula developed in MAPEI's own R&D laboratories and meets the requirements of ISO 11600 class F20 HM. Solvent-free, with a low impact on the environment.

Mapeflex PU 45 FT complies with Euronorm 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 PU 45 FT hardens following its reaction with atmospheric humidity and its special characteristics offers a guarantee of long service life. It may be used on both horizontal and vertical surfaces.

The product is ready to use and is available in both metal cartridges and soft cartridges equipped with a special extrusion gun, which makes the product particularly easy to apply.

The consistency of the product is ideal for quick application and its rapid-hardening characteristics allows the surface to be put into service quickly with resulting economic advantages.

Before painting over **Mapeflex PU 45 FT** make sure it is completely polymerised.

We recommend using elastomeric paint such as **Elastocolor Paint** after treating the surface of the sealant with **Colorite Performance**. Always carry out preliminary tests to make sure the sealant and paint are compatible.

RECOMMENDATIONS

- Do not use on dusty or flaky surfaces.
- Do not use on damp surfaces.
- Do not use to seal joints in stone and marble: use **Mapesil LM**.
- Do not use on surfaces which are dirty with oil, grease or mould-stripping compounds, as the bonding could be compromised.
- Do not use on bituminous surfaces where the bleeding of oil may be present.
- Do not apply **Mapeflex PU 45 FT** if the temperature is below +5°C.
- Do not contaminate the surface of the product with alcohol while still wet to prevent affecting its correct polymerisation.
- When applied on particularly absorbent substrates, the edges of the joint may become darker.

APPLICATION PROCEDURE

Preparation of surfaces to be sealed or bonded

All the surfaces to be sealed or bonded must be dry, sound and free of dust, crumbling parts, oil, grease, wax and old paint. When used for sealing, **Mapeflex PU 45 FT** must only bond perfectly to the sides and not to the bottom. Therefore, in expansion and contraction joints, place a suitable diameter of **Mapefoam** compressible, closed-cell expanded polyethylene cord at the bottom of the joint to leave a depth in the joint 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 PU 45 FT withstands movements when in service up to 20% of the average width of the sealed joint. If movements are greater than 20% when in service, use **Mapeflex PU40** polyurethane sealant with a low modulus of elasticity.

To avoid the sealant spreading out of the joint, and to leave an attractive finish, we recommend using masking tape along the edges of the joints, which must be removed immediately after smoothing off the sealant.

Mapeflex PU 45 FT bonds well even without the use of a primer on substrates which are solid, free of dust and perfectly clean and dry. We recommend applying **Primer A** if the absorbent surfaces are not solid enough, if they have a slightly powdery surface or if the joints are subject to high mechanical stress or frequent, prolonged contact with liquids.

When applied on non-absorbent surfaces such as iron, steel, aluminium, copper, ceramic, klinker, glass and zinc-plated sheet, **Mapeflex PU 45 FT** forms a good bond if the surface is cleaned with a suitable degreasing product. Applying **Primer M** on the surface will improve adhesion over the years.

When applying on plastics, it may help to roughen the surface by using fine sandpaper and then to apply a coat of **Primer P**, special product for plastic materials.

Application of Primer A

Apply with a brush a thin, even coat of **Primer A** one-component polyurethane primer for absorbent surfaces on the areas where it is required.

Leave the primer to dry before applying the sealant (around 2 hours at +23°C e 50% R.H.).

Application of Primer M

Apply with an even coat of **Primer M** on the areas where it is required with a brush single component, solvent-free polyurethane primer for non-absorbent surfaces around the edges of the joint.

The successive sealant must only be applied once the primer is no longer sticky (after approximately 40 minutes at +23°C and 50% R.H.).

Application of Primer P

Roughen the surface of the substrate, remove all loose and uneven areas and apply an even layer of **Primer P**, one-component solvent-based primer. Leave to dry (approximately 20 minutes at +23°C) before extruding the sealant.

Preparation and application of Mapeflex PU 45 FT when used as a sealant

300 ml cartridge; place the cartridge in the special extrusion gun, make a hole in the tip of the cartridge, screw on the extrusion nozzle, cut the nozzle at an angle of 45° and dependent on the width required. Squeeze out the product in a continuous flow into the joint. Take care to avoid entrapping air in the joint.

600 ml cartridge; place the cartridge in the special extrusion gun, cut off the tip of the cartridge, cut the extrusion nozzle at an angle of 45° and dependent on the width required. Squeeze out the product in a continuous flow into the joint. Take care to avoid entrapping air in the joint.

