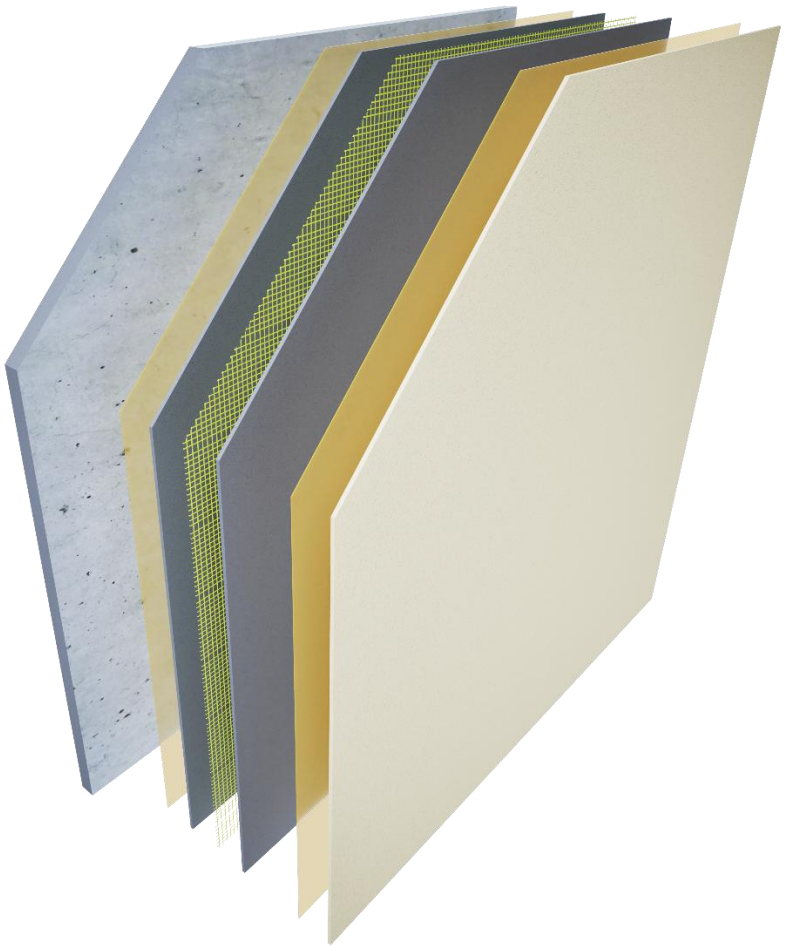
ATLAS TECHNICAL SPECIFICATION

RENDER FINISH OVER CEMENT-BASED BOARDS

ATLAS GEMINI RS silicone render – 1.5 mm grain size



RENDER COMPONENTS' PROVIDER / MANUFACTURER:

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This document provides general, non-project-specific guidance for render-only applications. Each building and project must be assessed individually, considering its specific design, substrate conditions, exposure, and technical requirements. Final specifications should be confirmed on a project-by-project basis.

DATE OF ISSUE: 28 October 2026

SCOPE OF APPLICATION

This specification provides technical guidance for the application of a render finish onto the external surface of cement-based boards used as sheathing on framed wall constructions, including timber frame and steel frame systems.
The specification primarily covers fibre cement boards (FCB), but also applies to cement-bonded particleboards (CBPB) and mesh-reinforced cement boards, provided that the selected boards are suitable for the proposed render finish.

The render finish is formed by the successive application of the following ATLAS components:

- ATLAS HOTER U – adhesive mortar for the reinforced base coat.
- ATLAS 150 – glass-fibre reinforcing mesh embedded in the base coat.
- ATLAS CERPLAST – primer for the thin-coat render.
- ATLAS GEMINI RS – hand-applied silicone thin-coat render, grain size 1.5 mm.

The finishing solution described in this specification is not covered by the Technical Assessments or certifications applicable to ATLAS ETICS/EWI systems. The use of similar application methods does not imply that the described solution or the complete wall assembly is covered by such assessments or certifications.
This specification applies only to the external render finishing layers and does not replace the design or construction documentation for the wall assembly itself. The complete wall construction, including its structural and thermal-moisture performance, must be properly designed and executed in accordance with applicable building regulations and the relevant design requirements.

