





## EXTERNAL THERMAL INSULATION COMPOSITE SYSTEMS

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# EXTERNAL THERMAL INSULATION COMPOSITE SYSTEMS

Proper thermal insulation of buildings belongs to the most important issues during façade works. It influences not only economics of use, but also building aesthetics. Thermal insulation is also ecologically significant, as it reduces emission of CO<sub>2</sub> because of reduction of energy use. The main tasks of all ATLAS thermal insulation systems are:

- **achievement of thermal insulation by building partitions** – as required by current regulations
- **reduction of operation costs** – owing to reduction of heating costs, therefore reduction of emission of harmful compounds
- **improvement of external walls durability** – owing to protection against direct influence of adverse atmospheric factors
- **giving aesthetic appearance** – by using various rendering coats and cladding

ATLAS long time experience in production of external thermal insulation systems allows us to offer products of the highest quality. Our materials enable application of façade finishing coats meeting any likes and expectations of customers. Choice of proper building thermal insulation may depend on a few factors:

- material the building is made of
- building age (old, newly constructed)
- building location and designed use
- building size and height
- designed finishing coat

Comprehensive portfolio of ATLAS thermal insulation systems offers technical solutions based both on polystyrene and mineral wool insulation. They can be finished with various render types and ceramic cladding. We offer both jointless façade and garage systems. Proper choice of thermal insulation, except of improvement of wall thermal insulation, can also improve acoustic insulation, resistance to fire and mechanical damage. Multiplicity of technical solutions given by ATLAS adhesives and renders allows designers to use almost any commonly available and proven thermal insulation material, i.e.:

- **traditional polystyrene**
- **elastified polystyrene**
- **extruded polystyrene (XPS)**
- **mineral wool**

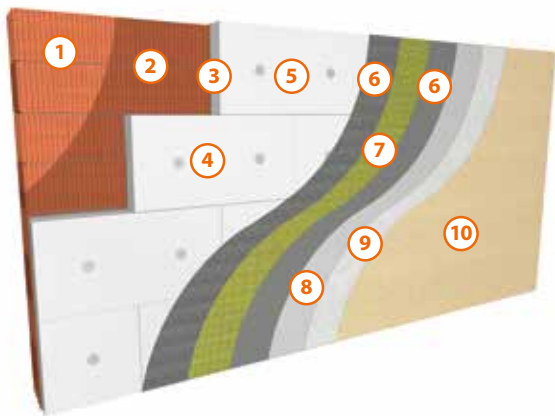
ATLAS external thermal insulation systems have been given European Technical Assessments (ETA) and domestic Technical Approvals (AT), which unequivocally list system components and properties. Moreover, ATLAS belongs to a few manufacturers of thermal insulation systems offering solutions positively assessed by National Standard Authority of Ireland (NSAI) and British Board of Agrément (BBA).

TABLE 9.1

NAME	ATLAS/ AVAL	ATLAS ETICS	ATLAS XPS	ATLAS RENOTER	ATLAS CERAMIK	ATLAS ROKER/ AVAL ROKER	ATLAS ROKER G		
							TYPE I	TYPE II	TYPE III
Reference document	ETA-06/0081 ETA-06/0187	AT-15-9090/2014	ETA-07/0316	AT-15-8477/2010	AT-15-8592/2011	ETA-06/0173 ETA-06/0281	AT-15-7314/2011		
INSULATION LAYER									
EPS	✓	✓		✓	✓				
XPS			✓		✓				
Mineral wool						✓	✓	✓	
Lamella mineral wool						✓	✓	✓	
Beveled lamella mineral wool									✓
(●) MORTAR FOR INSUALTION FIXING   (●●) MORTAR FOR INSULATION FIXING AND BASE COAT EXECUTION									
STOPTER K-10	●	●	●						
STOPTER K-20/ AVAL KT 85	●●	●●	●●	●●	●●				
STOPTER K-50		●●				●●			
HOTER S/ AVAL KT 53	●	●	●						
HOTER U/ AVAL KT 55	●●	●●	●●	●●	●●				
ROKER W-10						●			●
ROKER W-20/ AVAL KT 190						●●	●●	●●	●
BASE COAT – MESH									
Single	✓	✓	✓	✓		✓	✓	✓	
Double	✓ *				✓				
Without mesh									✓
FINISHING COAT – THIN-COAT RENDER, FAÇADE PAINT, CERAMIC TILE									
Mineral render	✓	✓	✓	✓		✓		✓	✓
Acrylic render	✓	✓	✓	✓					
Silicate render	✓	✓	✓	✓		✓		✓	
Silicone render	✓	✓	✓	✓		✓		✓	
Acrylic-silicone render		✓							
Silicone-silicate render		✓				✓			
Façade paint							✓		
Ceramic tiles					✓				
LIMITATION OF USE DUE TO BUILDING HEIGHT									
Height up to:	Check local regulations					No limits	Not applicable		
Use	Insulation of all types of buildings	Insulation of all types of buildings	All types of buildings and places vulnerable to mechanical damage	Renovation of existing insulations	Façades of particular utility requirements	Buildings of special fire and acoustic requirements	Underground garages, passages under buildings		

\* Possible if required by local regulations, e.g. in order to reach higher resistance to impact category.





# EXTERNAL THERMAL INSULATION COMPOSITE SYSTEM ATLAS

1. Ceramic hollow blocks
2. Substrate priming (optional)
3. Adhesive for boards fixing
4. EPS thermal insulation boards
5. Additional fixing – mechanical fixings for polystyrene and XPS
6. Adhesive for base coat application
7. Reinforcing fiberglass mesh
8. Priming mass
9. Thin-coat render
10. Paint

## Use

**Installation of external wall insulation** – can be used both on rendered/plastered façades and rough walls made of bricks and blocks (ceramic, cement-lime, stone, aerated concrete and concrete - monolithic or precast).

**Thermal insulation with the use of standard or elastified polystyrene (EPS)** - thermal insulation thickness even up to 250 mm.

**Installation of external thermal insulation upon buildings up to 25 m high.** Can be installed upon surfaces of horizontal or inclined building elements – provided that they are not directly exposed to weather conditions.

**Recommended for insulation of standard, passive and energy efficient buildings.**

## Properties

**System meets European technical requirements** - listed for thermal insulation systems supplied in the European Union.

**Complete set of materials for installation of thermal insulation** - offers full and proved compatibility of components, which is particularly important for long term system use.

**General - purpose** – offers the widest range of adhesives, renders and paints in one technological system.

**Enables achievement of thermal insulation parameters required for external walls by building regulations** - reduces heat loss and heating costs, offers effective method of thermal bridging elimination.

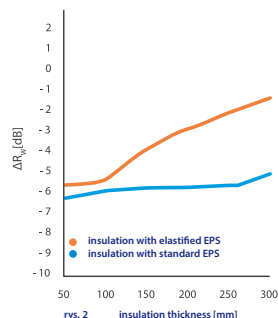
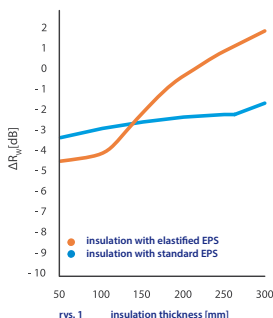
**Improves acoustic insulation of walls** – owing to the use of elastified polystyrene, the weighted acoustic insulation rate ( $\Delta R_w$ ) can be improved by more than three decibels.

**Low water absorptiveness** – below  $0.5 \text{ kg/m}^2$ , therefore system is more resistant to freeze-thaw cycles.

**High system impact resistance** - provides durability and resistance to damage during system use.

**Improves durability of external walls** - protects them from direct exposure to weather conditions.

**Fire retardant system** - relates to thermal insulation system with polystyrene boards (EPS) up to 250 mm thick.



## General system characteristics

ATLAS system is an external thermal insulation composite system (ETICS). Thermal insulation technology consists in application of polystyrene (EPS) boards upon the outer side of wall, installation of base coat with reinforcing fiberglass mesh and further application of finishing coat made of thin-coat render.

## System components

According to current regulations thermal insulation system is considered in its entirety as one construction product, therefore it must be applied with layers arrangement and with materials listed in the technical approval. It is unacceptable to use, so-called compilations or to use products from other systems or manufacturers, which are not accepted by the technical approval.

According to the European Technical Assessment, products listed in the table below can be used.

<p><b>Adhesives for thermal insulation fixing – basic fixing</b></p> <p>ATLAS STOPTER K-10 adhesive mortar  ATLAS STOPTER K-20 adhesive mortar  ATLAS HOTER S adhesive mortar  ATLAS HOTER U adhesive mortar</p>
<p><b>Insulation material</b></p> <p>Polystyrene boards (EPS) described by designation code constituted by combination of the following symbols: T2 (thickness); L1 or L2 (length); W2 (width); S1 or S2 (rectangularity); DS(N)2; DS(70,-)1 or DS(70,-)2, BS(75), TR80 (elastified polystyrene) or TR100 (standard polystyrene).</p>
<p><b>Mechanical fixings – additional fixing</b></p> <p>Authorized mechanical fixings, holding the European Technical Assessment (ETA) issued in accordance with ETAG 014.  Mechanical fixing is not obligatory for buildings up to 12 m and polystyrene thickness up to 15 cm, nevertheless always follow local technical regulations in this regard.</p>
<p><b>Base coat</b></p> <p>ATLAS STOPTER K-20 or ATLAS HOTER U adhesive mortar  with fiberglass mesh: SSA-1363-SM 05, ATLAS 150 or ATLAS 165.</p>

**Finishing coat**

ATLAS CERMIT mineral render + ATLAS CERPLAST priming mass  
 ATLAS ACRYLIC RENDER + ATLAS CERPLAST priming mass  
 ATLAS ACRYLIC-SILICONE RENDER + ATLAS CERPLAST priming mass  
 ATLAS SILICONE RENDER + ATLAS SILKON ANX priming mass  
 ATLAS SILICONE-SILICATE RENDER + ATLAS SILKON ANX priming mass  
 ATLAS CERMIT acrylic render + ATLAS CERPLAST priming mass  
 ATLAS SILKAT thin-coat render + ATLAS SILKAT ASX priming mass  
 ATLAS SILKON thin-coat render + ATLAS SILKON ANX priming mass  
 ATLAS SALTA E acrylic façade paint  
 ATLAS SALTA S silicate façade paint + ARKOL SX primer  
 ATLAS SALTA N silicone façade paint + ARKOL NX primer  
 ATLAS SALTA façade paint  
 ATLAS ARKOL E façade paint  
 ATLAS ARKOL S façade paint + ARKOL SX primer  
 ATLAS FASTEL NOVA façade paint

**Technical requirements**

ATLAS System has been given:

- the European Technical Assessment No. ETA-06/0081. Declaration of Performance No. 001/CPR. EC Certificate of Conformity No. 1488-CPD-0021.
- NSAI Certificate No. 10/0347 (for Ireland).
- BBA Certificate No. 13/5018 (for the UK).

**Requirements on thermal insulation installation****Conditions during installation**

Carry out installation in dry weather, at substrate and ambient temperature not lower than +5°C and not higher than +30°C. The only exception is ATLAS STOPTER K-20 adhesive mortar, which can also be used at 0°C, assuming that, after 8 hours since application completion, temperature does not drop below -5°C. On time of thermal insulation installation, façade should be protected and secured against precipitation, strong wind and direct sunlight - it is recommended to use fine mesh scaffolding covers. Insulation installation should be carried out in dry conditions (no precipitation, relative humidity below 80%).

**Substrate preparation****General provisions**

Before work commencement, evaluate the substrate technical condition and, on that basis, decide on scope and method of surface preparation. For the time of installation, remove any elements hindering tight bonding of thermal insulation boards and finishing coat application. An additional layer of insulation will increase the wall thickness, therefore the reach of flashings, downspouts anchors, etc. will have to be extended. Protect windows and doors against soiling with a plastic film.

**Requirements on the substrate**

The substrate should be sound, stable, even, clean and dry. Absorptive substrates should be primed with ATLAS UNI-GRUNT, smooth and non-absorptive (concrete) with ATLAS CERPLAST priming mass. Substrate should be even to the extent enabling easy execution of a plane formed by insulation boards installed upon walls. Clean the surface from any layers which would impair mortar bonding, dirt, loose and dusty elements. **Note!** Particular attention should be paid to proper assessment and preparation of substrate with problematic bearing capacity, e.g. finished with glass-mosaics, glazed brick, covered with paint coatings, etc. If in doubt, conduct bonding test (ultimate tensile strength should be above 0.08 MPa) or apply 8-10 polystyrene cubes (10x10 cm large) at various façade points and check the bond after 3 days. The use of thermal insulation system on buildings with reinforced concrete sandwich walls should always be preceded by thorough assessment of their technical condition. This applies to technical condition of metal fittings (hooks, pins, rods) as well as their connection and interaction with wall elements.

**Starter tracks installation**

Application of thermal insulation should commence with installation of starter tracks. They support the first row of thermal insulation boards, help to keep uniform level of successive layers, strengthen bottom edge of system and bottom edge drip prevents water bleeding. Tracks should be installed horizontally upon the building plinth, not lower than 30 cm above the ground level, which would protect against rising damp action and soiling - mud particles brought by raindrops reflected from the ground. Instead of starter tracks, it is permitted to use two layers of fiberglass mesh or strips of armour mesh.

**Installation of thermal insulation****Boarding**

In case of even substrates, adhesive mortar can be applied with a notched trowel (notch size 12 mm) – directly upon boards surface, not upon the substrate. In case of more irregular surfaces adhesive should be spread upon board surface with the "strip - point method". It consists in application of continuous circumferential bead (min. 3 cm wide) along the board edges and 6-8 patches (of diameter 8-12 cm) evenly distributed upon the board surface. The mortar bead is placed at a distance from the board edge, so when board is pressed to the wall, mortar is not squeezed out the board contour and side edges. Adhesive mortar applied upon board should coat min. 40% of its surface (60% after pressing the board to substrate). Thermal insulation application should commence from the building

corners. The first row of boards is fixed on starter tracks, the subsequent rows so positioned, that board vertical edges are staggered and overlapped at the building corners. Boards edges must not be placed in line with reveals edges. Place the boards with applied adhesive upon substrate, move tight to already fixed boards and press towards. Check the surface level. If adhesive is squeezed out the board contour, it should be removed. Any gaps between adjoining boards should be filled with cut stripes of polystyrene or low expansion polyurethane foam.

**Insulation boards sanding**

Surface of insulating boards applied upon substrate should be even, so when the mortar sets (after approx. 24 h), the boards can be sanded with sanding boards or floats covered with coarse sanding paper. This action eliminates any slips of board edges. In case of polystyrene boards installed approx. 3 months earlier or more, sanding and removal of any surface tarnish is mandatory.

