



POLYAC® M

ULTRA FAST CURING, PMMA BASED LEVELLING & REPARATION MORTAR, OR POLYMER CONCRETE



Description

POLYAC® M is a very fast-reacting PMMA (polymethyl methacrylate) resin as a binder for a fast mortar or polymer concrete. In combination with the POLYAC® M FILLER, whether or not further bulking out with sand or aggregates, a hard acrylic mortar with high mechanical resistance and extremely fast hardening is obtained.

Benefits

- Extremely fast curing and strength development, even at low temperatures
- Resists high and dynamic traffic impacts
- Easy to apply
- No rutting – reduction of damage to manhole covers, joints, etc.
- High abrasion resistance
- Durable and resistant to de-icing salts
- Minimal traffic disruption and signalling costs

Field of Application

- Repair mortar or polymer concrete for areas with high traffic impacts: roads, bridge decks, runways, loading docks, traffic islands, parking decks, ramps, garages, driveways, ...
- Repair mortar and reprofiling for cement and concrete floors: residential and industrial floors, incl. cold rooms and freezing tunnels
- Levelling mortar for mineral substrates
- Manholes reinstatement and bedding mortar
- Setting anchor bolts and underfilling of base plates
- Fixation of expansion joint profiles
- Filling holes and trenches

Application

Note: The following is a typical application description. For other site parameters, please contact our technical department. POLYAC® M always needs to be filled with at least the POLYAC® M FILLER, according to the following guidelines.

Preliminary analyses

Before starting with the substrate preparations and the application of the products, it is important to test various parameters in order to achieve a good and sustainable result. The horizontal or inclined contact surface must always consist of a mineral substrate with the following minimum mechanical requirements:

- Compressive strength of the substrate: min. 25 N/mm²
- Tensile strength of the substrate: min. 1,5 N/mm²

The cement laitance should always be removed beforehand.

Moisture content in the substrate for primer POLYAC® 14: ≤ 5% moisture.

Conditions during application and curing: see “Execution conditions” described in this technical data sheet.

Expansion joints must be respected.



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Required tools

- Mixer with spiral paddle suitable for pure resins (300-800 rpm)
- Hand concrete mixer with single or double helical mixing rod suitable for mixing dry aggregates and liquid mortars (300-800 rpm)
- Trowel, spatula
- Masking tape

Preparation of the substrate

Tears, cracks, joints and other parts that leak water must first be made completely watertight and leak-proof. The mineral substrate must be mechanically pre-treated. This can be done by shot or sandblasting the surface in a low-dust manner or by sanding the surface. These treatments ensure to obtain a surface with an open texture, to remove the cement laitance of concrete and old remnants of coatings and adhesives. Always apply the products to a clean surface, free of adhesion-reducing materials such as dirt, oil, grease, old coatings or surface treatments, etc.

The parts of the surfaces to be overcoated that do not comply with the requirements as described above (compressive strength, tensile strength, improperly bonded parts, ...) should be removed.

Remove loose parts by brushing well and remove dust with an industrial vacuum cleaner.

All contact surfaces made of concrete, mineral substrates, steel or asphalt in contact with the POLYAC® M mortar must be primed with POLYAC® 14 with a lint-free paint brush or roller. The surface must be sufficiently dry and, if the moisture criterion for POLYAC® 14 is exceeded, can be treated beforehand with a hot air blower or dry compressed air. The consumption of the primer is at least 350 g/m².

Apply enough primer to create a tight, full-coverage coat. If necessary, apply a second coat of POLYAC® 14 to highly porous substrates. Avoid primer puddle formation. In case of puddling, the excess primer should be removed within the application time with a rubber squeegee or spread evenly by brushing or rolling. Before the application of the POLYAC® M mortar begins, the POLYAC® 14 primer must be fully cured, the surface must not be sticky and must be dry and clean, and free of loose dirt, moisture and other contaminants.

If necessary, install a formwork to allow the POLYAC® M mortar to be applied.

Preparation of the product

Mix POLYAC® M well before use, with a spiral paddle suitable for pure resins (300-800 rpm). Paraffin can be separated during storage. The POLYAC® M resin and the filler POLYAC® M FILLER must always be used in the weight ratio of 1 : 7 parts respectively. Mix the resin and filler with spiral mixer or hand concrete mixer (300-800 rpm), for at least 1 minute, until a homogeneous mortar. This mortar can be applied in 1 layer between 6 and 120 mm.

The mortar can also be bulked out with fire-dried sand and/or aggregates. The table below states the mixing ratio (weight ratio) to be respected, grain size of sand and aggregates, minimum and maximum layer thickness in 1 layer, and the volume of the mortar or polymer concrete. Immediately after mixing the resin and filler, add the weighed sand or aggregates to the mortar and mix with the hand concrete mixer for at least 2 minutes until homogeneous. The fluidity of the mixture depends on the degree of filling.



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POLYAC® M Mortar components	Weight ratio	Layer thickness in mm	Volume of mortar per 1 kg of POLYAC® M resin after mixing with filler and optional quartz sand or aggregate
POLYAC® M POLYAC® M Filler Total	1 7 8	6–120	1 kg POLYAC® M resin + 7 kg POLYAC® M Filler => ±4.6 litres (or dm ³) of mortar
POLYAC® M POLYAC® M Filler sand 0.2 – 0.8 mm, or 1.75-2.5mm, or 2 – 3 mm Total	1 7 3 11	8–120	1 kg POLYAC® M resin + 7 kg POLYAC® M Filler + 3 kg sand 0.2 – 0.8 mm, or 1.75-2.5 mm, or 2-3 mm => ±5.0-5.1± litres (or dm ³) of mortar
POLYAC® M POLYAC® M Filler Aggregates 5 – 8 mm or 6 to 10 mm Total	1 7 3 11	≥ 25	1 kg POLYAC® M resin + 7 kg POLYAC® M Filler + 3 kg kift 5 – 8 mm => ±6.1-6.2 litres (or dm ³) of mortar

Preparation of the equipment

Always work with clean mixing containers and application material.

