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GLASROC® X

Exterior Wall Cladding System

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Introduction

INTRODUCTION
WHAT IS GLASROC®X?

GLASROC® X is reinforced with a glass-mat, is a superior building board featuring a gypsum core, enhanced with special additives that provide resistance to moisture and mould.

MADE TO LAST & EXTERIOR DURABILITY

GLASROC® X is reinforced with a glass-mat on both surfaces and finished with a UV-resistant coating, designed to withstand harsh and humid environments.

Its glass-mat liners, encapsulating the gypsum core, ensure exceptional durability and integrity.

As a nonpaper-faced board free from cellulose content, **GLASROC® X** boasts a high-resistance to mould build-up and growth, making it ideal for high humidity, wet areas, and exterior applications.

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HIGH-PERFORMANCE SYSTEM

The **Glasroc® X** Exterior Wall Cladding System is a non-combustible cladding solution, ideal for lightweight steel-framed buildings.

In this system, the exterior of the steel framework is clad with **Glasroc® X** board and finished with a Weber Basecoat plaster.

For insulation, Isover Cavitybatt™ is installed between the steel framing members, while the interior is lined with RhinoBoard® FireStop® dB plasterboard.

Offering a thermal resistance of 2.6 W/mK, the system is suitable for use in all South African energy zones.

It comes in two variants, providing 30-minute and 60-minute fire resistance, with acoustic performances of R w51 dB and Rw 55 dB, respectively.

INTRODUCTION
THE RESILIENT CHOICE

The system offers two variants, each with distinct fire resistance capabilities: one with a 30-minute rating and the other with a 60-minute rating.

The system boasts a thermal resistance of 2.6 W/mK, making it suitable for use across all South African energy zones.

The cladding system has undergone rigorous testing and verification by Agrément South Africa, ensuring its reliability and quality.

The **GLASROC® X** board, measuring 12.5 mm in thickness, 1 200 mm in width, and 2 400 mm in length, weighs 10.9 Kg/m^2 and features a square edge for seamless application.

The cladding system consists of variants with acoustic performances of Rw 51 dB and Rw 55 dB.

The **Glasroc® X** system features a unique set of compatible materials. Using materials from other systems or unapproved sources may lead to incompatibility and should be avoided.

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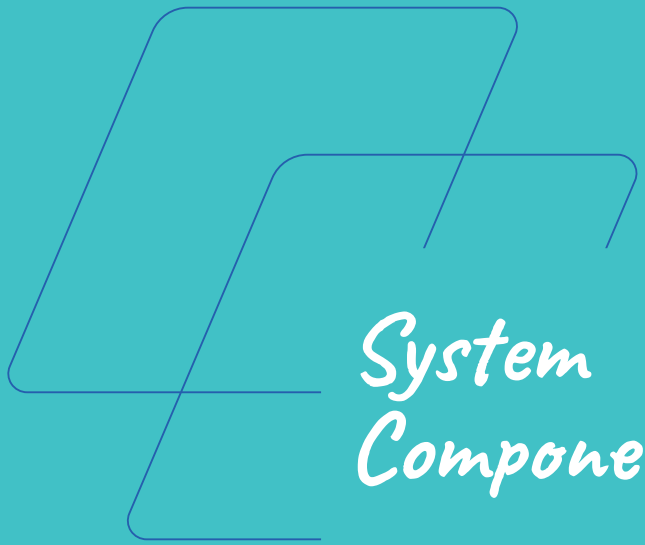
System
Components

SYSTEM COMPONENTS
YOUR PROJECT NEEDS

GLASROC® X BOARD

GLASROC® X is reinforced with a glass mat on both surfaces and finished with a UV-resistant coating. It can withstand harsh and humid environments. The glass mat liners, which encapsulate the gypsum core, guarantee both durability and exceptional structural integrity.

