



Mapeflex PU35 CR

One-component elastic polyurethane sealant resistant to chemicals also suitable for cleanrooms



WHERE TO USE

Sealing expansion and contraction joints on vertical and horizontal surfaces that come into accidental or prolonged contact with aggressive chemical liquids, including in areas occasionally used by light vehicles. Sealing sterile chambers in which an atmosphere with a low level of air pollution particles needs to be created and maintained.

Some application examples

- Production plants in general.
- Bottling plants and areas where liquids are handled, including moderately aggressive liquids.
- Storage warehouses.
- Safety tanks for industrial storage tanks.
- Depuration plants.
- Food industry.
- Pharmaceutical industry.
- Operating theatres.
- Electronic engineering and robotics.

TECHNICAL CHARACTERISTICS

Mapeflex PU35 CR is a highly deformable, high modulus of elasticity, thixotropic sealant particularly resistant to chemicals and to a wide spectrum of

aggressive liquids in compliance with EN 14187-4, EN 14187-6 standards (see table 1) and ISO 2812-1.

To meet the high standards required for sealants approved for sterile chambers, **Mapeflex PU35 CR** is certified CSM (Cleanroom Suitable Material) by IPA Fraunhofer for its chemical and biological resistance and low emission of VOC, this latter feature is also certified by the GEV Institute.

Mapeflex PU35 CR sets progressively by reacting with the water vapour in the air or in the pores in the substrate to form elastic, deformable rubber that adheres to the substrate. Once set, it compensates for compressive, tensile and flexural movements in joints while guaranteeing high resistance to puncturing and surface friction.

Mapeflex PU35 CR is resistant to dry service temperatures of -30°C to +80°C.

Mapeflex PU35 CR complies with European Standard EN 11600 class 25 HM (with **Primer A** or **Primer M**), class 20 HM (without priming).

RECOMMENDATIONS

- Do not apply on wet or damp surfaces.
- Do not apply on bituminous surfaces with oil bleeding.
- Do not apply if the temperature is lower than +5°C or if the level of humidity is lower than 40%.
- At low temperatures, we recommend warming the

Table 1

Type of substance	Concentration %	Contact time			
		72 hours	OK	28 days	OK
Fresh water		72 hours	OK	28 days	OK
Seawater		72 hours	OK	28 days	OK
Diesel		72 hours	OK*	28 days	OK*
Petrol		24 hours	NO		
Avgas		24 hours	NO		
Engine oil		72 hours	OK	28 days	OK
Brake fluid		72 hours	OK*	28 days	NO
Caustic soda	10	24 hours	OK	72 hours	OK*
Ethanol	15	24 hours	OK	72 hours	OK*
Acetic acid	10	24 hours	OK*	72 hours	OK*
Lactic acid	20	72 hours	NO		
Fruit juice		24 hours	OK		
Freshly-squeezed fruit juice		24 hours	OK		
Phosphoric acid	10	24 hours	OK	72 hours	OK*
Ammonia		24 hours	OK*	72 hours	OK*
Oleic acid		24 hours	OK*	72 hours	OK*
Sulphuric acid	25	72 hours	OK	7 days	NO
Xylene		24 hours	NO		
MEK		24 hours	NO		

OK = suitable for contact

OK* = suitable for contact but appearance of sealant may be affected slightly

NO = not suitable for contact

sealant by standing it in warm water or rubbing the cartridge vigorously before use so it is easier to extrude and smooth over.

APPLICATION PROCEDURE

Mapeflex PU35 CR is supplied ready-mixed in 600 ml soft cartridges wrapped in aluminium and is applied using a conventional manual, electric or pneumatic silicone gun for 600 ml soft cartridges.

Application

All the surfaces to be sealed must be dry, sound and free of all traces of dust, loose portions, cement laitance, oil, grease, wax, old sealant and paint, rust, form-release compound and anti-evaporation products.

When applying the sealant, the joint must be at least five times the maximum permitted design movement of the joint so that the sealant can absorb any movement in the joint correctly (e.g. if the design movement is 5 mm, the joint must be at least 25 mm wide).

To set the correct depth of the **Mapeflex PU35 CR** and prevent it adhering to the bottom of the joint, insert **Mapefoam** compressible expanded foam cord along the bottom of the joint. The diameter of the cord should be 10-20% higher than the maximum width of the joint to be sealed.

