

MORCEM® ELASTIC PM



DESCRIPTION

Single-component polyurethane membrane that produces a continuous, elastic, aromatic membrane completely adhered to the substrate, watertight and 100% waterproof. Its properties make it excellent for its application on all types of surfaces, whether in new construction or rehabilitation. It has the CE stamp based on a Declaration of Presentations (DoP) made according to the UE305/211 regulation. The MORCEM ELASTIC PM membrane has an ETE 20/0439 certification, with 25 years of useful life for a minimum thickness of 1.5 mm.

ADVANTAGES AND USES

- MORCEM COVER polyurethane membrane system, suitable for waterproofing and coating under the following circumstances:

- Terraces, balconies and walking roofs (ETE 20/0439 and BBA 16/5340)
- Metallic roof, fibre-cement
- Green roof (ETE 20/0439 and BBA 16/5340)

NOTE: Check with our technical department in case of applying the product on a different substrate or situation.

- MORCEM ELASTIC PM is a highly elastic and wear resistant membrane that, once applied, offers great stability, durability and certified water tightness (ETE 20/0439 and BBA 16/5340).
- The versatility of MORCEM ELASTIC PM gives it the possibility of adapting to different surfaces and materials, it is the ideal product to be applied to irregular areas with shapes of any nature, whether curved or square.
- Surface reinforcement is not necessary except for unique meeting points with other construction elements. (ETA 20/0439 and BBA 16/5340); or in irregular substrates or situations, such as covered roofs, terraces or balconies in poor condition.
- Suitable for Green roofs, it has an anti-roots certificate stated by the EN 13948 (ETE 20/0439 and BBA 16/5340).
- Apply several layers of product not thicker than 0.8mm each. Let each layer dry 4 to 6 hours approximately.
- MORCEM ELASTIC PM membrane can also be applied in just one layer (minimum thickness suggested = 1.5mm) mixing it with MORCEM ELASTIC PM CATALIZADOR, which will increase its mechanic features, will remove any existing bubbles in the inside and will increase the speed of execution since it can be applied not only with a roller but with metal or rubber spatulas. Therefore, it reduces direct costs of application, and at the same time, it reduces drying times. Do not use projection equipment when doing this type of application. Do not use this additive at temperatures above 25 C, and take into account its pot life in these situations.
- Using MORCEM ELASTIC PM, joints and any type of union are saved since the finish is uniform made as a single piece. It provides a surface with optimal maintenance and cleaning.
- The application of the MORCEM ELASTIC PM polyurethane membrane must be carried out in conditions without the presence of moisture or water in the substrate, either at the time of application or later (pressure due to water table...).
- In case of having humidity in the substrate at the time of application, consult the technical data sheet of our primers in which the maximum humidity ranges are specified.
- MORCEM ELASTIC PM must be protected from direct UV rays (according to ETE 20/0439 and BBA 16/5340) as it is an aromatic membrane. That is why, we always recommend adding a protection layer

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SUITABLE SUBSTRATES

such as our coloured polyurethane resins MORCEM ELASTIC PM VARNISH U.V. 2C (Please consult the corresponding technical data sheet if required).

- Properties in MORCEM ELASTIC PM membrane allow it to stick to any kind of surface: cement, concrete, polyurethane foam, wood or metal sheets, etc.
- Due to its great resistance, the surface can be passable and anti-slippery, giving it a rough finish by adding solid particles ((silica sand or plastic particles, PLASTITEC) in the aliphatic finish of MORCEM ELASTIC PM VARNISH U.V.2C
- MORCEM ELASTIC PM is immune to changes in temperature between -40°C and +80°C, keeping its elasticity once it has been fully cured.
- The MORCEM ELASTIC PM polyurethane membrane is a self-levelling membrane that needs to be applied in thin layers on vertical or inclined surfaces with slopes greater than 1.5 to prevent sagging.
- It is recommended not to apply it using any "airless" type equipment when we carry out applications with a mixture of MORCEM ELASTIC PM CATALIZADOR.
- Ceramic tiles can be placed on top. Apply a thin extra layer of MORCEM ELASTIC PM and spread some silica sand on the surface to improve the adherence.
- Reparations are easy to find as well as easy to repair.

