Technical Datasheet

ISOMAT-PUA 1240

Two-component, highly elastic, hot spray-applied, hybrid polyurea waterproofing membrane

Description

ISOMAT-PUA 1240 is a two-component, highly reactive, ultra fast-curing, hot sprayed-applied, hybrid polyurea membrane. ISOMAT-PUA 1240 is a 100% solids waterproofing membrane obtained from the reaction of an aromatic, isocyanate prepolymer with a blend of amine-polyol resin. Thanks to its special composition, the reaction takes place within seconds and the final product delivers excellent mechanical strength and chemical resistance to any kind of substrate.
It is applied with a special high-pressure and high-temperature spray gun, offering the following advantages:

- Forms a jointless, seamless surface.
- Excellent physical-mechanical properties: ultimate tensile stress, crack-bridging ability, abrasion resistance, high elasticity, etc.
- Rapid reaction; gel time in seconds.
- The waterproofed area can be returned to service immediately. Pedestrian use may begin within minutes after application.
- ~100% solids and odorless or nearly odorless.
- Thanks to its fast-curing time, it may be safely applied to vertical surfaces, too.
- Good adhesion to almost any substrate.

ISOMAT-PUA 1240 has been successfully tested by a third-party laboratory for resistance to root penetration, according to CEN/TS 14416:2014.
ISOMAT-PUA 1240 has received an Environmental Product Declaration (EPD) following an assessment of its life-cycle environmental impacts. Registration No: EPD-IES-0016839, The International EPD® System.

Fields of application

ISOMAT-PUA 1240 is used in a large number of waterproofing applications, especially where high mechanical strength, chemical resistance and fast work are required.

ISOMAT-PUA 1240 is ideal for waterproofing:

- roofs, balconies and terraces,
- inverted and green roofs,
- metal roofs,
- metal or concrete bridges,
- water tanks,
- stadiums and arenas.

Technical data

1. Properties of components (at +23˚C)

Form:	
Component A:	Liquid
Component B:	Liquid
Color:	
Component A:	Yellowish
Component B:	White/Grey
Density:	
Component A:	1.11 kg/l
Component B:	1.03 kg/l
(DIN EN ISO 2811-1)	
Viscosity:	
Component A:	1,000 mPa·s
Component B:	1,000 mPa·s

2. Application process

Mixing ratio:	1:1 per volume 1:0.95 per weight
Application temperature:	from +5˚C to+40˚C
Layer thickness:	1.5-3 mm

3. Membrane features (2 mm thickness)

Chemical base:	
Component A:	Isocyanate prepolymer
Component B:	Polyol/Polyamine resin
Solids content:	~100%
Colors:	Grey and selected colors upon order
Service temperature:	from -40˚C to +80˚C
Tensile strength: (ISO 37)	13 ± 1 N/mm^2
Elongation at break: (ISO 37)	350 ± 50%

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SHORE A hardness: ≥ 85
(EN ISO 868)

SHORE D hardness: ≥ 30
(EN ISO 868)

Abrasion resistance: < 300 mg (H22/1000/1000)
(EN ISO 5470-1, loss in weight <3000 mg with an H22 abrasive disk/1000 cycles/1000 g load)

Tear resistance: 75 ± 3 N/mm
(ISO 34-1)

Capillary water absorption: $w = 0.01\ kg/m^2h^{0.5}$
(EN 1062-3, requirement EN 1504-2: w<0.1)

CO_2 permeability: $S_d > 50$ m
(EN 1062-6)

Vapor permeability: $S_d = 2$ m
(EN ISO 7783-2, vapor-permeable Class I, $S_d < 5$m)

Adhesion strength: > 2.5 N/mm²
(EN 1542, requirement for flexible systems with no traffic: 0.8 N/mm²)

Crack-bridging ability:
(EN 1062-7)
Static: > 2.5 mm class A_5
Dynamic: class $B_{4.2}$

Reaction to fire: Class F
(EN 13501-1)

4. Curing times (at +23˚C)

Gel time: 15 s

Tack-free time: < 60 s

Overcoat time:
Minimum: 60 s
Maximum: 24 h

Walkability: 15-20 min

Mechanical load: 24 h

Directions for use

1. Substrate preparation

Polyurea may be applied on most substrates using a suitable primer, following appropriate preparation.

The substrate must be resistant, dry (moisture content < 4%) and free from loose material, dust, oil, and other contaminants.

1.1. Concrete surfaces

Cavities in the concrete must be filled with proper repair materials.

Deep cracks in the substrate must be sealed with one of the polyurethane sealants FLEX PU-30 S/50 S.

After the surface is properly prepared, it is primed with the one-component polyurethane primer PRIMER-PU 100 (or the two-component polyurethane PRIMER-PU 140 if humidity is between 4% and 6%).

The primer should be applied continuously over the entire surface using a brush, roller or spray gun, with a consumption of approx. 200 g/m². ISOMAT-PUA 1240 may be applied 2-3 hours after the application of the polyurethane primer and while the surface is still tacky. In any case, the waiting time after the application of the primer should not exceed 24 hours.