DESCRIPTION OF THE SUBSTRATE

General Description and Requirements

The substrate for the ATLAS render finish is an external sheathing made of cement-based boards installed on a framed wall construction, such as a timber frame or steel frame system.
The complete wall assembly must be designed and constructed in accordance with applicable building regulations, relevant design documentation and the requirements of the manufacturers of the materials and components used. This includes structural stability, load-bearing capacity and thermal and moisture performance, as well as the appropriate selection, positioning and installation of thermal insulation, vapour control layers and waterproofing or moisture protection measures.
The requirements specified in this section must be met in addition to those established by the board manufacturer. Where the manufacturer's requirements are more stringent than those specified in this document, the more stringent requirements must be followed.

COMPONENTS OF THE TECHNICAL SOLUTION

Hand-applied ATLAS GEMINI RS silicone render, grain size 1.5 mm

Layer / Component	Product	Layer thickness	Average consumption	Packaging	Coverage per package
Substrate primer – absorbent boards	ATLAS UNI-GRUNT (*)	—	approx. 0.025 kg/m^2 (diluted 1:1)	5 kg container	up to approx. 200 m^2 (*)
Substrate primer – low-absorption or smooth boards	ATLAS ULTRAGRUNT (*)	—	approx. 0.3 kg/m^2	15 kg bucket	approx. 50 m^2
Reinforced base coat	ATLAS HOTER U	2–5 mm	3.0–3.5 kg/m^2	25 kg bag	approx. 7.1–8.3 m^2
Reinforcing mesh	ATLAS 150	Embedded in base coat	approx. 1.1 m^2/m^2 (**)	50 m roll, 1 m wide	approx. 45 m^2 (**)
Primer under render	ATLAS CERPLAST	—	approx. 0.3 kg/m^2	15 kg bucket	approx. 50 m^2
Silicone thin-coat render	ATLAS GEMINI RS, 1.5 mm	approx. 1.5 mm	from 2.3 kg/m^2	25 kg bucket	up to approx. 10.9 m^2

(*) The selection of ATLAS UNI-GRUNT or ATLAS ULTRAGRUNT must be based on the cement-based board properties assessed by the contractor, particularly the water absorption and surface characteristics of the boards. The selected primer must be suitable for the substrate conditions.

(**) Estimated consumption and coverage for 1 m wide reinforcing mesh with approximately 10 cm overlaps. Actual consumption and coverage depend on the arrangement of mesh strips, overlaps and supplementary reinforcement.

MATERIALS, TECHNICAL DATA SHEETS AND SAFETY DATA SHEETS

All ATLAS products specified in this document must be used in accordance with the manufacturer's Technical Data Sheets and the application instructions provided in this specification.
Technical Data Sheets (TDS) and Safety Data Sheets (SDS) for individual products are available on their respective product pages on the official ATLAS website: www.atlas.com.pl/en.
Before commencing work, the contractor should ensure that the applicable product documentation is available and that the materials are suitable for the intended application.

HEALTH AND SAFETY[1]

All works must be carried out in accordance with applicable health and safety regulations, including the Health and Safety at Work etc. Act 1974, the Control of Substances Hazardous to Health Regulations 2002 (COSHH) and the Work at Height Regulations 2005, where applicable.
Before commencing work, contractors must familiarise themselves with the relevant safety information, hazards and precautionary measures specified in the Safety Data Sheets (SDS) of the products used.
Appropriate personal protective equipment (PPE) must be used in accordance with the product Safety Data Sheets and the requirements of the work being carried out.
The relevant Safety Data Sheets are available on the individual product pages on the official ATLAS website: www.atlas.com.pl/en.