The following features must be taken into account before applying the product:

- Repairing surfaces: Filling of holes in the concrete, removing irregularities, filling of cracks, removal of old existing waterproofing, pore opening in floor ceramics, cleaning of the substrate, removing existing dust, dirt, grease or efflorescence. The substrate to be applied must be firm and dry. (Check the level of humidity present at the time of the application if any, and choose the most suitable pre-priming resin.
- There should be no humidity retained inside or moisture by capillarity. (Water-table pressure).
- The substrates on which the MORCEM ELASTIC PM polyurethane system can be applied are very different, depending on their nature or state. We will now specify the application on some of the most common surfaces/substrates. Please contact our technical department if your surface or substrate is not on this data sheet.
- Please consult the technical department to define all the setting procedures in specific points and any other locations that have not been mentioned in this document.

Concrete substrate

Suggested application typology: single layer application (by adding MORCEM ELASTIC PM).

- Concrete should be completely cured (Curing process in concrete should be 28 days), otherwise, check the maximum amount of humidity allowed on the substrate according to the primer used.
- Grout or any other kind of agents should be removed to get an open porous and solid surface by sanding, polishing and milling processes as well as surface shot blasting, to be decided according to the conditions of the substrate.
- Existing holes or areas with a lack of material must be previously repaired.
- Minor fissures or irregularities will be repaired by filling with PUMALASTIC PU.
- Existing expansion joints: remove the existing joint material, clean well and fill with PUMALASTIC PU.
- Create a half-round perimeter where the slabs meet the vertical elements, applying a cord of PUMALASTIC and reinforcing with GEOTEXTIL PU OR BANDTEC.
- Then, clean the entire surface and remove any polluting elements such as dust or solid particles, preferably by dry methods (dry vacuuming).
- Proceed with the application of the primer as indicated in the corresponding technical data sheet. In general terms, IMPAREST EPW will be used.
- Please check its technical data sheet before starting the process to verify its timings and any other possible features.
- Apply the MORCEM ELASTIC PM polyurethane membrane (One single layer or several layers application).
- Then add the UV rays' protection (MORCEM ELASTIC PM BARNIZ U.V. 2C coloured asphalt resin, ceramic tiles, green floorings, gravel...); (According to ETE 20/0439 and BBA 16/5340). Applying MORCEM ELASTIC PM BARNIZ U.V. 2C can be carried out using a short hair roll or "airless" type equipment.

Metallic substrate

- Recommended type of application: application using airless equipment or traditional application with GEOTEXTIL PU or intermediate BANDTEC in reinforcement areas such as joints and overlaps.
- Metallic surfaces must be prepared by sandblasting, in order to improve the mechanical anchoring of the

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surface. In many cases, the application of corrosion inhibitor products might be required.

- Check joints and overlaps where actions have to be carried out with PUMALASTIC PU or GEOTEXTIL PU, in combination.
- For quick and effective cleaning of the surface, use a ketone-based solvent.
- Apply an IMPLAREST MT primer. The adherence of the substrate will be then improved. Please check its technical data sheet to verify its timings and any other possible features.
- Apply MORCEM ELASTIC PM polyurethane membrane (mechanical application with "airless" type equipment).
- Then add the UV ray's protection MORCEM ELASTIC PM BARNIZ U.V. 2C coloured aliphatic resin (According to ETE 20/0439 and BBA 16/5340). You may use a short hair roll or "airless" type equipment.

Ceramic substrate

Suggested application typology: application with intermediate mesh.

- Make sure there are no empty joints, or spare particles on the surface. They must be refilled with PUMALASTIC PU or mortars according to its size.
- In existing joints, clean up beforehand: remove material, clean, and fill with PUMALASTIC PU and reinforce with GEOTEXTIL PU.
- Carry out a light sanding of the area with specific equipment. This way, any existing efflorescence or particles adhered to the substrates will be eliminated, while the surface pore opens.
- Carry out a general cleaning by dry suction (avoid the use of water for cleaning if possible) then apply the required primer, in case of non-porous surfaces, IMPLAREST EPW will be used.
- Apply MORCEM ELASTIC PM membrane, (application by layers with intermediate mesh in cases of very cracked substrates or irregular flatness)
- Then add the UV ray's protection MORCEM ELASTIC PM BARNIZ U.V. 2C coloured aliphatic resin (According to ETE 20/0439 and BBA 16/5340) You may use a short hair roll or "airless" type equipment

Asphalt sheet substrate

Suggested application typology: traditional application with intermediate mesh. On surfaces of this type where the physical and mechanical conditions are not always the most suitable.

