

MADA ■
GYPSUM

ProGuard



MADA ProGuard

Mada ProGuard glass mat sheathing board is a noncombustible, mold, delamination, and moisture-resistant sheathing board that meets the onerous requirements of an external substrate. It is designed for use under Exterior Insulation Finish Systems (EIFS), exterior claddings like brick veneer, marble cladding, siding systems, porcelain tiling and conventional stucco or direct render. The reinforced core minimizes the potential for warping, buckling, sagging, and rippling, and fire-resistant additives create a noncombustible sheathing board. Panels are installed vertically using standard mechanical fasteners, to deliver the rigidity and fire-rating of wall and ceiling systems.

ProGuard HIGH PERFORMANCE SHEATHING SPECIFICATIONS

1

Treated gypsum core with coated fiberglass mat on both sides provides superior strength and water resistance

2

Ideal for use with most exterior cladding systems when installed as per manufacturer's details

3

Score and snap cutting, easily worked with standard tools

4

Can be left exposed for up to 12 months after installation

5

Mold Resistant

6

Meets or exceeds ASTM C1177 requirements

7

Noncombustible rating when tested in accordance with ASTM E136

Warranted Performance



Mada ProGuard glass mat sheathing is warranted against manufacturing defects for a period of 5 years, and damage from weather exposure for 12 months.

Limitations

1. Mada ProGuard glass mat sheathing board shall not be used as a nail base for exterior cladding system.
2. The specific requirements for frame spacing, fastener spacing, and fastener details to provide lateral wind-load resistance are the responsibility of the project architect, engineer, or designer. (Refer to technical data and specifications on the following pages.)
3. Mada ProGuard glass mat sheathing is weather-resistant but is not designed for constant water exposure. If extreme weather exposure is a possibility, the design professional should consider treating the panel joints, or installing a weather-resistant barrier.
4. Do not laminate panels to masonry surfaces or substrates, use furring or framing material for attachment purposes.
5. Maximum stud spacing is 600mm on center.
6. Mada ProGuard glass mat sheathing is not a finished surface.

ProGuard HIGH PERFORMANCE SHEATHING SPECIFICATIONS

Manufacturing Standard

- Mada ProGuard glass mat sheathing boards are designed and produced to ASTM C1177 / C1177M Type X and EN 15283-1:2008 Type GM-H1, GM-R, GM-F and GM-I Class 1 Standards.
- Mada ProGuard glass mat sheathing boards has been tested in accordance with ASTM E84 and ASTM E119.

Primary Uses

Mada ProGuard glass mat sheathing board can be specified for exterior walls, ceilings, and soffits in a wide variety of exterior applications:

- EIFS (Exterior Insulation Finish Systems)
- Cavity brick or stone veneer finishes
- Cladding systems such as wood/vinyl/composition siding, plywood panels, wood shingles/shakes, and conventional stucco finishes
- Interior finishes requiring a substrate panel with superior fire and moisture resistance



Tested and Certified as part of complete Mada System to ASTM E119 for Fire Rated Systems

Product Characteristics



Length

standard lengths: 2400mm & 3000mm
Special lengths: 1800mm to 4500mm



Thickness

12.5 mm & 16mm



Width

1200 mm



Color

Light blue on face and light blue/
white on back side



Edge detail

Square



Fire rating

(Using Mada System application)
Tested in accordance with ASTM E119

ProGuard PROPERTIES



Fire resistance Class A to ASTM E84



Pest resistance



Mold & Moisture Resistance



Limitless Design Options



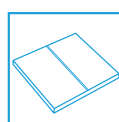
Improved Insulation (U-Values) and Energy Efficient



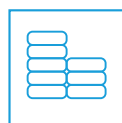
Light weight



Ease of Installation



Score & snap



Cost Saving Solution



Excellent Weather Exposure - 12 months warranty



10 years System Warranty

Parameters	Applicable standard	ProGuard Board Thickness	
		12.5mm	16mm
Weight (kg/m ²)	± 0.2	10.6	13.3
Board Density (kg/m ³)	Minimum	832	819
Flexural Strength (N) (Longitudinal)	ASTM C1177 / C1177M	≥ 445	≥ 623
	EN 15283-1:2008	≥ 537.5	≥ 688
Flexural Strength (N) (Transverse)	ASTM C1177 / C1177M	≥ 356	≥ 445
	EN 15283-1:2008	≥ 210	≥ 268.8
Nail Pull Resistance (N)	ASTM C1177 / C1177M	≥ 356	≥ 402
Water Absorption (%)	ASTM C1177 / C1177M	≤ 5	
	EN 15283-1:2008	H1	
Flame Spread Index	ASTM E84	25 or less	
Smoke Developed Index	ASTM E84	450 or less	
Asbestos (% by weight)	-	No asbestos fibers detected	

