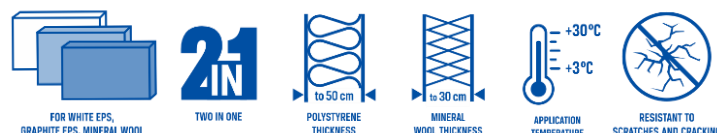




ATLAS GRAWIS DUO WHITE

white adhesive mortar for polystyrene, mineral wool and reinforced layers

- UNIVERSAL – for bonding boards and creating reinforced layers
- on white cement – reduces thermal stresses
- FLEXIBLE – has 3D reinforcement
- resistant to scratches and cracks



Properties

ATLAS GRAWIS DUO WHITE is produced in the form of a dry mix of the highest quality cement binder, aggregates and specially selected modifying agents.

Flexible – has 3D reinforcement – the fibres in the product provide additional dispersed reinforcement, thanks to which the mortar is protected against microcracks and has better mechanical resistance.

On white cement

Reduction of thermal stresses by reducing the temperature difference between the top layer and the thermal insulation layer.

Extended processing time – allows for freedom in connecting individual mesh strips thanks to the extended setting process of white cement.

Invisible repairs and fillings – the product allows for local repairs and fillings of the reinforced layer, minimising the risk of discolouration in areas where the mortar is trowelled.

No salt efflorescence – due to the use of white cement, the reinforced layer remains free of salt efflorescence even after prolonged exposure without priming.

Maximum adhesion after just 48 hours:

- adhesion to polystyrene (EPS TR80) after 48 hours (measured at +20 °C is at least 0.08 MPa,
- adhesion to mineral wool is a minimum of 0.015 MPa (MW TR 15)
- adhesion to concrete is a minimum of 0.25 MPa.

Rapid strength gain – dowelling or priming for rendering can be started after:

- 48 hours, at a temperature of approx. +20 °C and humidity up to 80% (lower temperatures prolong and higher temperatures shorten the drying time).

- NOTE! If daily temperatures fall to between +3 °C to +10 °C and humidity up to 80%, the setting time may be between 72 and 96 hours.

Possibility of using various thermal insulation materials with different hardness and wettability – during application, the adhesive achieves excellent adhesion, does not roll, tear or pull.

It allows two thermal insulation materials to be joined together to meet fire safety requirements.

High vapour permeability – does not restrict the flow of water vapour through the insulated partition, which is particularly important when using mineral wool.

Intended use

In **ETICS systems** – for bonding EPS polystyrene thermal insulation boards (white and graphite) and applying a reinforced layer on them.

Enables the fixing of polystyrene boards up to 50 cm thick.

Enables the fixing of mineral wool boards up to 30 cm thick.

It is recommended for insulation work in **passive and energy-efficient construction**.

It is a **component of thermal insulation systems** – it can be used to insulate newly constructed buildings and buildings undergoing thermal modernisation.

FUNCTION IN INSULATION SYSTEMS	
fastening thermal insulation in thermal insulation systems	+
creating a reinforced layer in thermal insulation systems for all ATLAS thin-layer renders	+

TYPES OF THERMAL INSULATION BOARDS	
EPS boards – white polystyrene	+
EPS boards – graphite polystyrene	+
mineral wool boards with a disordered fibre structure (facade)	+

TYPES OF BUILDINGS	
residential construction	+
public utility buildings, educational buildings, office buildings, healthcare buildings, sports buildings	+
commercial and service construction	+
industrial construction	+
industrial warehouses	+
transport infrastructure construction	+
farm buildings and livestock buildings	+
underground garages	use the ATLAS ROKER G system
buildings taller than 25 m*	+
passive construction	+
energy-efficient construction	+

* Buildings with up to 11 storeys commissioned before 1 April 1995 may be insulated with EPS.