**Additional elements installation**

In order to improve the system resistance against mechanical damage, to allow free drainage of water and execution of expansion joints - finishing profiles should be installed upon fixed thermal insulation layer. Profiles are installed at every specific location of the façade (i.e. corners, reveals, sills, etc.). They can also be installed simultaneously to the base coat mesh embedding.

**Strengthening the reveal corners**

At any corners of window and door reveals, additional reinforcing mesh strips (rectangles 20 x 30 cm) embedded in the adhesive mortar ATLAS STOPTER K-20 or ATLAS HOTER U should be installed. Strips should be applied diagonally, at a 45° angle in relation to the line set by reveal edges.

**Mechanical fixing**

Additional fixing with anchors with plastic or steel pins can commence after approx. 24 hours since boards application. Detailed information on the number of fixings, their distribution, length and depth of anchoring should be specified in the thermal insulation technical design. Follow the guidelines of fixings manufacturers.

**Base coat (reinforced layer) application**

Base coat can be applied when adhesive mortar used for boards fixing sets appropriately (after 3 days on average). Apply mortar upon fixed insulation, spread with a notched trowel (notch size 10 - 12 mm). Adhesive should be spread with vertical strips of width slightly greater than the fiberglass mesh width. Then, starting from the top, subsequent strips of mesh are embedded in the adhesive coat. Consecutive strips should be applied with min. 10 cm wide vertical and horizontal overlaps (15 cm wide at the building corners). The mesh overlaps should not correspond with the joints between insulation boards. The mesh should be thoroughly embedded in the adhesive. In order to embed the mesh evenly, the adhesive should be squeezed with slightly inclined trowel led from the top, in direction from the center to the mesh strip side. Correctly embedded mesh should be completely coated with adhesive and should not contact polystyrene boards directly.

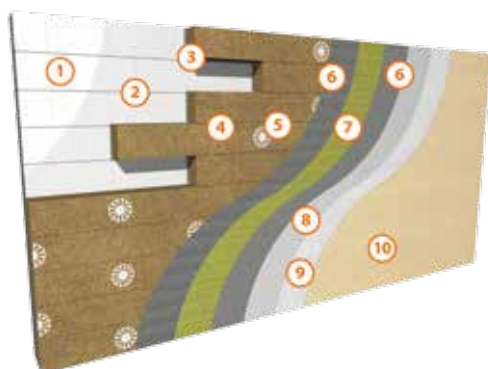
**Finishing coat application**

The outer system layer can be made of thin-coat render or a thin-coat render coated with façade paint. The execution of finishing coat can commence after approx. 3 days since the base coat installation. One can use thin - coat renders: ATLAS CERMIT mineral, ATLAS ACRYLIC RENDER, ATLAS ACRYLIC-SILICONE RENDER, ATLAS SILICONE RENDER, ATLAS SILICONE-SILICATE RENDER, ATLAS CERMIT acrylic, ATLAS SILKAT or ATLAS SILKON. Rendering coats can be additionally painted with façade paints ATLAS SALTA E, ATLAS SALTA S, ATLAS SALTA N, ATLAS SALTA or ATLAS ARKOL E, ATLAS ARKOL S and ATLAS FASTEL NOVA. Perform application in accordance to the technology described in technical data sheets of these individual products.

*The above information constitutes basic guidelines for the application of the product and does not release the user from the obligation of carrying out works according to engineering principles and OHS regulations.*

*At the time of publication of this product data sheet all previous ones become void.*  
*Date of update: 2013-07-01*





## EXTERNAL THERMAL INSULATION SYSTEM ATLAS ROKER

1. Silicate blocks
2. Substrate priming (optional)
3. Adhesive for boards fixing
4. Mineral wool thermal insulation boards (lamella or façade)
5. Additional fixing – mechanical fixings for mineral wool
6. Adhesive for base coat application
7. Reinforcing fiberglass mesh
8. Priming mass
9. Thin-coat render
10. Paint

### Use

**Installation of external wall insulation** – can be used both on rendered/plastered façades and rough walls made of bricks and blocks (ceramic, cement-lime, stone, aerated concrete and concrete - monolithic or precast).

**Thermal insulation with the use of mineral wool** – both façade boards (thickness 50-250 mm) and lamella boards (thickness 20-250 mm).

**Installation of external thermal insulation regardless the building height** – particularly advised for high buildings (above 25 m).

**Recommended for insulation of standard, passive and energy efficient buildings** – due to non-flammability, it is recommended for public access buildings, schools, hospitals, etc.

### Properties

**System meets European technical requirements** – listed for thermal insulation systems supplied in the European Union.

**Improves building fire safety** – protects construction elements against fire and improves safety of users. System is non-flammable (with mineral renders) and fire retardant.

**Very high water vapour permeability** – does not restrict water vapour transfer through the insulated partition, allows free drying of wall technological moisture (diffusion resistance coefficient  $S_d = 0.12$  m for system with mineral render finishing coat).

**Enables achievement of thermal insulation parameters required for external walls by building regulations** – reduces heat loss and heating costs, offers effective method of thermal bridging elimination.

**Impact resistance** – classified in category I and category II depending on rendering coat type.

**Safety of use** – system has been tested against wind load resistance, which is particularly important in case of high buildings or those located in the mountains or by the sea.

**Allows for installation of thermal insulation on surfaces of irregular shapes** – with the use of lamella boards.

**Complete set of materials for installation of thermal insulation** – offers full and proved compatibility of components, which is particularly important for long term system use.

**Improves durability of external walls** – protects them from direct exposure to weather condition.

### General system characteristics

ATLAS ROKER system is an external thermal insulation composite system (ETICS). Thermal insulation technology consists in application of mineral wool boards upon the outer side of wall, installation of base coat with reinforcing fiberglass mesh and further application of finishing coat made of thin-coat render.

### System components

According to current regulations thermal insulation system is considered in its entirety as one construction product, therefore it must be applied with layers arrangement and with materials listed in the technical approval. It is unacceptable to use, so-called compilations or to use products from other systems or manufacturers, which are not accepted by the technical approval.

According to the European Technical Assessment, the following products can be used:

<b>Adhesives for thermal insulation fixing – basic fixing</b> ATLAS ROKER W-20 adhesive mortar
<b>Insulation material</b> Mineral wool panels (MW) with designation codes: Standard wool: T4 or T5 (thickness), DS(TH), WS, WL(P), TR10 or TR15, CS(10)40 or CS(10,Y)50 Lamella wool: T5 (thickness), DS(TH), WS, WL(P), TR80 or TR100, CS(10)30 or CS(10)40
<b>Mechanical fixings – additional fixing</b> Authorized mechanical fixings, holding the European Technical Assessment (ETA) issued in accordance with ETAG 014. Examples: WKRE-T-MET: LMX 8, LTX 8, LMX 10, LTX 10; EJOT: ejotherm STR U, SDK-U, NT U, NK U, SDM-T plus U; Fischer: TERMOZ 8N, 8NZ, PN8; KOELNER: TFIX-8M, TFIX-8S, TFIX-8ST, KI-10N; MKaM-Li3A 10, MKaM-Li3A 10 Mt; BRAVOLL PTH-S 60/8-La, BRAVOLL PTH-SL 60/8-La; Hilti SD-FV
<b>Base coat</b> ATLAS ROKER W-20 adhesive mortar with fiberglass mesh: SSA-1363-SM 05, ATLAS 150 or ATLAS 165.
<b>Finishing coat</b> ATLAS CERMIT mineral render + ATLAS CERPLAST priming mass ATLAS SILICONE RENDER + ATLAS SILKON ANX priming mass ATLAS SILICONE-SILICATE RENDER + ATLAS SILKON ANX priming mass ATLAS SILKAT thin-coat render + ATLAS SILKAT ASX priming mass ATLAS SILKON thin-coat render + ATLAS SILKON ANX priming mass ATLAS SALTA S silicate façade paint + ARKOL SX primer ATLAS SALTA N silicone façade paint + ARKOL NX primer ATLAS SALTA façade paint ATLAS ARKOL S façade paint + ARKOL SX primer ATLAS FASTEL NOVA façade paint

## Technical requirements

ATLAS ROKER System has been given:

- the European Technical Assessment No. ETA-06/0173. Declaration of Performance No. E002/CPR. EC Certificate of Conformity No. 1488-CPD-0036.
- NSAI Certificate No. 10/0347 (for Ireland).
- BBA Certificate No. 13/5018 (for the UK).

## Requirements on thermal insulation installation

### Conditions during installation

Carry out installation in dry weather, at substrate and ambient temperature not lower than +5°C and not higher than +30°C. On time of thermal insulation installation, façade should be protected and secured against precipitation, strong wind and direct sunlight - it is recommended to use fine mesh scaffolding covers. Insulation installation should be carried out in dry conditions (no precipitation, relative humidity below 80%).

## Substrate preparation

### General provisions

Before work commencement, evaluate the substrate technical condition and, on that basis, decide on scope and method of surface preparation. For the time of installation, remove any elements hindering tight bonding of thermal insulation boards and finishing coat application. An additional layer of insulation will increase the wall thickness, therefore the reach of flashings, downspouts anchors, etc. will have to be extended. Protect windows and doors against soiling with a plastic film.

### Requirements on the substrate

The substrate should be sound, stable, even, clean and dry. Absorptive substrates should be primed with ATLAS UNI-GRUNT, smooth and non-absorptive (concrete) with ATLAS CERPLAST priming mass. Substrate should be even to the extent enabling easy execution of a plane formed by insulation boards installed upon walls. Clean the surface from any layers which would impair mortar bonding, dirt, loose and dusty elements. **Note!** Particular attention should be paid to proper assessment and preparation of substrate with problematic bearing capacity, e.g. finished with glass-mosaics, glazed brick, covered with paint coatings, etc. If in doubt, conduct bonding test (ultimate tensile strength should be above 0.08 MPa) or apply 8-10 mineral wool cubes (10x10 cm large) at various façade points and check the bond after 3 days. The use of thermal insulation system on buildings with reinforced concrete sandwich walls should always be preceded by thorough assessment of their technical condition. This applies to technical condition of metal fittings (hooks, pins, rods) as well as their connection and interaction with wall elements.

### Starter tracks installation

Application of thermal insulation should commence with installation of starter tracks. They support the first row of thermal insulation boards, help to keep uniform level of successive layers, strengthen bottom edge of system and bottom edge drip prevents water bleeding. Tracks should be installed horizontally upon the building plinth, not lower than 30 cm above the ground level, which would protect against rising damp action and soiling - mud particles brought by raindrops reflected from the ground. Tracks are supplied with various width adjusted to insulation thickness, can be made of aluminum or PVC. Instead of starter tracks, it is permitted to use two layers of fiberglass mesh or strips of armour mesh.

## Installation of thermal insulation

### Boarding

Adhesive mortar can be applied upon boards with two methods: partial coating with the "strip - point method" or full coating (lamella panels or façade wool panels, but only on respectively even substrates). In both cases, the board surface should be floated with thin coat of adhesive mortar, pressed well into the wool structure by stripping with steel trowel edge. This action pre-moistens wool fibers and improves bonding. Then, in case of partial coating, apply main coat of adhesive in the form of continuous circumferential bead (min. 3 cm wide) along the board edges and 6-8 patches (of diameter 8-12 cm) evenly distributed upon the board surface. Adhesive mortar applied upon board should coat min. 40% of its surface. In case of full coating, the adhesive is applied upon whole board surface with a smooth float and profiled with notched trowel then (notch size 8 - 12 mm). When adhesive is applied upon façade or lamella boards backside, they should be placed upon substrate, lightly moved and pressed. The first row of boards is fixed on starter tracks, the subsequent rows so positioned, that boards vertical edges are staggered and overlapped. Do not leave gaps between adjacent boards or adhesive residues in joints. Check the surface level on regular basis. Press and correct position of boards with wooden floats with rounded edges only.

## Additional elements installation

In order to improve the system resistance against mechanical damage, to allow free drainage of water and execution of expansion joints - finishing profiles should be installed upon fixed thermal insulation layer. Profiles are installed at every specific locations of the façade (i.e. corners, reveals, sills, etc.). They can also be installed simultaneously to the base coat mesh embedding.

## Strengthening the reveal corners

At any corners of window and door reveals, additional reinforcing mesh strips (rectangles 20 x 35 cm) embedded in the adhesive mortar ATLAS ROKER W-20 should be installed. Strips should be applied diagonally, at a 45° angle in relation to the line set by reveal edges.

## Mechanical fixing

Additional fixing with anchors can commence after approx. 24 hours since boards application. Use plastic fixings with steel pin. Detailed information on the number of fixings, their distribution, length and depth of anchoring should be specified in the thermal insulation technical design. Follow the guidelines of fixings and mineral wool manufacturers. It is recommended to use 4-6 fixings per 1 m<sup>2</sup> (buildings up to 20 m high) and 6-10 (buildings higher than 20 m). The number of fixings should be higher at wall corners and wall edge zones 1.5 m wide.

## Base coat (reinforced layer) application

Base coat can be applied after min. 3 days since boards application. Apply mortar upon fixed insulation, spread with a notched trowel (notch size 10 - 12 mm). Adhesive should be spread with vertical strips of width slightly greater than the fiberglass mesh width. Then, starting from the top, subsequent strips of mesh are embedded in the adhesive coat. Consecutive strips should be applied with min. 10 cm wide vertical and horizontal overlaps (15 cm wide at building corners). The mesh overlaps should not correspond with the joints between insulation boards. The mesh should be thoroughly embedded in the adhesive. In order to embed the mesh evenly, the adhesive should be squeezed with slightly inclined trowel led from the top, in direction from the center to the mesh strip side. Correctly embedded mesh should be completely coated with adhesive and should not contact mineral wool boards directly.

## Finishing coat application

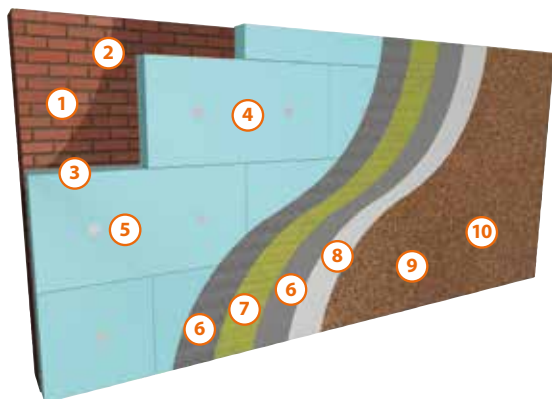
The outer system layer can be made of thin-coat render or a thin-coat render coated with façade paint. The execution of finishing coat can commence after approx. 3 days since the base coat installation. One can use thin - coat renders: ATLAS CERMIT mineral, ATLAS SILICONE RENDER, ATLAS SILICONE-SILICATE RENDER, ATLAS SILKAT or ATLAS SILKON. Rendering coats can be additionally painted with façade paints ATLAS SALTA S, ATLAS SALTA N, ATLAS SALTA or ATLAS ARKOL S and ATLAS FASTEL NOVA. Perform application in accordance to the technology described in technical data sheets of these individual products.

