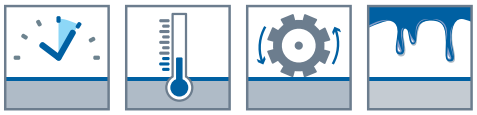
POLYAC® 51

FAST CURING PMMA BINDER FOR SELF LEVELLING, MEDIUM HARD FLOORS, LEVELLING LAYERS AND WEAR LAYERS



DESCRIPTION

Fast curing binder based on PMMA (polymethyl methacrylate) for making self-levelling floors, levelling and wear layers with a layer thickness of 1 to 5 mm.

BENEFITS

POLYAC® 51 has excellent adhesion and can be applied at temperatures below the freezing point thanks to its fast and good reactivity.

- High reactivity
- Fast curing
- Applicable at low temperature
- Gradation of anti-slip finish possible
- Different layer thicknesses possible
- Low viscosity
- Widely applicable by adaptation of POLYAC® CATALYST and fillers.

FIELD OF APPLICATION

POLYAC® 51 is ideally suited for medium hard industrial floors, levelling layers or wear layers.

APPLICATION

Note: The following is a typical application description. In case of other jobsite parameters, please contact our technical department.

PRELIMINARY ANALYSES

Before starting the substrate preparation and applying the products, it is important to test various parameters in order to achieve a good and sustainable result.
Compressive strength of the substrate: min. 25 N/mm²
Tensile strength of the substrate: min. 1.5 N/mm²
POLYAC® 51 must be applied a dry surface. Moisture content in the substrate: ≤ 5% moisture.
Exception: ≤ 10% moisture if the primer POLYAC® 18 is used.
Conditions during the application and curing: see "Application conditions" further described in this technical data sheet.
Technically studied dilatation joints must be provided. These are resumed in the synthetic resin system to be installed.
The flatness of the surface must be consistent with the desired requirements. Should this not be the case, correct measures must be taken to fill in or smooth out the unevenness with products that are complementary to the substrate and to the synthetic resin system to be installed.
Shrink joints and passive cracks can be coated. This on condition that they are not used as dilatation joints or if they do not follow other movements of the structure and the substrate and that they are flattened with products that are complementary to the substrate and to the synthetic resin system to be installed.

REQUIRED TOOLS

- Mixer with spindle (min. 300 rpm)
- Spatula, rake or toothed trowel
- Spiked roller
- Masking tape

PREPARATION OF THE SUBSTRATE

It is not necessary to place a primer on existing POLYAC® systems before applying POLYAC® 51.
POLYAC® 51 is always applied on a suitable primer depending on the type of substrate.
POLYAC® 12: Dry, form-retaining, mineral substrates. POLYAC® 14: Moving or less form-retaining mineral substrates, asphalt or bituminous membranes. POLYAC® 15: Metal. POLYAC® 18: Damp, form-retaining, mineral substrates. (Always consult the POLYAC® primers technical data sheets) Before applying the primer. Cracks, joints and other parts that show water leaks must first be made completely water-tight and leak-proof.
The surface must be mechanically pre-treated. This can be achieved by removing the dust by bullet- or sandblasting or by grinding the surface. Tiles are to be degreased well and grinded with a diamond blade. These treatments ensure that an open texture surface is obtained, to remove the cement skin from concrete and old remnants of coatings and adhesives.
High pressure water jetting is possible but then the surface must dry sufficiently before applying the primer. (Moisture content in the substrate: ≤ 5% moisture. Exception: ≤ 10% moisture if the primer POLYAC® 18 is used.
Always apply the products on a clean surface, free from adhesion reducing materials such as dirt, oil, grease, old coatings or surface treatments, ...
The parts of the surfaces to be coated that do not meet the requirements as described above (compressive strength, tensile strength, parts that are not well connected, ...) must be treated or removed and repaired according to a correct method and with products that are complementary to the substrate and the synthetic resin system to be installed. Remove any loose parts by brushing properly and remove dust with an industrial vacuum cleaner.
The surface must be mechanically pre-treated. this can be achieved by removing the dust by bullet- or sandblasting or by sanding the surface. The degree of roughness for metal surfaces is SA 21/2. Remove rust by sandblasting. The surface must be dry and free of impurities such as grease, oil or dust.
Galvanized steel is thoroughly cleaned in advance with water and soap or sandblasted. Degrease metal surfaces immediately after the mechanical preparation with SOLVENT MEK. After the SOLVENT MEK has fully evaporated, immediately apply a layer of POLYAC® 15 to prevent the steel from re-oxidizing.

PREPARATION OF THE PRODUCT

Mix POLYAC® 51 well before use. Paraffin can separate during storage.
Dispense an amount of resin that can be processed within 15 minutes.
If a different colour is desired than the standard colour, you can now add 4% pigment powder (by weight of the resin part) to the resin and mix it well until a homogeneous mass is achieved.
The amount of aggregates is determined by the layer thickness, the climatic conditions and the application.

RESIPLAST
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Layer thickness	Mixing example	Density
1 to 2 mm	1 kg POLYAC® 51 resin + 2 kg POLYAC® SL2 FILLER	1.7 kg/dm³
3 to 5 mm	1 kg POLYAC® 51 resin + 3 kg POLYAC® SL2 or SL3 FILLER	1.8 kg/dm³

Add the filler and mix again until a homogeneous mixture is achieved. Add 1 to 5% curing powder. POLYAC® CATALYST must be ordered separately.

Add POLYAC® CATALYST to POLYAC® 51		
Temp.	In%	POLYAC® CATALYST per 1 kg POLYAC® 51 (resin part)
0 °C	5%	50 g
5 °C	4%	40 g
10 °C	3%	30 g
20 °C	2%	20 g
30 °C	1%	10 g

Mix until the powder is completely dissolved.