TYPE OF SUBSTRATE	
aerated concrete wall	+
brick or silicate block wall	+
brick or ceramic block wall	+
concrete block wall	+
stone wall	+
walls made of concrete poured on site	+
precast concrete walls	+
cement and cement-lime plasters	+
walls covered with strongly adhering paint coatings (adhesion must be assessed in each case)	+
ceilings on the ceiling side, under heated rooms	use the ATLAS ROKER G system

TYPE OF INSULATION SYSTEM	
traditional system (finished with thin-layer render)	+
renovation system (insulation of existing insulation with a layer of polystyrene thermal insulation)	use the ATLAS RENOTER system
ceramic system (finished with ceramic tiles)	use the ATLAS CERAMIK system

Technical data

Bulk density (dry mix)	approx. 1.40 kg/dm ³
Mixing proportions: water / dry mix	0.19÷0.21 l / 1 kg 4.75÷5.25 l / 25 kg
Min./max. thickness of reinforced layer: - polystyrene: - mineral wool	2 mm/5 mm 4 mm/6 mm
Application temperature (substrate and ambient)	from +3 °C to +30 °C
Curing time*	approx. 5 minutes
Pot life*	approx. 4 hours
Open time*	min. 25 minutes
Water absorption after 24 hours	< 0.5 kg/m ²
Adhesion to concrete after 48 hours	≥ 0.25 MPa
Adhesion to EPS polystyrene foam	≥ 0.08 MPa
Adhesion to mineral wool	≥ 0.015 MPa
Compressive strength according to PN-EN 1015-11:2001+A1:2007	category CS IV (> 20 N/mm ²)
Flexural strength according to PN-EN 1015-11:2001+A1:2007	> 5.5 kN/mm ²
Reaction to fire (in the ATLAS ROKER system with mineral and silicate renders)	NRO
Reaction to fire (in a system with acrylic and silicone renders)	NRO

*) The values given in the table are recommended for application conditions at a temperature of approx. 20 °C and 55% humidity.

Technical requirements

ATLAS GRAWIS DUO WHITE is a component of a set of products for thermal insulation systems:

System name	National Technical Assessment
ATLAS ETICS	ITB-KOT-2020/1616 edition 5
ATLAS ROKER	ITB-KOT-2021/1919 edition 3
ATLAS GRIP	ICiMB- KOT-2022/0180 edition 3

Adhesion of thermal insulation

Preparing the substrate for bonding the board

The substrate should be:

unfrozen and dry,

stable – sufficiently load-bearing, resistant to deformation and seasoned,
even – larger irregularities should be filled with mortar:

- ATLAS ZW 330,
- ATLAS PLASTERING MIX,

cleaned – remove any layers that may weaken the adhesion of the mortar, especially dust, dirt, lime, oils, fats, wax, paint residues,
primed – priming with emulsion:

- ATLAS UNI-GRUNT
- ATLAS UNI-GRUNT ULTRA.

Priming should be carried out in the case of absorbent or unevenly absorbent substrates (e.g. in the case of previous local repairs); weak cement and cement-lime plasters, as well as walls made of aerated concrete, silicate blocks or slag concrete blocks also require priming.

Before starting to adhere the boards, fix and level the skirting board, which forms the bottom finish of the insulation.

Detailed instructions on substrate preparation, depending on its type

Type of substrate	Procedure
"Dull" plaster	must be removed
Paint coatings with low adhesion and other contaminants weakening the adhesion of the mortar to the substrate	remove mechanically, e.g. by hydrodynamic cleaning
Facades with microbial infestation on the surface (fungi, algae, lichens)	clean the surface mechanically, then use ATLAS MYKOS PLUS
Buildings constructed using large panel technology	In addition to assessing the condition of the substrate, check the condition of the panel joints. Remove any joint sealant that may react chemically with the thermal insulation. In buildings constructed using external prefabricated sandwich panels, a technical assessment of the original condition of the textured layer fastenings should be carried out. If necessary, reinforce these joints with additional anchoring before carrying out thermal insulation work. The assessment and technical design in this regard should be carried out by a person with structural engineering qualifications.

Bonding panels

Preparation of adhesive

Pour the material from the bag into a container with a measured amount of water (proportions given in the Technical Data) and mix with a low-speed mixer with a mortar mixer until a uniform consistency is obtained. Leave the mixed adhesive to stand for 5 minutes and mix again. The adhesive prepared in this way should be used within approx. 4 hours.