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*At the time of publication of this product data sheet all previous ones become void.*

*Date of update: 2013-07-01*





## EXTERNAL THERMAL INSULATION SYSTEM ATLAS XPS

1. Ceramic bricks
2. Substrate priming (optional)
3. Adhesive for boards fixing
4. XPS thermal insulation boards
5. Mechanical fixing - fixings for polystyrene and XPS
6. Adhesive for base coat application
7. Reinforcing fiberglass mesh
8. Priming mass
9. Thin-coat render
10. Paint

### Use

**Installation of external wall insulation** – can be used both on rendered/plastered façades and rough walls made of bricks and blocks (ceramic, cement-lime, stone, aerated concrete and concrete - monolithic or precast).

**Thermal insulation with the use of extruded polystyrene (XPS)** - thermal insulation thickness from 20 up to 200 mm.

**Recommended upon plinths, foundation and cellar walls** - due to nature and type of insulation material, the system can also be used on gable walls, attics, at building entrances.

**Can be installed upon surfaces of horizontal or inclined building elements** – provided that they are not directly exposed to weather conditions.

**Recommended for insulation of standard, passive and energy efficient buildings.**

### Properties

**System meets European technical requirements** - listed for thermal insulation systems supplied in the European Union.

**Complete set of materials for installation of thermal insulation** - offers full and proved compatibility of components, which is particularly important for long term system use.

**Compatible with EPS-based external thermal insulation system ATLAS** - for thermal insulation of zones exposed to moisture and mechanical damage the XPS insulation is used, upon other wall zones - EPS boards.

**High system durability** - due to low water absorptiveness of the finishing coat (max. 0.5 kg/m<sup>2</sup> after 24 hours), combined with high resistance to water action of XPS boards.

**Impact resistance** - system classified as Category III.

**Enables achievement of thermal insulation parameters required for external walls by building regulations** - reduces heat loss and heating costs, offers effective method of thermal bridging elimination.

**Improves durability of external walls** - protects them from direct exposure to weather conditions.

**Fire retardant system** - relates to thermal insulation system with extruded polystyrene boards (XPS) up to 200 mm thick.

### General system characteristics

ATLAS XPS system is an external thermal insulation composite system (ETICS). Thermal insulation technology consists in application of extruded polystyrene (XPS) boards upon the outer side of wall, installation of base coat with reinforcing fiberglass mesh and further application of finishing coat made of thin-coat render.

#### System components

According to current regulations thermal insulation system is considered in its entirety as one construction product, therefore it must be applied with layers arrangement and with materials listed in the technical approval. It is unacceptable to use, so-called compilations or to use products from other systems or manufacturers, which are not accepted by the technical approval.

According to the European Technical Approval, products listed in the table below can be used.

<b>Adhesives for thermal insulation fixing – basic fixing</b> ATLAS STOPTER K-10 adhesive mortar ATLAS STOPTER K-20 adhesive mortar ATLAS HOTER S adhesive mortar ATLAS HOTER U adhesive mortar
<b>Insulation material</b> XPS boards with designation codes: T2-CS(10/Y)200-DS(TH)-TR100-WL(T)1,5 T1-CS(10/Y)250-DS(TH)-TR100-WL(T)1,5
<b>Mechanical fixings – additional fixing</b> Authorized mechanical fixings, holding the European Technical Assessment (ETA) issued in accordance with ETAG 014. Examples: WKRE-MET: ŁIT, ŁIM, ŁFM8, ŁFN8, ŁFM10, ŁFN10; EJOT: ejotherm ST U, STR U, SDM-T plus U, NT U; Fischer: TERMOZ 8N, 8U; KOELNER: K18M; Hilti: SD-FV, SX-FV.
<b>Base coat</b> ATLAS STOPTER K-20 or ATLAS HOTER U adhesive mortar with fiberglass mesh SSA-1363-SM 05.
<b>Finishing coat</b> ATLAS CERMIT mineral render + ATLAS CERPLAST priming mass ATLAS CERMIT acrylic render + ATLAS CERPLAST priming mass ATLAS SILKAT thin-coat render + ATLAS SILKAT ASX priming mass ATLAS SILKON thin-coat render + ATLAS SILKON ANX priming mass ATLAS ARKOL E façade paint ATLAS ARKOL S façade paint + ARKOL SX primer ATLAS FASTEL NOVA façade paint

## Technical requirements

ATLAS XPS System has been given:

- the European Technical Approval No. ETA-07/0316. Declaration of Performance No. 003/CPR. EC Certificate of Conformity No. 1488-CPD-0075.
- NSAI Certificate No. 10/0347 (for Ireland).

## Requirements on thermal insulation installation

Carry out installation in dry weather, at substrate and ambient temperature not lower than +5°C and not higher than +25°C. On time of thermal insulation installation, façade should be protected and secured against precipitation, strong wind and direct sunlight - it is recommended to use fine mesh scaffolding covers. Insulation installation should be carried out in dry conditions (no precipitation, relative humidity below 80%).

## Substrate preparation

### General provisions

Before work commencement, evaluate the substrate technical condition and, on that basis, decide on scope and method of surface preparation. For the time of installation, remove any elements hindering tight bonding of thermal insulation boards and finishing coat application. An additional layer of insulation will increase the wall thickness, therefore the reach of flashings, downspouts anchors, etc. will have to be extended. Protect windows and doors against soiling with a plastic film.

### Requirements on the substrate

The substrate should be sound, stable, even, clean and dry. Absorptive substrates should be primed with ATLAS UNI-GRUNT, smooth and non-absorptive (concrete) with ATLAS CERPLAST priming mass. Substrate should be even to the extent enabling easy execution of a plane formed by insulation boards installed upon walls. Clean the surface from any layers which would impair mortar bonding, dirt, loose and dusty elements. **Note!** Particular attention should be paid to proper assessment and preparation of substrate with problematic bearing capacity, e.g. finished with glass-mosaics, glazed brick, covered with paint coatings, etc. If in doubt, conduct bonding test (ultimate tensile strength should be above 0.08 MPa) or apply 8-10 polystyrene cubes (10x10 cm large) at various façade points and check the bond after 3 days. The use of thermal insulation system on buildings with reinforced concrete sandwich walls should always be preceded by thorough assessment of their technical condition. This applies to technical condition of metal fittings (hooks, pins, rods) as well as their connection and interaction with wall elements.

### Starter tracks installation

Application of thermal insulation should commence with installation of starter tracks. They support the first row of thermal insulation boards, help to keep uniform level of successive layers, strengthen bottom edge of system and bottom edge drip prevents water bleeding. Tracks should be installed horizontally upon the building plinth, not lower than 30 cm above the ground level, which would protect against rising damp action and soiling - mud particles brought by raindrops reflected from the ground. Instead of starter tracks, it is permitted to use two layers of fiberglass mesh or strips of armour mesh.

## Installation of thermal insulation

### Boarding

In case of even substrates, adhesive mortar can be applied with a notched trowel (notch size 12 mm) - directly upon boards surface, not upon the substrate. In case of more irregular surfaces adhesive should be spread upon board surface with the "strip - point method". It consists in application of continuous circumferential bead (min. 3 cm wide) along the board edges and 6-8 patches (of diameter 8-12 cm) evenly distributed upon the board surface. The mortar bead is placed at a distance from the board edge, so when board is pressed to the wall, mortar is not squeezed out the board contour and side edges. Adhesive mortar applied upon board should coat min. 40% of its surface (60% after pressing the board to substrate). Thermal insulation application should commence from the building corners. The first row of boards is fixed on starter tracks, the subsequent rows so positioned, that vertical board edges are staggered and overlapped at the building corners. Boards edges must not be placed in line with reveals edges. Place the boards with applied adhesive upon substrate, move tight to already fixed boards and press towards. Check the surface level. If adhesive is squeezed out the board contour, it should be removed. Any gaps between adjoining boards should be filled with cut stripes of polystyrene or low expansion polyurethane foam.

### Insulation boards sanding

Surface of insulating boards applied upon substrate should be even, so when the mortar sets (after approx. 24 h), the boards can be sanded with sanding boards or floats covered with coarse sanding paper. This action eliminates any slips of board edges.

## Additional elements installation

In order to improve the system resistance against mechanical damage, to allow free drainage of water and execution of expansion joints - finishing profiles should be installed upon fixed thermal insulation layer. Profiles are installed at every specific location of the façade (i.e. corners, reveals, sills, etc.). They can also be installed simultaneously to the base coat mesh embedding.

## Strengthening the reveal corners

At any corners of window and door reveals, additional reinforcing mesh strips (rectangles 20 x 30 cm) embedded in the adhesive mortar ATLAS STOPPER K-20 or ATLAS HOTER U should be installed. Strips should be applied diagonally, at a 45° angle in relation to the line set by reveal edges.

## Mechanical fixing

Additional fixing with anchors with plastic or steel pins can commence after approx. 24 hours since boards application. Detailed information on the number of fixings, their distribution, length and depth of anchoring should be specified in the thermal insulation technical design. Follow the guidelines of fixings manufacturers.

## Base coat (reinforced layer) application

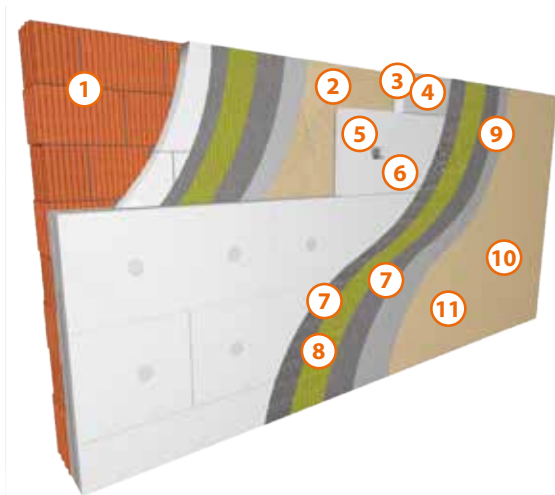
Base coat can be applied when adhesive mortar used for boards fixing sets appropriately (after 3 days on average). Apply mortar upon fixed insulation, spread with a notched trowel (notch size 10 - 12 mm). Adhesive should be spread with vertical strips of width slightly greater than the fiberglass mesh width. Then, starting from the top, subsequent strips of mesh are embedded in the adhesive coat. Consecutive strips should be applied with min. 10 cm wide vertical and horizontal overlaps (15 cm wide at the building corners). The mesh overlaps should not correspond with the joints between insulation boards. The mesh should be thoroughly embedded in the adhesive. In order to embed the mesh evenly, the adhesive should be squeezed with slightly inclined trowel led from the top, in direction from the center to the mesh strip side. Correctly embedded mesh should be completely coated with adhesive and should not contact polystyrene boards directly.

### Finishing coat application

The outer system layer can be made of thin-coat render or a thin-coat render coated with façade paint. The execution of finishing coat can commence after approx. 3 days since the base coat installation. One can use thin - coat renders: mineral ATLAS CERMIT, acrylic (e.g. ATLAS CERMIT), silicate (e.g. ATLAS SILKAT) or silicone (e.g. ATLAS SILKON). Rendering coats can be additionally painted with façade paints: acrylic (e.g. ATLAS ARKOL E), silicate (e.g. ATLAS ARKOL S) and silicone (e.g. ATLAS FASTEL NOVA). Perform application in accordance to the technology described in technical data sheets of these individual products.

*The above information constitutes basic guidelines for the application of the product and does not release the user from the obligation of carrying out works according to engineering principles and OHS regulations.*

*At the time of publication of this product data sheet all previous ones become void.  
Date of update: 2013-07-01*



## EXTERNAL THERMAL INSULATION SYSTEM ATLAS RENOTER

1. Wall — substrate for mechanical fixings
2. Substrate for fixing with adhesive mortar
3. Adhesive for polystyrene boards fixing
4. New polystyrene thermal insulation board
5. Main mechanical fixing — anchor for polystyrene fixing
6. Plug
7. Adhesive for base coat application
8. Reinforcing mesh
9. Priming mass for thin-coat render
10. Thin-coat render
11. Paint

### Use

**Installation of external wall insulation upon existing thermal insulation** – when existing external wall insulation is in bad condition and/or does not meet current requirements on thermal resistance.

**Thermal insulation with the use of polystyrene** - enables renovation of thermal insulation with additional layer of thermal insulation applied (in case of existing thermal insulation systems with polystyrene).

**Recommended for insulation of standard, passive and energy efficient buildings.**

### Properties

**Complete set of materials for installation of thermal insulation** - for repairs of main building insulation, offers full and proved compatibility of components, which is particularly important for long term system use.

**Enables improvement and achievement of thermal insulation required by building regulations** – by adding additional thermal insulation layer, system reduces heat loss and heating costs.

**Enables effective repairs of thermal insulation systems** - damaged because of design and/or installation errors, or as a result of natural weathering and atmospheric factors action.

**Enables installation of thermal insulation of thickness up to 30 cm** - applies to total thickness of old and new thermal insulation.

### General system characteristics

ATLAS RENOTER thermal insulation technology consists in installation of additional outer thermal insulation layer upon the existing external wall insulation. System consists of polystyrene thermal insulation, base coat made of adhesive and reinforcing mesh, rendering coat and decorative paint coat (optional). Polystyrene boards are fixed with adhesive mortar and mechanical fixings. The use of mechanical fixings is obligatory regardless the building height. ATLAS RENOTER system is fixed mechanically, i.e. loads are fully transmitted by mechanical anchors and adhesive mortar provides flat bonding of system to substrate (works as an assembly mortar). The construction material layer of the building outer wall, not the existing layer of thermal insulation, should always be treated as the system substrate. Therefore, fixings should go through all layers of the existing insulation. This fact should be taken into account during designing and selection of mechanical fixings.

### System components

According to current regulations thermal insulation system is considered in its entirety as one construction product, therefore it must be applied with layers arrangement and with materials listed in the technical approval. It is unacceptable to use, so-called compilations or to use products from other systems or manufacturers, which are not accepted by the technical approval.

