



# Mapetherm AR1 GG



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



## WHERE TO USE

- Bonding all types of thermal-insulating panels (foam/extruded polystyrene, expanded polystyrene, mineral fibres, cork, etc.) directly on render, masonry and concrete on walls and ceilings.
- A reinforcing coat for 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 insulating panels and thermal insulation systems on:

- cementitious render or lime-mortar render;
- concrete;
- concrete blocks;
- approved render boards;
- brickwork.

Also suitable for bonding insulation panels and reinforcing coat 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 boards as a render only system on to steel and timber framed buildings.

## 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.
- 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.

# 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 <b>Mapetherm AR1 GG</b> with 22-24 parts by weight of water
Consistency of mix:	thick paste
Density of mix (g/cm <sup>3</sup> ):	approx 1.55-1.75
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

Modulus of elasticity (N/mm <sup>2</sup> ):	5,500
Flexural strenght after 28 days (N/mm <sup>2</sup> ):	approx. 3.0
In service temperature:	from -30°C to +90°C

### PERFORMANCE CHARACTERISTICS ACCORDING TO EN 998-1

Performance characteristic	Test method	Grey	White
Dry bulk density (kg/m <sup>3</sup> ):	EN 1015-10	1.200	1.273
Range of compressive strength at 28 days:	EN 1015-11	≥ 6 N/mm <sup>2</sup> Category CS IV	≥ 6 N/mm <sup>2</sup> Category CS IV
Adhesion (concrete) (N/mm <sup>2</sup> ):	EN 1015-12	≥ 1 failure mode (FP) = B	≥ 1 failure mode (FP) = B
Capillary water absorbtion:	EN 1015-18	Category W2	Category W2
Water vapour permeability:	EN 1015-19	μ ≤ 15	μ ≤ 15
Thermal conductivity:	EN 1745	0,32 W/mK (tab.mean value; P = 50%)	0,32 W/mK (tab.mean value; P = 50%)
Reaction to fire:	EN 13501-1	Euroclass A1	Euroclass A1

- Do not bond the insulating panels on deteriorated substrates or crumbling render.

## APPLICATION PROCEDURE

### Preparation of the substrate

The substrate must be sound, strong and free of dust, loose parts, grease, oil, adhesive etc. It is recommended to use **Nivoplan** or **Mapewall GPR** to even out variations in masonry or cementitious substrates. Gypsum substrates must be perfectly dry, free of dust and treated with **Primer G** before bonding insulation panels.

### 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 to the back of the panels, in an even layer, using a 10 mm notched trowel when the substrate is flat, or with a minimum coverage of at least 40% using a perimeter band, with additional central dabs, if the substrate is uneven. After applying, press the panels down well to guarantee a secure 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 hrs after fitting the panels, install specified **Mapetherm** fixings, before spreading 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** contains cement that when in contact with sweat or other body fluids causes irritant alkaline reactions and allergic reactions to those predisposed. It can cause damage to eyes.

During use wear protective gloves and goggles and take the usual precautions for handling chemicals. If the product comes in contact with the eyes or skin, wash immediately with plenty of water and seek medical attention.

For further and complete information about the safe use of our product please refer to the latest version of our 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.co.uk](http://www.mapei.co.uk)

## LEGAL NOTICE

**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.co.uk](http://www.mapei.co.uk).**

**ANY ALTERATION TO THE WORDING OR REQUIREMENTS CONTAINED OR DERIVED FROM THIS TDS EXCLUDES THE RESPONSIBILITY OF MAPEI.**

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



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**



*Work on a EWI housing project using Mapetherm AR1 GG*



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