ISOVER CAVITYLITE™ INSULATION

Cavitybatt™/Cavitylite® insulation is specially designed for steel frame structures and drywall systems. Made from premium Glasswool, it features a glass-tissue facing on one side, which facitilates easier handling and enhances its rigidity.

WEBER® TYLON® X BASECOAT

This is a cement-based, fiber-reinforced product designed for use alongside **GLASROC® X** Fibre Mesh. After applying the basecoat, it should be finished with a layer of plaster or paint for optimal results.

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SYSTEM COMPONENTS
YOUR PROJECT NEEDS

GLASROC® X FIBRE MESH

The mesh features a 5 mm x 5 mm grid and has a weight of 150 g/m^2. It is available in rolls, each measuring 15 m x 50 m.

GYPROC SCREWS

Gyproc Jack-Point Screws, available in lengths of 25 and 41 mm, are specifically designed for attaching gypsum boards to structural steel frame studs. The heads of these external screws should be coated with rust-protective paint for enhanced durability.

GLASROC® X EXTERIOR TAPE

Glasroc® X exterior tape is applied to all the board joints including all external corners.

SYSTEM COMPONENTS
YOUR PROJECT NEEDS

a.b.e® DRAIN 8

The a.b.e.® DRAIN 8 features dimpled, high-density polyethylene protection and drainage membranes, available either with or without a polyester geotextile layer.

a.b.e® SUPER LAYKOLD® TAPE

Super Laykold tape is a self adhesive waterproofing tape made from bitumen and aluminum.

a.b.e® DURAFLEX® WATERPROOFING

DuraFlex® is a ready-to-use flexible slurry composed of a special synthetic resin dispersion and a blend of selected cements, mixed with carefully graded aggregate.

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SYSTEM COMPONENTS
YOUR PROJECT NEEDS

RHINOBOARD® FIRESTOP® DB

RhinoBoard® FireStop® dB 15 mm consists of a high-density gypsum core with glass fibre and other additives encased in, and firmly bonded to strong paper liners. RhinoBoard® FireStop® dB is a plasterboard that is suitable for drylining internal surfaces.

RHINOLITE® GYPSUM PLASTER RANGE

RhinoLite® range of gypsum plasters are lightweight retarded hemihydrate gypsum plasters, specially manufactured as a combined basecoat, finishing, leveling and skimming plasters for internal application onto brickwork, concrete block, concrete and Gyproc RhinoBoard® plasterboard.

MARMORAN FINISH

This is a tinted, trowel-applied, textured plaster, resin-bonded for superior adherence. It's formulated with meticulously graded aggregates, allowing for the creation of various patterns with a distinctive raked finish.

HANNOBAND®-BG1 SEALING TAPE

This is a joint sealing tape made from soft polyurethane foam, impregnated with acrylate dispersion, and supplemented with accessory and filling agents. It's designed for heavy-duty sealing of primary and cross joints in façade and window construction.

Storage & Handling

GOOD PRACTICE
STORAGE & HANDLING

All products must be stored on a firm, clean, level base, off the ground, and protected from exposure to rain and sunlight, ensuring they are kept in dry conditions.

Powder mortars require storage in dry conditions, off the ground, and must be safeguarded against frost at all times.

Similarly, polymeric coatings should be stored safely, under cover, and protected from excessive heat and frost at all times.

Installation

GOOD PRACTICE
CONDITIONS OF INSTALLATION

The unfinished **Glasroc® X** board can withstand exposure to weather conditions for up to 6 months before the application of render systems.

However, Weber® Tylon® X Basecoat and finishing coatings (render systems) should not be applied if frost is forecast within 24 hours, in damp/wet conditions, during strong winds, in temperatures below 5°C or above 30°C, or on elevations in direct sunlight or where the substrate is hot.

