



Mapeflex 21 SL E-PU

**Two-component,
high-strength, castable
epoxy-polyurethane
sealant with high
modulus of elasticity**



WHERE TO USE

- Sealing horizontal joints, in exterior and interior also subject to high mechanical stress.
- Abrasion resistant sealing of joints in industrial floors subject to heavy traffic, both in interior and exterior.
- Sealing joints where a castable, resistant to mechanical stress and to chemicals, water and vapor proof product is required.
- Sealing expansion and contraction joints in commercial, residential and industrial floors.
- Sealing joints in rubber and PVC floors.
- Sealing joints in ceramic floors subject to heavy traffic, both pedestrian and vehicular, such as supermarkets, warehouses, production areas, sidewalks, walkways, arcades and squares.
- Elastic sealing of pipe-work systems, drainage systems and manholes.

TECHNICAL CHARACTERISTICS

Mapeflex E-PU 21 SL is a castable, two-component sealant made up of a epoxy-polyurethane polymer that does not contain free isocyanates (component A) and a special hardener (component B).

The two components must be mixed together thoroughly to obtain a cohesive but fluid paste that is easy to pour and to apply by pumping using specific tools (such as **Mapeflex SPP**).

Mapeflex E-PU 21 SL can be used on horizontal surface with a maximum slope of 4%.

After hardening by chemical reaction alone, which takes place in about 24 hours without shrinkage, **Mapeflex E-PU 21 SL** becomes a flexible elastomer, resistant to water and slightly acidic or basic chemicals, with abrasion and friction (both sliding and rolling) resistant properties.

Mapeflex E-PU 21 SL bonds well on all the substrates that are commonly used in building. The application of a specific adhesive primer always increases the bonding properties and durability of the sealing, in particular under severe conditions.

The resistance of **Mapeflex E-PU 21 SL** to chemicals is good; however, due to the variety of products and working conditions under which it can be used, it is necessary to carry out preliminary tests in cases of doubt.

After complete polymerization **Mapeflex E-PU 21 SL** can be painted over with suitable elastomeric paints. In case the product needs to be painted over, it is recommended to apply the elastomeric paint in a suitable thickness, in order to avoid cracks on the surface of the paint layer due to deformation of the underlying sealant. It is always recommended to carry out preliminary tests to check compatibility between sealant and elastomeric paint.

Mapeflex E-PU 21 SL, once fully polymerised, can be polished with appropriate abrasive discs to obtain a perfectly flat surface.

RECOMMENDATIONS

- Do not use on damp surface or surfaced subject to rising damp from underground.



Mapeflex E-PU 21 SL



Application with
Mapeflex SPP pump

TECHNICAL DATA (typical values)

PRODUCT IDENTITY

	component A	component B
Consistency:	castable paste	fluid liquid
Colour:	white	straw yellow
Density (g/cm³):	1.45	0.95
Dry solids content (%):	96	100
Brookfield viscosity at +23°C (mPa·s):	40,000 (rotor F - 5 revs)	250 (rotor F - 5 revs)
Mixing ratio:	93	7

APPLICATION DATA

Consistency of the mix:	castable paste
Density of the mix (kg/dm³):	1.45
Pot life of the mix:	50 minutes
Application temperature:	from +5°C to +40°C
Initial setting time:	8 hours
Set to light foot traffic:	24 hours
Final hardening:	7 days
Shore A hardness:	60
Tensile strength (ISO 37) (N/mm²):	1.7
Elongation at break (DIN 53504S3A):	90%
In service temperature:	from -30°C to +80°C
Maximum movement allowed in operation:	10%

values referred to grey 113

- Do not use the product if the concrete is not completely cured, therefore subject to shrinkage.
- **Mapeflex E-PU 21 SL** is able to withstand working elongation that does not exceed 10%, therefore it is necessary that the joints have an average width at least 10 times greater than the sum of compression/traction movements expected. If this condition cannot be respected, it is recommended to use a sealant with more extended working elongation (for ex. 20%, 25%...) or to enlarge the width of the joint (please contact beforehand our Technical Service).
- It is recommended not to seal the joint when its width is at the maximum or minimum level due to the high or low temperature of the substrate (for ex. winter/summer, night/day): if possible, seal the joint when its width is between the maximum and minimum level measured on site.
- Do not use on bituminous surfaces where the bleeding of oil may be present.
- The colour of the product may change if it is exposed to UV rays. This may happen in particular with light colours. However, this phenomenon does not affect the performance of the product.
- Do not apply **Mapeflex E-PU 21 SL** if the temperature is lower than +5°C.

APPLICATION PROCEDURE

Preparation of the surface to be sealed

The sealant can carry out its sealing function well and last in time only if the expansion joints are correctly sized. Always check that the average width of the joint is at least 10 times greater than the maximum movement expected.

