MAPEI

Mapeflex PU21

Two-component self-levelling polyurethane sealant for floor joints with expansion up to 5%

WHERE TO USE

- For abrasion resistant sealing of joints in interior industrial ceramic tile floors.

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- Sealing joints in ceramic tiles, rubber and PVC floors.
- Self-levelling, waterproof, flexible membrane.

Some application examples

- Sealing floor joints in ceramic and porcelain floor tiles in areas subject to heavy traffic such as supermarkets, industrial buildings with fork lift trucks, pedestrian subways, arcades, etc.
- Sealing rubber and PVC flooring, filling joints between tiles or sheets.
- Flexible sealing around pipelines, outlets, drains etc.
- Elastic, waterproof and damp-proof membrane for floors and surfaces of rooms and areas subject to standing water.
- Waterproof membrane for bathroom and shower floors to be covered with ceramic tiles.

TECHNICAL CHARACTERISTICS

Mapeflex PU21 is a two-component, self-levelling sealant composed of a polyurethane polymer, free from isocyanates (part A), and a special hardener (part B).

The two components must be mixed together thoroughly to obtain a self-levelling, evenly coloured smooth paste that is easy to pour.

Mapeflex PU21 can only be applied to horizontal surfaces.
After hardening by chemical reaction alone, which takes place in about 3 days without shrinkage, **Mapeflex PU21** becomes elastic, resistant to water and heat, with high mechanical strength and abrasion-resistant properties, and a good adhesion to almost all materials that are commonly used in building.

The resistance of **Mapeflex PU21** to chemicals is good; however, due to the variety of products and working conditions under which it can be used, it is advisable to carry out preliminary tests in cases of doubt.

Mapeflex PU21 is resistant to temperatures from –30°C to +80°C.

RECOMMENDATIONS

- Do not use on substrates that are subject to rising damp.
- Do not use on damp surfaces.
- Do not use on bituminous surfaces where the bleeding of oils may take place.
- Do not use **Mapeflex PU21** at temperatures below +10°C.
- Use **Mapeflex PU30** on vertical surfaces.
- Use **Mapeflex PU20**, **Mapeflex PU55 SL** or **Mapeflex PB27** for sealing concrete industrial flooring in car parks and industrial buildings subject to vehicle traffic.

Mapeflex PU21

Expansion joint in red quarry tile floor sealed with Mapeflex PU21

Cleaning out the joint with a vacume cleaner

Filling the joint with Mapeflex PU21

APPLICATION PROCEDURE

Mixing

The two components of **Mapeflex PU21** are supplied in the correct proportions:

- Part A 94 parts by weight.
- Part B 6 parts by weight.

Mixing should be carried out, preferably by means of a low speed mechanical stirrer, until the colour of the mix is uniform.

The setting speed and pot life are closely linked to ambient temperature (see table).

The working time of the mixed product at +23°C is about 40-50 min., but the optimum self-levelling properties are obtained in the first 30 minutes.

Use the most suitable pack size for the estimated usage within this time.

Warning: the ratio of the resin (part A) to the hardener (part B) is fixed and should be batched.

Never use when the temperature is lower than +10°C, because the setting time may be too long.

Application as a joint sealant

All surfaces to be sealed must be dry, solid, free from dust, loose particles, oils, grease, wax, old paint and rust.

To ensure that the sealant will function properly, it is essential that, once applied to the joint, it can expand and contract freely.

It is therefore important to ensure that **Mapeflex PU21** adheres perfectly only to the lateral sides of the joint and not to the bottom and that the thickness of the joint is always less than its width.

The joint must be sized so that the maximum anticipated expansion is less than or equal to 5% of the total width.

To regulate the depth and prevent **Mapeflex PU21** from adhering to the bottom of the joint a compressible strip of **Mapefoam** must be inserted before the sealant.

Joints are normally filled by pouring in the properly mixed **Mapeflex PU21** using a container with a spout or by utilising a sealant cartridge.

Sometimes it may be necessary to mask the joints to prevent the sealant from spreading onto the surface.

Application as a self-levelling membrane

The substrates must be dry, flat, resistant to compression and traction, free from dust, loose parts, paint, wax, oils, rust and traces of gypsum.

The maximum moisture content should be as prescribed by the standards for the particular country, e.g:

- max 2.5% for cementitious substrates.
- max 0.5% for gypsum or anhydrite substrates.