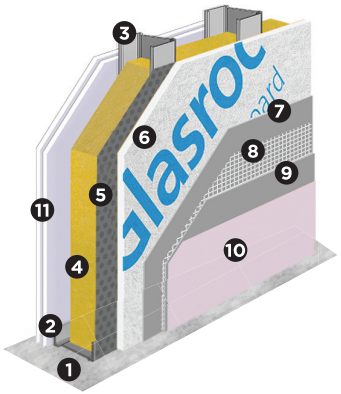
The internal lining with RhinoBoard® FireStop® dB should be installed only once the building is weather-tight.

INSTALLATION
YOUR QUICK REFERENCE INSTALLATION GUIDE

Ensure that the Glasroc® X Exterior Wall Cladding System is installed strictly following the specified guidelines.

1. STEEL FRAMEWORK

The load-bearing LSF structure must be designed and installed in accordance with SANS 10162:2 and SANS 517: Vertical metal framework shall be spaced at 600 mm/400 mm/300 mm centres.



1. Concrete slab
2. Channel (LSF)
3. Stud (LSF)
4. Isover Cavitybatt™
5. a.b.e® Drain
6. Glasroc® X
7. Weber® Tylon® X Basecoat
8. Glasroc® X Fibre Mesh
9. Weber® Tylon® X Basecoat
10. Topcoat
11. Internal Plasterboard

2. STARTER ANGLES

Before installing the a.b.e.Drain® 8, an aluminium starter angle must be fitted. Attach the starter angle to the steel frame or foundation wall using proprietary fixings spaced at 600 mm centres. Use a 6 mm metal drill bit to create openings at intervals of 600 mm in the starter channel.

3. DRAIN INSTALLATION

In areas needing extra security, such as ground floors, install expanded metal mesh or a galvanised sheet. These should be fixed onto the steel frame using proprietary tek screws.

INSTALLATION

YOUR QUICK REFERENCE INSTALLATION GUIDE

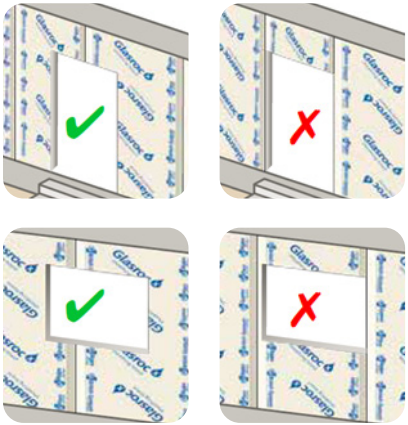
4. WEATHER BARRIER a.b.e.DRAIN® 8

Install a.b.e.Drain® 8 onto the steel framework using 25 mm Jack-Point drywall screws, placed at intervals of 300 mm. Begin from the bottom of the wall and work upwards, ensuring each new course overlaps the previous one by 200 mm. Seal the overlapping seams with a continuous bead of silicone adhesive.

5. INSTALLATION OF GLASROC® X BOARDS

Before installing the **Glasroc® X** boards, apply Hannoband-BG1 above and on both sides of the openings. The boards should be installed horizontally, starting at least 100 mm from the ground, or alternatively, waterproof the first 100 mm using a.b.e.® Ecofelt membrane saturated with a.b.e.® Duraflex®.

Fix the boards to metal profiles with 41 mm Jack-Point drywall screws, spaced at 150 mm centres, ensuring the screw heads are flush with the board surface without damaging the core. All joints or board ends must be securely fixed to the framework.



5. INSTALLATION OF GLASROC® X BOARDS

For windows and doors, ensure that board joints do not align with the vertical lines of lintels, window cases, or door jambs. Maintain a minimum distance of 400 mm between vertical joints and the edges of the openings, and 150 mm between horizontal joints and the opening edges.

INSTALLATION
YOUR QUICK REFERENCE INSTALLATION GUIDE

6. APPLICATION OF RENDER SYSTEM

The render system must be applied to the **Glasroc® X** Boards within 6 months of installation. For **Glasroc® X** Board joints, there are two options:

Option 1 (Mesh and Basecoat)

Apply a 300 mm wide band of **Glasroc® X** Fibre Mesh, embedded in Weber® Tylon® X Basecoat, over the joints.