RECOMMENDATIONS

1. Installed Mada ProGuard glass mat sheathing board must be covered by the exterior cladding system within a 12-month period.
2. Mada ProGuard glass mat sheathing board is water-resistant, but it's not suitable for prolonged exposure to rainfall.
3. Framing and application details and requirements shall be determined from the weather-resistant barriers, cladding, structural assemblies, and fire-resistance requirements for the project, and must be approved by the project architect, engineer, or designer.
4. Avoid conditions during construction that could result in an excessive moisture load inside the building. Items such as forced-air heaters, masonry, or concrete pouring and finishing produce large volumes of water vapor, which can condensate in unfinished exterior wall cavities. Use ventilation or dehumidification to reduce moisture levels below the dew point of the outside air. Any damage resulting from improper moisture management is not the responsibility of Mada Gypsum.
5. Panels are heavy and could fall over causing injury or death. Always store panels flat, unless directed otherwise by the site manager to eliminate tripping hazard or avoid point overloading of the floor structure.



INSTALLATION INSTRUCTIONS

- Mada ProGuard glass mat sheathing board must be installed in accordance with this brochure's instructions, and ASTM C1280. Panels may be attached perpendicular or parallel to the framing system. Use the correct board orientation for specific fire assemblies and shear wall applications within this document, other reference documents, or as required by the design authority. Framing stud flanges shall not measure less than 32mm for steel framing applications. Framing members shall not vary more than 3mm from the face plane of adjacent framing.
- Fasteners shall not be countersunk, but flush to the panel face and into the framing element. Locate fasteners at least 10mm from sheathing ends and edges. Nails or screws listed in the fastener chart can be used to attach panels to framing system. Consult with manufacturer for application specifications and shear resistance data when using pneumatic fasteners.
- Install Mada ProGuard glass mat sheathing using staggered joints to fit panel ends and edges together tightly. Align joints (when possible) with edge of openings, and properly flashed around the perimeter of the opening. Consult with the project architect, engineer, or designer for control joint recommendations.
- Panels may be installed vertically or horizontally, except when limited by other specific requirements. Panel orientation is dictated by fire-rated construction assemblies.
- Panels can be cut by sawing, or by scoring the face, snapping the core, and scoring the back of the panel. When using a power saw, a cordless low-RPM saw will generate far less airborne particles than a standard corded saw.
- Properly trim any cuts to create neatly fitting joints once installed.
- Holes for pipes, penetrations, and devices shall be scored or saw-cut from the panel face before removing cutout material.
- All vertical ends and edge joints should be centered on framing member and offset a minimum of one framing cavity between adjacent panel rows. Fit panels tightly without forcing them together.
- Hold panels in firm contact with framing components and attach with specified fasteners. Fasteners should be driven flush with panel, do not countersink or break surface of the Mada ProGuard glass mat sheathing panel. Attach panel to framing starting in the center and working outwards to the edges. The maximum fastener spacing is 300mm to the plain and 200mm to the perimeter, and a minimum of 10mm from any edge or end of the panel.
- Supplemental use of panel adhesive will strengthen the connection and fill in minor surface irregularities, resulting in a smoother finish surface. The use of adhesive does not reduce the number of fasteners required. For optimal adhesive bond, apply per manufacturers recommendations. Framing elements must be free of oil or dirt, and panel must be clean and dry.
- Panels should fit snugly around door and window openings. Offset panel joints a minimum of 100mm from the edge of openings to reduce potential stress cracking. Refer to the weather-resistive barrier or exterior cladding system manufacturer for specific installation requirements.
- To prevent water intrusion, flash all openings (head, sill, etc.) and all roof/wall intersections properly.
- Panels shall maintain a 6mm gap at masonry or other water retaining materials to prevent wicking.
- Install panels a minimum of 200mm above finish grade in a weather and water protected cladding system and in properly drain and ventilated crawl spaces.
- Where panels meet horizontal surfaces such as slabs, foundation walls, or roof assemblies, gap panels 6mm to 12.7 mm above the intersecting surface. Fill gap with approved sealant to prevent moisture from wicking into panel.