PREPARATION OF THE EQUIPMENT

Always work with clean mixing containers and application material.

APPLICATION

Spread the mixture with a spatula, rake or toothed trowel and immediately vent and level with a spiked roller.
An anti-slip surface is obtained by fully broadcasting it with the desired type of dry granulate. (4 to 5 kg/m²)
Processing time of POLYAC® 51 is 10 to 15 minutes.

FINISHING

After one hour this layer can be covered with a POLYAC® Topcoat.

APPLICATION CONDITIONS

Conditions during the application and curing of the products.
The recommended processing temperature for substrate, environment, material and products is between +5 °C and +35 °C. For temperatures lower than +5 °C please contact KORACHEM NV.
Relative humidity: Max. 85%
Dew point: The temperature of the substrate and of the not fully cured product must be at least 3 °C higher than the dew point. Avoid condensation on the surface from the moment that the preparations start until the complete curing of the products. Ensure adequate ventilation and a low relative humidity during curing.

CLEANING AND MAINTENANCE

Clean the used tools with SOLVENT MEK or ethyl acetate before the curing of POLYAC® 51. Cured products residues must be removed mechanically.
For the cleaning and maintenance of the installed synthetic resin system, please refer to the information leaflets:
Cleaning and maintenance of synthetic resin floor systems - INDUSTRY
Cleaning and maintenance of synthetic resin floor systems - PUBLIC AND PRIVATE BUILDINGS.

COMPLIMENTARY PRODUCTS

- Cleaning solvent for tools: SOLVENT MEK or ethyl acetate
- POLYAC® CATALYST
- POLYAC® SL 2 FILLER or SL 3 FILLER (depending on the desired thickness of floor, levelling layer of wear layer).
- Pigment powder

ADVICE

Always consult all technical and safety data sheets of the products concerned.

TECHNICAL DATA

APPEARANCE - COMPOSITION

Liquid with low viscosity, azure blue, slightly cloudy.

REACTION TIMES

Processing time after mixing: 10 to 15 min.
Trafficable: after 1 hour
Recoatable: after 1 hour
Fully mechanical load: after 2 hours
Full chemical resistance: after 2 hours
Times measured at 20 °C; lower temperatures extend the curing time.

CONSUMPTION

0.4 to 0.6 kg POLYAC® 51 resin in the filled system / m² / 1 mm layer thickness.

TECHNICAL DATA

Odour	Methyl methacrylate
Initiator: POLYAC® CATALYST	BPO 50%, depending on the temperature from 1% to 5 weight% calculated on the proportion of POLYAC® 51
Viscosity	125 - 175 mPa.s (20 °C Brookfield, spindle III/200 rpm)
Density	0.97 g/cm³ ±0.2 (20 °C)
Flash point	10 °C (MMA, DIN 51 755)
Hardening test (test volume)	300 g POLYAC® 51 with 6g curing powder
Exothermic peak	130 - 145 °C
POLYAC® 51 + 2% POLYAC® CATALYST + SL2 or SL3	
Density	1.7 - 1.8 kg/dm³
Colour	Beige-brown
Shore D hardness	80 – 90

CHEMICAL RESISTANCES

Polymerized POLYAC® resins have good chemical resistance to alkalis, petroleum derivatives, acid, salts and maintenance products. For more information please contact KORACHEM NV.

CE MARKING

CE

KORACHEM NV, Gulkenrodestraat 3, 2160 Wommelgem, Belgium	
12	
EN 13813	
Synthetic resin floor/coating for indoor use in buildings	
Release of corrosive substances	SR
Abrasion resistance	≤ AR0.5
Bond strength	≥ B2;0
Impact resistance	≥ IR8
Reaction to fire	E_{fl}

REFERENCE DOCUMENTS

Information sheet “POLYAC® ODOUR”.

PACKAGING

POLYAC® 51	20 kg	Metal pall
	180 kg	Drum

To be ordered separately:

POLYAC® CATALYST	0.5 kg	Plastic pall
	5 kg	Plastic pall
	25 kg	Box
POLYAC® SL 2 or SL 3 Filler	20 kg	Bag
Pigment powder	1 kg	Plastic pall
	5 kg	Plastic pall
	25 kg	Bag

STORAGE AND SHELF LIFE

Store POLYAC® products in a dry, well-ventilated storage area between +5 and +35 °C.
Shelf life: 12 months after production date.
In case of doubt, please contact KORACHEM NV and state the batch number on the packaging. Do not discharge into groundwater, surface water of sewers. Dispose of contaminated packaging and residues in accordance with the applicable legal requirements.

SAFETY PRECAUTIONS

Carefully read the safety data sheets before using POLYAC® products. A characteristic odour arises during processing. Ensure adequate ventilation, keep away from sources of ignition and do not smoke. Avoid skin contact. Eye irritation and/or hypersensitivity may occur with severe vapour concentration, inhalation and/or skin contact. Do not store food and/or drinks in the same workspace. Always wear personal safety equipment in accordance with the applicable local guidelines and legislation. Gloves and safety glasses are mandatory.

The above information is provided in good faith, but without any guarantees. The application, use and processing of the products are beyond our control and are, as such, the sole responsibility of the user/processor. In the event that Korachem NV is still held liable for damages, then the claim will still be limited to the value of the goods delivered. We always aim to deliver consistently high quality goods. All values on this technical sheet are average values that result from tests carried out under laboratory conditions (20 °C and 50% RH). Values that are measured on the construction site may show a slight deviation since the environmental conditions, the application, and the way of processing our products are beyond our control. Do not add any products other than those indicated on the technical documentation. This version replaces all previous versions. Version 2.0 Date: 11 June 2025 3:40 pm

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