
	<p>PELELASTIC PE50</p> <hr/> <p>Two-component, flexible cementitious mortar for waterproofing and concrete protection</p> <hr/> <p>EN 1504-2 (C), principles PI, MC and IR, CM01P in compliance with EN 14891 </p>
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Description

PELELASTIC PE50 provides a flexible, cementitious membrane for waterproofing verandas, balconies, terraces, bathrooms, swimming pools, in compliance with the requirements of European Standards EN 14891, class CM01P and for the protection of concrete structures in compliance with the requirements of EN 1504-2 coating (C), principles PI, MC and IR. Due to its characteristics and high content of water dispersed polymers, PELELASTIC PE50 is ideal for applications in high moist environments and where structures are being subjected to high flexural strains due to vibrations, shrinkage and dynamic stresses. When mixed, the two components form a mixture with very good plasticity and fluid consistency for easy application. Due to its high content of synthetic polymers, it provides high flexibility and excellent adhesion over most conventional substrates, such as concrete, renders, tiles and natural or artificial stones.

Advantages / Characteristics

- Crack bridging ability
- Quick and easy application, using either a roller, a brush, or a trowel, on both horizontal and vertical surfaces without modifying the powder – latex ratio
- Suitable for waterproofing areas that are to be covered with ceramic tiles, mosaics and natural or artificial stones, using C2 type tile adhesives
- Forms a highly flexible waterproofing membrane, which provides excellent substrate protection against humidity and water penetration
- Excellent resistance to Carbon Dioxide (CO₂) penetration and de-icing salts

Fields of application

- Waterproofing and protection of hydraulic structures, such as water channels, water tanks, faces of dams, swimming pools, concrete pipes etc
- Waterproofing of bathrooms, showers, and floors, before the application of tiles, mosaics, natural stones etc
- Waterproofing of balconies and verandas, with concrete or old tile substrates
- Waterproofing of gypsum boards, bricks, concrete blocks, renders, light weight blocks and various cement-based substrates
- Flexible protection of cement-based renders and plasters, as well as concrete substrates which are subject to cracks due to thermal expansion, vibration, and shrinkage
- Protection against Carbon Dioxide (CO₂) penetration
- Protection against corrosive atmospheric agents
- Protection of surfaces which may come in contact with sea water, de-icing salts or sulphates
- Waterproofing and protection of external foundation or basement concrete walls
- Interior waterproofing of basement walls, under small negative hydrostatic pressure

Technical Characteristics

Density		
Component A dry powder	:	≈ 1.1 Kg/L
Component B liquid	:	≈ 1.1 Kg/L
Density of fresh mixture	:	≈ 1.7 Kg/L
Mixing ratio	:	Component A : Component B = 20 Kg : 12 Kg
Consumption	:	Indicatively ≈ 1.6 Kg/m ² /mm
Substrate temperature	:	+ 5 °C min. / + 35 °C max.
Application temperature	:	+ 5 °C min. / + 35 °C max.
Dry solids content	:	Component A : 100% Component B : 53%
Pot life	:	≈ 1 hour at 20 °C
Reaction to fire (Euroclass)	:	E

Requirements according to EN 1504-2 (Final values obtained with thickness of 2 mm)		
	REQUIREMENTS	PERFORMANCE FIGURES FOR PELELASTIC PE50
Permeability to CO ₂	$S_D > 50m$	$S_D > 50m$
Adhesion by pull of strength	with no traffic $\geq 0.8 \text{ N/mm}^2$	1.1 N/mm^2
Thermal compatibility to freeze / thaw cycles with de-icing salts, measured as adhesion strength	with no traffic $\geq 0.8 \text{ N/mm}^2$	0.9 N/mm^2
Static crack bridging ability	Class A1 $> 0.100 \text{ mm}$ Class A2 $> 0.250 \text{ mm}$ Class A3 $> 0.500 \text{ mm}$ Class A4 $> 1.250 \text{ mm}$ Class A5 $> 2.500 \text{ mm}$	1,4 mm (Class A4)
Dynamic crack bridging ability	Class B1 to B.4.2	Class B2
Permeability to water vapour	Class I: $S_D < 5m$ (permeable) Class II: $5m < S_D < 50m$ Class III: $S_D > 50m$ (not permeable)	$S_D = 0.23$ (Class I)
Capillary absorption and permeability	$w < 0.1 \text{ Kg.m}^{-2}.\text{h}^{-0.5}$	$< 0.05 \text{ Kg.m}^{-2}.\text{h}^{-0.5}$