Alternatively, DUROFLOOR-PSF two-component, solvent-free epoxy primer is applied using a brush or roller in one layer, with a consumption of 200-300 g/m².

After the application of DUROFLOOR-PSF and while this is still fresh, quartz sand (Ø 0.1-0.4 mm or 0.3-0.8 mm) must be broadcast. The quartz sand must be completely dry.

Once the primer has cured, remove any residual quartz sand grains using a high-suction vacuum cleaner.

The membrane must be applied within 24 hours from primer application.

1.2. Smooth – Non-absorbent surfaces

Smooth and non-absorbent surfaces, as well as surfaces of bituminous membranes or old waterproofing layers, after being cleaned of residue, loose material and anything that might affect adhesion, are primed with the two-component, water-based epoxy primer EPOXYPRIMER-500.

The primer is diluted up to 30% with water, with a consumption of 150-200 g/m² and uniformly applied over the entire surface using a roller, brush or spray gun. ISOMAT-PUA 1240 may be applied within 24-48 hours from priming and as long as the moisture content of the primer falls < 4%.

The technical information and instructions supplied in this datasheet are based on the knowledge and experience of the Department of Research and Development of our company and on results from long-term applications of the product in practice. The recommendations and suggestions referring to the use of the product are provided without guarantee, since site conditions during the applications are beyond the control of our company. Therefore, the user is responsible for confirming that the chosen product is suitable for the envisaged application. The present edition of this technical datasheet automatically cancels any previous one concerning the same product. | Edition: 05.11.2024

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1.3 Wooden surfaces

The substrate must be resistant, dry (moisture content < 4%), and free from loose material, dust, oil, old paints and other contaminants.
The joints between the panels must be treated and sealed with suitable materials.
After the surface is properly prepared, it is primed with the one-component polyurethane primer PRIMER-PU 100 or the two-component polyurethane PRIMER-PU 140. The primer should be applied uniformly over the entire surface using a brush, roller or spray gun, with a consumption of approx. 200 g/m^2.
ISOMAT-PUA 1240 may be applied 2-3 hours (depending on the weather conditions) after the application of the polyurethane primer and while the surface is still tacky. In any case, the waiting time after the application of the primer should not exceed 24 hours.

1.4 Metal surfaces

The substrate is prepared by brushing, rubbing, sandblasting, etc. and is then thoroughly cleaned using an industrial vacuum cleaner in order for the surface to be dry, stable and free from materials that may prevent adhesion, such as dust, loose material, oil, rust or corrosion of any type.
Then, the two-component, anti-corrosion epoxy primer EPOXYCOAT-AC is applied by brush, roller or spray in two layers. The second layer may be applied as soon as the first one has dried.
ISOMAT-PUA 1240 is applied within 24 hours from priming.

2. Application – Consumption

Components A and B are packaged in separate containers.
Polyurea membrane is applied using a special high-pressure and high-temperature spray gun. Material temperature has to range between 60-65˚C and pressure must be set at 140 bar.
ISOMAT-PUA 1240 is sprayed after the primer has dried (depending on temperature and humidity conditions and the primer selected).
Consumption: approx. 1.0 kg/m^2/mm, depending on the substrate.

Packaging

Set of metal drums: 400 kg (A+B).

Shelf life – Storage

12 months from production date if stored in original, unopened packaging at temperatures between +5˚C and +30˚C. Protect from direct sunlight and frost.

Remarks

- Substrate temperature must be at least 3˚C above the dew point to avoid the risk of vapor condensation.
- In order to preserve product quality, it is important that polymeric MDI products be stored and handled correctly. The viscosity of component A (isocyanate), is temperature-dependent. Exposure to temperatures below 5˚C during transport or storage, can cause increase of the viscosity or even crystallization (in case of extremely low temperatures), depending on the time of the exposure and the minimum temperature at which the material was exposed. The process is reversible (by storing the material at room temperature and waiting for the viscosity to return to normal before application) and does not affect the properties and performance of the material.
- The applied membrane is sensitive to UV radiation, so discoloration is possible during exposure. In that case, in order to ensure that the properties of ISOMAT-PUA 1240 are preserved, it is recommended to protect the final surface with the one-component, aliphatic, elastic, polyurethane protective coating TOPCOAT-PU 720. TOPCOAT-PU 720 is applied by brush, roller or spray within 24 hours from the application of polyurea.
- ISOMAT-PUA 1240 is intended for professional use only.

Volatile Organic Compounds (VOCs)

According to Directive 2004/42/CE (Annex II, table A), the maximum allowed VOC content for the product subcategory j, type SB, is 500 g/l (2010) for the ready-to-use product.
The ready-to-use product ISOMAT-PUA 1240 contains a maximum of 500 g/l VOC.

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CE

2032

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2032-CPR-10.11

DoP No.: ISOMAT-PUA 1240 / 1855-01

EN 1504-2

Surface protection products

Coating

Permeability to CO_2: Sd > 50 m

Water vapor permeability: Class I (permeable)

Capillary absorption: w < 0.1 kg/m^2·h$^{0.5}$

Adhesion: ≥ 1.0 N/mm^2

Reaction to fire: Euroclass F

Dangerous substances comply with 5.3

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