DESIGN CONSIDERATIONS

Façade Performance

Despite being an essential architectural component, most façade designs tend to be utilitarian in nature. Traditionally, façade requirements have included being aesthetically pleasing, providing some weather protection as building visitors enter and exit, or providing an area for signage. Today's façades still serve their original purpose, but they must be designed like every other part of the structure with includes considering:

- Acoustic performance
- Fire-resistance requirements
- Thermal performance

These three factors have the largest impact on energy consumption, and long-term maintenance and operational costs, posing a difficult challenge for many architects and designers.

Steel Frame External Wall System

This option combines lightweight steel framing, thermal insulation, and gypsum boards to provide a cost-effective solution suitable for all types of buildings and projects. Mada Gypsum offers a fully engineered, certified, and tested building envelope system with up to a 2-hour fire-rating for you, your tenants, visitors, or employee's peace of mind and safety.

Lightweight Construction

This term refers to structural and non-load bearing systems and assemblies fabricated from alternate materials with a lower mass than traditional materials.

External Thermal Insulation

External Thermal Insulation is becoming more of a necessity, with the building designs more driven to sustainability and energy saving as walls and/roofs contributing to more than 50%



of energy losses in any enclosed living space and their transmission load accounts at least 60% of air conditioning loads.

The benefits for a proper External Thermal Insulation are:

- Improved insulation values (U value) due to insulation materials like rockwool.
- Reduced activity of heating equipment or air conditioning
- Reduced required capacity for temperature (Climate) control units
- Encapsulates the building with a thermal envelope protecting from both cold and heat
- Eliminates thermal bridging
- Reduces thermal stress in the building

DESIGN CONSIDERATIONS

Country	Specific	U-value (W/m ² K)
Bahrain	Thermal Insulation Order 2018	0.57
Kuwait	Light construction, dark external color	0.37
	Light construction, medium-light external color	0.43
Oman	Muscat	0.74
Qatar	Kahramaa	0.34
Saudi Arabia	SEEC - Zone 1 - Residential	0.40
	SEEC - Zone 2 - Residential	0.45
	SEEC - Zone 3 - Residential	0.53
	SASO - Commercial	0.57
United Arab Emirates	Abu Dhabi - Commercial	0.32
	Abu Dhabi - Residential	0.57
	Dubai	0.57



DESIGN CONSIDERATIONS





Indicative Framing & Insulation	Fire Rating	Boarding	Finish Options			
			Direct Render		Insulated Render (IFS)	
			Thickness (mm)	U-value (W/m ² K)	Thickness (mm)	U-value (W/m ² K)
100mm Stud with 90mm infill (Density 50kg/m ³)	60 min	External: 1x16mm ProGuard Internal: 1x16mm Impact Resistant	132	0.345	182	0.229
	120min	External: 2x16mm Impact Resistant Internal: 1x12.5mm ProGuard	157		207	
125mm Stud with 100mm in fill (Density 50kg/m ³)	60 min	External: 1x16mm ProGuard Internal: 1x16mm Impact Resistant	157	0.315	207	0.215
	120min	External: 2x16mm Impact Resistant Internal: 1x16mm ProGuard	182		232	
150mm Stud with 120mm in fill (Density 50kg/m ³)	60 min	External: 1x16mm ProGuard Internal: 1x16mm Impact Resistant	182	0.268	232	0.192
	120min	External: 2x16mm Impact Resistant Internal: 1x12.5mm ProGuard	207		257	

FASTENING AND FRAMING

Thickness	Framing Spacing	Panel Orientation	Fastener Spacing-Metal Framing ^c
12.5mm	600 mm o.c. max ^{a,b}	Parallel or Perpendicular	200 mm o.c. along framing
16mm	600 mm o.c. max ^b	Parallel or Perpendicular	200 mm o.c. along framing

- a. Only for mechanically attached claddings. When specified behind EIFS, maximum framing spacing for single layer 12.5 mm Mada ProGuard glass mat sheathing is 400 mm o.c.
- b. For racking strength resistance, apply panel edges parallel with framing spaced a maximum of 400 mm o.c. for both 12.5 mm and 16 mm Mada ProGuard glass mat sheathing.
- c. Fire-rated assemblies may require additional fasteners, see specific assembly details.