Requirements according to EN 14891 (Adhesion values obtained using a C2 type tile) adhesive)		
	REQUIREMENTS	PERFORMANCE FIGURES FOR PELELASTIC PE50
Water impermeability under pressure (1.5 bar at 7 days)	No penetration	No penetration
Crack bridging ability Under normal temperatures 20°C Under low temperatures - 5°C	$\geq 0.75 \text{ mm}$ $\geq 0.75 \text{ mm}$	$\geq 1.4 \text{ mm}$ $\geq 0.9 \text{ mm}$
Adhesion strength Initial After immersion in water After thermal ageing After freeze/thaw cycles After immersion in limewater After immersion in chlorinated water	$\geq 0.5 \text{ N/mm}^2$ $\geq 0.5 \text{ N/mm}^2$ $\geq 0.5 \text{ N/mm}^2$ $\geq 0.5 \text{ N/mm}^2$ $\geq 0.5 \text{ N/mm}^2$ $\geq 0.5 \text{ N/mm}^2$	$\approx 1.4 \text{ N/mm}^2$ $\approx 0.9 \text{ N/mm}^2$ $\approx 1.1 \text{ N/mm}^2$ $\approx 0.8 \text{ N/mm}^2$ $\approx 0.8 \text{ N/mm}^2$ $\approx 0.7 \text{ N/mm}^2$

Instructions for use

SURFACE PREPARATION

A) Preparation for waterproofing of concrete structures (terraces, balconies, swimming pools)
The surface to be treated must be cured, structural stable and robust, dry and perfectly clean, free of dust, oil grease and efflorescence. Loose adhering particles and segments must be removed manually or by the use of mechanical means (such as sand-blasting, high-pressure water jet, wire brush etc.) as to not adversely affect the bonding of the mixture. Do not use vibrating or collision equipment, as they may cause further damages to the concrete. Cracks and damaged areas must be repaired and restored using PELETICO's repair mortar RM 40. Concrete laitance that may be formed during the application or curing of the concrete, must be completely removed by mechanical means, until stable substrate reached. Remove any dust or other contaminants before applying PELELASTIC PE50. The surface (especially in cases of highly absorbent substrates) must be lightly sprayed with water before waterproofing mortar application.

B) Preparation for waterproofing Cement based Plasters and Renders

The surface to be treated must be cured, sound and robust, dry and perfectly clean, free of dust, oils and efflorescence before the application of PELELASTIC PE50. Cracks or uneven surfaces must be repaired and left to cure. The surface (especially in cases of high absorbent substrates) must be treated with water beforehand, to achieve saturated dry conditions before the application of the waterproofing mortar. The surface must be lightly sprayed with water before waterproofing mortar application. New renders must be allowed to cure sufficiently (at least 7 days per cm of thickness in warm weather conditions).

C) Preparation for waterproofing tile, natural stone, and mosaic substrates

The surface to be treated must be stable, dry and perfectly clean, free of dust, efflorescence, detergent residues and construction material residues before the application of PELELASTIC PE50. Detergent residues and soap agents can affect the adhesion of the waterproofing to the area of application. Therefore, the surface must be cleaned with the use of caustic soda solution (30% caustic soda + 70% water) and then rinse thoroughly and air dry. Once the surface has dried, PELELASTIC PE50 can be applied.