SUBSTRATE PREPARATION

Before commencing rendering works, the condition of the cement-based board sheathing must be examined to confirm its suitability for the application of the proposed render finish.

a. Stability and Load-Bearing Capacity

The boards must have appropriate technical properties, including adequate thickness, strength and dimensional stability, confirmed by the relevant manufacturer's documentation.
The boards must be securely fixed to a suitably designed supporting structure. The arrangement and spacing of the supporting members, together with the type, number and spacing of the fixings, must ensure adequate support, load-bearing capacity and stability under the anticipated loads, including wind pressure and suction and stresses resulting from temperature changes.
Fixings, such as screws or rivets, must be appropriately selected and made of stainless steel or suitably galvanised steel, in accordance with the board manufacturer's requirements.
The installation of the boards must prevent relative movements between adjacent boards that could result in cracking or other defects in the render finish.

b. Cleanliness and Surface Condition

The surface of the boards must be clean and free from dust, dirt, loose particles and other contaminants that could impair the adhesion of the reinforced base coat.
For newly installed boards, the surface must be inspected and any accumulated dust or contamination removed using suitable cleaning methods, such as vacuum cleaning.
Where existing board sheathing is being renovated, the surface must be thoroughly cleaned. Any loose, flaking or poorly bonded coatings must be removed using suitable cleaning methods, including pressure washing where appropriate.
Pressure washing must be carried out carefully, taking into account the board manufacturer's requirements, to avoid damaging the surface or causing excessive moisture absorption. The boards must be allowed to dry sufficiently before further work is carried out, in accordance with the requirements specified in subsection d. Dryness and Moisture Content.

[1] Note: The legislation referenced in this section applies to Great Britain (England, Scotland and Wales). For works carried out in Northern Ireland or the Republic of Ireland, the relevant health and safety legislation applicable in those jurisdictions must be observed

c. Flatness

The surface of the cement-based board sheathing must form an even and continuous plane suitable for the application of the reinforced base coat.
The required flatness must be achieved during the installation of the boards, through the correct arrangement and fixing of the sheathing to the supporting structure.

The heads of fixing elements, such as screws or rivets, must not protrude above the surface of the boards. Where necessary, appropriate fixing holes or recesses must be provided in accordance with the board manufacturer's requirements.

d. Dryness and Moisture Content

The cement-based board sheathing must be dry, free from frost and surface condensation before the application of any ATLAS products.
Boards exposed to rainfall or excessive moisture, including moisture introduced during substrate preparation, such as washing described in subsection b., must be allowed to dry for a minimum of 72 hours under dry weather conditions before priming or applying the reinforced base coat. A longer drying period may be required to achieve the permissible moisture content.
The moisture content of the boards must not exceed 3%, unless the board manufacturer specifies a lower permissible value, in which case the more stringent requirement must be followed.
The wall construction must be adequately protected against moisture penetration from the interior of the building through the appropriate design and installation of vapour control layers and other moisture protection measures, as specified in the relevant construction documentation.

e. Board Joints and Movement Joints

The joints between adjacent cement-based boards must be properly formed in accordance with the board manufacturer's requirements.
Any gaps between boards must be treated using suitable materials and methods specified or approved by the board manufacturer.
The arrangement and fixing of the boards must prevent relative movements at the joints that could result in cracking of the reinforced base coat or render finish.[2]
Existing or designed movement and expansion joints in the wall construction must be maintained through the reinforced base coat and render finish using appropriate movement joint profiles. Such joints must not be bridged by the reinforcing mesh or render.

f. Adhesion and Priming

Adequate adhesion of ATLAS HOTER U to the cement-based board substrate must be ensured before the application of the reinforced base coat.
The selection of the substrate primer must be based on the absorbency and surface characteristics of the boards, as assessed by the contractor.

[2] Depending on their type and properties, cement-based boards may undergo thermal deformation as a result of temperature changes, including heating caused by solar radiation, even when the boards are covered by the render finish and are not directly exposed to sunlight. Such deformation may cause the boards to bow or deflect out of the façade plane, potentially affecting the appearance and flatness of the finished surface. Where such effects result from deformation of the underlying board sheathing rather than defects in the render finish itself, they must not be regarded as defects in the applied render finish.