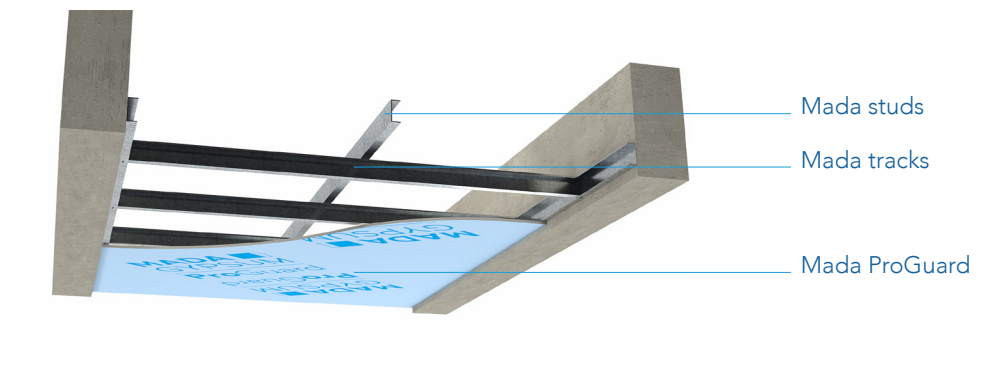
Fastener	Description	Application	Proguard Board		
			12.5mm	16mm	Layers
	Bugle head fine thread, corrosion-resistant drill point drywall screw	ProGuard Sheathing to heavy-gauge metal framing (18 gauge or thicker)	25mm	35mm	Single
			35mm	42mm	Double
	Bugle head fine thread, corrosion-resistant sharp point drywall screw	ProGuard Sheathing to light-gauge metal framing furring (20-25 gauge)	25mm	35mm	Single
			35mm	42mm	Double

HOW CAN MADA HELP YOUR PROJECT

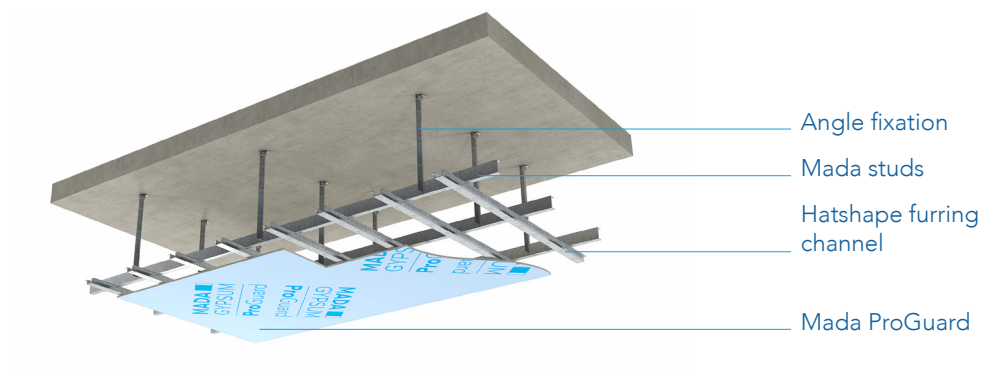
ARCHITECT							
	PROJECT ENGINEER			MAIN CONTRACTOR		INSTALLER	
			Final design	Technical realisation of design	The build		Project handover
	Initial scoping of project	Surveys and brief					
This is the stage where we meet the designers to discuss and present the available options	At this stage we gather the performance constraints to allow us to do the concept design	An indicative design is created by our in-house design team. The design is discussed and amended if needed then approved	At this stage the indicative design has been approved and final drawings are produced	Here we work closely with the designers and contractors to get the drawings to construction status A	Here we offer on-site technical support on design and installation	At this stage we can provide the design specification pack and supporting documentation on calculations	

ASSEMBLY OPTIONS

Exterior ceiling (<3m)