MIXING

Before mixing, ensure that all tools and mixing equipment are thoroughly clean, free of dust, other building materials and generally any substance that could affect the performance of **PELELASTIC PE50**.

Prior to use, component B (liquid) must be stirred to improve homogenization.

Pour component B (liquid) in a suitable, clean container and slowly add Component A (dry powder) while constantly stirring. Use a low-speed mechanical mixer or other suitable equipment, and mix for at least 3 minutes or until a homogenized, free of lumps mixture is obtained.

Caution: Each packaging unit must be entirely used, as wrong mixing ratios may adversely affect the quality of the product. In case of using a portion less than 1 set, the mixing ratio weight should be strictly followed.

Mixing ratio: Component A : Component B = 20 Kg : 12 Kg

APPLICATION CONDITIONS / LIMITATIONS

- Apply only in ambient temperatures between 5°C to 35°C.
- When applied under dry, windy, or high temperature conditions, the surface must be protected, to avoid rapid evaporation of the mixture's water.
- Protect from rain or direct contact with water for at least 24-48h (depended on the weather conditions) after application.
- Avoid application during extreme weather conditions.
- Do not add cement, aggregates, or any additives to the mix, as this may negatively affect the mixture's characteristics.
- **PELELASTIC PE50** can be applied on surfaces subjected to car traffic, only if protected with tiles.
- Do not smooth the surface of PELELASTIC PE50 using a float or a sponge trowel.
- Avoid direct contact with chlorinated swimming pool water.

APPLICATION

Application using a metal trowel

The **PELELASTIC PE50** can be applied using a trowel, within 60 minutes after being mixed. Apply the first layer, by firmly pressing the mixture onto the substrate, to achieve a consistent thickness. Apply a second layer of **PELELASTIC PE50** when the first one has set (approximately 4-5 hours after the first coat). Maximum thickness per layer should not exceed the 2mm and total thickness for both layers should be at least 2mm.

Application using a brush or paint roller

The **PELELASTIC PE50** may be applied using either a brush or a roller, within 60 minutes after being mixed. Apply in at least two layers. The maximum thickness per layer is 2mm and the total thickness should not be less than 2mm. While applying the first layer, the brush (or roller) must be lightly pressed as to ensure higher bonding of the mixture on the substrate (especially in cases of highly porous or uneven surfaces). The second layer must be applied only after the first one has set. It is recommended that the second layer is applied crosswise to the first layer, ensuring that there are no gaps and that the first coating is completely covered.

Application with alkali-resistant fibre mesh (150-160g/m²) reinforcement

Treating surfaces and elements which are expected to be highly stressed or where capillary cracks are likely to occur (balconies, terraces, swimming pools etc.), it is highly recommended that **PELELASTIC PE50** is reinforced with alkali-resistant fibre mesh (150-160g/m²). In such case, **PELELASTIC PE50** can be applied within 60 minutes after mixing. Apply first layer preferably with the use of a steel notched trowel 4x4mm by firmly pressing the mixture onto the substrate. Embed fibre mesh in the first layer while mortar is still fresh and using a flat trowel lightly press the fibre mesh as to ensure that it is fully integrated throughout the coating. It is very important to install the fibre mesh with an overlap of minimum 10cm between two adjacent layers of the mesh. Once the first layer of **PELELASTIC PE50** has set (approx. 4-5hours), the second layer is applied crosswise using a flat steel trowel ensuring that there are no gaps and that the first layer with the fibre mesh is completely covered. The maximum thickness per layer is 2mm and the total thickness should not be less than 2mm. When applied in critical zones, such floor joints, intersection of floors and walls and adjacent walls etc., the layer of **PELELASTIC PE50** can be reinforced using a specific sealing tape. Apply the sealing tape on the first layer of **PELELASTIC PE50**, while is still fresh and lightly press with a trowel, to work out all bubbles and voids. Completely cover the seal tape with a second layer of **PELELASTIC PE50** once first layer has set.