Immediately after extruding the sealant, smooth over the surface with a tool with a suitable size and shape while keeping it continuously wet with **Mapei Easy Smooth** solution or soap and water.

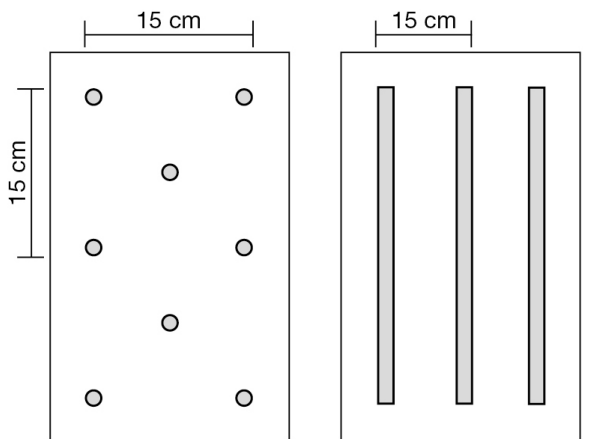
Preparation and application of Mapeflex PU 45 FT when used as a flexible adhesive

When bonding sections with a restricted surface area or weight, extrude single drops of the product on the back of the section and press it well down onto the substrate to spread the adhesive uniformly. When bonding sections with a large surface area, extract a series of vertical, parallel beads around 15 cm apart and press on well to spread the adhesive uniformly.

If required, the bonded element may be adjusted within approx. 6 minutes of laying at a temperature of +23°C.

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

Do not bond with layers of product more than 3 mm thick.



Spot-bonding technique

Bead-bonding technique



Flexible bonding of construction members and features



Flexible sealing of construction joints

CONSUMPTION

Used as a sealant

According to the size of the joint. Consult the table below for consumption of the product:

CONSUMPTION TABLE		
Size of the joint in mm	Linear metres	
	300 ml kit	600 ml kit
5 x 5	12	24

10 x 10	3	6
15 x 10	2	4
20 x 10	1.5	3
25 x 12,5	0.9	1.9
30 x 15	0.6	1.3

Used as an adhesive

According to the bonding method used (formation of a bead or spot-application).

CLEANING

Remove **Mapeflex PU 45 FT** from surfaces next to the sealed joint or from tools and clothing with toluene or alcohol before it hardens. Never contaminate the surface of fresh sealant with any type of solvent, otherwise it may not polymerise correctly. Once hardened, it may only be removed with **Pulicol 2000**.

PACKAGING

Boxes of 12 (300 ml cartridges).

Boxes of 20 units (600 ml cartridges).

COLOURS AVAILABLE

Mapeflex PU 45 FT is available in white, 111 grey, 113 grey, beige, brown and black.

STORAGE

Mapeflex PU 45 FT may be stored for 12 months in a cool, dry place in its sealed, original packaging.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Mapeflex PU 45 FT may cause sensitisation if inhaled and allergic reactions in those sensitive to isocyanates.

While using the product, wear protective gloves and goggles and take the usual precautions for handling chemicals. If the product comes into contact with the eyes or skin, wash immediately with plenty of water and seek medical attention. Use a suitable device to protect the respiratory system.

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

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
Consistency:	thixotropic paste
Colour:	white, 111 grey, 113 grey, beige, brown, black
Density (g/cm³):	1.39
Dry solids content (%):	100

Brookfield viscosity at +23°C (mPa·s):	1,700,000 (rotor F - 5 revs)
APPLICATION DATA (at +23°C and 50% R.H.)	
Recommended application temperature range:	from +5°C to +35°C
Dust dry:	35 mins.
Final setting after:	3.3 mm/24 h - 5.2 mm/48 h - 8.5 mm/7 days
Set to light foot traffic:	according to the depth of the joint
FINAL PERFORMANCE	
Shore A hardness (DIN 53505):	40
Tensile strength (DIN 53504S3a) (N/mm ²): – after 28 days at 23°C and 50% R.H.:	3.8
Elongation at break (DIN 53504S3a) (%) – after 28 days at 23°C and 50% R.H.:	700
Resistance to UV rays:	excellent
In service temperature:	from -40°C to +70°C
Elongation in service continuous use (%):	20
Modulus of elasticity at +23°C (ISO 8339) (N/mm ²):	0.7
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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