The moisture must be checked throughout the whole thickness by means of a carbide hygrometer or an electric moisture meter bearing in mind that the latter only gives indicative values.

Concrete surfaces that are not sufficiently solid must be removed or, where possible, consolidated with **Prosfas** or **Primer EP** and left to dry.

Crevices or cracks in the concrete surfaces must be repaired with **Eporip**.

Floating screeds over light-weight or insulating layers and screeds cast directly on the ground must be laid on a damp-proof barrier to prevent rising damp.

External substrates must also be insulated from rising damp with a water-proof barrier (unless they are already covered in asphalt).

Surfaces formed from hot applied asphalt must have a suitable consistency to bear anticipated loads.

It is not possible to use **Mapeflex PU21** over bitumen based surfaces with a low melting point as they may bleed oils.

The choice of application procedure (trowel, roller or float) depends on the type of flooring to be laid and on the substrate.

CONSUMPTION

As a sealant: consumption depends on the size of the joint; for calculations bear in mind that the density of **Mapeflex PU21** is 1480 kg/m^3.

As a self-levelling membrane: 1.48 kg/m^2 per mm of thickness.

Cleaning

Mapeflex PU21 can be cleaned from surfaces, tools, clothes etc. with toluol or alcohol while fresh; after setting, cleaning can only be carried out mechanically or with **Pulicol**.

COLOURS

Mapeflex PU21 is available in grey.

Special colours are only available on request and for minimum quantities of 500 kg.

PACKAGING

Mapeflex PU21 is available in 10 kg units (part A 9.4 + part B 0.6) and in 5 kg units (part A 4.7 + part B 0.3).

STORAGE

Store in a dry place at a temperature between +10°C and +35°C.

Setting time of Mapeflex PU21 in relation to Temperature							
Temperature in °C	30	25	20	15	10	5	0
Time in hours	4	6	8	12	20	36	–

TECHNICAL DATA (typical values)

PRODUCT IDENTITY		
	Part A	**Part B**
Type:	thick paste	fluid liquid
Colour:	grey	straw-coloured transparent
Density (g/cm³):	1.5	0.92
Dry solid content (%):	96.5	100
Brookfield viscosity (mPa·s):	50,000	250
Storage:	**Mapeflex PU21** has a stable storage life of at least 24 months in unopened original packing	
Hazard classification according to EC 99/45:	irritant, dangerous for the environment	corrosive, dangerous for the environment
	Before using refer to the "Safety instructions for preparation and application" paragraph and the information on the packing and Safety Data Sheet	
Customs class:	3909 50 00	

COMPOSITION AND PROPERTIES OF THE MIXTURE at +23°C and 50% R.H.	
Mixing ratio:	part A : part B = 94 : 6
Consistency of mix:	flowing liquid
Brookfield viscosity of mix (mPa·s):	20,000
Density of the mix (kg/m³):	1480
Pot life (workability):	40-50 min.
Application temperature range:	from +10°C to +35°C
Initial set:	8 hours
Final set:	9 hours
Ready for traffic:	after 24-36 hours
Cure time:	3 days

FINAL PERFORMANCES	
Shore-A-hardness (according to DIN 53505):	65
Resistance to tension (acc. to DIN 53504S3a) (N/mm²):	2.2
Elongation at break (acc. to DIN 53504S3a) (%):	180
Resistance to abrasion:	excellent
Resistance to moisture:	excellent
Resistance to ageing:	excellent
Resistance to solvents and oils:	good
Resistance to acids and alkalis:	good
Temperature when in use:	from –30°C to +80°C
Flexibility:	yes
Elongation in service (continuous duty) (%):	max 5

Smoothing the joint

Removing the masking tape from the joint

Movement joints of an industrial concrete floor sealed with Mapeflex PU21

Mapeflex PU21

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Mapeflex PU21 Part A is irritant in contact with eyes and skin.
Mapeflex PU21 Part B is corrosive, and in contact with the skin, causes dangerous burns. In case of contact with eyes or skin, immediately wash with plenty of water and consult a doctor.
The resins contained in **Mapeflex PU21** could cause allergic reactions to those predisposed. Avoid contact with skin by wearing protective gloves and clothing. Before hardening **Mapeflex PU21** is hazardous to the environment. Avoid dispersing the product and its container in the environment.

FOR PROFESSIONALS.

WARNING

Although the technical details and recommendations contained in this product 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 the product.

All relevant references of the product are available upon request

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