Laying ceramic tiles over **PELELASTIC PE50**

The final surface of **PELELASTIC PE50** can accept ceramic tiles, mosaics, natural stones etc. after at least 2 days (35° C) from application of **PELELASTIC PE50** or 7 days (5° C)

Placing of the tiles can be achieved using a suitable Class C2TE-S1 tile adhesive such as **PELECRETE FLEX** (**PELETICO** product), according to EN 12004-1. Grouting of the tiles must be done using a suitable class CG2WA cement-based grout such as **PELESET** (**PELETICO** product) according to EN 13888.

Waiting time before use or overcoating

PELELASTIC PE50 must be completely cured before over laying or used in contact with water.

The following waiting times can be used as a guide:

	+35° C	+5°C
• Overlaying with tiles, natural stones etc.	2 days	7 days
• Backfilling of walls below ground level e.g., basement walls, retaining walls etc. (protective membranes must be used)	3 days	7 days
• Direct contact with water e.g., water tanks, water channels etc.	5 days	10 days

Waiting times may vary depending on humidity of environment and substrate.

CLEANING OF EQUIPMENT

Clean all tools and mixing equipment thoroughly with plenty of water after completion of work, and while product is still fresh. Once set, the hardened material can only be removed using mechanical means, due to its high adhesion on most compatible surfaces.

PACKAGING

Set of 32 Kg:

- Component A (dry): 20 Kg multiwall paper bags
- Component B (liquid): 12 Kg pail

STORAGE

Store the product in a sheltered, dry area, free of water and moisture. Store in closed bags preferably in the original packaging, onto a pallet or generally without direct contact with the floor. The product has a shelf life of up to 3 months from production date, when stored properly in the original, unopened bag. Store Component B (liquid dispersion) up to 12 months in a sheltered, dry area, away from direct sunlight, and at temperatures not lower than 5°C.

**Health and
Safety Measures**

- Component A contains cement, which reacts as alkaline with water, moisture, sweat and/or other body fluids so it is classified as irritant. Follow normal precautions as with all cementitious materials and products.
- Harmful in contact with skin.
- Harmful if inhaled.
- Harmful if swallowed
- May cause respiratory irritation.
- Keep out of reach of children.
- Wash body and clothes thoroughly after handling.
- Do not eat, drink, or smoke when using this product.
- Wear respiratory protection
- Please refer to Safety data Sheet for more information and advice regarding the safe handling, storage, use and disposal of the material.

Note 1: All Technical Data provided in section “Technical Specifications” are based on laboratory trials and tests, under conditions which may significantly differ from the ambient application conditions. Therefore, the actual technical characteristics may vary due to conditions or circumstances beyond company’s control.

Note 2: The information provided by our Technical Data Sheets or given by our employees, agents or distributors concerning the use of our products, is based upon extensive research and experience, and are provided in good faith in order to help you. We guarantee the consistent high quality of our products; however, as we have no control over site conditions of the executions of the work, we cannot accept any liability for any loss or damage, which may arise as a result thereof.

Note 3: All cement-based products, must be stored in dry sheltered places, on wooden pallets. Even under these circumstances, the products are influenced by the atmospheric moisture after a period of time. Since this period is not defined or standard, we strongly advise our customers not to use hardened products or if, generally, its quality due to storage is uncertain. In general, it is advisable that for cement-based products, storage period should not exceed the 3 months.

PELETICO LTD | 19 Kampou | 2030 Strovolos | Cyprus | T: 357-22482265 | F: 357-22481757
PELETICO HELLAS S.A. | 20 Zoodohos Piyi | Halandri | 152-31 Athens | Greece
T: 30-2106776661 | F: 30-2106756996
E: peletico@peletico.com | www.peletico.com

