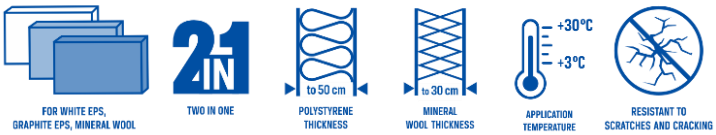
ATLAS GRAWIS DUO

adhesive mortar for polystyrene boards, mineral wool and reinforced layers

- UNIVERSAL – for white and graphite polystyrene and mineral wool
- maximum adhesion after just 24 hours*
- flexible – has 3D reinforcement
- resistant to scratches and cracks



Properties

ATLAS GRAWIS DUO is produced in the form of a dry mix of the highest quality cement binder, aggregates, polymer dispersions and 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.

***Maximum adhesion after just 24 hours** (measured at +20°C):
- adhesion to polystyrene foam (EPS TR80) after 24 hours is a minimum of 0.08 MPa,
- adhesion to mineral wool is at least 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:
- 24 hours, at a temperature of approx. +20 °C and humidity up to 80% (lower temperatures prolong and higher temperatures shorten the drying time). - 48 hours, if the temperature during this time is between +3 °C to +10 °C and humidity up to 80%.

High durability during use – thanks to the high content of redispersible polymer powders, microfibres and special additives and modifiers, the adhesive's durability and resistance to atmospheric and thermal factors have been increased.

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 mineral wool thermal insulation boards up to 30 cm thick,
- for bonding thermal insulation boards made of EPS polystyrene (white and graphite) up to 50 cm thick,
- for applying a reinforced layer on them.

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

FUNCTION IN THE INSULATION SYSTEM	
thermal insulation fastening	+
creating a reinforced layer	+

TYPE OF INSULATION SYSTEM	
traditional system (finished with thin-layer render)	+
garage system (external ceiling insulation)	+

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

TYPES OF BUILDINGS	
residential construction	+
public utility buildings, educational facilities, offices, healthcare facilities, sports facilities	+
commercial and service construction	+
industrial construction	+
industrial warehouses	+
transport infrastructure construction	+
farm buildings and livestock buildings	+
underground garages	+
tall buildings >25 m	+
passive construction	+
energy-efficient construction	+
BUILDINGS WITH SEPARATE FIRE ZONES (fire belts, lintels, fire separation zones, insulation belts under lightning protection systems)	+

TYPE OF SUBSTRATE	
aerated concrete walls	+
brick or silicate block walls	+
brick or ceramic block walls	+
concrete block walls	+
stone walls	+
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	+

Technical Data

Bulk density (dry mix)	approx. 1.25 kg/dm3
Mixing ratio: water / dry mix	approx. 0.21÷0.23 l / 1 kg approx. 5.25÷5.75 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. 2.5 hours
Open time*	min. 15 minutes
Water absorption after 24 hours	< 0.5 kg/m^2
Adhesion to concrete after 24 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 is a component of product sets 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

Thermal insulation boards bonding

Preparing the substrate for panels:
The substrate should be:
unfrozen and dry,
stable – sufficiently load-bearing, resistant to deformation, free of substances that reduce adhesion 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 should be performed in the case of substrates that are too absorbent or unevenly absorbent (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.
Priming should be carried out using one of the following emulsions:
- ATLAS UNI-GRUNT
- ATLAS UNI-GRUNT ULTRA.

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

Detailed instructions for preparing the substrate, depending on its type.

Substrate type	Procedure
"Dull" plasters	must be removed
Paint coatings with low adhesion and other contaminants that weaken the adhesion of the mortar to the substrate	remove mechanically, e.g. by hydrodynamic cleaning
Facades with microbial infestation on the surface (mould 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 fastening should be carried out. If necessary, before thermal insulation works, reinforce this connection with additional anchoring. The assessment and technical design in this regard should be carried out by a person with structural qualifications.

Boards bonding

Preparing the adhesive
Pour the material from the bag into a container with the measured amount of water (proportions specified 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. 2.5 hours.

Bonding mineral wool boards
Apply the adhesive mortar to the underside of the board using the "perimeter-dot" method. To do this, fill the surface of the boards with mortar in the area to be bonded, and then apply a perimeter bead with a minimum width of 3 cm along the edge of the board. Apply 3-6 evenly spaced patches 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 teeth measuring
10 x 10 mm.
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 panel using the "strip and point" method. The width of the perimeter strip, laid along the edge of the panel, should be at least 3 cm. Apply 6-8 patches with a diameter of at least 8 cm evenly over the remaining surface. The effective bonding area of the thermal insulation boards to the substrate should be at least 40% 6÷8 patches with a minimum diameter of 8 cm. 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 adhesive 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 adhered 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 the quantity specified in the technical design of the insulation, min. 4 pcs/m².

Reinforced layer

Adhesive preparation

Pour the material from the bag into a container with the 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. 2.5 hours.

Applying a reinforced layer to mineral wool boards

The reinforced layer can be applied no earlier than 24 hours after the boards have been adhered. The reinforced layer consists of a fibreglass reinforcement mesh embedded in adhesive mortar. Apply a layer of mortar 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 should be adhered at a 45-degree angle. 20 x 35 cm at an angle of 45 degrees. The reinforcements should be located under the proper 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 24 hours after the boards have been adhered. The reinforced layer consists of a fibreglass reinforcement mesh embedded in adhesive mortar.

The reinforced layer is applied in a single operation by evenly applying the mortar with a trowel (e.g. a notched trowel with a tooth size of 8-10 mm), followed by spreading the reinforcing mesh and embedding it with a trowel, while smoothing it out. It is important that the reinforcing 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 works

Finishing work

Priming for rendering can be started after:

- 24 hours, at a temperature of approx. +20 °C and humidity up to 80% (lower temperatures prolong and higher temperatures shorten the drying time).
- 48 hours, if the temperature during this time is between +3 °C to +10 °C and humidity up to 80%.

Consumption

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

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 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 humidity above 80%.
The strength of the substrate can be considered sufficient if the polystyrene foam 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 the user 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.

Date of update: 2025-07-08