For absorbent boards, ATLAS UNI-GRUNT is to be used to reduce and equalise substrate absorbency. The primer must be diluted with clean water in proportions appropriate to the absorbency and surface characteristics of the boards. The 1:1 dilution ratio indicated in the components table is used for estimating material consumption and coverage.
For boards with low absorbency, very smooth surfaces or factory-applied hydrophobic treatments that could impair adhesion, ATLAS ULTRAGRUNT is to be used to provide a suitable bonding surface.
Where the suitability or adhesion of the substrate is uncertain, particularly in the case of existing board sheathing undergoing renovation, the adhesion of ATLAS HOTER U to the substrate must be verified before commencing rendering works. Where a standardised adhesion test cannot be carried out, an indicative on-site adhesion assessment may be performed.[3]
The selected primer must be allowed to reach the condition required for subsequent application of ATLAS HOTER U.

REINFORCED BASE COAT – ATLAS HOTER U + ATLAS 150

Preparation of Adhesive Mortar

ATLAS HOTER U adhesive mortar is to be prepared using 5.0–5.5 litres of clean water per 25 kg bag.
The dry mix is to be added to the measured amount of water and mixed using a low-speed mixer until a uniform consistency is obtained.
The mixed mortar is to be left to stand for approximately 5 minutes, after which any unmixed material remaining on the sides of the mixing container is to be incorporated and the mortar mixed again.
The prepared mortar should be used within approximately 4 hours.

Application of the Reinforced Base Coat

Step 1 – Installation of Accessories and Supplementary Reinforcement

The necessary corner beads, window and door reveal profiles, movement joint profiles and other relevant finishing accessories must be installed in the appropriate sequence, using ATLAS HOTER U mortar where suitable.
At the corners of window and door openings, additional reinforcing mesh patches measuring at least 20 × 35 cm are required. These stress patches are to be embedded diagonally at an angle of 45° in freshly applied ATLAS HOTER U mortar, beneath the main reinforced layer, to reduce the risk of cracking.
Where accessories or supplementary reinforcement are installed separately before the main base coat, the mortar used for their installation must have set sufficiently to permit further work without disturbing the installed elements.

[3] An indicative adhesion assessment may be carried out using a method analogous to that commonly applied when checking substrate suitability for External Wall Insulation (EWI) systems. Representative EPS samples are bonded to the substrate using ATLAS HOTER U and, after the mortar has set sufficiently, manually detached. Failure at the adhesive-to-board interface indicates insufficient adhesion, while failure within the EPS sample generally indicates satisfactory adhesion. Failure within the board itself requires further assessment of its suitability. This procedure is not a standardised adhesion test.

Step 2 – Application of the Reinforced Base Coat

A thin, even contact layer of ATLAS HOTER U mortar is to be applied to the prepared and primed board surface using the smooth side of a steel trowel.
ATLAS HOTER U mortar is then to be spread evenly using a notched trowel with 6–10 mm teeth.
ATLAS 150 glass-fibre reinforcing mesh must be embedded into the freshly applied mortar, pressed evenly into the adhesive layer and smoothed over using the flat side of the trowel.
Adjacent reinforcing mesh strips must overlap by at least 10 cm, including connections with the mesh incorporated into finishing profiles. At external corners, the mesh overlaps must be at least 15 cm.
Reinforcing mesh overlaps must not coincide with the joints between adjacent cement-based boards.
The reinforcing mesh must be completely embedded in the mortar and must not remain visible or be in direct contact with the subsequently applied thin-coat render.
The total thickness of the reinforced base coat must be between 2 mm and 5 mm.
After the mortar has dried sufficiently, any remaining surface irregularities that could affect the correct application of the thin-coat render must be removed by suitable smoothing or sanding methods.

Drying Before Further Work

The reinforced base coat must be allowed to dry sufficiently before commencing subsequent finishing works.
Under normal application conditions, the drying period is approximately 3 days. The actual drying time may vary depending on the thickness of the applied layer, temperature, relative humidity and prevailing weather conditions.