Option 2 (Glasroc® X Tape)

Use Gyproc **Glasroc® X** Tape on all joints, including all external and internal corners. Ensure the tape is centered on all joints.

6. APPLICATION OF RENDER SYSTEM

Strengthening reinforcement to areas of concentrated stress

A band of **Glasroc® X** Fibre Mesh, measuring 400 mm in length and 200 mm in width, should be positioned at a 45° angle and embedded in Weber® Tylon® X Basecoat. This is to be applied over areas of concentrated stress, such as the corners of openings. Additionally, strengthening reinforcement using **Glasroc® X** trims and beads must be installed.

INSTALLATION
YOUR QUICK REFERENCE INSTALLATION GUIDE

6. APPLICATION OF RENDER SYSTEM

For the façade's first application of base coat, apply a 3-5 mm layer of Weber® Tylon® X Basecoat using a 10 mm x 10 mm notched steel trowel. Embed **Glasroc® X** Fibre Mesh into this wet layer.

Allow the first coat to dry completely before proceeding. If it has dried, moisten the layer with a block brush before the second application.

Then, apply another 3-5 mm coat of Weber® Tylon® X Basecoat with the notched trowel, and float the final layer until a satisfactory finish is achieved.

Following the application of the Weber® Tylon® X Basecoat render systems, wet the coated walls three times the next day using clean water.

7. FINISHING

For the finishing process, it is essential to always start with a primer:

Begin by applying Marmoran RBP Primer to a base coat that is dry and clean, ensuring a well-prepared surface for subsequent layers.

After the primer application, you have two options for the final finish:

Polymeric textured plaster: Apply the Marmoran Permacrete top coat using a trowel. This should be done over the primed, dry, and clean base coat for a smooth and even finish.

Paint Application: Alternatively, for a painted finish, use a roll-on polymeric-based paint. This should also be applied over the primed, dry, and clean base coat to achieve uniform coverage and a well-finished look.

8. CAVITY INSULATION

When working on the interior, improve thermal and acoustic performance by installing 102 mm Isover Cavitybatt™ insulation in the 90 mm framework cavity.

9. INTERNAL LINING

Fix RhinoBoard® FireStop® dB boards to the interior of the steel framework using Gyproc® Jack-Point Screws (25 mm/41 mm) at 220 mm centres.

To prepare for a plastered finish with Gyproc RhinoLite®, apply Gyproc RhinoTape® to all joints and Gypframe® Corner Bead to all external corners.

In areas with high indoor humidity, install a minimum 50 Qm general-purpose polythene membrane before the internal lining.

PENETRATION

Water intrusion can occur in any unsealed areas where the **Glasroc® X** system is penetrated. In order to prevent water penetration into the system, we recommend installing perforating elements in the decreasing pitch from the **Glasroc® X** towards the exterior.

The joint along the circumference of the penetrating element be sealed by a flexible sealant to stop water intrusion.

WINDOW SILLS

Precast concrete window sill

Utilise a specific precast concrete window sill. Between the window frame and the wall or sill, apply polysulphide sealant to halt water entry. For waterproofing beneath the sill, use 50 mm and 150 mm a.b.e.® Super Laykold® Tape onto the walls.

Glasroc® X board window sill

For **Glasroc® X** board window sills, a minimum slope of 10° is necessary for effective water drainage. The sill should be layered with an a.b.e.® Ecofelt membrane coated with three applications of a.b.e.® Duraflex® waterproofing. To ensure adequate waterproofing below the sill, apply 50 mm and 150 mm a.b.e.® Super Laykold® Tape.

