Technical Datasheet

ISOMAT-PUA 1360

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

Description

ISOMAT-PUA 1360 is a two-component, highly elastic, ultra fast-curing, 100% solids, hot spray-applied, pure polyurea membrane, obtained from the reaction of an aromatic, isocyanate prepolymer with an amino resin. Thanks to its special composition, the reaction takes place within seconds and the final product delivers excellent mechanical and chemical resistance to any substrate type.
It is applied with a special two-component, high pressure and high temperature spray equipment offering the following advantages:

- Very high elasticity that allows application even in extreme climatic conditions or complex architectural structures.
- Very quick reaction; gel time in seconds.
- Areas can be returned to service immediately. Pedestrian use may begin within minutes after application.
- Low to no sensitivity to atmospheric conditions, such as relative humidity and temperature.
- ~100% solids and odorless or nearly odorless.
- Excellent physical-mechanical properties: ultimate tensile stress, crack-bridging ability, abrasion resistance, etc.
- Very high chemical resistance. Recommended for use in cases of heavy chemical loads.
- Thermal stability at very high temperatures.
- Wide range of layer thickness in one application.
- After curing, a vapor-permeable membrane is formed, preventing moisture accumulation.
- Forms a jointless and seamless, monolithic surface.
- Can also be safely applied to vertical surfaces.

The product has been successfully tested in combination with TOPCOAT-PU 720 in accordance with the requirements of EAD 030350-00-0402 and is classified as W3, S, TL4-TH4, P4 (Special). This classification indicates an expected working life of 25 years under the most severe conditions defined in the EAD with regard to the user loads (P4), the climatic zone (S), and the minimum and maximum surface temperatures (TL4-TH4).
ISOMAT-PUA 1360 complies with all the requirements established in Royal Decree 140/2003, modified by RD 314/2016 and RD 902/2018, which establishes sanitary criteria for the quality of water for human consumption. Water tanks must be thoroughly washed prior to filling with potable water.
Certified for safe flooring applications in food handling and processing areas (ISEGA, Germany, Certification No: 58259 U22).
ISOMAT-PUA 1360 has been successfully tested by a third-party laboratory for resistance to root penetration, according to CEN/TS 14416:2014.
ISOMAT-PUA 1360 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.
ISOMAT-PUA 1360 is part of the certified ISOMAT DECK OS 10 SYSTEM, which meets the requirements of the "Guideline for the Protection and Repair of Concrete Components" issued by the German Committee for Reinforced Concrete (DAfStb), October 2001, test class OS 10.

Fields of application

Polyurea is widely used in waterproofing and protection applications and is the go-to solution when high mechanical strength, chemical resistance, fast completion of works and immediate return-to-service are required.
ISOMAT-PUA 1360 is ideal for substrates subject to some kind of vibration. Other areas of use include:

- Waterproofing of industrial refrigerators and generally areas subject to extremely low temperatures or extreme temperature variations.
- As a waterproofing layer on roofs, balconies, terraces, green roofs and flower beds.
- Waterproofing of metal roofs.
- Waterproofing of metal or concrete bridges.
- Waterproofing of concrete ballast troughs and steel railway viaducts and bridges
- As a protective coating against abrasion and impact on industrial floors in parking garages, traffic areas, auto repair shops, etc.
- As an elastomeric protective coating for truck trailers.
- As shock-absorbing flooring for the prevention of injuries in playgrounds.

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Also suitable for use as a waterproofing protective layer:

- In potable water tanks.
- In wastewater and biological wastewater treatment tanks etc.
- In swimming pools, aquariums, recreation areas.
- On floors in industrial facilities, craft businesses, warehouses and surfaces subject to high mechanical and/or chemical loads.

