



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 those areas subject to the passage of light vehicles.

Sealing joints in 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.
- Water treatment plants.
- Foodstuffs industries.
- Pharmaceutical industries.
- Operating theatres.
- Cleanrooms in general.

TECHNICAL CHARACTERISTICS

Mapeflex PU35 CR is a highly deformable, high modulus of elasticity, thixotropic sealant particularly

resistant to chemicals and to a wide range 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 as CSM (Cleanroom Suitable Material) by IPA Fraunhofer for its chemical and biological resistance and as a product with low emission of VOC, this latter feature is also certified by the GEV Institute.

Mapeflex PU35 CR complies with the requirements of the HACCP plan (Hazard Analysis and Critical Control Points) for use in food processing environments.

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 torsional movements in joints while guaranteeing high resistance to punching 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 damp or wet surfaces.
- Do not apply on bituminous surfaces potentially affected by oil bleeding.

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 fuel		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 the original characteristics of sealant may be slightly affected

NO = not suitable for contact

- 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 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-to-use in 600 ml soft cartridges wrapped in aluminium and it 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 depth of **Mapeflex PU35 CR** and prevent it from 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% greater 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 as indicated in table 2:

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**.

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

TECHNICAL DATA (typical values)

PRODUCT IDENTITY

Colour:	113 grey
Consistency:	smooth thixotropic paste
Density (g/cm³):	1.42
Brookfield viscosity (mPa·s):	1,200,000 (Helipath spindle f – 5 rpm)
Dry solids content (%):	100
EMICODE:	EC1 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 h and 30 min
Final hardening time:	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
Elastic recovery (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



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

**Cleanroom[®]
Suitable
Materials**

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

Sealants & Adhesives

DUPLICATE

Qualification Certificate

We hereby certify that the material stated above, provided by **Mapei S.p.A.**, Milano, Italy

has been awarded the Fraunhofer IPA CSM Certificate of Qualification with the report number MA 1510-788.

MAPEFLEX PU 35 CR (color: gray 113) was tested regarding outgassing at service temperature according to ISO 2085-11. The tested material obtained the following classification:

Test Item	Family of parameters	Specific result	ISO-ACC	ISO-ACC
23°C / 23%	VOC	4.81/10 ¹	-7.3	-7.3
23°C / 65% RH	Amines	not detectable	—	—
	Organophosphates	not detectable	—	—
	Stannanes	4.21/10 ¹	—	—
	Phthalates	not detectable	—	—

Detailed information regarding specific product data such as date of manufacture, color and serial number as well as test environment and parameters can be obtained from the CSM test report issued by the Fraunhofer-Gesellschaft.

Datpunkt: February 10, 2016

M. S. S. S.

Fraunhofer IPA



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

**Cleanroom[®]
Suitable
Materials**

MAPEFLEX PU 35 CR
Chemical Resistance: good

Sealants & Adhesives

DUPLICATE

Qualification Certificate

We hereby certify that the material stated above, provided by **Mapei S.p.A.**, Milano, Italy

has been awarded the Fraunhofer IPA CSM Certificate of Qualification with the report number MA 1510-788.

The chemical resistance tests on the MAPEFLEX PU 35 CR (color: gray 113) were performed in accordance with ISO 2085-11. Therefore the parameters according to ISO 4628-1 and ISO 2085-17 have been determined by the following classification:

Chemical	Chemical	Chemical	Chemical
Acidic	Neutral	Alkaline	Hydrocarbons
Acidic	Neutral	Alkaline	Hydrocarbons
Acidic	Neutral	Alkaline	Hydrocarbons
Acidic	Neutral	Alkaline	Hydrocarbons
Acidic	Neutral	Alkaline	Hydrocarbons
Acidic	Neutral	Alkaline	Hydrocarbons

Detailed information regarding specific product data such as date of manufacture and serial number as well as test environment and parameters can be obtained from the CSM test report issued by the Fraunhofer-Gesellschaft.

Datpunkt: February 10, 2016

M. S. S. S.

Fraunhofer IPA



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

**Cleanroom[®]
Suitable
Materials**

MAPEFLEX PU 35 CR
Biol. Resistance: good

FLOORING & COATING

Biological Resistance

Qualification Certificate

We hereby certify that the material stated above, provided by **Mapei S.p.A.**, Milano, Italy

has been awarded the Fraunhofer IPA CSM Certificate of Qualification with the report number MA 1703-896.

The MAPEFLEX PU 35 CR (color: gray 113) was tested in accordance with CSM procedures of biological resistance. The tested material obtained the following classification according to ISO 2085 Part 14 and ISO 846:

Biological resistance	Growth intensity	Classification
Biological resistance	0	excellent
Biological resistance	1	good
Biological resistance	2	good

Detailed information regarding specific product data such as date of manufacture, color and serial number as well as test environment and parameters can be obtained from the CSM test report issued by the Fraunhofer-Gesellschaft.

Datpunkt: April 3, 2017

M. S. S. S.

Fraunhofer IPA

Mapeflex PU35 CR

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 fresh.

CONSUMPTION

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

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.

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.

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