<b>Adhesives for thermal insulation fixing</b> ATLAS STOPTER K-10 adhesive mortar ATLAS STOPTER K-20 adhesive mortar ATLAS STOPTER K-50 adhesive mortar ATLAS HOTER S adhesive mortar ATLAS HOTER U adhesive mortar
<b>Insulation material</b> Polystyrene boards (EPS) of properties listed by the designation code: EPS-EN 13163-T1-L2-W2-S5-P5-BS75-DS(N)2-DS(70,-)2-TR100 Note: Boards of tensile strength TR80 can be used as long as they are covered by the ITB Technical and Quality Recommendation or volitional Certificate issued by notified assessment body.
<b>Mechanical fixings</b> Mechanical fixings authorized for use in construction works, obligatorily with steel pin protected against corrosion or made of stainless steel.
<b>Base coat</b> ATLAS STOPTER K-20, ATLAS STOPTER K-50 or ATLAS HOTER U adhesive mortar with fiberglass mesh SSA-1363-SM 05.
<b>Finishing coat</b> ATLAS CERMIT mineral render + ATLAS CERPLAST priming mass ATLAS CERMIT acrylic render + ATLAS CERPLAST priming mass ATLAS SILKAT thin-coat render + ATLAS SILKAT ASX priming mass ATLAS SILKON thin-coat render + ATLAS SILKON ANX priming mass ATLAS ARKOL E façade paint ATLAS ARKOL S façade paint + ARKOL SX primer ATLAS FASTEL NOVA façade paint

## Technical requirements

ATLAS RENOTER System has been given the ITB Technical Approval No. AT-15-8477/2010. Domestic Declaration of Conformity No. 113 of 01.01.2011. Factory Production Control Certificate No. ITB-0456/Z.

## Requirements on thermal insulation installation

### Conditions during installation

Carry out installation in dry weather, at substrate and ambient temperature not lower than +5°C and not higher than +30°C. The only exception is ATLAS STOPTER K-20 adhesive mortar, which can also be used at 0°C, assuming that, after 8 hours since application completion, temperature does not drop below -5°C. On time of thermal insulation installation, façade should be protected and secured against precipitation, strong wind and direct sunlight - it is recommended to use fine mesh scaffolding covers. Insulation installation should be carried out in dry conditions (no precipitation, relative humidity below 80%).

## Substrate preparation

### General provisions

Before work commencement it is necessary to carry out on-site inspection, cataloguing and full evaluation of technical condition of existing insulation. Cataloguing should consist in completing any available documentation (design, construction log, etc.), determining type of wall partition and construction material, type and thickness of existing insulation, verification of mechanical fixings, type of finishing coat and determination whether it was painted. It is recommended to carry out excavations in number depending on building size, preferably on each building wall. Assessment of technical condition of old thermal insulation should determine current condition of individual system layers, their bonding to substrate and interlayer bonding and should allow to establish and identify type and range of damage. Basing on the information gathered, appropriately for actual situation, technology of thermal insulation installation and method of preparation of the existing thermal insulation should be selected. **Caution!** For buildings with reinforced concrete sandwich walls, installation of additional layer of insulation should be preceded by service inspection in accordance with recommendations in this regard, including the ITB Instruction No. 360/99, 371/02, 374/02 and 447/2009. For the time of installation, remove any elements hindering tight bonding of thermal insulation boards and finishing coat application. An additional layer of insulation will increase the wall thickness, therefore the reach of flashings, downspouts anchors, etc. will have to be extended. Protect windows and doors against soiling with a plastic film.

## Installation of thermal insulation

### Boarding

Adhesive mortar can be applied upon boards with two methods: full coating (even substrates) or partial coating with the "strip - point method" (uneven substrates). The second method consists in application of continuous circumferential bead (min. 3 cm wide) along the board edges and 6-8 patches (of diameter 8-12 cm) evenly distributed upon the board surface. The mortar bead is placed at a distance from the board edge, so when board is pressed to the wall, mortar is not squeezed out the board contour and side edges. Adhesive mortar applied upon board should coat min. 40% of its surface (60% after pressing the board to substrate). In case of full coating, the adhesive is applied upon whole board surface with a smooth float and profiled with a notched trowel then (notch size 8 - 12 mm). Thermal insulation application should commence from the building corners. The first row of boards is fixed on starter tracks, the subsequent rows so positioned, that the vertical board joints are staggered and overlapped at the building corners. Boards edges must not be placed in line with reveals edges. Place the boards with applied adhesive upon substrate, move tight to already fixed boards and press towards. Check the surface level. If adhesive is squeezed out the board contour, it should be removed. Any gaps between adjoining boards should be filled with cut stripes of polystyrene or low expansion polyurethane foam.

### Insulation boards sanding

Surface of insulating boards applied upon substrate should be even, so when the mortar sets (after approx. 24 h), the boards can be sanded with sanding boards or floats covered with coarse sanding paper. This action eliminates any slips of board edges. In case of polystyrene boards installed approx. 3 months earlier or more, sanding and removal of any surface tarnish is mandatory.

## Mechanical fixing

Additional fixing with anchors (with steel pin protected against corrosion or made of stainless steel) can commence after approx. 24 hours since boards application. Screwed-in fixings recommended, min. 4-6 pcs/ 1 m<sup>2</sup>. When selecting fixings length one should consider total thickness of old thermal insulation and new thermal insulation material. The depth of anchoring in mineral substrate should be clearly defined in technical design of thermal insulation. **Note!** The layer of wall construction material should be considered as the load bearing layer. Detailed information on the number of fixings, their distribution, length and depth of anchoring should be specified in the thermal insulation technical design. Follow the guidelines of fixings manufacturers.

## Additional elements installation

In order to improve the system resistance against mechanical damage, to allow free drainage of water and execution of expansion joints - finishing profiles should be installed upon fixed thermal insulation layer. Profiles are installed at every specific locations of the façade (i.e. corners, reveals, sills, etc.). They can also be installed simultaneously to the base coat mesh embedding. Use adhesive mortars ATLAS STOPTER K-20, ATLAS STOPTER K-50 or ATLAS HOTER U for profiles fixing. Keep the expansion joints of existing thermal insulation - use special expansion joint profiles with mesh.

## Strengthening the reveal corners

At any corners of window and door reveals, additional reinforcing mesh strips (rectangles 20 x 30 cm) embedded in the adhesive mortar ATLAS STOPTER K-20, ATLAS STOPTER K-50 or ATLAS HOTER U should be installed. Strips should be applied diagonally, at a 45° angle in relation to the line set by reveal edges.

## Base coat (reinforced layer) application

Base coat can be applied after min. 3 days since boards application. Apply mortar upon fixed insulation, spread with a notched trowel (notch size 10 - 12 mm). Adhesive should be spread with vertical strips of width slightly greater than the fiberglass mesh width. Then, starting from the top, subsequent strips of mesh are embedded in the adhesive coat. Consecutive strips should be applied with min. 10 cm wide vertical and horizontal overlaps (15 cm wide at the building corners). The mesh overlaps should not correspond with the joints between insulation boards. The mesh should be thoroughly embedded in the adhesive. In order to embed the mesh evenly, the adhesive should be squeezed with slightly inclined trowel led from the top, in direction from the center to the mesh strip side. Correctly embedded mesh should be completely coated with adhesive and should not contact polystyrene boards directly.

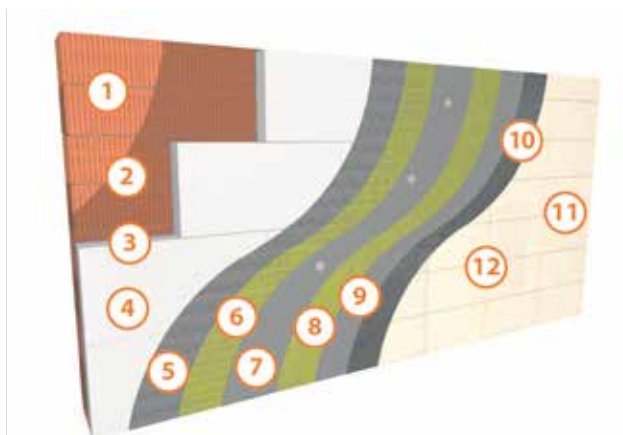
## Finishing coat application

The outer system layer can be made of thin-coat render or a thin-coat render coated with façade paint. The execution of finishing coat can commence after approx. 3 days since the base coat installation. One can use thin - coat renders: mineral ATLAS CERMIT, acrylic (e.g. ATLAS CERMIT), silicate (e.g. ATLAS SILKAT) or silicone (e.g. ATLAS SILKON). Rendering coats can be additionally painted with façade paints: acrylic (e.g. ATLAS ARKOL E), silicate (e.g. ATLAS ARKOL S) and silicone (e.g. ATLAS FASTEL NOVA). Perform application in accordance to the technology described in technical data sheets of these individual products.

*The above information constitutes basic guidelines for the application of the product and does not release the user from the obligation of carrying out works according to engineering principles and OHS regulations.*

*At the time of publication of this product data sheet all previous ones become void.*  
Date of update: 2013-11-12





## EXTERNAL THERMAL INSULATION SYSTEM ATLAS CERAMIK

1. Ceramic hollow blocks
2. Substrate priming (optional)
3. Adhesive for boards fixing
4. EPS thermal insulation boards - standard or graphite-enhanced
5. Adhesive for base coat application
6. Reinforcing mesh – 1st layer
7. Mechanical fixing – fixings for polystyrene and XPS
8. Reinforcing mesh – 2nd layer
9. Adhesive for base coat application
10. Adhesive for tiles
11. Façade tiles
12. Grout

### Use

**Installation of external wall insulation** - can be used on newly constructed buildings or those under thermal modernization, both on rendered/plastered façades and rough walls made of bricks and blocks (ceramic, cement-lime, stone, aerated concrete and concrete - monolithic or precast).

**Recommended for façades exposed to high operation load and soiling** - on plinths, foundations, public access, commercial buildings, etc.

### Properties

**Complete set of materials for installation of thermal insulation** - offers full and proved compatibility of components, which is particularly important for long term system use.

**Enables achievement of external wall thermal insulation required by building regulations** - reduces heat loss and heating costs.

**Improves durability of external walls** - protects them against direct weathering.

**Very durable material solution** - wear of ceramic cladding is slower than in case of insulation with rendering coat, it also provides high system resistance to damages.

**Resistance to biological corrosion** - cladding is easy to keep clean and is less exposed to possible development of fungi, algae and lichen.

**General - purpose** - enables installation of both expanded polystyrene (EPS) and extruded polystyrene (XPS) boards upon an individual façade.

**Fire retardant system** - it relates to thermal insulation systems with EPS and XPS boards of thickness up to 250 mm.

### General system characteristics

ATLAS CERAMIK system is an external thermal insulation composite system (ETICS). Thermal insulation technology consists in application of EPS or XPS boards upon the outer side of wall, installation of base coat with reinforcing fiberglass mesh and further application of finishing layer made of ceramic tiles fixed to base coat with adhesive mortar and finished with grout. Due to the type of finishing layer, insulation boards must be mechanically fixed through the first layer of mesh.

### System components

According to current regulations thermal insulation system is considered in its entirety as one construction product, therefore it must be applied with layers arrangement and with materials listed in the technical approval. It is unacceptable to use, so-called compilations or to use products from other systems or manufacturers, which are not accepted by the technical approval. Products used with ATLAS CERAMIK system, according to the ITB Technical Approval No. AT-15-8592/2011, are listed in the table below.

### Technical requirements

ATLAS CERAMIK System has been given the ITB Technical Approval No. AT-15-8592/2011. Domestic Declaration of Conformity No. 114 of 25.03.2011. Factory Production Control Certificate No. ITB-0472/Z.

<b>Adhesives for thermal insulation fixing</b> ATLAS STOPTER K-20, ATLAS HOTER U
<b>Thermal insulation material - polystyrene boards (EPS) of minimum properties meeting the designation code</b> EPS-EN 13163-T1-L2-W2-S5-P5-BS75-DS(N)2-DS(70,-)2-TR100 Caution. Boards of tensile strength TR80 can be used if they are given the ITB Technical and Quality Recommendation or volitional Certificate issued by notified assessment body
<b>Materials for thermal insulation – extruded polystyrene (XPS) boards of minimum properties meeting the designation code</b> XPS-EN 13164-XPS-EN13164-T1-DS(TH)-TR100
<b>Mechanical fixings</b> Mechanical fixings authorized for use in construction works.
<b>Base coat</b> ATLAS STOPTER K-20 or ATLAS HOTER U adhesive mortar with fiberglass mesh SSA-1363-SM 05.
<b>Finishing layer</b> ATLAS CERPLAST acrylic priming mass for renders Adhesive for ceramic cladding fixing ATLAS PLUS, ATLAS PLUS WHITE, ATLAS PLUS EXPRESS
<b>Ceramic cladding</b> Façade ceramic tiles, frost-resistant, pressed or extruded, belonging to groups BIa, BIb or AI acc. to PN-EN 14411:2009 standard, max. thickness 15 mm and surface mass max. 40 kg/m <sup>2</sup> .
<b>Grouting</b> ATLAS ARTIS GROUT
<b>Complementary elements</b> Drip profile, corner profile, window profile, expansion joint profile (straight, angle), sill profile.

## Requirements on thermal insulation installation

### Conditions during installation

Carry out installation in dry weather, at substrate and ambient temperature not lower than +5°C and not higher than +30°C. The only exception is ATLAS STOPTER K-20 adhesive mortar, which can also be used at 0°C, assuming that, after 8 hours since application completion, temperature does not drop below -5°C. Façade should be on time of thermal insulation installation protected and secured against precipitation, strong wind and direct sunlight - it is recommended to use fine mesh scaffolding covers. Insulation installation should be carried out in dry conditions (no precipitation, relative humidity below 80%).

### Substrate preparation

#### General provisions

Before work commencement, evaluate the substrate technical condition and, on that basis, decide on scope and method of surface preparation. For the time of installation, remove any elements hindering tight bonding of thermal insulation boards and finishing coat application. An additional layer of insulation will increase the wall thickness, therefore the reach of flashings, downspouts anchors, etc. will have to be extended. Protect windows and doors against soiling with a plastic film.

#### Requirements on the substrate

The substrate should be sound, stable, even, clean and dry. Absorptive substrates should be primed with ATLAS UNI-GRUNT, smooth and non-absorptive (concrete) with ATLAS CERPLAST priming mass. Substrate should be even to the extent enabling easy execution of a plane formed by insulation boards installed upon walls. Clean the surface from any layers which would impair mortar bonding, dirt, loose and dusty elements. Note! Particular attention should be paid to proper assessment and preparation of substrate with problematic bearing capacity, e.g. finished with glass-mosaics, glazed brick, covered with paint coatings, etc. If in doubt, conduct bonding test (ultimate tensile strength should be above 0.08 MPa) or apply 8-10 polystyrene cubes (10x10 cm large) at various façade points and check the bond after 3 days. The use of thermal insulation system on buildings with reinforced concrete sandwich walls should always be preceded by thorough assessment of their technical condition. This applies to technical condition of metal fittings (hooks, pins, rods) as well as their connection and interaction with wall elements.