PRIMING UNDER RENDER – ATLAS CERPLAST

Before priming, the reinforced base coat must be sufficiently dry. If the interval between completion of the reinforced base coat and priming is extended, any dust or contamination accumulated on the surface must be removed before applying ATLAS CERPLAST.
ATLAS CERPLAST is supplied as a ready-to-use compound. The material must be stirred to obtain a uniform consistency before and during application. The primer must not be diluted or mixed with other materials.
The primer should be applied evenly over the entire surface of the reinforced base coat using a roller or brush.
Render application may commence once the primer has dried completely, normally after approximately 4–6 hours, depending on the prevailing conditions.

RENDER APPLICATION – ATLAS GEMINI RS

Preparation of Render

ATLAS GEMINI RS is supplied as a ready-to-use silicone render. The material must be stirred thoroughly immediately before application to obtain a uniform consistency.
The render must not be mixed with other materials or thickened. When working at temperatures near the upper limit of the permitted application range, the addition of up to 1% clean water (maximum 250 ml per 25 kg bucket) is permitted.

Application and Texturing

ATLAS GEMINI RS is applied manually using a smooth stainless steel trowel, in a uniform layer with a thickness corresponding to the aggregate grain size.
Excess render material collected during application is to be returned to the container for remixing.
The freshly applied render should be textured using a plastic float, with circular movements to achieve the required texture.
Although ATLAS GEMINI RS is formulated to minimise the formation of excess resin-rich slurry during texturing, any such material accumulating on the plastic float must be removed and must not be returned to the render container.
Application must be carried out using the wet-on-wet method, without allowing the previously applied render to dry before the adjoining area is completed.
Technological breaks should be planned in advance and located, wherever possible, at natural divisions of the façade, such as building corners, changes in façade geometry or colour boundaries.
To minimise visible differences in colour, render from the same production date should be used on each continuous façade surface.

Alternative Application Method – Spray Application

ATLAS GEMINI RS, grain size 1.5 mm, may also be applied mechanically using suitable spray equipment, in accordance with the equipment manufacturer's recommendations.
Mechanically applied render does not require texturing with a plastic float. The surface texture obtained by spray application differs from that achieved by manual application; therefore, combining the two application methods on the same façade surface is not recommended.
Spray application may provide lower material consumption compared with manual application. For ATLAS GEMINI RS, grain size 1.5 mm, the indicative consumption is:

- Manual application: from 2.3 kg/m^2, corresponding to a coverage of up to approximately 10.9 m^2 per 25 kg bucket.
- Spray application: from 1.9 kg/m^2, corresponding to a coverage of up to approximately 13.2 m^2 per 25 kg bucket.

Actual consumption and coverage depend on the substrate conditions, application technique and equipment settings.

APPLICATION CONDITIONS

The contractor must ensure that all works are carried out under suitable weather conditions and that the substrate is free from frost and surface condensation before the application of each subsequent layer.
The façade must be protected against excessive direct sunlight, strong winds and precipitation. Suitable protective sheeting or mesh installed on the scaffolding should be used where necessary to provide adequate protection.
The minimum application temperature for all specified products is +5°C, while the maximum permissible temperatures vary between +25°C and +35°C depending on the product.
During the application and setting of ATLAS GEMINI RS, the relative air humidity must remain below 80%.

ATLAS GEMINI RS silicone thin-coat render may also be applied at temperatures above 0°C and below +5°C, or at increased relative humidity, including above 80%, provided that ATLAS ESKIMO G is used.
When using ATLAS ESKIMO G, particular attention must be paid to the additional application conditions and limitations associated with this product.

COPINGS, FLASHINGS AND SEALERS

Copings and Flashings

The render finish must not be applied to horizontal or sloping surfaces where rainwater may accumulate or remain standing. Such surfaces, including wall tops and parapets, must be adequately protected by suitable copings, flashings or other appropriate weatherproofing details.
These elements must be designed and installed to prevent water penetration behind the render finish and to direct rainwater away from the façade surface.
Window sills, flashings and other projecting elements should provide adequate protection against rainwater running onto or penetrating behind the rendered surface.