Accurately clean the surface of the joint using suitable manual or mechanic tools, with or without water, to remove any loose, detached part such as dust, defoaming agents, cement

laitance, hardened cement slurry and dirt in general.

Before sealing, make sure the joint is perfectly dry.

On the joint edges apply **Primer MF** or **Primer SN**, solvent-free, two-component epoxy primers.

To regulate the depth of the sealant and to avoid **Mapeflex E-PU 21 SL** sticking to the bottom of the joint, insert **Mapefoam**, expanded polyurethane flexible cord, with a diameter 10-20% larger than the maximum width of the joint to be sealed.

Insert the **Mapefoam** cord in the joint using a suitable tool. This operation enables also to regulate the depth of the sealant and to obtain a material section that respects the proportions indicated in 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

To leave an attractive finish, we recommend using masking tape along the edges of the joints before applying the sealant. The tape must be removed immediately after having applied the sealant.

Seal the joint only once the primer is dry to the touch (1-4 hours depending on the temperature) and in any case within 24 hours after its application.

Preparation of the product

The two components (A and B) of **Mapeflex E-PU 21 SL** are supplied pre-dosed and must be completely and carefully mixed together until a uniform coloured, thixotropic paste is obtained.

Open the lid of the container and remove the bottle containing component B (liquid), shake it in order to homogenise it. Pour component B into component A (castable paste) and mix them together for few minutes with a low speed drill, avoiding air-entraining.

In case **Mapeflex E-PU 21 SL** needs to be coloured on site using **Mapecolor Paste** colouring pastes, they need to homogenise and dispersed in component B before mixing it with component A.

Avoid partial quantities. If necessary, dose the components by weight, considering that the mix ratio of component A and component B is 93 : 7.

Setting time and pot life are directly linked to the temperature of the environment and of the packaging: at +23°C they are approx. 50 minutes.

Application of the product

Immediately after having mixed the two components, seal the joint (after having prepared it as described above).

The product must be casted inside the joints or using a specific electric peristaltic pump **Mapeflex SPP**.

Remove the excess of **Mapeflex E-PU 21 SL** while still fresh.

Remove the marking tape (if any) applied on the edge of the joint immediately after having applied the sealant.

Cleaning

Mapeflex E-PU 21 SL can be removed while still fresh from surfaces, tools, clothes and with toluol or ethyl alcohol. Once hardened, it can be removed only mechanically or with **Pulicol 2000**.

CONSUMPTION

Consumption depends on the size of the joint. The density of **Mapeflex E-PU 21 SL** is 1.45 g/cm³.

The approximative consumption of the different possible sections is indicated in the table below.

COLOURS

Mapeflex E-PU 21 SL is available in 113 grey and neutral, that can be used together with **Mapecolor Paste** for customised colours.

Special colours are available upon request in min. quantities of 1000 kg.

PACKAGING

Mapeflex E-PU 21 SL is available in 5 kg units (component A = 4.65 kg + component B = 0.35 kg).

STORAGE

Mapeflex E-PU 21 SL is stable for 2 years if stored in a dry place at a temperature between +10°C and +35°C.

width of joint (mm)	5	10	15	20	25	30	35	40
depth of sealant (mm)	5	10	10	10	12.5	15	17.5	20
Mapefoam Ø mm	6	15	20	25	30	40	40	2 x 20
Consumption of sealant (kg/ml)*	0.04	0.15	0.22	0.29	0.45	0.65	0.89	1.16
Meters of sealant per 5 kg packaging	138	34	23	17	11	8	6	4
Consumption of Primer MF or Primer SN (kg/ml)*	0,004	0,015	0,022	0,029	0,045	0,065	0,089	0,116

* theoretical consumption with no product waste

Mapeflex E-PU 21 SL



SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Mapeflex E-PU 21 SL part A is irritant for the skin and eyes. Both part A and B can cause sensitization if they come in contact with the skin of those predisposed. Furthermore, part B may cause irreversible damage if used for lengthy periods. It is corrosive and can cause burns and damage to eyes.

The product contains low molecular weight epoxy resins that may cause sensitisation if cross-contamination occurs with other epoxy compounds.

During use wear protective clothes, gloves safety goggles, and a safety mask to protect the respiratory tract, and work only in well-ventilated areas. If the product comes in contact with the eyes or skin wash immediately with plenty of water and seek medical attention.

We advise against the use of pregnant women.

Furthermore, **Mapeflex E-PU 21 SL** component A and B are dangerous for aquatic life, do not dispose of them in the environment.

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

RESTRICTED TO PROFESSIONAL USERS.

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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