Set the depth of the sealant according to the width of the joint to be sealed (see table below):

Table 2

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 20mm	half the width

Brush-apply **Primer M** or **Primer A** along the edges of the joint where the sealant must adhere and leave it to dry (3-4 hours, depending on the surrounding temperature and absorbency of the substrate); the primer must be dry to the touch before applying **Mapeflex PU35 CR** sealant.

Fill the joint with **Mapeflex PU35 CR** using a silicone gun from the **Mapei Gun** range, depending on site requirements (contact Mapei Head Office for further details). Place masking tape along the edges of the joint for a perfect finish. Extrude the sealant into the joint without entraining air. Remove any excess sealant from the edges of the joint and smooth the surface with soapy water for a flat and uniform surface. If masking tape has been placed along the edges of the joint, it must be removed while the sealant is still wet.

CONSUMPTION

The density of **Mapeflex PU35 CR** is 1.42 g/cm³.

TECHNICAL DATA (typical values)

PRODUCT IDENTITY

Colour:	113 grey
Consistency:	soft thixotropic paste
Density (g/cm³):	1.42
Brookfield viscosity (mPa·s):	1,200,000 (Helipath spindle f – 5 rpm)
Solids content (%):	100
EMICODE:	EC1 R Plus - very low emission

APPLICATION DATA (at +23°C - 50% R.H.)

Application temperature range:	+5°C to +35°C
Time to form surface skin:	1.30 hours
Complete setting:	3.5 mm/24 h 5.0 mm/48 h 8.5 mm/7 days

FINAL PERFORMANCE

IPA Fraunhofer CSM report MA 1510-788:	chemical resistance: good
IPA Fraunhofer CSM report MA 1510-788:	outgassing VOC (23°C/90°C): ISO-ACC class -7.3
IPA Fraunhofer CSM report MA 1703-896:	biological resistance: good
Shore A hardness (DIN 53505):	36
Tensile strength (ISO 37 TYPE 3) (N/mm²):	3.5
Elongation at failure (ISO 37 TYPE 3) (%):	700
Modulus at 100% (ISO 37 TYPE 3) (N/mm²):	0.8
Elongation in service (ISO 11600) (%):	25 (with Primer M or Primer A) 20 (without priming)
Tear strength (ISO 34-1) (N/mm):	18
Springback (ISO 7389) (%):	95

Table 3

Width of joint (mm)	5	10	15	20	25	30	35	40
Depth of sealant (mm)	5	10	10	10	12.5	15	15	15
Ø Mapefoam (mm)	6	15	20	25	30	40	40	2 x 25
Metres of sealant per 600 ml soft cartridge	24	6	4	3	1.9	1.5	1.1	1
Consumption of Primer M or Primer A (g)	5	15	15	15	25	30	30	30

Cleanroom Suitable Materials
MAPEFLEX PU 35 CR
 Outgassing VOC (23°C/90°C): ISO-ACC, Class -7.3 / tested

Mapei S.p.A.
Report No. MA 1510-788

Sealants & Adhesives

Qualification Certificate

For the use of the product in the following conditions:
Mapei S.p.A.
 Milano, Italy

The user is advised to refer to the Technical Data Sheet (TDS) of the product for the correct application and curing conditions.

The product is tested according to the following standards:
 - ISO 11600:2013 for elongation in service
 - ISO 37:2013 for tensile strength and elongation at failure
 - ISO 34-1:2013 for tear strength
 - ISO 7389:2013 for springback

Parameter	Value	Standard	Result
Elongation in service (ISO 11600)	25	ISO 11600	OK
Tensile strength (ISO 37)	3.5	ISO 37	OK
Elongation at failure (ISO 37)	700	ISO 37	OK
Tear strength (ISO 34-1)	18	ISO 34-1	OK
Springback (ISO 7389)	95	ISO 7389	OK

Based on the test results, the product is qualified for the use in the following conditions:
 - Temperature range: +5°C to +35°C
 - Relative humidity: up to 50%
 - Substrate: concrete, masonry, plaster, etc.

Report No. MA 1510-788
 Mapei S.p.A. - Milano, Italy

Fraunhofer IPA

Cleanroom Suitable Materials
MAPEFLEX PU 35 CR
 Chemical Resistance: good

Mapei S.p.A.
Report No. MA 1510-788

Sealants & Adhesives

Qualification Certificate

For the use of the product in the following conditions:
Mapei S.p.A.
 Milano, Italy

The user is advised to refer to the Technical Data Sheet (TDS) of the product for the correct application and curing conditions.

