



# Mapetherm AR1 GG

**One component cementitious mortar for bonding and levelling thermal-insulating panels and thermal insulation systems**



## WHERE TO USE

- Bonding all types of thermal-insulating panels (foam/extruded polystyrene, foam polystyrene, mineral fibres, cork, wood fibres, etc.) directly on render, masonry and concrete on walls and ceilings.
- Smoothing thermal-insulating panels with embedded fibreglass reinforcing mesh on internal and external walls (thermal insulation system).

## Some application examples

Bonding and smoothing internal and external heat-insulating panels and thermal insulation systems on:

- cementitious render or lime-mortar render;
- concrete;
- concrete blocks;
- brick blocks.

Also suitable for bonding and smoothing systems for:

- insulating inside faces of walls in rooms above ground;
- insulating inside faces of retaining walls in basements;
- insulating inside faces of loft ceilings;
- insulating external faces of ventilated façades;

- for use as a dash receiver and brick slip adhesive, plus synthetic brick slip or tile adhesive;
- for use with MAPEI approved backing board systems and for use with render only systems.

## TECHNICAL CHARACTERISTICS

**Mapetherm AR1 GG** is a grey or white powder made from cement, selected sand, synthetic resin and special additives with a fine grain size of up to 0.6 mm, developed according to a formula developed in MAPEI's own research laboratories. When mixed with water, it forms a mortar with the following characteristics:

- low viscosity and, therefore, good workability;
- high thixotropic consistency: **Mapetherm AR1 GG** may be applied on vertical surfaces without running and without the risk of insulating panels slipping, including large sized panels;
- bonds perfectly to all materials normally used in the building industry;
- hardens without shrinking.

## RECOMMENDATIONS

- Do not use **Mapetherm AR1 GG** to bond insulating panels on metallic surfaces or substrates subject to large movements.

# Mapetherm AR1 GG



Pressing the panel in place to guarantee a good bond to the substrate



Laying of the first coating of smoothing compound with Mapetherm AR1 GG

## TECHNICAL DATA (typical values)

### PRODUCT IDENTITY

**Consistency:** powder

**Colour:** grey or white

### APPLICATION DATA (at +23°C - 50% R.H.)

**Mixing ratio (%):** 100 parts of **Mapetherm AR1 GG** with 20-24 parts by weight of water

**Consistency of mix:** thick paste

**Density of mix (g/cm<sup>3</sup>):** 1.6

**Application temperature range:** from +5°C to +40°C

**pH of mix:** 13

**Pot life:** 3 hours

**Open time:** 20 minutes

**Adjustment time:** 40 minutes

**Waiting time before finishing:** minimum 3-4 days depending on RH values

### FINAL PERFORMANCE

**Bond strength according to EN 12004 (N/mm<sup>2</sup>):**  
 – after 24 hours: 0.3  
 – initial bond (after 28 days): 1.2  
 – after application of heat source (+70°C): 0.5  
 – after immersion in water: 1.0

**Flexural strength**  
 – after 28 days (N/mm<sup>2</sup>): 5.0

**Compressive strength**  
 – after 28 days (N/mm<sup>2</sup>): 12.0

**In service temperature range:** from -30°C to +90°C

- Do not use if the panels have a smooth surface, good bonding may be impeded: polyurethane or mineral fibres with a surface coating of kraft paper, extruded polystyrene with a surface skin, etc.
- Do not bond the insulating panels on deteriorated substrates or crumbly render.

## APPLICATION PROCEDURE

### Preparation of the substrate

The substrate must be sound, strong and free of dust, loose parts, grease, oil, adhesive, etc. We recommend eliminating steep slopes on cementitious surfaces with **Nivoplan**. Gypsum substrates (render applied by hand or with a rendering machine, pre-fabricated panels, etc.) must be perfectly dry and free of dust and, before bonding insulating panels with **Mapetherm AR1 GG**, must be treated with **Primer G**.

### Preparation of the mix

Pour the **Mapetherm AR1 GG** while mixing in a container with 20-24% by weight of clean water (approx. 5.0-6.0 litres of water per 25 kg of powder). Stir the mix, preferably with a low-speed mixer to avoid drawing in air, until a smooth, creamy, lump-free paste is obtained. Let the mix stand for 5 minutes, and stir again briefly before use. The mix obtained remains workable for approximately 3 hours.

### Spreading the mix

#### Used as adhesive

Spread **Mapetherm AR1 GG** directly on the back of the panels in an even layer using a 10 mm notched trowel if the substrate is flat, or with a minimum coverage of at least 40% if the substrate is uneven. After laying, press the panels down well to guarantee a good bond to the substrate, and check the flatness with a straightedge.

#### Used as smoothing and levelling compound

Once the adhesive is completely dry, at least 24 hours after applying the panels according to climatic conditions, spread an even layer of **Mapetherm AR1 GG** on the surface and then embed **Mapetherm Net** alkali-resistant glass fibre mesh in the mortar. The **Mapetherm Net** must be pressed down with a smooth trowel on the fresh layer of mortar, and must overlap by at least 10 cm along the joints. After 12-24 hours, apply a second layer of **Mapetherm AR1 GG** smoothing and levelling compound to form a compact, even surface suitable for the final coating which must only be applied once the smoothing layer is hardened and cured.

### Cleaning

Tools and containers may be cleaned with water while **Mapetherm AR1 GG** is still fresh.

## CONSUMPTION

- For bonding insulating panels: 4-6 kg/m<sup>2</sup> according to the bonding technique used;
- Smoothing and levelling: 1.3-1.5 kg/m<sup>2</sup> per mm of thickness (recommended thickness: approximately 4 mm in 2 layers).

## PACKAGING

**Mapetherm AR1 GG** is available in 25 kg paper sacks.

## STORAGE

**Mapetherm AR1 GG** may be stored for 12 months in its original packaging in a dry place.

The product complies with the conditions of Annex XVII to Regulation (EC) N° 1907/2006 (REACH), item 47.

## SAFETY INSTRUCTIONS FOR PREPARATION AND INSTALLATION

**Mapetherm AR1 GG** is irritant; contains cement which, in contact with perspiration or other body fluids, produces an irritating alkaline reaction and, in those subjects sensitive to such products, an allergic rash. May cause damage to eyes. Use protective gloves and goggles. For further and complete information about the safe use of our product please refer to our latest version of the Material Safety Data Sheet.

PRODUCT FOR PROFESSIONAL USE.

### N.B.

*Whilst we try to ensure that any advice, recommendations or information given in our literature is accurate and correct, we have no control over the circumstances in which our product is used. It is therefore important that the end users satisfy themselves that the product and conditions are suitable for the envisaged application. No warranty can be given or responsibility accepted other than, that the product supplied by us will meet our written specification. End users should ensure that our latest product data and safety information sheets have been consulted prior to use.*

**Please refer to the current version of the Technical Data Sheet, available from our website [www.mapei.com](http://www.mapei.com)**

**All relevant references for the product are available upon request and from [www.mapei.com](http://www.mapei.com)**



Application of a reinforced smoothing and levelling layer by embedding Mapetherm Net



Finishing off the surface of the smoothing and levelling layer with a sponge float

# Mapetherm AR1 GG



*Reggio Emilia - Italy - Work on a private home using Mapetherm AR1 GG*



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**BUILDING THE FUTURE**