Bonding mineral wool boards

Apply the adhesive mortar to the underside of the board using the "perimeter and spot" method. To do this, fill the surface of the boards with mortar in the area to be bonded, and then apply a perimeter strip with a minimum width of 3 cm along the edge of the board. Apply 3-6 evenly spaced dots with a diameter of 10-15 cm to the remaining surface. The amount of mortar applied should ensure an effective bonding area of at least 40%. The adhesive mortar should only be applied to the surface of the insulation boards, never to the substrate. It is recommended that the thickness of the mortar under the board after pressing should not exceed 20 mm. On even and smooth substrates, full-surface bonding is acceptable. The surface of the boards should be filled with mortar and then the adhesive mortar should be spread evenly over it using a trowel with 10 x 10 mm teeth.

Insulation boards should be bonded with a staggered arrangement of vertical joints of at least 15 cm. Adhere the boards to the substrate, checking their flatness with a minimum 2 m straight edge. Mechanical fasteners can be installed no earlier than 24 hours after gluing the boards. Use steel pin fasteners in the quantity specified in the technical design, assuming a minimum of 4 pcs/m².

Gluing polystyrene boards

Apply the adhesive mortar to the inner side of the board using the "strip and dot" method. The width of the perimeter ridge, laid along the edge of the board, should be at least 3 cm. Apply 6÷8 evenly spaced patches with a diameter of at least 8 cm should be applied evenly to the remaining surface. The effective bonding area of the thermal insulation boards to the substrate should be at least 40% of the board. The adhesive mortar should only be applied to the surface of the insulation boards, never to the substrate. It is recommended that the thickness of the mortar under the board after pressing should not exceed 10 mm. On even and smooth substrates, it is acceptable to spread the mortar evenly over the entire surface of the board with a notched trowel. The size of the trowel teeth should be no less than 10 x 10 mm.

Insulation boards should be bonded with staggered vertical joints. Immediately after applying the adhesive mortar, the board should be placed on the substrate and then tapped into the desired position with a straight edge. Mechanical fasteners can be used for fixing at the earliest 24 hours after the boards have been adhered. In the case of additional fixing, use fasteners with plastic or steel pins in a quantity consistent with the technical design of the insulation, min. 4 pcs/m².

Reinforced layer

Application of the reinforced layer on mineral wool boards

The reinforced layer can be applied no earlier than 48 hours after gluing the boards. The reinforced layer consists of a fibreglass reinforcement mesh embedded in adhesive mortar. Apply a layer of mortar to the fixed boards and spread it evenly over the surface with a notched trowel. Embed a taut strip of mesh in the mortar. Then apply the remaining 1/3 of the mortar and smooth the surface thoroughly. Any remaining unevenness after the mortar has dried should be sanded down, as it may prevent the render from being applied properly.

To avoid scratches in the corners of the holes, additional mesh strips with dimensions of at least 20 x 35 cm at an angle of 45 degrees. The reinforcements should be located under the appropriate reinforced layer.

Preparation of polystyrene boards for the reinforced layer

Before applying the reinforced layer, the surface of the boards should be free of frost, even, clean, stable and dust-free. Before applying the reinforced layer, the boards should be sanded and dusted.

Applying the reinforced layer to polystyrene boards

The reinforced layer can be applied no earlier than 48 hours after the boards have been adhered. The reinforced layer consists of a fibreglass reinforcement mesh embedded in adhesive mortar.

The reinforced layer is made in one operation by evenly applying mortar with a trowel (e.g. a notched trowel with teeth 8-10 mm in size 8-10 mm), followed by the laying of the reinforcement mesh and embedding it with a trowel, while smoothing it out. It is important that the reinforcement mesh is invisible and completely embedded in the adhesive. The mesh should be laid with an overlap of at least 10 cm.

Any remaining unevenness after the mortar has dried should be sanded down, as it may prevent the render from being applied properly.

In order to avoid scratches in the corners of the holes, additional strips of mesh with dimensions of at least 20 x 35 cm should be adhered at an angle of 45 degrees. 20 x 35 cm at an angle of 45 degrees. The reinforcements should be located under the appropriate reinforced layer.

