MAPETHERM AR2

Single component cementitious mortar for bonding and smoothing off thermal insulating panels and insulation cladding systems



WHERE TO USE

Bonding all types of heat-insulating panels (foam/ extruded polystyrene, foam polystyrene, mineral fibers, cork, etc.) on walls or directly on render on ceilings, brickwork, or concrete. Smoothing off heat insulation panels with embedded fiberglass reinforcing mesh on internal and external walls (thermal insulation cladding)

Some application examples

Bonding and smoothing heat insulation panels and external cladding systems on:
- cementitious render or lime-mortar render
- concrete
- concrete blocks.

Also suitable for bonding and smoothing systems for:
- insulating radiator alcoves
- insulation below the roof
- insulating loft floors
- 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 facades

TECHNICAL CHARACTERISTICS

Mapetherm AR2 is a grey-coloured powder made up of cement, fine graded sand, synthetic resins and special additives according to a formula developed in MAPEI's own research laboratories. When mixed with water, it becomes a mortar with the following characteristics:
- medium viscosity and, therefore, good workability
- high thixotropic properties; **Mapetherm AR2** may be applied on vertical surfaces without sagging and limiting the risk of insulating panels slipping
- bonds perfectly to all masonry materials normally used in the building industry
- hardens without shrinkage

RECOMMENDATION

- Do not use **Mapetherm AR2** to bond insulating panels on metallic surfaces or substrates subject to large movements (wood, cement-fibre, etc.)
- Do not use if the panels have a smooth surface (good bonding may be impeded) foam polyurethane or mineral fibres with a surface coating of kraft paper, fibreglass gauze, extruded polystyrene with a surface skin, high density pressed foam polystyrene, etc.
- Do not bond insulating panels on deteriorated substrates or poor quality render. In these cases always secure with anchors (nylon mechanical fixings with additional centre nail) for final fixation

APPLICATION PROCEDURE

Preparation of the substrate

The substrate must be compact, sound, and free of dust, loose parts, grease, oil, adhesive, etc. 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 AR2**, must be treated with **Primer G**, **Mapeprim SP,** or **Mapeprim 1K**. It is recommended to use **Nivoplan** or **Planitop** range to even out steep unevenness in cementitious surface levels.

Preparation of the mix

Pour **Mapetherm AR2** while mixing into a container with 20-22% weight of clean water (approximately 5-5.5 liters of water for every 25 kg sack 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.

Application of the mix

Used as adhesive

Apply the **Mapetherm AR2** mix directly on the entire surface of the back face of the panels with a notched trowel, or at various points with a trowel. panels must be bonded on the entire surface. Small panels can be spot bonded or only bonded on the edges of the panel. When laying, follow the instructions supplied by the manufacturer of the panels. After laying, press the panels down well to ensure a good bond to the substrate, and check the flatness with a straightedge.

As a smoothing layer on insulating panels on walls

At least 24 hours after laying the panels, spread the **Mapetherm AR2** paste evenly and insert **Mapenet 150**, an alkali-resistant glass fibre mesh. Glass fibre mesh must be pressed down with a smooth trowel into the fresh layer of mixture, and must overlap by at least 10 cm along the joints. A compact, even surface suitable for the finishing layer will be obtained if the procedure described above is followed. The finishing layer may only be applied once the smoothing layer has hardened and cured.

Cleaning

Tools and containers may be cleaned using water while **Mapetherm AR2** is still fresh.

CONSUMPTION

For bonding panels:
– spot bonding: 2-4 kg/m²;
– bonding of insulating panels with a uniform layer on the back of the panel using a notch trowel: 4-6 kg/m²;
– smoothing layer: 1.4-1.6 kg/m² per mm of thickness (recommended thickness: 4 mm in 2 coats).

PACKAGING

Mapetherm AR2 is available in 25 kg paper bags.

STORAGE

Mapetherm AR2 may be stored for 12 months when contained in its original packaging in a dry place.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Mapetherm AR2 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 the 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.

TECHNICAL DATA (typical values)	
PRODUCT IDENTIFICATION	
Consistency:	powder
Colour:	grey

Apparent volume mass (kg/m³):	1300
Dry solids content (%):	100
APPLICATION DATA (at +23°C - 50% R.H.)	
Mixing Ratio:	100 parts of **Mapetherm AR2** with 20-22 parts in weight of water
Consistency of the mix:	thick paste
Density (mixed):	1.45
Application temperature range:	from +5°C to + 45°C
pH of mix:	13
Pot life:	3 hours
Open time:	20 min.
Adjustment time:	20 min
FINAL PERFORMANCE	
Flexural strength: – after 28 days (N/mm²):	4.3
Compressive strength: – after 28 days (N/mm²):	9
In service temperature range:	from -30 to + 90°C
Adhesion to XPS panels (N/mm²): – in dry conditions: – 2 days in immersion + 2 hours at +23°C and 50% R.H.: – 2 days in immersion + 7 days at +23°C and 50% R.H.:	 0.21 0.16 0.16

IMPORTANT NOTES

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 installers 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 specifications. The installer 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.

LEGAL NOTICE

The contents of this Technical Data Sheet ("TDS") may be copied into other project-related documents, 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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