#### Skirting boards installation

Application of thermal insulation should commence with installation of starter tracks. They support the first row of thermal insulation boards, help to keep uniform level of successive layers, strengthen bottom edge of system and bottom edge drip prevents water bleeding. Boards should be installed horizontally upon the building plinth, not lower than 30 cm above the ground level, which would protect against rising damp action and soiling - mud particles brought by raindrops reflected from the ground. Instead of starter tracks, it is permitted to use two layers of fiberglass mesh or strips of armour mesh.

## Installation of thermal insulation

### Boarding

In case of even substrates, adhesive mortar can be applied with a notched trowel (notch size 12 mm) – directly upon boards surface, not upon the substrate. In case of more irregular surfaces adhesive should be spread upon board surface with the "strip - point method". It consists in application of continuous circumferential bead (min. 3 cm wide) along the board edges and 6-8 patches (of diameter 8-12 cm) evenly distributed upon the board surface. The mortar bead is placed at a distance from the board edge, so when board is pressed to the wall, mortar is not squeezed out the board contour and side edges. Adhesive mortar applied upon board should coat min. 40% of its surface (60% after pressing the board to substrate). Thermal insulation application should commence from the building corners. The first row of boards is fixed on starter tracks, the subsequent rows so positioned, that board vertical edges are staggered and overlapped at the building corners. If adhesive is squeezed out the board contour, it should be removed. Any gaps between adjoining boards should be filled with cut stripes of polystyrene or low expansion polyurethane foam.

### Insulation boards sanding

Surface of insulating boards applied upon substrate should be even, so when the mortar sets (after approx. 24 h), the boards can be sanded with sanding boards or floats covered with coarse sanding paper. This action eliminates any slips of board edges. In case of polystyrene boards installed approx. 3 months earlier or more, sanding and removal of any surface tarnish is mandatory.

## Additional elements installation

In order to improve the system resistance against mechanical damage, to allow free drainage of water and execution of expansion joints - finishing profiles should be installed upon fixed thermal insulation layer. Profiles are installed at every specific locations of the façade (i.e. corners, reveals, sills, etc.). They can also be installed simultaneously to the base coat mesh embedding. Use adhesive mortars ATLAS STOPTER K-20 or ATLAS HOTER U for profiles embedding.

## Strengthening the reveal corners

At any corners of window and door reveals, additional reinforcing mesh strips (rectangles 20 x 30 cm) embedded in the adhesive mortar ATLAS STOPTER K-20 or ATLAS HOTER U should be installed. Strips should be applied diagonally, at a 45° angle in relation to the line set by reveal edges.

## Base coat application

As the finishing coat of ATLAS CERAMIK system consists of ceramic tile cladding, it is required to apply base coat (reinforced layer) and to install mechanical fixings in the same work action. Two layers of fiberglass mesh embedded in ATLAS STOPTER K-20 or ATLAS HOTER U adhesives are used for application of base coat. Mechanical fixings are installed through the first mesh layer. Base coat can be installed after min. 3 days since boards fixing. Apply adhesive mortar upon the surface of installed insulation boards and spread it with a notched trowel (notch size 10 - 12 mm). Adhesive should be spread with vertical strips of width slightly greater than the fiberglass mesh width. Then, starting from the top, subsequent strips of mesh are embedded in the adhesive coat. Consecutive strips should be applied with min. 10 cm wide vertical and horizontal overlaps (15 cm wide at the building corners). The mesh overlaps should not correspond with the joints between insulation boards. The mesh should be thoroughly embedded in the adhesive. In order to embed the mesh evenly, the adhesive should be squeezed with slightly inclined trowel led from the top, in direction from the center to the mesh strip side. Correctly embedded mesh should be completely coated with adhesive and should not contact polystyrene boards directly. The next step is the installation of mechanical fixings through the first layer of mesh. Use fixings with galvanized steel pin, min. 8 pcs per 1 m<sup>2</sup>. Detailed information on the number of fixings, their distribution, length and depth of anchoring should be specified in the thermal insulation technical design. When fixings are properly installed, their plates should be slightly pressed into adhesive coat. Then the entire surface should be covered with the next fiberglass mesh embedded thoroughly in the mortar and smoothed with a float.

## Finishing coat application

### Contact coat application

Contact coat made of ATLAS CERPLAST priming mass can be applied after approx. 3 days since base coat application.

### Ceramic cladding application

Deformable cement adhesives, C2TE S1 type according to the PN-EN 12004:2008 standard, are recommended, e.g. ATLAS PLUS, ATLAS PLUS WHITE or ATLAS PLUS EXPRESS. When fixing the tiles, in order to eliminate possible gaps beneath cladding (e.g. notched trowel marks), one should pay special attention to ensure proper adhesive bonding. Taking these factors into account, it is recommended to use 'double spreading' method, consisting in distribution of adhesive both upon substrate - with a notched trowel, and upon back side of tile - with smooth side of a trowel. Press the tile to the substrate and slightly move then. Follow the adhesive coat thickness advised in technical data sheets. Do not coat too large area with adhesive at the same time, as spread adhesive retains its bonding properties within 10 - 30 minutes (depending on substrate and ambient properties). Tile position can be adjusted delicately within 10 minutes since it is pressed. Remove excessive adhesive present in joints after tile pressing immediately.

### Grouting

Grouting should commence when the adhesive fully sets, i.e. after approx. 24 h since tiles installation. It is recommended to use ATLAS ARTIS GROUT. Due to cladding operation conditions, the joints should be from 6 mm up to 20 mm wide (width should be adequate to tiles size) and percentage of joints upon entire surface should not be less than 6%. In order to avoid differences in colour shades, it is recommended to use grout of the same manufacturing date and the same batch number (shown on the packaging). Grout an individual surface with no break, continue grouting on adjoining scaffolding levels. Keep the same water/dry mix ratio. Cladding should be protected against precipitation (mesh covers on scaffoldings) within min. 3 days since application (in temperature +20 °C and relative humidity 60%; in less positive conditions slower setting of materials should be considered).

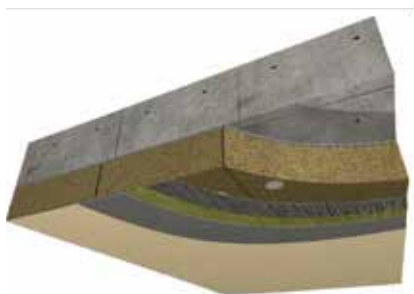
### Expansion joints of the ceramic cladding

Construction expansion joints and expansion joints of insulation plane as well as the angle ones should be repeated on the ceramic cladding surface, which should be divided into smaller sections, max. 9 m<sup>2</sup> large. In case of installation of ATLAS CERAMIK thermal insulation system upon large and high façades, it is recommended to apply additional horizontal consoles or stabilizing brackets.

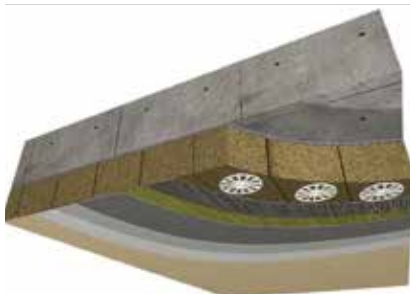
*The above information constitutes basic guidelines for the application of the product and does not release the user from the obligation of carrying out works according to engineering principles and OHS regulations.*

*At the time of publication of this product data sheet all previous ones become void. Date of update: 2013-11-12*

# EXTERNAL THERMAL INSULATION SYSTEM ATLAS ROKER G



Type I



Type II



Type III

## Use

**Installation of thermal insulation upon ceilings (from the bottom ceiling side) and walls** - if not directly exposed to weathering or mechanical damage, in residential, commercial, public access, industrial buildings, both existing and newly constructed ones.

**Indoors** - types I, II and III - upon ceilings and walls in non-heated rooms (e.g. garages, cellars, multi-level car parks), open and closed, where heated rooms are located above or in close neighbourhood.

**Outdoors - type II and III** - from bottom ceiling side, e.g. over driveways, walkways, car parks, above which heated rooms are located.

## Properties

**Complete set of materials for installation of thermal insulation** - offers full and proved compatibility of components, which is particularly important for long term system use.

**Available in three material and technological options** - allows execution of thermal insulation with one of three types (marked with Roman symbols I, II or III), depending on needs and design requirements.

**Type I and II** - with installation method similar to installation of standard external wall thermal insulation, base coat improves resistance to mechanical damage and factors related to the use of rooms.

**Option III** - allows for limited range of work, faster progress of installation and reduction of labor costs due to lack of base coat and spray application of finishing coats directly upon outer layer of thermal insulation boards.

**Enables achievement of thermal insulation parameters required for ceilings by building regulations** - reduces heat loss and heating costs.

**System components are non-flammable** - ATLAS ROKER G system improves protection of building structural elements against fire action and high temperature.

**Classified as fire retardant** - in accordance to applicable regulations (applies to all three material-technological system types).

**Characterized by high reaction to fire class** - type II (with mineral and silicate render) and type III are classified as fully non-flammable (reaction to fire class A2 s2, d0).

## General system characteristics

Technology of ATLAS ROKER G system consists in application of mineral wool insulation boards upon surfaces of walls or ceilings indoors, followed by application of finishing coats according to one of three material/ technological options. In type I, base coat with fiberglass mesh is installed manually upon mineral wool boards and the resulting surface is coated with façade paint. In type II, base coat with fiberglass mesh is applied manually upon mineral wool boards and the resulting surface is coated with thin - coat render (with optional further painting). In type III, finishing coat made of thin-coat render is spray - applied upon mineral wool boards (one-side impregnated). Option III allows to reduce cost of both material and labor, shorten the time of system installation with keeping full system technical and operational functionality.

## System components

According to current regulations thermal insulation system is considered in its entirety as one construction product, therefore it must be applied with layers arrangement and with materials listed in the technical approval. It is unacceptable to use, so-called compilations or to use products from other systems or manufacturers, which are not accepted by the technical approval.

Products used with ATLAS ROKER G system, according to the ITB Technical Approval No. AT-15-7314/2011, are listed in the tables.

## Technical requirements

ATLAS ROKER G System has been given the ITB Technical Approval No. AT-15-7314/2011. Domestic Declaration of Conformity No. 115 of 16.07.2012. Factory Production Control Certificate No. ITB-0222/Z.

## Requirements on thermal insulation installation

### Conditions during installation

Carry out installation at substrate and ambient temperature not lower than +5°C and not higher than +30°C.

## Substrate preparation

### General provisions

Installation of insulation should be conducted in accordance to technical design prepared individually for an object. The design should list (at least): substrate preparation method, thickness of insulation material and its installation method, type of finishing coat and its technology of application, number and distribution of mechanical fixings (if required), finishing of special areas. The design should also list the range of thermal insulation work, i.e. whether except of ceiling insulation, also other elements (columns, joists or wall fragments) are to be insulated. For the time of installation, remove any elements hindering tight bonding of thermal insulation boards and finishing coat application. Permanent building equipment (installations, ducts, etc.) must be protected against contamination and/or damage. In case of spray application of renders protect floors as well.

### Requirements on the substrate

The substrate should be sound, stable, even, clean and dry. Absorptive substrates should be primed with ATLAS UNI-GRUNT, smooth and non-absorptive (concrete) with ATLAS CERPLAST priming mass. Substrate should be even to the extent enabling easy execution of a plane formed by insulation boards installed upon walls. Clean the surface from any layers which would impair mortar bonding, dirt, loose and dusty elements. If in doubt, conduct bonding test (ultimate tensile strength should be above 0.08 MPa) or apply 8-10 mineral wool cubes (10x10 cm large) at various substrate points and check the bond after 3 days.

## Installation of thermal insulation

### Installation of standard (façade) wool boards

It is recommended to use adhesive mortar and, obligatorily, mechanical fixings (4-6 pcs/1m<sup>2</sup>). Adhesive mortar can be applied upon boards with two methods: partial coating with the "strip - point method" or full coating (lamella panels or façade wool panels, but only on respectively even substrates). In both cases, the board surface should be floated with thin coat of adhesive mortar, pressed well into the wool structure by stripping with steel trowel edge. This action pre-moistens wool fibers and improves bonding. Then, in case of partial coating, apply main coat of adhesive in the form of continuous circumferential bead (min. 3-5 cm wide) along the board edges and 6-8 patches (of diameter 8-12 cm) evenly distributed upon the board surface. Adhesive mortar applied upon board should coat min. 40% of its surface. In case of full coating, the adhesive is applied upon whole board surface with a smooth float and profiled with a notched trowel then (notch size 8 - 12 mm).

### Installation of lamella wool boards

In case of lamella wool, boards can be applied upon substrate with adhesive mortar solely (without mechanical fixings) in the following cases: when substrate is rough (not rendered), its ultimate tensile strength is higher than 0.08 MPa and when thermal insulation is installed up to 20 m high. Then, adhesive mortar coat should be spread upon whole mineral wool board surface. In other situations lamella boards should be fixed with adhesive mortar and mechanical fixings.

When adhesive is applied upon boards backside, they should be placed upon substrate, lightly moved and pressed. The boards should be so positioned, that boards vertical edges are staggered and overlapped. Do not leave gaps between adjacent boards or adhesive residues in joints. Check the surface level on regular basis. Press and correct position of boards with wooden floats with rounded edges only. Fixing with anchors can commence after approx. 24 hours since boards application. Detailed information on the number of fixings, their distribution, length and depth of anchoring should be specified in the thermal insulation technical design. Follow the guidelines of fixings and mineral wool manufacturers.

### Finishing coat application

The technology of finishing coat application depends on ATLAS ROKER G system type, i.e. I, II or III.

## Type I

In system type I, fixed thermal insulation is coated with base coat, which can be painted with façade paint. Base coat can be applied after min. 3 days since boards application. Apply ATLAS ROKER W-20 mortar upon insulation boards surface and embed subsequent mesh strips. Correctly embedded mesh should be completely coated with adhesive and should not contact mineral wool boards directly. Consecutive strips should be applied with min. 10 cm wide overlaps. The mesh overlaps should not correspond with the joints between insulation boards. Smooth the base coat with a steel float. Approx. 3 days since base coat application, its surface can be primed with primer appropriate for particular paint and coated with façade paint then. The following paints can be used for base coat painting: silicate (e.g. ATLAS ARKOL S), silicone (e.g. ATLAS FASTEL NOVA). Perform application in accordance to technology described in technical data sheets of individual products.

