

Mapetherm AR3 GG



WHERE TO USE

- Bonding of thermal insulation panels (expanded/extruded polystyrene, polyurethane foam, mineral wool, etc.) directly on render, brick, concrete, walls, and ceilings.
- Smoothing and reinforcing thermal insulation panels in combination with fibreglass mesh for reinforcement on indoor and outdoor walls (external thermal insulation systems).

Some application examples

Bonding and smoothing of thermal insulation panels indoors and outdoors and external thermal insulation systems on:

- cementitious renders or lime and cement mortars or lime only, concrete,
- concrete blocks (aerated concrete),
- brickwork.

It is also suitable for smoothing:

- internal and/or external walls and ceilings,
- boards used as cladding for ventilated façades in exterior applications.

TECHNICAL CHARACTERISTICS

Mapetherm AR3 GG is a grey or white powder consisting of cement, selected sand, synthetic resins, and special additives, produced according to a formula developed in the **MAPEI** Research Laboratories. When mixed with water, a mortar with the following characteristics is produced:

- low viscosity and, therefore, easy workability,
- high thixotropy: **Mapetherm AR3 GG** can be applied on vertical surfaces without running (slumping) and without the risk of thermal insulation panels slipping,
- good adhesion to the main insulation boards and substrates used in construction, such as skim coats, traditional renders, old paints, and well-adhered plastic coatings,
- hardening without significant shrinkage.

RECOMMENDATIONS

- Do not use **Mapetherm AR3 GG** for bonding insulating panels on metal surfaces or substrates subject to significant movement.

- Do not use if the panel has a smooth surface that prevents proper bonding: polyurethane or mineral fibre sheets with external paper lining, extruded polystyrene with a smooth surface (skin), etc. Do not bond thermal insulation panels on deteriorating substrates or damaged renders.
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APPLICATION PROCEDURE

Preparation of the substrate

The substrate must be sound, mechanically strong, and free of dust, loose particles, grease, oil, adhesive, etc. It is recommended to level any unevenness in cementitious substrates with **Nivoplan**. Gypsum substrates (hand-applied or machine-applied plasters, prefabricated panels, etc.) must be perfectly dry, dust-free, and treated with **Primer G** before bonding thermal insulation panels with **Mapetherm AR3 GG**.

Preparation of the mix

Pour **Mapetherm AR3 GG** into a container with clean water while stirring, at a ratio of 19-21% by weight (approx. 4.75 – 5.25 litres of water per 25 kg of powder). Mix, preferably with a low-speed mechanical mixer to avoid entraining air, until a smooth, creamy, lump-free paste is obtained. Let the mix stand for 5 minutes and re-mix before use. The mix remains workable for approximately 3 hours.

Application of the mix

As an adhesive

Apply the **Mapetherm AR3 GG** mix directly to the back of the thermal insulation panels in an even layer using a 10 mm notched trowel if the substrate is flat, or in a continuous strip around the perimeter and in spots (dabs) in the center if the substrate is not flat. After applying the adhesive, press the thermal insulation panels firmly to ensure good adhesion to the substrate and check flatness with a straight edge.

As a smoothing / reinforcing layer

Once the adhesive has hardened, at least 24 hours after installing the thermal insulation panels and depending on environmental conditions, apply a layer of **Mapetherm AR3 GG** to a uniform thickness and embed the alkali-resistant glass fibre mesh **Mapetherm Net**.

The **Mapetherm Net** must be pressed into the fresh mix with a flat trowel, and overlaps must be at least 10 cm. After 12-24 hours, apply a second coat of **Mapetherm AR3 GG** to form a continuous, smooth surface suitable for the final coating, which is applied only after the smoothing compound has hardened and cured.



Apply pressure on the insulation panel to ensure good bonding with substrate



Application of first leveling layer of Mapetherm AR3 GG



Application of reinforcing layer with Mapetherm Net

Cleaning

Tools and containers should be cleaned with water while **Mapetherm AR3 GG** is still fresh.

CONSUMPTION

Consumption is heavily influenced by the roughness of the substrate and the application method used. In the case of a homogeneous substrate, the indicative consumption is:

- Bonding of insulating boards by bead-and-spot application: approx. 3.0–4.0 kg/m²
- Full-surface bonding of insulating boards application: approx. 4.0–6.0 kg/m²
- Reinforced levelling coat: (recommended thickness 4 mm in 2 coats): approx. 1.35-1.55 kg/m² per mm of thickness

PACKAGING

Mapetherm AR3 GG is available in 25 kg paper bags.

STORAGE

Mapetherm AR3 GG can be stored for 12 months in a dry environment in its original packaging.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Instructions for the safe use of our products can be found in the latest version of the Safety Data Sheet, available on our website www.mapei.com.

PRODUCT FOR PROFESSIONAL USE.

TECHNICAL DATA (typical values)

PRODUCT IDENTITY

Consistency:	Powder
Colour:	Grey or White
Maximum size of aggregate (mm):	approx. 1.00 mm

APPLICATION DATA (+23°C - 50% R.H.)

Mixing ratio with water (%):	19 - 21% (4.75-5.25 liters per 25 kg of powder)
Density of mix (kg/m ³):	approx. 1.600
Application temperature:	from +5°C to +35°C
Pot life:	approx. 3 hours
Open time:	approx. 20 minutes
Waiting time before finishing:	15 days
Consumption (kg/m ²):	▪ Bonding of insulating boards by bead-and-spot application: approx. 3.0-4.0 kg/m² ▪ Full-surface bonding of insulating boards application: approx. 4.0– 6.0 kg/m² ▪ Reinforced levelling coat: approx. 1.35-1.55 kg/m² per mm of thickness

FINAL PERFORMANCES

Modulus of elasticity (N/mm ²):	5.500
Flexural strength after 28 days (N/mm ²):	approx. 3.0

PERFORMANCE CHARACTERISTICS ACCORDING TO EN 998-1

Performance characteristics	Test method	GREY	WHITE
Bulk density:	EN 1015-10	approx. 1400 kg/m ³	approx. 1400 kg/m ³
Compressive strength after 28 days:	EN 1015-11	≥ 6.00 MPa Category CS IV	≥ 6.00 MPa Category CS IV
Adhesion to substrate (concrete):	EN 1015-12	≥ 1.00 MPa Failure Pattern (FP) = B	≥ 1.00 MPa Failure Pattern (FP) = B
Water absorption due to capillary action:	EN 1015-18	≤ 0.20 kg/(m ² min ^{0,5}) Category W _C 2	≤ 0.20 kg/(m ² min ^{0,5}) Category W _C 2
Water vapour permeability coefficient :	EN 1015-19	≤ 12	≤ 12
Thermal conductivity :	EN 1745	0.45 W/mK	0.45 W/mK
Reaction to fire:	EN 13501-1	Euroclass A1	Euroclass A1

WARNING

Although the technical details and recommendations contained in this product data sheet correspond to the best of our knowledge and experience, all the above information must, in every case, be taken as merely indicative and subject to confirmation after long-term practical application; for this reason, anyone who intends to use the product must ensure beforehand that it is suitable for the envisaged application. In every case, the user alone is fully responsible for any consequences deriving from the use of the product.

Please refer to the current version of the Technical Data Sheet, available from our website www.mapei.com

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The contents of this Technical Data Sheet ("TDS") may be copied into another project-related document, but the resulting document shall not supplement or replace requirements per the TDS in force at the time of the MAPEI product installation.

The most up-to-date TDS can be downloaded from our website www.mapei.com.

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