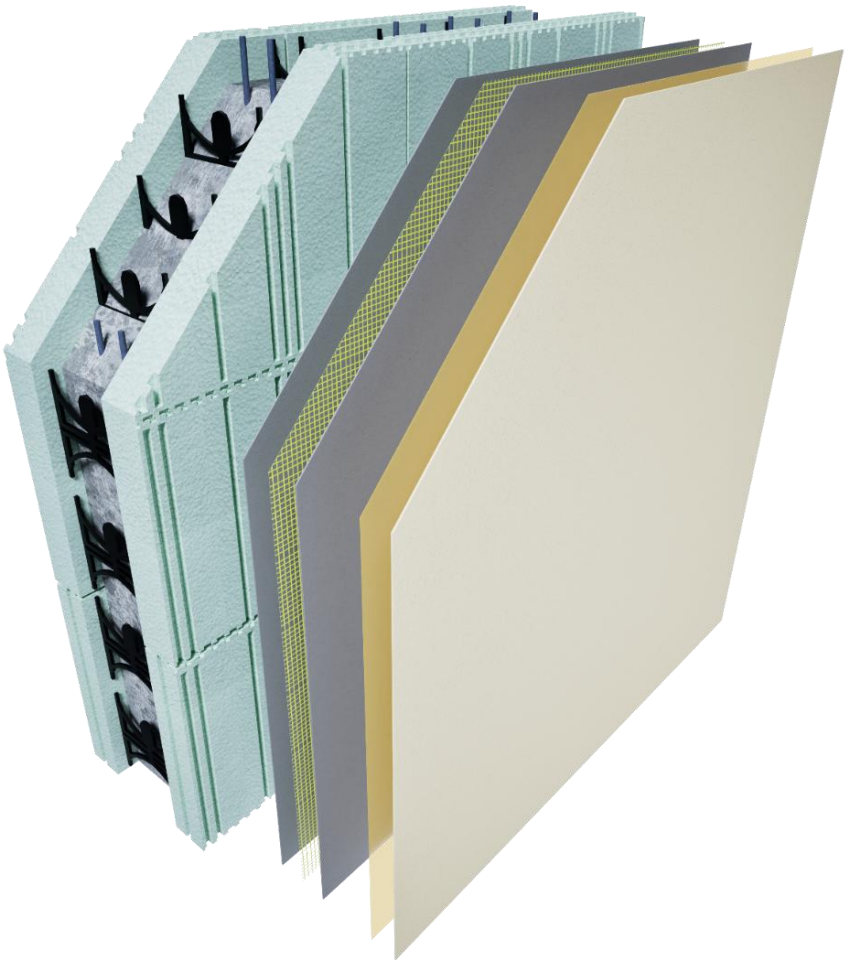
ATLAS TECHNICAL SPECIFICATION

RENDER FINISH OVER INSULATED CONCRETE FORMWORK (ICF)

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.

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SCOPE OF APPLICATION

This specification provides technical guidance for the application of a render finish onto the external expanded polystyrene (EPS) surface of walls constructed using Insulated Concrete Formwork (ICF) technology.
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 165 – 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 ICF wall assembly is covered by such assessments or certifications.

This specification does not replace the design or construction documentation for the ICF wall itself.

DESCRIPTION OF ICF SUBSTRATE

The substrate for the ATLAS render finish is a wall constructed using Insulated Concrete Formwork (ICF) technology, consisting of permanent EPS formwork elements with a concrete structural core.
The ICF wall must be designed and constructed in accordance with the ICF manufacturer's requirements and the applicable building regulations.
The ICF substrate must be suitable for the application of a reinforced base coat and thin-coat render finish. It must be stable, properly constructed and free from defects or movements that could adversely affect the durability of the render finish.
The suitability of the ICF substrate for the proposed render finish, including its stability and the condition of the joints between the ICF elements, must be confirmed before rendering works commence.

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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
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 165	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

(*) 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 additional 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.

[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.

SUBSTRATE PREPARATION

Before commencing work, the condition of the ICF substrate must be examined, with particular attention to the surface of the formwork blocks and the joints between adjacent elements.
The substrate must be:

- **Uniform** – the external surface of the ICF blocks must form a continuous and uniform substrate suitable for the application of the reinforced base coat.
- **Properly joined** – adjacent ICF blocks must fit tightly together, without open joints or gaps. Particular attention must be paid to areas where concrete may have escaped from the structural core during wall construction. Any protruding concrete must be removed and the surface made even.
- **Even** – any surface irregularities that could affect the correct application and thickness of the reinforced base coat must be corrected.
- **Frost-free and dry** – the substrate must not be frozen or wet when the reinforced base coat is applied.
- **Clean and dust-free** – the surface must be free from dust, dirt, loose particles and other substances that could impair the adhesion of the adhesive mortar.

Where necessary, the surface of the ICF blocks should be sanded using a suitable EPS rasp to achieve an even surface suitable for the application of the reinforced base coat. Any dust generated during sanding must be thoroughly removed. The reinforced base coat must not be used to level significant surface irregularities or fill gaps and defects in the ICF substrate.
Any gaps or defects in the ICF substrate must be filled using ATLAS GRAWIS P polyurethane foam adhesive. After the foam adhesive has cured, any excess material must be removed to obtain a continuous and even surface suitable for the subsequent application of the reinforced base coat.
The substrate must be inspected after preparation to confirm that the surface and joints between the ICF elements are suitable for the application of the reinforced base coat.