**Note!** In case of installation of thermal insulation in open garages, over crossings, etc., where insulation moistening by jamming rain or snow is possible, it is obligatory to apply thin-coat render both upon walls and ceilings, and at the edge zones of insulation. The edge zones should be understood as insulation within a distance of min. 3 m from edge exposed to rain, with exception of entries where this distance should be 10 m.

## Type II

In system type II, fixed thermal insulation is coated with base coat installed with the same method as in option I. Then, thin - coat render is applied and optionally painted. Approx. 3 days since base coat application, its surface can be primed with priming mass appropriate for particular render, left to dry and coated with thin-coat render then. The use of priming mass improves render bonding to substrate and protects rendering coat against any contamination from the adhesive mortar coat. One can use the following renders: mineral (e.g. ATLAS CERMIT), silicate (e.g. ATLAS SILKAT) or silicone (e.g. ATLAS SILKON). Render surface can be painted optionally with silicate (e.g. ATLAS ARKOL S), silicone (e.g. ATLAS FASTEL NOVA) paints. Perform application in accordance to technology described in technical data sheets of individual products.

## Type III

In system type III, the base coat is not installed and thin-coat render is spray-applied directly upon lamella wool boards. In case of factory-impregnated mineral wool boards the use of additional priming mass is not required. If mineral wool surface is not pre-impregnated, use ATLAS CERPLAST priming mass, which is spray - applied upon fixed boards surface. It is possible to use mineral render, stirred with water before use. Perform application in accordance to technology described in technical data sheets of individual products.

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*At the time of publication of this product data sheet all previous ones become void.  
Date of update: 2013-07-01*



<p><b>TYPE I</b></p> <p><b>Insulation fixing – Basic</b></p> <p>ATLAS ROKER W-20 adhesive mortar</p> <p><b>Insulation material *)</b></p> <p><b>Standard wool</b></p> <p>FASROCK (MW-EN13162-T5-DS(T+)-DS(TH)-CS(10)40-TR15-WS-WL(P)-MU1)</p> <p>FASROCK MAX (MW-EN13162-T4-DS(TH)-CS(10)10-TR7,5-WS- MU1)</p> <p>PAROC FAS 3 (MW-EN13162-T5-DS(TH)-CS(10)30-TR10-WS-WL(P)-MU1)</p> <p>PAROC FAS 4 (MW-EN13162-T5-DS(TH)-CS(10)40-TR15-WS-WL(P)-MU1)</p> <p>PAROC FAS B (MW-EN13162-T5-DS(TH)-CS(10/20)-TR10-WS-WL(P)-MU1)</p> <p>FRONTROCK MAX E (MW-EN13162-T5-DS(T+)-DS(TH)-CS(10)20-TR10-PL(5)250-WS-WL(P)-MU1)</p> <p>FASOTERM PF (MW-EN13162-T5-DS(TH)-CS(10/40)-TR15-MU1-AFr5)</p> <p><b>Lamella wool</b></p> <p>FASROCK L (MW-EN13162-T5-DS(T+)-DS(TH)-CS(10\Y)40-TR100-WS-WL(P)-MU1)</p> <p>PAROC FAL 1 (MW-EN13162-T5-DS(TH)-CS(Y)50-TR80-WS-WL(P)-MU1)</p> <p>FASOTERM NF (MW-EN13162-T5-CS(10/30)-TR80-MU1-AFr5)</p>
<p><b>Mechanical fixings – additional fixing</b></p> <p><b>Standard wool</b></p> <p>Mechanical fixings with steel pin</p> <p><b>Lamella wool</b></p> <p>Fixings are not required in the following cases:</p> <ul style="list-style-type: none"> <li>- substrate is rough (not rendered)</li> <li>- substrate tensile strength &gt; 0.08 MPa</li> <li>- thermal insulation installed up to 20 m high</li> </ul>
<p><b>Base coat</b></p> <p>ATLAS ROKER W-20 adhesive mortar with fiberglass mesh SSA-1363-SM 05.</p>
<p><b>Finishing coat</b></p> <p>ATLAS ARKOL S façade paint + ARKOL SX primer</p> <p>ATLAS FASTEL NOVA façade paint</p>

<p><b>TYPE II</b></p> <p><b>Insulation fixing – Basic</b></p> <p>ATLAS ROKER W-20 adhesive mortar</p> <p><b>Insulation material *)</b></p> <p><b>Standard wool</b></p> <p>FASROCK (MW-EN13162-T5-DS(T+)-DS(TH)-CS(10)40-TR15-WS-WL(P)-MU1)</p> <p>FASROCK MAX (MW-EN13162-T4-DS(TH)-CS(10)10-TR7,5-WS- MU1)</p> <p>PAROC FAS 3 (MW-EN13162-T5-DS(TH)-CS(10)30-TR10-WS-WL(P)-MU1)</p> <p>PAROC FAS 4 (MW-EN13162-T5-DS(TH)-CS(10)40-TR15-WS-WL(P)-MU1)</p> <p>PAROC FAS B (MW-EN13162-T5-DS(TH)-CS(10/20)-TR10-WS-WL(P)-MU1)</p> <p>FRONTROCK MAX E (MW-EN13162-T5-DS(T+)-DS(TH)-CS(10)20-TR10-PL(5)250-WS-WL(P)-MU1)</p> <p>FASOTERM PF (MW-EN13162-T5-DS(TH)-CS(10/40)-TR15-MU1-AFr5)</p> <p><b>Lamella wool</b></p> <p>FASROCK L (MW-EN13162-T5-DS(T+)-DS(TH)-CS(10\Y)40-TR100-WS-WL(P)-MU1)</p> <p>PAROC FAL 1 (MW-EN13162-T5-DS(TH)-CS(Y)50-TR80-WS-WL(P)-MU1)</p> <p>FASOTERM NF (MW-EN13162-T5-CS(10/30)-TR80-MU1-AFr5)</p>
<p><b>Mechanical fixings – additional fixing</b></p> <p><b>Standard wool</b></p> <p>Mechanical fixings with steel pin</p> <p><b>Lamella wool</b></p> <p>Fixings are not required in the following cases:</p> <ul style="list-style-type: none"> <li>- substrate is rough (not rendered)</li> <li>- substrate tensile strength &gt; 0.08 MPa</li> <li>- thermal insulation installed up to 20 m high</li> </ul>
<p><b>Base coat</b></p> <p>ATLAS ROKER W-20 adhesive mortar with fiberglass mesh SSA-1363-SM 05.</p>
<p><b>Finishing coat</b></p> <p>ATLAS CERMIT mineral render + ATLAS CERPLAST priming mass</p> <p>ATLAS SILKAT thin-coat render + ATLAS SILKAT ASX priming mass</p> <p>ATLAS SILKON thin-coat render + ATLAS SILKON ANX priming mass</p> <p>ATLAS ARKOL S façade paint + ARKOL SX primer</p> <p>ATLAS FASTEL NOVA façade paint</p>

<p><b>TYPE III</b></p> <p><b>Insulation fixing – Basic</b>            ATLAS ROKER W-20 adhesive mortar            ATLAS ROKER W-10 adhesive mortar</p>
<p><b>Insulation material *)</b>  <b>Lamella wool</b>            PAROC CGL20 CY (MW-EN13162-T5-DS(TH)-CS(Y)20-TR20-WS-WL(P)-MU1)            FASROCK L (MW-EN 13162-T5-DS(TH+)-DS(TH)-CS(10\Y)40-TR100-WSWL(P)-MU1)            ISOVER NF333 (MW-EN 13162-T5-DS(TH)-CS(10)40-TR15-WS-WL(P)-MU1)            ISOROC ISOFAS LM (MW-EN 13162-T5-DS(TH)-CS(10)50-TR90-WS-WL(P)-MU1)</p>
<p><b>Mechanical fixings – additional fixing</b>  <b>Lamella wool</b>            Fixings are not required in the following cases:            - substrate is rough (not rendered)            - substrate tensile strength &gt; 0.08 MPa            - thermal insulation installed up to 20 m high</p>
<p><b>Outer (finishing) layer</b>            ATLAS CERMIT mineral render (spotted 1.5 and 2.0 mm)</p>

\*) It is acceptable to use other mineral wool boards, provided that the test results of thermal insulation systems with these boards meet the requirements of the technical approval (this note applies to all options).

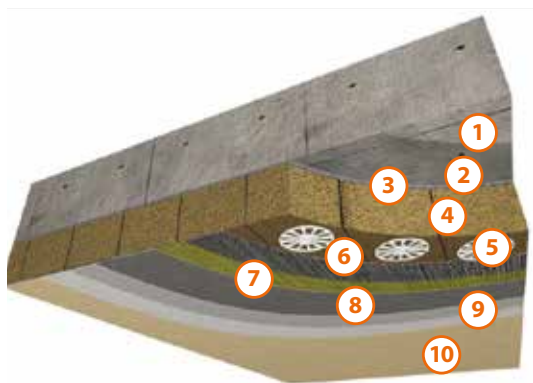


## THERMAL INSULATION SYSTEM

### ATLAS ROKER G

#### Type I

1. Concrete ceiling
2. Priming (optional)
3. Adhesive for boards fixing
4. Mineral wool
5. Mechanical fixings with steel pin
6. Adhesive for base coat application
7. Reinforcing mesh
8. Paint coat

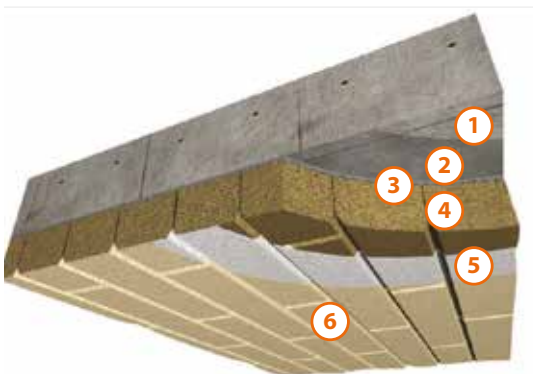


## THERMAL INSULATION SYSTEM

### ATLAS ROKER G

#### Type II

1. Concrete ceiling
2. Priming (optional)
3. Adhesive for boards fixing
4. Lamella mineral wool
5. Mechanical fixings with steel pin
6. Adhesive for base coat application
7. Reinforcing mesh
8. Priming mass
9. Thin-coat render
10. Paint coat (optional)



## THERMAL INSULATION SYSTEM

### ATLAS ROKER G

#### Type III

1. Concrete ceiling
2. Priming (optional)
3. Adhesive for boards fixing
4. Lamella mineral wool
5. Thin-coat mineral render (spray-applied)
6. Paint coat (optional)

## Use

**Additional thermal insulation fixing** – protects thermal insulation system against forces related to wind loads (suction).

## Properties

**Fixings with plastic pin** – recommended for fixing polystyrene boards.

**Fixings with metal pin** – recommended for fixing both polystyrene and mineral wool boards.

**They don't cause thermal bridging in the point of penetration through the thermal insulation.**

## Important additional information

- From technological point of view, application of fixings is not required for walls up to 12 m high with appropriately reliable and strong substrate (concerns systems with polystyrene). Check local regulations on the requirements on mechanical fixing.
- If in doubt concerning the bearing capacity of substrate, it is recommended to carry out pull - off test.
- The number of fixings should not be lower than 4 pieces for each 1 m<sup>2</sup>. Increase the number of fixings in the building corner zones.
- Detailed data concerning number, type and length of pins as well as their arrangement should be included in the technical design of external thermal insulation.
- The depth of fixings anchoring in the wall structural layer depends on substrate type and should be selected in concordance with requirements of the fixings manufacturer.
- Types of substrates: type A – concrete, type B – clay brick, sand-lime clay brick, type C – sand-lime and clay hollow brick, type D – lightweight concrete blocks, lightweight concrete aggregate bricks, type E – aerated concrete.

Fixing A-TERMO for polystyrene, with plastic pin, hammered in, diameter 10 mm, substrate type B, C, D, E.	Symbol/index	Available length [mm]	Depth of anchoring [mm] A B	Insulation thickness [mm] A B	Depth of anchoring [mm] C D E	Insulation thickness [mm] C D E	Collective packaging
	A-TERMO-90	90	25	50	50	30	250
	A-TERMO-120	120	25	80	50	60	250
	A-TERMO-140	140	25	100	50	80	250
	A-TERMO-160	160	25	120	50	100	250
	A-TERMO-180	180	25	140	50	120	250
	A-TERMO-200	200	25	160	50	140	250

Fixing TFIX 8M for polystyrene and mineral wool, with metal pin, hammered in, diameter 8 mm, substrate type A, B, C.	Symbol/index	Available length [mm]	Depth of anchoring [mm]	Insulation thickness [mm]	Collective packaging
	TFIX-8M-095	95	25	60	200
	TFIX-8M-115	115	25	80	200
	TFIX-8M-135	135	25	100	200
	TFIX-8M-155	155	25	120	200
	TFIX-8M-175	175	25	140	200
	TFIX-8M-195	195	25	160	200
	TFIX-8M-215	215	25	180	100
	TFIX-8M-235	235	25	200	100
	TFIX-8M-255	255	25	220	100
	TFIX-8M-275	275	25	240	100
	TFIX-8M-295	295	25	260	100

Fixing KI-10N for polystyrene and mineral wool, with metal pin and long expansion zone, hammered in, diameter 10 mm, substrate type B, C, D, E.	Symbol/index	Available length [mm]	Depth of anchoring [mm]	Insulation thickness [mm]	Collective packaging
	A-KI-120-N	120	60	50	250
	A-KI-140-N	140	60	70	250
	A-KI-160-N	160	60	90	250
	A-KI-180-N	180	60	110	250
	A-KI-200-N	200	60	130	250
	A-KI-220-N	220	60	150	250
	A-KI-260-N	260	60	190	250
	A-KI-300-N	300	60	230	250

Additional accessories		
Symbol/index	Product type	Collective packaging
KWL-140	Pressing collar for lamella wool, diameter 140 mm, to be used with KI-10N fixings	200
KFS (cutter)	Thermal insulation hole cutter	1
KES (plug)	Polystyrene plug	250

# MECHANICAL FIXINGS

## Thermal insulation mechanical fixing

Installation of mechanical fixings can start not earlier than after approx. 24 hours since the insulation material application. Drill a hole of depth recommended for the given fixing length. Then, remove dust from hole and insert the fixing. Next, hammer in (in case of hammered in fixings) or screw in (in case of screwed in fixings) the pin. The structure of thermal insulation material must not be damaged by mechanical fixings. Fixing head should keep the plane of thermal insulation material.