The product is tested according to the following standards:
 - ISO 11600:2013 for elongation in service
 - ISO 37:2013 for tensile strength and elongation at failure
 - ISO 34-1:2013 for tear strength
 - ISO 7389:2013 for springback

Parameter	Value	Standard	Result
Elongation in service (ISO 11600)	25	ISO 11600	OK
Tensile strength (ISO 37)	3.5	ISO 37	OK
Elongation at failure (ISO 37)	700	ISO 37	OK
Tear strength (ISO 34-1)	18	ISO 34-1	OK
Springback (ISO 7389)	95	ISO 7389	OK

Based on the test results, the product is qualified for the use in the following conditions:
 - Temperature range: +5°C to +35°C
 - Relative humidity: up to 50%
 - Substrate: concrete, masonry, plaster, etc.

Report No. MA 1510-788
 Mapei S.p.A. - Milano, Italy

Fraunhofer IPA

Cleanroom Suitable Materials
MAPEFLEX PU 35 CR
 Biol. Resistance: good

Mapei S.p.A.
Report No. MA 1703-896

FLOORING & COATING

Biological Resistance

Qualification Certificate

For the use of the product in the following conditions:
Mapei S.p.A.
 Milano, Italy

The user is advised to refer to the Technical Data Sheet (TDS) of the product for the correct application and curing conditions.

The product is tested according to the following standards:
 - ISO 11600:2013 for elongation in service
 - ISO 37:2013 for tensile strength and elongation at failure
 - ISO 34-1:2013 for tear strength
 - ISO 7389:2013 for springback

Parameter	Value	Standard	Result
Elongation in service (ISO 11600)	25	ISO 11600	OK
Tensile strength (ISO 37)	3.5	ISO 37	OK
Elongation at failure (ISO 37)	700	ISO 37	OK
Tear strength (ISO 34-1)	18	ISO 34-1	OK
Springback (ISO 7389)	95	ISO 7389	OK

Based on the test results, the product is qualified for the use in the following conditions:
 - Temperature range: +5°C to +35°C
 - Relative humidity: up to 50%
 - Substrate: concrete, masonry, plaster, etc.

Report No. MA 1703-896
 Mapei S.p.A. - Milano, Italy

Fraunhofer IPA

Mapeflex PU35 CR

Approximate consumption rates for various sizes of joints are indicated in table 3.

CLEANING

Remove **Mapeflex PU35 CR** from surfaces, tools, clothing etc. with alcohol, nitro thinners or turpentine before it sets. Once set it must be removed mechanically or with **Pulicol 2000**.

PACKAGING

Mapeflex PU35 CR is supplied in boxes of twenty 600 ml soft cartridges.

COLOURS

Mapeflex PU35 CR is available in 113 grey.

STORAGE

12 months in its original, sealed packaging at a temperature of +5°C to +25°C.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Mapeflex PU35 CR is harmful and may cause sensitisation if inhaled and allergic reactions in those subjects sensitive to isocyanates. During use, wear protective gloves and goggles and take the usual precautions for handling chemicals. If the product comes in contact with the eyes or skin, wash immediately with plenty of water and seek medical attention. Use a suitable device to protect the respiratory tract. 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.

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

LEGAL NOTICE

The contents of this Technical Data Sheet ("TDS") may be copied into another project-related document, but the resulting document shall not supplement or replace requirements per the TDS in force at the time of the MAPEI product installation.

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

ANY ALTERATION TO THE WORDING OR REQUIREMENTS CONTAINED OR DERIVED FROM THIS TDS EXCLUDES THE RESPONSIBILITY OF MAPEI.



This symbol is used to identify Mapei products which give off a low level of volatile organic compounds (VOC) as certified by GEV (Gemeinschaft Emissionskontrollierte Verlegewerkstoffe, Klebstoffe und Bauprodukte e.V.), an international organisation for controlling the level of emissions from products used for floors.



Our Commitment To The Environment
MAPEI products assist Project Designers and Contractors create innovative LEED (The Leadership in Energy and Environmental Design) certified projects, in compliance with the U.S. Green Building Council.

All relevant references for the product are available upon request and from www.mapei.com



BUILDING THE FUTURE