REINFORCED BASE COAT – ATLAS HOTER U + ATLAS 165

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 prepared mortar should be used within approximately 4 hours, depending on the application conditions.

Application of the Reinforced Base Coat

Before application of the main reinforced base coat, the necessary corner beads, window and door reveal profiles, movement joint profiles and other relevant finishing accessories must be installed in the appropriate sequence.
Reinforcing mesh overlaps, including connections with the mesh incorporated into finishing profiles, must be executed in accordance with good building practice, ensuring continuity of the reinforcement.
Where practicable, reinforcing mesh overlaps should be positioned so that they do not coincide with the joints between adjacent ICF elements.
ATLAS HOTER U is applied evenly onto the prepared ICF substrate using a steel trowel, e.g. a notched trowel with 6–10 mm teeth.
ATLAS 165 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.

The reinforcing mesh must be completely embedded in the mortar and must not remain visible. Adjacent mesh strips must overlap by at least 10 cm.
At the corners of window and door openings, additional reinforcing mesh strips measuring at least 20 × 35 cm are required. These are to be embedded diagonally at an angle of 45°, beneath the main reinforced layer, to reduce the risk of cracking.
The total thickness of the reinforced base coat must be between 2 mm and 5 mm.
After the mortar has dried, any remaining surface irregularities that could affect the correct application of the thin-coat render are to be sanded down.

Drying Before Further Work

Subsequent finishing work may commence once the reinforced base coat has dried sufficiently, normally after approximately 3 days, depending on the prevailing conditions.
Before applying the thin-coat render, the reinforced base coat must be primed with ATLAS CERPLAST in accordance with the following section of this specification.

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 thoroughly before application to obtain a uniform consistency. 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

The following instructions refer to the manual application of ATLAS GEMINI RS silicone render.

Preparation of Render

ATLAS GEMINI RS is supplied as a ready-to-use silicone render. The material is to be prepared in accordance with its Technical Data Sheet and mixed thoroughly 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.
The rendered surface must be protected against adverse weather conditions during application and drying, in accordance with the product Technical Data Sheet and the following section of this specification.

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 product Technical Data Sheet and 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, the two application methods must not be combined on the same building.
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 temperature of the substrate and surrounding air during the application of ATLAS HOTER U, ATLAS CERPLAST and ATLAS GEMINI RS must be between +5°C and +30°C, except where the use of ATLAS GEMINI RS with ATLAS ESKIMO G is permitted as described below.
During the application and setting of ATLAS GEMINI RS, the relative air humidity must be below 80%. Where the temperature falls below +5°C but remains above 0°C, ATLAS GEMINI RS may be applied with the addition of ATLAS ESKIMO G, including in conditions of increased relative humidity (even above 80%).
The use of ATLAS ESKIMO G does not alter the application temperature requirements for ATLAS HOTER U or ATLAS CERPLAST.
Rendering works should not be carried out during rainfall, strong winds or in conditions of intense direct sunlight without appropriate protection.
The façade must be protected against direct sunlight, wind and precipitation during application and throughout the drying and setting periods of the materials. Suitable protective scaffolding sheeting or mesh should be used where necessary.
The drying and setting times specified in the product Technical Data Sheets are indicative and depend on the prevailing temperature, relative humidity and substrate conditions. Low temperatures and increased humidity may significantly extend these times.
For ATLAS GEMINI RS, the indicative drying time is approximately 24 hours under the reference conditions stated in its Technical Data Sheet. The render must remain adequately protected until it has dried sufficiently.
Each subsequent layer may be applied only when the preceding layer has reached the condition required for further work, in accordance with the relevant product Technical Data Sheet.

COPINGS, FLASHINGS, MOVEMENT JOINTS AND SEALERS

Copings and Flashings

All exposed horizontal surfaces, wall tops, parapets and other areas where rainwater may accumulate 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.

Movement and Expansion Joints

Existing movement and expansion joints in the ICF wall must be maintained through the reinforced base coat and render finish.
Movement joints must not be bridged by the reinforcing mesh or render.
Appropriate movement joint profiles or other suitable detailing must be provided where required by the ICF wall design and the relevant construction documentation.

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 ICF substrate 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.
Elements requiring installation before application of the reinforced base coat or render must be identified and installed at the appropriate stage. Other elements, such as rainwater downpipes, may be installed after completion of the render finish, provided that suitable fixings and weatherproofing details are used.
All fixings must be suitable for the ICF wall construction and installed in accordance with the relevant design and the ICF manufacturer's requirements.

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.

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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

The render finish on walls constructed using Insulated Concrete Formwork (ICF) technology may alternatively be executed using other ATLAS products, allowing application under different conditions and the achievement of different surface textures and decorative effects.
Depending on the intended application and the required finish, the following alternative materials may be considered:

Reinforced base coat – alternative adhesive mortars:

- ATLAS STOPTER K-50
- ATLAS STOPTER K-20
- ATLAS ROKER U
- ATLAS HOTER U2-B
- ATLAS GRAWIS U
- ATLAS GRAWIS DUO
- ATLAS GRAWIS ULTRA

Thin-coat renders – alternative finishes:

- 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

The suitability and compatibility of the selected materials for the intended application must be verified before use.
The alternative materials may have different application requirements, layer thicknesses, consumption rates, drying times and application conditions. The relevant Technical Data Sheets and any additional ATLAS technical instructions must therefore be consulted.
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 the alternative materials.
Any change to the specified technical solution may require the preparation of a separate technical specification. In such cases, ATLAS technical support should be contacted to verify the proposed solution and determine whether additional technical documentation is required.

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