## Technical requirements

For fixings TERMO: AT-15-7920-2009

For fixings TFIX-8M: ETA-07/0336

For fixings TFIX-8S: ETA-11/0144

For fixings TFIX-8ST: ETA-11/0144

For fixings KI-10N: ETA-07/0221

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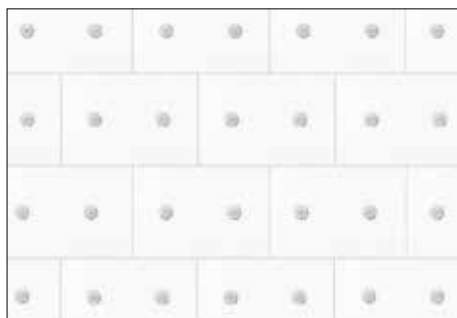
*At the time of publication of this product data sheet all previous ones become void.*

*Date of update: 2015-07-31*

Fixing TFIX 8S for polystyrene and mineral wool, with metal pin, screwed in, diameter 8 mm, substrate type A, B, C, D, E.	Symbol/index	Available length [mm]	Depth of anchoring [mm] ABCD/E	Insulation thickness [mm] ABCD/E	Collective packaging
	TFIX-8S-115	115	25/65	80/40	200
	TFIX-8S-135	135	25/65	100/60	200
	TFIX-8S-155	155	25/65	120/80	200
	TFIX-8S-175	175	25/65	140/100	200
	TFIX-8S-195	195	25/65	160/120	200
	TFIX-8S-215	215	25/65	180/140	100
	TFIX-8S-235	235	25/65	200/160	100
	TFIX-8S-255	255	25/65	220/180	100
	TFIX-8S-275	275	25/65	240/200	100
	TFIX-8S-295	295	25/65	260/220	100
	TFIX-8S-335	335	25/65	300/260	100
	TFIX-8S-355	355	25/65	320/280	100
	TFIX-8S-375	375	25/65	340/300	50
	TFIX-8S-395	395	25/65	360/320	50
	TFIX-8S-415	415	25/65	380/340	50

Fixing TFIX 8ST for polystyrene and mineral wool, with metal pin and polyurethane foam insulating cap, screwed in, diameter 8 mm, substrate type A, B, C, D, E.	Symbol/index	Available length [mm]	Depth of anchoring [mm] ABCD/E	Insulation thickness [mm] ABCD/E	Collective packaging
	TFIX-8ST-115	115	25/65	80/40	200
	TFIX-8ST-135	135	25/65	100/60	200
	TFIX-8ST-155	155	25/65	120/80	200
	TFIX-8ST-175	175	25/65	140/100	200
	TFIX-8ST-195	195	25/65	160/120	200
	TFIX-8ST-215	215	25/65	180/140	100
	TFIX-8ST-235	235	25/65	200/160	100
	TFIX-8ST-255	255	25/65	220/180	100
	TFIX-8ST-275	275	25/65	240/200	100
	TFIX-8ST-295	295	25/65	260/220	100
	TFIX-8ST-335	335	25/65	300/260	100
	TFIX-8ST-355	355	25/65	320/280	100
	TFIX-8ST-375	375	25/65	340/300	50
	TFIX-8ST-395	395	25/65	360/320	50
	TFIX-8ST-415	415	25/65	380/340	50

Symbol/index	Diameter [mm]	Product type	Collective packaging
TFIX-8S-DEVICE	Ø 63	Thermal insulation hole cutter for TFIX-8S	100
TFIX-8S-EPS	Ø 62 x 10	Polystyrene cap	250
TFIX-8S-MW	Ø 62 x 10	Mineral wool cap	250
TFIX-8S-TOOL	Ø 80	Installation tool TFIX-8S for a screwdriver	1
TFIX-8ST-TOOL	Ø 80	Installation tool TFIX-8ST for a screwdriver	1

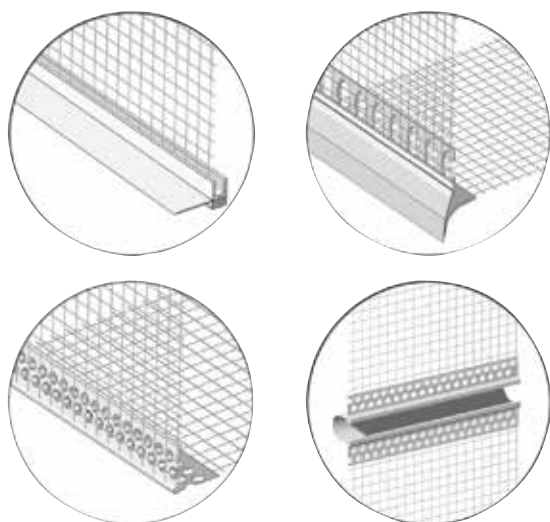


**POLYSTYRENE** – FIXINGS ARE PLACED IN THE CENTRE OF THE BOARD



**MINERAL WOOL** – FIXINGS ARE PLACED CENTRALLY AND IN CORNERS OF NEIGHBOURING BOARDS





## FAÇADE PROFILES FOR EXTERNAL WALL INSULATION

- protection of façade corners
- installation of expansion joints of external thermal insulation
- resistant to weather conditions
- resistant to mechanical damage
- easy and quick in use

### Use

**Protection and installation of expansion joints at specific points of insulated façades** – profiles used with all ATLAS external thermal insulation systems. Profiles reinforce corners of façades and any edges of concrete and ferroconcrete elements, e.g. repaired with ATLAS BETONER system.

**Effective drainage of rainwater** – from façade surface and other vertical construction elements.

**Installation of expansion joints** – separate façade elements, which may differ in type of load or properties, e.g. thermal expansion.

**Enable transfer of building expansion joints upon the layers of thermal insulation system.**

**Even edges and give them aesthetic appearance.**

### Properties

**Long term durability** – resistant to weather conditions, aggressive action of polluted environment and other construction materials, weathering and UV radiation.

**Resistant to mechanical damage during transport, storage and in operation** – owing to the use of hard and highly flexible PVC.

**Similar thermal expansion of profiles and thermal insulation materials** – which eliminates the risk of damage to the render.

**Easy and quick installation** – allow to save about 15% of time at reveals treatment.

**Equipped with reinforcing mesh** – 10 cm wide, made of fiberglass, additionally reinforcing the area along edges; owing to acrylic bathing, the mesh is protected against influence of alkaline environment.

**Joints between profile and mesh are executed with high frequency welding technology** – which makes them much more durable and resistant than joints formed by older technologies, e.g. gluing.

**Manufactured in white colour (RAL 9010), profile elements made in co-extrusion technology are grey.**

**Profiles can be painted with acrylic or silicone façade paints** – e.g. ATLAS SALTA E or ATLAS SALTA.

### Technical data

Finishing profiles are made of high quality PVC granulate (with no cadmium).

### Technical requirements

Finishing profiles are supplementary elements of thermal insulation systems:

System name	Technical Approval No.	Certificate No.
ATLAS	ETA 06/0081	1488-CPD-0021
ATLAS XPS	ETA 07/0316	1488-CPD-0075
ATLAS ROKER	ETA 06/0173	1488-CPD-0036
ATLAS ETICS	AT-15-9090/2014	FPC No. ITB-0562/Z
ATLAS ROKER	AT-15-7314/2011	FPC No. ITB-0222/Z
ATLAS ROKER G	AT-15-2930/2012	FPC No. ITB-0436/Z
ATLAS CERAMIK	AT-15-8592/2011	FPC No. ITB-0472/Z
ATLAS RENOTER	AT-15-8477/2010	FPC No. ITB-0456/Z

## General guidelines on profiles installation

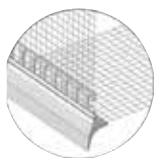
Finishing profiles are installed after thermal insulation layer fixing, before or during installation of the system base coat. Apply adhesive used for mesh embedding, e.g. ATLAS STOPPER K-20, ATLAS STOPPER K-50, ATLAS HOTER U or ATLAS ROKER W-20, along the edge upon which the profile is to be installed. Put the profile against the edge, embed its reinforcing mesh in the freshly applied mortar coat so the mesh is not visible. When the adhesive dries, apply the system base coat upon whole façade surface. The system reinforcing mesh should fully cover the finishing profile mesh.

Cut the finishing profiles to expected size with shears for PVC beads. Join perpendicular sections by cutting the ends at angle less than 45° and fill the joint with silicone filler.

### PROTECTIVE PROFILES

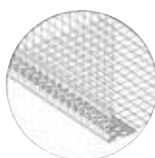
#### Drip profile

Drip profiles are installed on horizontal edges of window and door reveals and other façade recesses. They are also applied on bottom edges of balcony slabs: the mesh is embedded in the finishing coat, e.g. ATLAS ENDER in ATLAS BETONER repair system. They can also be used on bottom edge of thermal insulation when starter tracks cannot be used, e.g. thermal insulation boards are thicker than the largest available track size. The profiles ensure appropriate drainage of water flowing down the vertical façade surface, therefore eliminate the risk of stains and render damage. The profiles protect also the edge from mechanical damage.



#### Corner profile

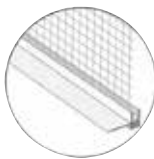
Corner profiles are fixed on various edges exposed to mechanical damage during façade use, e.g. door and window reveals, corners, etc. The material flexibility prevents mechanical damage from causing permanent corner destruction.



### EXPANSION JOINT PROFILES

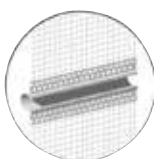
#### Window profile

Window profiles are fixed between window or door frames and finishing coats of the thermal insulation system. They are available in two widths: 6 and 9 mm. Window profile has polyurethane tape which eliminates render cracks and damages resulting from differences in thermal expansion of frames and rendering coats. Moreover, profile facilitates application of render and keeping its proper thickness, protects frames from soiling during work – enables quick and easy fixing of protective foil to the profile "flap" and, after installation completion, quick removal by breaking off the flap with used foil. Window profile protects space between frames and render against moisture, dirt, microorganisms and insects and improves thermal, sound and damp insulation there. It can be used with any type of frames (wooden, PVC, aluminum). Select the type of profile (6 mm or 9 mm) appropriately to the assumed thickness of base coat and render. Mark the planned contact line with rendering coat on frames, then remove white protective strip from polyurethane tape and stick the profile to the frame, so its edge corresponds with line marked on the frame. Profile is always fixed with the "flap" inwards the reveal. Remove yellow protective strip and attach appropriately cut foil in order to protect the frames. Fill fully the profile inside part with base coat and thin-coat render. Break off the flap with foil after work completion.



#### Expansion joint profile

Expansion joint profile is fixed between thermal insulation boards in points where construction expansion joints run or where thermal insulation layer needs to be divided. Profile is available in two versions: straight – expansion joint keeps the façade plane, and angle – expansion joint in the internal corner. Profile can be used in expansion gaps 10 up to 30 mm wide. It consists of two parts: hard (PVC-U) – contacting thermal insulation boards and soft (PVC-P) – filling the space between them. Soft part is made in the co-extrusion process and therefore it joins the hard part strong and durably. The use of expansion joint profile ensures permanent tightness (in regard to moisture, dirt, microorganisms and insects) and appropriate cooperation of adjacent building sections and thermal insulation layers. The precondition of whole expansion joint tightness is correct vertical arrangement of two adjacent profiles: the upper one and the lower one. They are joined with special assembly section attached to each profile. It is made of soft PVC-P and has bonding layer (covered with a protective tape). The assembly section should be fixed to lower end of the upper profile (on bottom side of its soft part) and to upper end of the lower profile (on top side of the soft part). It is also possible to join profiles with overlaps – the upper profile needs to overlap the lower one. To do that, cut off 10 mm sections from the hard profile part, so an overlap is made of soft parts only. To form perfectly straight run of combined profiles, use attached plugs, which should be pressed from bottom side into "tips" – protruding parts of upper and lower profile.



Note. Before application of expansion joint profile, fill the joint with thermo-insulating material, e.g. polyethylene or polyurethane backer rod. After profile installation, protect the joint against soiling during application of base coat and rendering coat. For that purpose, put polystyrene strips into the joint and remove them after rendering.

### Sill profile

Profile is fixed under a sill, which ensures appropriate expansion joints between sill and thermal insulation system layers. The use of sill profile provides permanent tightness (to moisture, dirt, microorganisms and insects) and stiffens the sill (owing to appropriately shaped profile upper side). Sill profile has polyurethane tape which eliminates render cracks and damages resulting from differences in thermal expansion of materials. Moreover, profile facilitates application of render and keeping its proper thickness. When fixing the profile, make sure the thermal insulation boards are cut exactly to reveal size and that the profile is fixed horizontally. Directly before profile fixing, remove protective tape from polyethylene foam strip.



## Important additional information

- Do not clean the profiles with agents containing chloride.
- Fix profiles in temperature above +5°C. In temperature from 5°C up to 15°C, one can expect lower profiles flexibility.
- Protect profiles against deformation during transport and storage – keep in horizontal position in dry, heated room (temperature above +5°C). Shelf life in conditions as specified is 18 months from the production date shown on the packaging.

## Packaging

Profile	length [m]	Quantity in one packaging [m / pcs]
drip profile	2.5	62.5 / 25
corner profile	2.5	125.0 / 50
window profile 6 mm	2.4	48.0 / 20
window profile 9 mm	2.4	48.0 / 20
expansion joint profile - straight	2.0	50.0 / 25
expansion joint profile - angle	2.0	50.0 / 25
sill profile	2.0	50.0 / 25

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*At the time of publication of this product data sheet all previous ones become void.  
Date of update: 2014-05-21*



## ATLAS FASADA

### polystyrene boards for ATLAS external thermal insulation systems

- standard and graphite
- perfect thermal conductivity coefficient  $\lambda_D$  – required partition thermal insulation can be achieved with thinner boards

### Use

**Atlas Fasada** – white polystyrene boards manufactured by polystyrene foaming and intended for thermal insulation of walls, including thermal insulation of façades. Boards are manufactured in standard dimensions: 1,000 mm long, 500 mm wide, 20 mm thick and then every 10 mm.

**Atlas Fasada Grait** – grey polystyrene boards made of expanded polystyrene with refined graphite composition added in production process. The addition of graphite improves insulation properties, therefore better thermal resistance can be achieved with thinner boards. Boards are manufactured in standard dimensions: 1,000 mm long, 500 mm wide, 20 mm thick and then every 10 mm.