Finishing work

At a temperature of approx. + 20 °C and humidity up to 80%, priming can be started after:

- 48 hours using ATLAS SILKON ANX primer,
- 72 hours using ATLAS CERPLAST primer.

Lower temperatures may prolong the drying time.

Note: If the colour of render with an HBW value below 10 covers more than 10 per cent of the total façade surface area, it is necessary to use one of the solutions listed in the table:

Use of ATLAS thin-coat render in combination with various types of adhesive mortars, depending on the colour scheme of the façade (HBW)*

ATLAS GEMINI RSX, ATLAS DEKO M**	HBW <10
	ATLAS GRAWIS ULTRA
	HBW >10
	ATLAS GRAWIS ULTRA ATLAS STOPTER K-50 ATLAS STOPTER K-20
Any ATLAS thin-coat render	HBW >15
	ATLAS GRAWIS ULTRA ATLAS STOPTER K-50 ATLAS STOPTER K-20 ATLAS GRAWIS U, ATLAS GRAWIS DUO + double mesh ATLAS GRAWIS DUO WHITE
	HBW >20
	Any ATLAS adhesive for reinforced layer

* HBW – light reflectance coefficient, expressed as a percentage. It determines what percentage of sunlight is reflected from the façade surface. The lower the HBW coefficient, the more radiation is absorbed by the façade surface, increasing the temperature at that surface. Light colours have a high HBW value (100 for white). The darker and more intense the colours, the lower the light reflectance.
**When using dark-coloured mosaic renders on façade surfaces covering more than 10 per cent of the total area, it is recommended that you contact a Technical Adviser directly.

Consumption

The exact unit consumption of the material depends on the parameters of the substrate (including the degree of evenness) and the panel bonding technology used.

Bonding mineral wool boards: approx. 4.5-5.5 kg/m².

Bonding polystyrene boards: from 4.0 to 5.0 kg/m².

Reinforcing layer on mineral wool boards: approx. 5.0-6.0 kg/m².

Reinforced layer on polystyrene boards: from 3.0 to 3.5 kg/m².

Packaging

25 kg paper bags.

Safety information

Safety information is provided on the product packaging and in the Safety Data Sheet, available at www.atlas.com.pl.

Storage and transport

Information on storage and transport is provided on the product packaging and in the Safety Data Sheet, available at www.atlas.com.pl.

The product's storage period (shelf life) is 12 months from the date of manufacture indicated on the packaging.

Important additional information

Do not stick heated graphite polystyrene. Do not allow graphite polystyrene to heat up during installation and during the initial setting of the adhesive. Heating graphite polystyrene at any of the above stages may result in the polystyrene detaching from the adhesive.

During the works, it is necessary to use covers on scaffolding. Do not carry out works during snowfall or rainfall, or in strong winds.

If it is necessary to leave the reinforced layer for a longer period without applying the top layer, it is recommended to use a primer. This protects the surface from adverse weather conditions (moisture, frost, UV radiation) and improves the adhesion of subsequent layers applied at a later stage of the work.

Before resuming finishing works, it is recommended to check the condition of the previously applied primer layer.

If it is necessary to adhere polystyrene boards to weak substrates with a load-bearing capacity that is difficult to determine (e.g. unstable, dusty, difficult to clean), it is recommended to perform an adhesion test. This involves gluing 10x10x10 cm polystyrene cubes in characteristic (significant, representative) places on the façade and checking the bond:

- after 3 days in normal conditions,
- after 5 days when the temperature is below 10 °C and the humidity above 80%.

The strength of the substrate can be considered sufficient if the polystyrene breaks when pulled off by hand. If the block is torn off together with the mortar and the substrate layer, the substrate is not sufficiently load-bearing. Further action in such a case, e.g. determining how to remove the weak layer, should be described in the technical design of the insulation.

Tools should be cleaned with clean water immediately after use. Residues of already set mortar that are difficult to remove should be washed off with ATLAS SZOP.

The information contained in the Technical Data Sheet constitutes basic guidelines for the use of the product and does not exempt from the obligation to perform work in accordance with the rules of good building practice and health and safety regulations. With the publication of this technical data sheet, all previous ones become invalid. Documents accompanying the product are available at www.atlas.com.pl.

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Date of update: 2026-02-17