- In existing joints, pre-clean: extract material, clean and fill with PUMALASTIC PU.
- Carry out fine surface sanding with specific equipment. In this way, a removal of existing efflorescences or adhered particles on the substrate is carried out, while the surface pore is opened.
- General cleaning by dry vacuum (avoid using water for cleaning if possible).
- Then apply the required primer, in these cases two coats of primer are applied at a rate of 150 gr / m2 per IMPLAREST EPW coat.
- Application of MORCEM ELASTIC PM membrane, (Application by layers with intermediate mesh.).
- Application of protection against UV rays MORCEM ELASTIC PM BARNIZ U.V., coloured aliphatic resin (according to ETE 10/0121 and BBA 16/5340). This application can be carried out using a short-haired roller or "airless" type equipment.

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APPLICATION PROCEDURE

Once the preparation of the substrate and the application of the primer have been carried out, depending on conditions, the polyurethane membrane will be spread, according to the following methods:

Application by layers (Traditional or conventional)

- Open the MORCEM ELASTIC PM drum and stir until it is completely homogenized.
- Spread the mixture using a short hair roll in a first layer of approximately 0,7 mm (apply just the amount required, no extra dilution is required).
- Wait until it is completely dried (this will depend on climate condition), 5-6 hours approximately.
- Apply a second layer of the product following the previous steps.
- Repeat the whole process until getting the thickness required.

Application by layers with intermediate mesh (using GEOTEXTIL PU)

- Suitable for ceramic substrates, asphalt sheets, and cracked substrates in general. Open the MORCEM ELASTIC PM drum and stir until it is completely homogenized.
- Spread the mixture using a short hair roll in a first layer of approximately 0,7 mm (apply just the amount required, no extra dilution is required).
- Spread the GEOTEXTIL PU mesh on top of the previous humid layer. Use a dry roll in order to add pressure on the mesh and make sure it is embedded in the resin layer.
- Apply the next layer of MORCEM ELASTIC PM, following any of these two options:
 - OPTION 1: Wait for the first layer to dry approximately 5-6 hours, and apply the next layer (with or without MORCEM ELASTIC PM CATALIZADOR).
 - OPTION 2 (Wet and Wet): directly apply the next layer on top of the previous application that is still wet (only if GEOTEXTIL is available, it is possible).
- Consumption in this type of application may increase compared to the theoretical figure without the use of mesh*.

*Consumption in the application with intermediate mesh 2.5 Kg/m².

Single layer application (with additional MORCEM ELASTIC PM CATALIZADOR)

- Pour MORCEM ELASTIC PM CATALIZADOR in the MORCEM ELASTIC PM drum, always in the fixed proportion provided by the manufacturer, continuous mixing with medium speed mechanical equipment (pot life: ±25 minutes).
- Pouring and spreading of the product on the surface. Carry out the application with a dented trowel or rubber tool (a roller may also be used).
- This process is unique, through which the desired thickness is obtained with a single operation, eliminating intermediate waiting times, ensuring the formation of the membrane without internal bubbles, conferring more resistance to traction and reducing the final drying time.

NOTE: When adding MORCEM ELASTIC PM CATALIZADOR, do not use any mechanic equipment.

Mechanical application (airless type equipment)

- Add 5-10% of XILENO solvent to the MORCEM ELASTIC PM drum.
- Mix at medium level speed.
- Apply it in thin layers with the corresponding equipment.
- Wait until it is completely dried.
- Repeat the process until getting the thickness required.