#### Range of use of Atlas Fasada boards:

- with ATLAS external thermal insulation systems, according to domestic or European technical approvals/assessments,
- external thermal insulation of walls installed with ETICS method (light-wet method, BSO) – if boards meet minimum requirements listed in technical specifications,
- external thermal insulation of walls installed with light-dry method,

- thermal insulation on the surface of stud wall,
- filling expansion joints,
- thermal insulation of enclosed slot of cavity walls,
- thermal insulation of ventilated slot of cavity walls,
- thermal insulation of loggias, balconies
- thermal insulation of jambs, lintels.

**Atlas Fundament** – insulation boards made of special polystyrene of lower hydrophobic properties. Perfect solution for thermal insulation of partitions exposed to long term damp action. Can be used for thermal insulation of foundation walls below ground level (up to 2 m below ground level), floors in damp rooms, damp rooms (wash rooms, cellars), plinths and cellar walls.

**Types of substrates** – concrete cement and cement-lime plasters, rough walls made of bricks, blocks, hollow blocks and other ceramic or silicate materials, cellular concrete.

**Adhesive mortars** – cement and polyurethane.

### Technical data and requirements

Product conforms to PN-EN 13163 + A1:2015-03.

FASADA GRAFIT λ 031		FASADA λ 039		FASADA λ 040		FASADA λ 042	
CE 1488, 1434		CE 1488, 1482		CE 1488, 1434		CE 1488, 1434	
EPS-EN 13163-T1-L2-W2-S5-P5-BS100-DS(N)2-DS(70,-)2-TR100		EPS-EN 13163-T1-L2-W2-S5-P5-BS115-DS(N)2-DS(70,-)2-TR100		EPS-EN 13163-T1-L2-W2-S5-P5-BS115-DS(N)2-DS(70,-)2-TR100		EPS-EN 13163-T1-L2-W2-S5-P5-BS75-DS(N)2-DS(70,-)2-TR80	
Reaction to fire	E	Reaction to fire	E	Reaction to fire	E	Reaction to fire	E
Thermal conductivity coefficient $\lambda_D$	$\leq 0.031$ W/mK	Thermal conductivity coefficient $\lambda_D$	$\leq 0.039$ W/mK	Thermal conductivity coefficient $\lambda_D$	$\leq 0.040$ W/mK	Thermal conductivity coefficient $\lambda_D$	$\leq 0.042$ W/mK
Thickness	T1 ( $\pm 1$ mm)	Thickness	T1 ( $\pm 1$ mm)	Thickness	T1 ( $\pm 1$ mm)	Thickness	T1 ( $\pm 1$ mm)
Length and width	L2, W2 ( $\pm 2$ mm)	Length and width	L2, W2 ( $\pm 2$ mm)	Length and width	L2, W2 ( $\pm 2$ mm)	Length and width	L2, W2 ( $\pm 2$ mm)
Rectangularity	S5 ( $\pm 5$ mm/1000 mm)	Rectangularity	S5 ( $\pm 5$ mm/1000 mm)	Rectangularity	S5 ( $\pm 5$ mm/1000 mm)	Rectangularity	S5 ( $\pm 5$ mm/1000 mm)
Flatness	P5 (5 mm)	Flatness	P5 (5 mm)	Flatness	P5 (5 mm)	Flatness	P5 (5 mm)
Bending strength	BS100 ( $\geq 100$ kPa)	Bending strength	BS115 ( $\geq 115$ kPa)	Bending strength	BS100 ( $\geq 100$ kPa)	Bending strength	BS75 ( $\geq 75$ kPa)
Dimensional stability in constant normal laboratory conditions	DS(N)2 ( $\leq 0.2\%$ )	Dimensional stability in constant normal laboratory conditions	DS(N)2 ( $\leq 0.2\%$ )	Dimensional stability in constant normal laboratory conditions	DS(N)2 ( $\leq 0.2\%$ )	Dimensional stability in constant normal laboratory conditions	DS(N)2 ( $\leq 0.2\%$ )
Dimensional stability in specified temperature and humidity conditions	DS(70,-)2 ( $\leq 2\%$ )	Dimensional stability in specified temperature and humidity conditions	DS(70,-)2 ( $\leq 2\%$ )	Dimensional stability in specified temperature and humidity conditions	DS(70,-)2 ( $\leq 2\%$ )	Dimensional stability in specified temperature and humidity conditions	DS(70,-)2 ( $\leq 2\%$ )
Tensile resistance to force perpendicular to front surfaces	TR 100 ( $\geq 100$ kPa)	Tensile resistance to force perpendicular to front surfaces	TR 100 ( $\geq 100$ kPa)	Tensile resistance to force perpendicular to front surfaces	TR 100 ( $\geq 100$ kPa)	Tensile resistance to force perpendicular to front surfaces	TR 80 ( $\geq 80$ kPa)

FASADA λ 045		FUNDAMENT STANDARD λ 038		FUNDAMENT PLUS λ 036	
CE 1488, 1434					
EPS-EN 13163-T1-L2-W2-S5-P5- BS75-DS(N)2-DS(70,-)2-TR80		EPS-EN 13163-T2-L3-W3-S5-P10- BS150-CS(10)100-DS(N)2-DS(70,-)2-WL(T)3		EPS-EN 13163-T2-L3-W3-S5-P10- BS200-CS(10)150-DS(N)5-DS(70,-)2-WL(T)3	
Reaction to fire	E	Reaction to fire	E	Reaction to fire	E
Thermal conductivity coefficient $\lambda_p$	$\leq 0.045$ W/mK	Thermal conductivity coefficient $\lambda_p$	$\leq 0.038$ W/mK	Thermal conductivity coefficient $\lambda_p$	$\leq 0.036$ W/mK
Thickness	T1 ( $\pm 1$ mm)	Thickness	T2 ( $\pm 2$ mm)	Thickness	T2 ( $\pm 2$ mm)
Length and width	L2, W2 ( $\pm 2$ mm)	Length and width	L3, W3 ( $\pm 3$ mm)	Length and width	L3, W3 ( $\pm 3$ mm)
Rectangularity	S5 ( $\pm 5$ mm/1000 mm)	Rectangularity	S5 ( $\pm 5$ mm/1000 mm)	Rectangularity	S5 ( $\pm 5$ mm/1000 mm)
Flatness	P5 (5 mm)	Flatness	P10 (10 mm)	Flatness	P10 (10 mm)
Bending strength	BS75 ( $\geq 75$ kPa)	Bending strength	BS150 ( $\geq 150$ kPa)	Bending strength	BS200 ( $\geq 200$ kPa)
Dimensional stability in constant normal laboratory conditions	DS(N)2 ( $\leq 0.2\%$ )	Dimensional stability in constant normal laboratory conditions	DS(N)2 ( $\leq 0.2\%$ )	Dimensional stability in constant normal laboratory conditions	DS(N)5 ( $\leq 0.5\%$ )
Dimensional stability in specified temperature and humidity conditions	DS(70,-)2 ( $\leq 2\%$ )	Dimensional stability in specified temperature and humidity conditions	DS(70,-)2 ( $\leq 2\%$ )	Dimensional stability in specified temperature and humidity conditions	DS(70,-)2 ( $\leq 2\%$ )
Tensile resistance to force perpendicular to front surfaces	TR 80 ( $\geq 80$ kPa)	Water absorption at long term total immersion	WL(T)3 ( $\leq 3\%$ )	Water absorption at long term total immersion	WL(T)3 ( $\leq 3\%$ )

## Boards installation

### Substrate preparation for boarding

The substrate should be frost-free, stable, even and structurally sound, i.e. strong enough, free from layers which would impair the mortar bonding, in particular dust, dirt, lime, oil, grease, wax, remains of emulsion and oil paints. Prior to repair works substrate should be cleaned and, if excessively absorptive, primed with ATLAS UNI-GRUNT emulsion. Prime also weak cement, cement-lime plasters and rough walls made of cellular concrete or hollow cinder blocks. Mayor irregularities or cavities should be filled with ATLAS ZW 330 or ATLAS PLASTERING MIX.

### Boarding

Apply the mortar on the back side of a board with the "strip-point method", i.e. apply continuous circumferential bead (min. 3 cm wide) along the board edges and 6-8 patches (of diameter 8-12 cm) evenly distributed upon the board surface. In total, mass should coat min. 40% of the board surface (60% after pressing the board to substrate) and provide appropriate bonding between the board and the wall. Just after mortar application the board should be placed upon substrate and pressed onto expected place, so the mortar thickness beneath the board does not exceed 10 mm. In case of even and smooth substrates, it is acceptable to spread the mortar evenly with a notched trowel upon the whole board surface, so it forms layer 2-5 mm thick after fixing.

### Boards preparation for base coat

The boards surface should be frost-free, even, clean, stable and dusted, if boards have been grinded since fixing. It is advisable to grind and dust graphite boards prior to base coat application.

## Important additional information

- Do not fix heated graphite polystyrene. Protect graphite polystyrene against heating up during installation and initial adhesive setting. Heating graphite polystyrene during any of these phases can result in the adhesive loosening.
- When fixing the boards onto poor substrates of hard to determine bearing capacity (e.g. unstable, dusty, hard to clean), it is advisable to conduct a test of bonding. It consists in fixing 8-10 polystyrene cubes (10x10 cm large) at various façade points and checking the bond after 3 days. The substrate strength can be assumed as acceptable when polystyrene cube breaks within when torn off. If the cube tears off with mortar or substrate layer, then the substrate bearing capacity is insufficient. In such case further procedure, e.g. technology of weak layer removal, should be described in the external insulation design.
- In case of prolonged exposition of fixed polystyrene to atmospheric factors, particularly UV radiation, yellowish tarnish can occur on boards surface. Remove the tarnish before base coat application.
- Use scaffolding covers during work. Do not carry out the installation during snowfall, rain and in strong wind.
- Do not use boards in direct contact with substances of destructive effect on polystyrene, e.g. organic solvents (acetone, nitro, benzene, etc.).
- The boards should be transported and stored in original packaging. Protect against mechanical damage and atmospheric factors. Do not keep graphite polystyrene in place exposed to direct sunlight, as it can lead to boards deformation.

## Packaging

Thickness [mm]	Boards per packaging [pcs]	Packaging volume [m <sup>3</sup> ]	Coverage [m <sup>2</sup> ]
20	30	0.30	15.00
30	20	0.30	10.00
40	15	0.30	7.50
50	12	0.30	6.00
60	10	0.30	5.00
70	8	0.28	4.00
80	7	0.28	3.50
90	6	0.27	3.00
100	5	0.30	3.00
110	5	0.275	2.50
120	5	0.30	2.50
130	4	0.26	2.00
140	4	0.28	2.00
150	4	0.30	2.00
160	3	0.24	1.50
170	3	0.255	1.50
180	3	0.27	1.50
190	3	0.285	1.50
200	3	0.300	1.50

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*At the time of publication of this product data sheet all previous ones become void.  
Date of update: 2015-10-09*





## Use

**For base coat (reinforced layer) installation** – to be embedded in the adhesive coat during installation of thermal insulation systems, both with polystyrene and mineral wool.

**Component of thermal insulation systems** – element of composite thermal insulation systems, which have been given both European (ETA) and domestic (AT) technical approvals.

## Properties

- **Durable** – consists of interlacing weft and warp yarns creating strong gauze weave, providing the mesh with high mechanical resistance and preventing the yarns from slipping out of position.
- **Flexible** – ensures compensation of thermal and mechanical deformations, which thermal insulation system is subject to during operation, prevents cracking of the façade layers and enables formation of stable substrate for the rendering coat.
- **Resistant to alkali** – yarns are protected by immersion in acrylic bath, therefore resistant against aggressive alkali present in the adhesive mortars.

## Technical data

The mesh is made of fiber glass, protected by immersion in acrylic bath against aggressive alkali present in the adhesive mortars.

## Base coat application

Base coat can be applied when adhesive mortar used for boards fixing sets appropriately and after additional mechanical fixing (after 3 days on average). Spread mortar upon fixed thermal insulation and embed consecutive fiberglass mesh strips. The mesh strips should be placed vertically – from top to bottom. It is advisable to press the mesh into adhesive coat in a few points and embed the whole strip with a notched trowel then. Properly installed mesh should be embedded in the adhesive coat not deeper than half the coat thickness, therefore it's completely coated with adhesive and has no contact with the boards surface. The base coat should be approx. 3 mm thick and should be kept continuous, i.e. consecutive strips should be applied with min. 10 cm wide vertical and horizontal overlaps (15 cm wide at the building corners). The mesh overlaps should not correspond with the joints between insulation boards. After embedding the mesh, thoroughly float the adhesive coat with a smooth steel float.

# REINFORCING MESH

- resistant to alkali
- durable
- elastic

	ATLAS 150	SSA-1363 SM 0.5	ATLAS 165
Colour	yellow with ATLAS overprint	yellow with ATLAS overprint	yellow with ATLAS overprint
Density [g/m <sup>2</sup> ]	150 (-3/+10%)	155 ± 5%	160 (-3/+10%)
Weave type	gauze	gauze	gauze
Width [m]	1.0	1.0	1.0
Mesh size [mm]	4.5 x 5.0	3.5 x 3.5	3.7 x 3.9
Packaging	roll 50 rm	roll 50 rm	roll 50 rm
Technical requirements	AT-15-9090/2014	AT-15-8489/2010	AT-15-9090/2014

Fiberglass mesh is listed the following European Technical Assessments/Approvals for thermal insulation systems:

System name	Technical Approval No.	EC Conformity Certificate
ATLAS	ETA 06/0081	1488-CPD-0021
ATLAS XPS	ETA 07/0316	1488-CPD-0075
ATLAS ROKER	ETA 06/0173	1488-CPD-0036

Fiberglass mesh is listed the following domestic technical approvals for thermal insulation systems:

System name	Technical Approval No.	Certificate No.
ATLAS ETICS	AT-15-9090/2014	FPC No. ITB-0562/Z
ATLAS ROKER	AT-15-7314/2011	FPC No. ITB-0222/Z
ATLAS ROKER G	AT-15-2930/2012	FPC No. ITB-0436/Z
ATLAS CERAMIK	AT-15-8592/2011	FPC No. ITB-0472/Z
ATLAS RENOTER	AT-15-8477/2011	FPC No. ITB-0456/Z

Fiberglass mesh SSA-1363 SM 0.5 is listed in the National Standard Authority of Ireland (NSAI) Certificate no. 10/0347 and in the British Board of Agrément (BBA) Certificate no. 13/5018.

## Important technical information

- The mesh parameters are used to its full advantage only when applied in combination with other system components and according to the technology of system installation.
- Fiberglass mesh has to be stored in vertical position, in dry, airy rooms, away from heating devices.

**Note:** Mesh must not be exposed to direct sunshine and atmospheric factors.

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Date of update: 2014-05-21*