WINDOWS & DOORS

Window and door heads and jambs

For the lining of window and door heads and jambs, **Glasroc® X** boards should be used. Install Hannoband®-BG1 between the lining of the **Glasroc® X** board and the structure, and apply a.b.e.Drain® 8 polysulphide sealant at the junctures of the window/door and the wall to prevent water ingress.

Abutments

To avoid crack formation and water penetration when **Glasroc® X** facade systems meet adjacent constructions, use polysulphide sealants at the interface with **Glasroc® X** and the adjoining structure. Employ proper flashing techniques to avert water intrusion.

Expansion joints

The high dimensional stability of **Glasroc® X** sheathing board makes it well-suited for extensive, uninterrupted façade sections, necessitating expansion joints only at a maximum of every 15 m, both vertically and horizontally, apart from those required by the building's structural integrity. The steel framework should end at both sides of any structural expansion joints.

Deflection of slabs

In instances where slab deflection is anticipated, the detailing at the junction of the structural soffit must be thoughtfully designed to allow for movement.

Fire Resistance

The **Glasroc® X** Exterior Wall Cladding System is classified as a Type-F wall, which is fully fire-resistant as per SANS 10400: Part T: Fire Protection. The **Glasroc® X** system provides fire resistance for 30 minutes and 60 minutes. In calculations for safety distances, the wall is considered entirely non-combustible.

DESIGN CONSIDERATIONS

Fire Spread

The **Glasroc® X** system is considered a non-combustible external cladding that does not contribute to fire spread. Therefore, no special detailing is necessary. Designers should follow the guidelines provided in SANS 10400: Part T: Fire Protection or consult with a qualified professional.

Walls in wet areas

For all walls in wet areas, a face layer of 15 mm RhinoBoard® MoistureResistant™ should be used for cladding. In such areas, replace the face layer of 15 mm Gyproc RhinoBoard® FireStop® with 15 mm Gyproc MoistureResistant™ to ensure proper moisture resistance.

Roofs

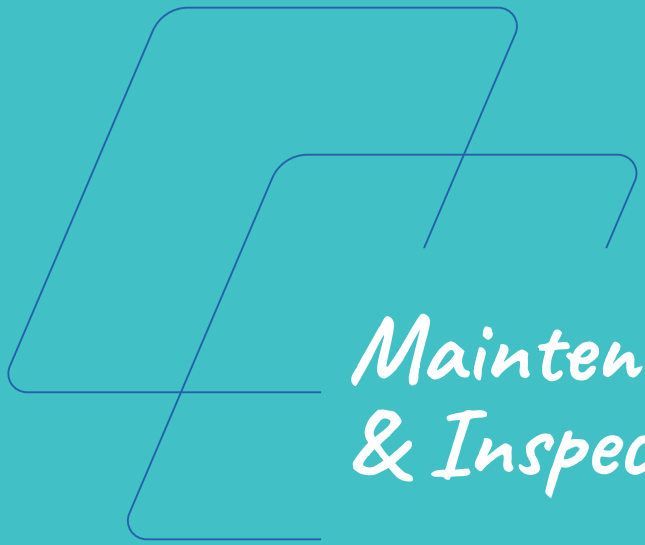
The **Glasroc® X** External Walling System is designed to be compatible with conventional roofing systems. The installation of roofing materials and the structure should adhere to SANS 10400-L and SANS 517 standards.

Windows and doors

Windows must be securely attached to the load-bearing steel frame using proprietary fasteners, following the recommendations provided by the window frame manufacturer.

Services

Electrical conduits and plumbing pipes are to be accommodated within the cavity of the walling systems.



Maintenance & Inspection

MAINTENANCE AND INSPECTION
INSPECTION OF THE GLASROC® X SYSTEM

Regular visual inspections of the **Glasroc® X** system should be conducted at reasonable intervals. These inspections are crucial to identify potential issues such as areas of discolouration, instances of spalling or cracking, locations where sealants or other protective measures have failed, and spots of mechanical damage, whether accidental or otherwise.