Notes:

- In each case, consult the waiting times, drying times, solution in singular points of the construction, the conditions of application of all the products checking the technical data sheets of each product or consult our technical department.
- For any other substrates, further information on the application procedure, or any additional questions, consult the technical data sheets of these products, or our technical department.
- These guidelines are valid although they can be modified, depending on the situation of the substrate, conditioning factors of the load-bearing structures of the elements to be waterproofed, environmental climate or the situation at the time of application

REPAIR AND OVERLAYING PROCEDURE

In cases which the repair of the membrane is necessary due to accidental causes or mounting interventions

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for unforeseen installations that require perforations on the MORCEM ELASTIC PM polyurethane membrane, the procedure to be followed will be as follows:

Reparation

- Cut or remove the affected or damaged area.
- Then, sand the area expanding it about 20-30 cm all over the perimeter as security overlap.
- When cleaning any possible waste, such as dust, avoid using water if possible. If used, please take into account the amount of humidity in the substrate. You may also use ketone-based solvents for this type of surface cleaning.
- Apply a thin layer (50-100 g/m²) of IMPLAREST EPW primer.
- Proceed with the spreading of BANDTEC silica aggregate, when the primer resin is still wet. As it will improve the adherence in the layer.
- Wait until it is completely dried.
- Apply MORCEM ELASTIC PM together with MORCEM ELASTIC PM CATALIZADOR (please follow the instructions given by the manufacturer).
- Apply MORCEM ELASTIC PM BARNIZ U.V.2C coloured Protection against UV rays. (According to ETE 20/0439 and BBA 16/5340).

Work overlap

In cases in which the repainting time has been exceeded (48 ~ 72 hours), that is, the waiting time between jobs has been prolonged, proceed as follows:

- Sand a longitudinal overlap strip of approximately 20~30 cm wide.
- When cleaning any possible waste, such as dust, avoid using water if possible. If used, please take into account the amount of humidity in the substrate. You may also use ketone-based solvents for this type of surface cleaning.
- Apply a thin layer (50-100 g/m²) of IMPLAREST EPW primer.
- Proceed with the spreading of silica aggregate, when the primer resin is still wet.
- Wait until it is completely dried.
- Apply MORCEM ELASTIC PM together with MORCEM ELASTIC PM CATALIZADOR (please follow the instructions given by the manufacturer).
- Add the aliphatic polyurethane resin MORCEM ELASTIC PM VARNISH U.V.2C coloured (according to ETE 20/0439 and BBA 16/5340).

SUMMARY

In the application of MORCEM COVER the following products can be applied as supplements to their use. In this sense, physical and mechanical properties are protected and improved depending on their exposure, desired finish or types of substrates:

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- MORCEMSEAL TODO 1: For filling and covering existing holes in concrete surfaces. A consistence filling base with a quick drying process is obtained.
 - IMPLAREST EPW: It is used as primer base on the substrates to improve their adherence and regularise its flatness. Nevertheless, these settings, standardises the grade of humidity in the substrate.
 - MORCEM ELASTIC PM U.V.2C VARNISH: two-component, coloured aliphatic polyurethane resin for protection against UV rays, in roof, passable terraces or vehicular use.
 - PLASTITEC: Plastic particles which form a rough surface when mixed with MORCEM ELASTIC PM BARNIZ U.V.2C. It even complies with the CTE DB SUA1 (Slipperiness of floors), until achieving a CLASS 3 classification (Rd>45) ENV 12633:2003, according to its dosage (Please check with our technical department).
 - MORCEM ELASTIC PM CATALYST: additive that allows the application of the MORCEM ELASTIC PM membrane in a single layer, very useful in applications in humid or cold environments (Please check conditions in its technical data sheet). In addition, it eliminates the risk of internal bubble formation, increases the mechanical properties of the membrane and considerably reduces the drying time compared to layer application.
 - BANDTEC: deformable cold adhesive band, made of an upper layer of non-woven fabric, and a self-adhesive lower viscoelastic layer, both of which allow adaptation to the shape of the substrate. Suitable for structural joints, and overlaps between metallic materials.
 - GEOTEXTIL PU: Fibre mesh for application on non-resistant or non-cohesive supports, in expansion or work joints and on vertical perimeters.
 - PUMALASTIC PU: polyurethane putty for joints' filling and cracks.
- NOTE: Please consult the corresponding Technical Data Sheet or contact our Technical Department.