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:	1.06 kg/l
- Component B:	1.06 kg/l
(DIN EN ISO 2811-1)	
Viscosity:	
- Component A:	900-1,100 mPa·s
- Component B:	500-700 mPa·s

2. Application process

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

3. Membrane features (2 mm thickness)

Chemical base:	
- Component A:	MDI prepolymer
- Component B:	Poly-amino resin
Solid content:	~100%
Colors:	Grey and selected colors upon order
Service temperature:	from -40˚C to +110˚C
Tensile strength: (ISO 37)	14 ± 1 N/mm^2
Elongation at break: (ISO 37)	500 ± 50 %
SHORE A hardness: (EN ISO 868)	≥ 95
SHORE D hardness: (EN ISO 868)	≥ 40
Abrasion resistance: (H22/1000/1000) (EN ISO 5470-1, loss in weight <3000 mg with an H22 abrasive disk/1000 cycles/1000 g load)	< 220 mg
Tear resistance: (ISO 34-1)	75 ± 3 N/mm
Capillary water absorption: (EN 1062-3, requirement EN 1504-2: w<0.1)	0.01 kg/m^{2}h$^{0.5}$
CO_2 permeability: (EN 1062-6)	S_d > 50 m
Vapor permeability: (EN ISO 7783-2, vapor-permeable Class I, S_d< 5m)	S_d = 0.95 m
Adhesion strength: (EN 1542, requirement for flexible systems with no traffic: 0.8 N/mm^2)	> 2 N/mm^2
Crack bridging ability: (EN 1062-7)	
- Static:	> 2.5 mm class A_5
- Dynamic:	class $B_{4.2}$
Reaction to fire: (EN 13501-1)	Class F

4. Curing times (at +23˚C)

Gel time:	10 s
Tack-free time:	25 s
Overcoat time:	
- Minimum:	25 s
- Maximum:	24 h
Walkability:	15-20 min
Mechanical load:	24 h

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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 on the substrate must be sealed with one of the polyurethane sealants FLEX PU-30 S FLEX PU-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).
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 1360 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, DUROPLOOR-PSF two-component, solvent-free epoxy primer is applied using a brush or roller in one layer, with a consumption of 200-300 g/m^2.
After the application of DUROFLOOR-PSF and while this is still fresh, quartz sand (Ø 0.1-0.4mm or 0.3-0.8mm) 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 the primer application.

1.2 Smooth – Non-absorbent surfaces
Smooth and non-absorbent surfaces with a moisture content > 4%, 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 uniformly applied over the entire surface using a roller, brush or spray gun, thinned with water up to 30% by weight, with a consumption of 150-200 g/m^2.
ISOMAT-PUA 1360 may be applied within 24-48 h from priming and as long as the moisture content of the primer falls below 4%.

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 1360 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 to ensure the surface is dry, stable and free from materials that may inhibit 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 with a brush, roller or by spray in two layers. The second layer may be applied as soon as the first one has dried.
ISOMAT-PUA 1360 is applied within 24 h 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. The application temperature of the two components must range between 75-85°C and pressure must be set between 160-200 bar.

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ISOMAT-PUA 1360 is sprayed after the primer has dried (depending on the temperature and humidity conditions, as well as the selected primer).
Consumption: approx. 1.0 kg/m^2/mm, depending on the substrate.

Packaging

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

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 in order to avoid the risk of vapor condensation.
- Especially for component A (isocyanate), 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, to ensure the properties of ISOMAT-PUA 1360 remain intact, 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 the polyurea.
- ISOMAT-PUA 1360 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 1360 contains a maximum of 500 g/l VOC.

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ISOMAT-PUA 1360

CE

2032

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17th km Thessaloniki – Ag. Athanasios
P.O. BOX 1043, 570 03 Ag Athanasios, Greece

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2032-CPR-10.11

DoP No.: ISOMAT-PUA 1360 / 1856-01

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

CE

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EN 13813 SR-B2,0-AR0,5-IR20

Synthetic Resin screed material for use internally in buildings

DoP No.: ISOMAT-PUA 1360 / 1845-01

Reaction to fire: F_{fl}

Release of corrosive substances: SR

Water permeability: NPD

Wear resistance: AR0,5

Adhesion: B2,0

Impact resistance: IR20

Sound insulation: NPD

Sound absorption: NPD

Thermal resistance: NPD

Chemical resistance: NPD

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