WHAT TO LOOK FOR:

Discolouration

Spalling or cracking

Insufficient sealant

Mechanical damage

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MAINTENANCE AND INSPECTION
INSPECTION OF THE GLASROC® X SYSTEM

To clean, use ample amounts of water, a soft brush, and mild detergents. Avoid aggressive cleaning methods such as scrubbing, acid washing, or high-pressure power washing under any circumstances. For remodelling, conventional external paints may be applied to the surface.

Use water with a soft brush

Mild detergents can be worked gently

Do not use aggressive treatments or high-pressure cleaning

The surface can be painted with conventional paints

MAINTENANCE AND INSPECTION
HOW TO REPAIR

Where the walls have been seriously damaged and the **Glasroc® X** board is damaged, removal of part and reinstatement of the **Glasroc® X** board might be necessary. Further, in an unlikely event that cracks appear.

FIX THE CRACKS USING THE FOLLOWING PROCEDURE

If the walls and **Glasroc® X** boards are seriously damaged, partial removal and reinstatement of the boards might be necessary. Should cracks develop, follow this repair procedure:

- Cleaning the Crack: Begin by cleaning any efflorescence around the crack using a soft brush and detergent.
- Preparing the Area: Use a grinder to remove a 100 mm-wide finish on either side of the crack, taking care not to grind into the mesh layer. Apply masking tape around the work area to protect adjacent surfaces.
- Applying Base Coat: Wet the area with a block brush where the Weber® Tylon® X Basecoat will be applied. Apply the basecoat and embed **Glasroc® X** Fibre Mesh into it, ensuring the mesh extends 100 mm on each side of the crack.
- Finishing Touches: Cover the mesh with a second layer of basecoat, ensuring it matches the level of the existing base coat.

HOW TO REPAIR

- Apply Marmoran ‘Permacrete’ or polymeric paint as specified, ensuring the new finish colour matches the existing one. For crack repair, use a grinder to carefully remove a 100 mm-wide strip of finish on each side of the crack, avoiding damage to the mesh layer. After grinding, remove the masking tape and smooth out the new finish to blend with the existing one.

INSTALLATION OF EXTERNAL ANCILLARY FIXTURES AND FITTINGS

- All external fixtures must be securely anchored to the steel framework.
- Heavy items, especially those susceptible to movement in the wind, should be robustly fixed through to the steel framework for enhanced stability.
- Use sealants around the circumference of the fixings to prevent water from entering the system, ensuring complete protection.

INSTALLATION OF INTERNAL ANCILLARY FIXTURES AND FITTINGS

- For heavy internal fixtures, ensure they are securely fastened to the steel framework or to a 16 mm plywood panel of appropriate length and depth.
- Light to medium fixtures can be directly mounted onto the plasterboard using Fischer Ux fasteners for reliable support.

Fastener detail	Fischer/Upbat fastener Code	Number of 15mm RhinoBoard® FireStop®/MR	Maximum Allowance load (Kg) per fastener
	UX6/UX8/ UX10	1	20
		2	25

Table 1 - Recommended fixing devices for static light to medium duty fixtures and fittings.

MAINTENANCE AND INSPECTION
INSTALLERS

IMPORTANT NOTE FOR INSTALLERS

The application of these systems must be carried out by installers approved by Saint-Gobain. An approved installer is defined as a company that:

- Employs personnel who have been trained and approved by Saint-Gobain to install the systems, and who have received a valid certificate of attendance.
- Has committed to adhering to Saint-Gobain's application procedures. These procedures mandate that each application team includes at least one member who has received the necessary training.
- Please note: Installation is subject to supervision by Saint-Gobain and its partners, which may include unannounced site inspections to ensure compliance and quality standards.

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South Africa, 03/2024. Gyproc reserves the right to modify data without prior notice. If required, please contact the Gyproc Technical Department @ saint-gobain.technical@saint-gobain.com

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