RECOMMENDED THICKNESS AND CONSUMPTION

Recomenda-se uma espessura mínima total aplicada de 1,5 mm, com um consumo total aproximado entre 2 e 2,5 kg/m² no caso de reforço do sistema com GEOTEXTIL PU Fibra de Vidro (espessura de filme seco); aplicado em uma ou mais camadas, dependendo do método e das condições de aplicação.

PACKAGING AND STORAGE

Two different format metallic containers: 6 kg / 25 kg.

Grey and Red in stock.

Please consult if any other colours are required.

12 months at 5C to 35C degrees, always kept in dry places. If the container is open, please use immediately.

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TECHNICAL DATA

(According to ETE 10/0121 and BBA 16/5340)

Specific weight at 23°C ISO 1675	1,40 ± 5% g/cm ³
Viscosity at 23°C ISO 2555	2000-6000 cps
Dry extract at 105°C (% weight) EN 1768	> 90
Flash Point ASTM D93, cloused cup	42°C
Ashes at 450 ° weight EN 1879	42 - 47%
Solid content ISO 1768	82 - 85%
VOC	240 g/l
Useful life (EOTA y BBA)	W3 25 years for a minimum thickness of 1,5 mm
Cover slope	S1-S4 (zero slope)
Reaction to fire	NPA
Reaction to exterior fire	Broof (t1)+(t4)
Wind resistance	SUITABLE > 50 KPa
Anti-roots certificate (EN 13848)	SUITABLE
Ambient temperature range	5°C - 35°C
Substrate's temperature range	5°C - 30°C
Shore A surface hardness at 23°C DIN 53.505	> 85
Shore D surface hardness at 23°C DIN 53.505	> 35
Tear (longitudinal) according to pants, angular and crescent ISO 34-1-2011	24 Kn/M
Tensile strength without MORCEM ELASTIC PM CATALIZADOR ISO 527-3	2-3 MPa
Tensile strength with MORCEM ELASTIC PM CATALIZADOR ISO 527-3	4-6 MPa
Elongation at 23°C without MORCEM ELASTIC PM CATALIZADOR ISO 527-3	> 600%
Elongation at 23°C with MORCEM ELASTIC PM CATALIZADOR ISO 527-3	> 400%
initial drying at 23°C and 55% RH without MORCEM ELASTIC PM CATALIZADOR ISO 527-3	± 5-6 hours
initial drying at 23°C and 55% RH with MORCEM ELASTIC PM CATALIZADOR ISO 527-3	± 1,5 hours
Over-coating range without MORCEM ELASTIC PM CATALIZADOR	± 5-48 hours
Over-coating range with MORCEM ELASTIC PM CATALIZADOR	± 1,5 - 24 hours
Resistance to the transmission of water vapour EN1931	μ = 2500
Permeability to the transmission of water vapour EN1931	14 g/m ² /day
Adhesion to concrete at 23°C	> 2MPa

LEGAL DISCLAIMER

The instructions for use are given according to our tests and knowledge and do not imply any commitment by GRUPO PUMA nor free the consumer from the examination and verification of the products for their correct use. Claims must be accompanied by the original packaging to allow a proper traceability.

GRUPO PUMA is not responsible, in any case, for the application of its products or constructive solutions carried out by the application company or other parties involved in the process and / or execution of the work, limiting the responsibility of GRUPO PUMA exclusively to the damages directly attributable to the supplied products, individually or integrated in systems, due to failures in their manufacturing process.

In any case, the drafter of the work project, the technical management or the person responsible for the work, or collaterally the application company or other parties involved in the process and / or execution of the

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work, must ensure the suitability of the products addressing the characteristics of them, as well as the conditions, support and possible pathologies of the work in question.

The values obtained by GRUPO PUMAS's products or its constructive solutions that, as the case may be, are determined by the EN standards or any other regulation that applies to it in each case refers exclusively to the conditions specifically stipulated in said regulation and that are referred to, among others, to certain characteristics of the support, humidity and temperature conditions, etc. without being them required in the tests obtained under different conditions, all in accordance with the relevant regulation.