Application

Pour the mortar onto the prepared substrate. In the case of mixtures filled with additives of sand and/or aggregates, compacting with a trowel is necessary to achieve maximum mechanical resistance also on the surface. If these mortars are applied in several layers, score the surface with the trowel before curing starts.

Finishing can be done with trowel or spatula. Liquid resin on the mortar surface means that too much resin has been used, a matt surface indicates too little resin.

Finishing

The surface of the mortar or polymer concrete can be sprinkled with firedried quartz sand after application and before binding starts to obtain increased slip resistance. Optionally, the surface can be covered with a transparent or coloured Polyac® top layer or waterproofing system.

Performance conditions

The standard processing temperature for substrate, environment, material and products is between +0°C and +30°C.

At substrate temperatures between +25°C and +35°C, the product temperature of the mortar should be between +15°C and +25°C.

For application at temperatures outside the standard processing temperature, please contact Resiplast NV.

Relative humidity: Max. 85%

Dew point: The temperature of the substrate and of the product that has not yet fully hardened must be at least 3°C higher than the dew point. Avoid condensation on the surface from the moment preparations start until the products are fully cured.

Ensure adequate ventilation and low relative humidity during curing.



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Cleaning and maintenance

Clean the tools used with SOLVENT MEK or POLYAC® CLEANER before curing POLYAC® M. Cured product residues must be removed mechanically. For repair work on top of existing POLYAC® M layers, activate the surface with cloth and POLYAC® CLEANER.

Complimentary products

- Cleaning solvent for tools: SOLVENT MEK or POLYAC® CLEANER • POLYAC® M Filler
- Depending on the desired mixture and layer thickness, fire-dried aggregates:
 - Quartz sand 0.2 – 0.8 mm, or 1.7 – 2.5 mm, or 2-3 mm
 - Or aggregates 5-8 mm or 6-10 mm
- POLYAC® 14 primer

Advice/remarks

POLYAC® M Filler contains hardener. For processing up to +5°C, do not add an additional initiator. If to apply below +5°C, please contact RESIPLAST NV.

Appearance – Composition

POLYAC® M	Reactive acrylic resin, transparent, azure blue
POLYAC® M Filler	Grey beige filler
Colour mixture	Beige

Reaction times

Processing time after mixing: 10 to 15 min.

Pedestrian traffic: after 30 min.

Recoatable: after 30 min.

Loadable for motorized traffic: after 1 hour

Full chemical resistance: after 2 hours.

When applied between +5°C and -25°C, the reaction times and longer and the development of strength is slowed down to a relatively limited extent. If a higher reaction speed is required at lower temperatures, contact Resiplast NV.

Consumption

See the table in the “Preparation of the product” section.



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Technical Data

Smell	Methyl methacrylate
Hardener: POLYAC® CATALYST	BPO 50% POLYAC® M Filler already contains hardener POLYAC® CATALYST. Do not add additional hardener.
Viscosity	90 mPa.s +/- 20 mPa.s (20°C Brookfield, spindle III/200 rpm)
Density (Resin)	0.97 g/cm ³ ±0,3 (20°C)
Flash point	10°C (MMA, DIN 51 755)
Exothermic peak	130 – 145°C
Mortar: POLYAC® M + POLYAC® M Filler + optional: quartz or aggregates	
Density: - 1:7 (resin:filler) - 1:7:3 (with sand or aggregates) Weight ratio: see mixing table under the section "Preparation of the product"	±1.75 kg/dm ³ 2.15 – 2.30 kg/dm ³
Compressive strength EN 196-1 / EN 12190	≥ approx. 45-50 N/mm ²
Flexural strength EN 196-1/EN 12190	≥ 22 N/mm ²
Adhesion to concrete EN 1542	≥ 4 N/mm ² (Exceeds the strength of concrete)

Chemical resistances

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

Reference documents

Information sheet "POLYAC® ODOUR".





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Packaging

POLYAC® M	20 kg	Metal bucket
	180 kg	Barrel

To be ordered separately:

POLYAC® M Filler	20 kg	Bag
Quartz 0.2 -0.8 mm, or 1.75-2.5mm	25 kg	Bag
Kift 5 – 8 mm aggregate	25 kg	Bag

Other sand and aggregate mixes described in this product data sheet to bulk out the mortar, need to be locally sourced. Also available in set with weight ratio resin: filler= 1:7:

POLYAC® M (kit)	POLYAC® M (resin)	POLYAC® M (filler)
Set 22.86 kg	2.86 kg	20 kg

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 RESIPLAST NV and state the batch number on the packaging. Do not discharge into groundwater, surface water or 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 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.

Warranties and Disclaimers

Hychem warrants that this product shall conform to the technical specifications published in the product literature. The quality and fitness of the product is dependent upon the proper use and application of the product by the applicator. Hychem has no role in the application of the finished polymer other than to manufacture and supply its components. It is vital that the person applying this product understands the product and is fully trained and certified in the use of spray equipment and application of sol-gel materials. There are no warranties that extend beyond the description on the face of this instrument, except when provided in writing, directly by Hychem and executed under seal by a company officer.

Field Support

Field support where provided, does not constitute supervisory responsibility. Suggestions made by HYCHEM either verbally or in writing may be followed, modified or rejected by the owner, engineer or contractor since they and not HYCHEM are responsible for carrying out procedures appropriate to a specific application.

Customer Responsibility

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