Connections and Sealing

Connections between the render finish and adjacent building elements, including window and door frames, flashings, sills and other façade components, must be detailed to accommodate anticipated movement and prevent water penetration.
Suitable finishing profiles, sealing tapes or sealants should be used where necessary, taking into account compatibility with the adjoining materials and the expected exposure conditions.
Sealants must be suitable for external use and applied in accordance with their manufacturers' instructions.
All junctions and penetrations through the rendered surface must be adequately weatherproofed to protect the underlying cement-based board sheathing and the render finish.
Existing or designed ventilation openings, drainage outlets and weep holes must remain unobstructed. The application of the reinforced base coat, render and associated finishing materials must not restrict their intended function.

Installation of Additional Façade Elements

The installation sequence of additional façade elements, such as brackets, fixings, external services, downpipes and other accessories, must be considered during the planning of rendering works.
Fixings for additional façade elements, including rainwater, soil and vent pipes, should be installed before the application of the reinforced base coat and render. Where these elements require structural support, the fixings must be appropriately anchored to the supporting wall structure through the cement-based board sheathing, rather than relying solely on the boards themselves.
The installation of the associated elements, such as pipes and downpipes, may be completed after the render finish has been applied, provided that all connections and penetrations are adequately weatherproofed.

PROTECTION OF ADJACENT ELEMENTS AND FINAL CLEANING

Before commencing rendering works, windows, doors, sills, flashings and other adjacent building elements must be adequately protected against contamination or damage using suitable protective materials.
Upon completion of the works, all temporary protection must be removed and any mortar, primer, render or sealant residues must be cleaned from affected surfaces using methods appropriate for the materials concerned.
The completed works and surrounding areas must be left clean and free from construction residues.

MAINTENANCE

Regular maintenance of the render finish is essential to ensure its long-term durability.
Maintenance may include repairs to damaged areas and, where necessary, the application of suitable products or paints compatible with the materials previously used.
Further guidance is provided in the ATLAS Façade Maintenance and Renovation guide, available on the official ATLAS website: www.atlas.com.pl/en.

ALTERNATIVE MATERIALS

Alternative ATLAS products may be used to achieve different technical properties, surface textures and decorative effects.

Alternative mortars for the reinforced base coat

The following ATLAS mortars may be used as alternatives to ATLAS HOTER U:

- ATLAS STOPTER K-50 (*)
- ATLAS STOPTER K-20
- ATLAS ROKER U
- ATLAS HOTER U2-B
- ATLAS GRAWIS U
- ATLAS GRAWIS DUO
- ATLAS GRAWIS DUO WHITE
- ATLAS GRAWIS ULTRA

(*) A reinforced base coat formed using ATLAS STOPTER K-50 does not require priming before the application of the thin-coat render.

Alternative reinforcing mesh

ATLAS 165 may be used instead of ATLAS 150.

Alternative primer under render

ATLAS SILKON ANX may be used instead of ATLAS CERPLAST.

Alternative thin-coat renders

The following alternative ATLAS renders may be used:

- ATLAS GEMINI RSX – silicone render
- ATLAS SILICONE RENDER
- ATLAS SILICONE HYBRID RENDER
- ATLAS ACRYLIC RENDER
- ATLAS SILICONE-SILICATE RENDER
- ATLAS CERMIT ND – cement-lime mineral render
- ATLAS DEKO M – mosaic render
- ATLAS CERMIT N-100 – decorative render with a brick effect
- ATLAS CERMIT WN – cement-lime mineral render with a timber effect (**)
- ATLAS SILKON BA – silicone render with a concrete or brick effect

(**) A timber board texture formed using ATLAS CERMIT WN additionally requires the application of ATLAS BEJCA.

General requirements

The use of alternative ATLAS products requires the agreement of a separate technical specification with ATLAS, taking into account the suitability and compatibility of the selected materials and any differences in substrate preparation, application requirements, layer thicknesses, consumption rates, drying times and application conditions.
The material consumption and coverage values provided in this specification apply only to the products listed in the main components table and must not be assumed to apply to alternative materials.

The content of the Technical Data Sheets, as well as the symbols and trade names used therein, is the property of ATLAS sp. z o.o. Their unauthorised use will be sanctioned.

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