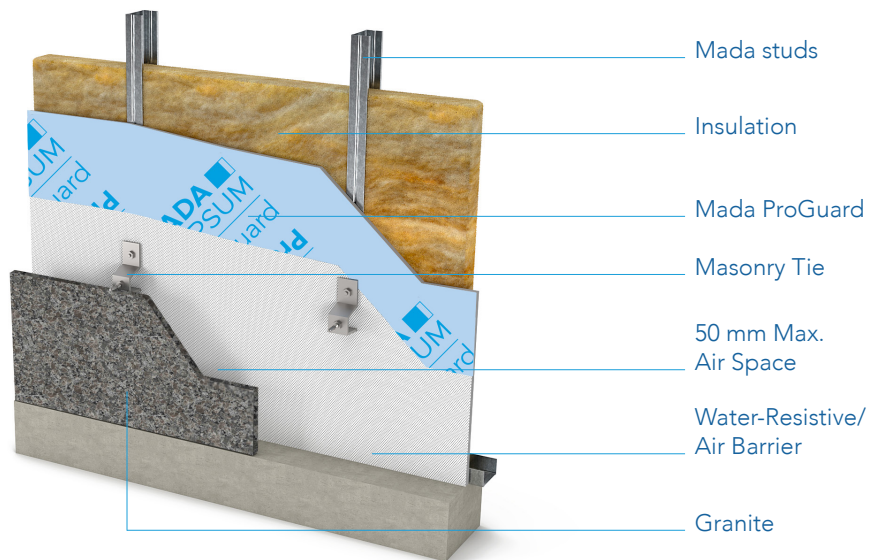


Exterior ceiling (>3m)

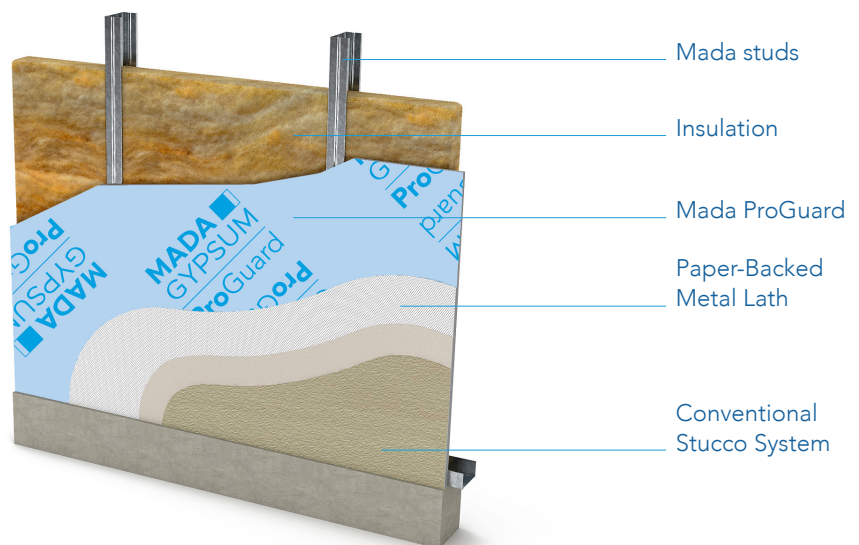


ASSEMBLY OPTIONS

Cladding



Stucco rendering



ProGuard ACCESSORIES



Rockwool Insulation

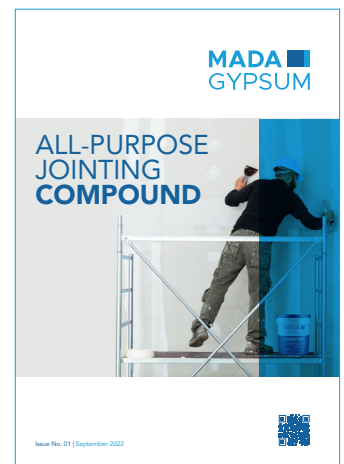
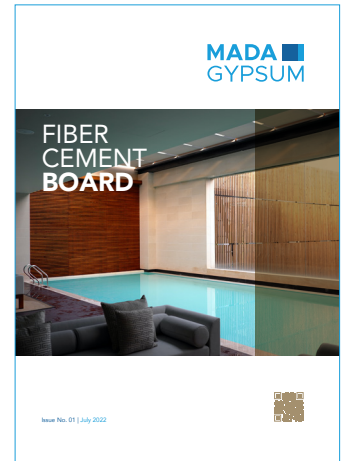
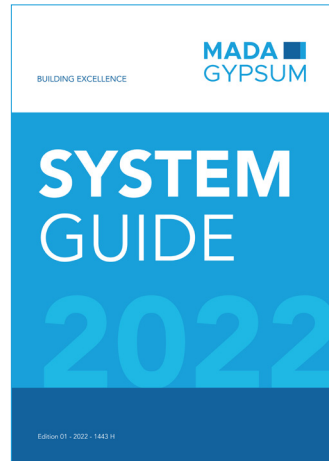
Rockwool is an insulating material manufactured from natural minerals such as basalt, which are melted at very high temperatures and spun using advanced production techniques. The fibers are then bonded with a thermosetting resin binder and special additives. It has good thermal and acoustic properties, is lightweight and strong, and classed as non-combustible when tested to BS:476.



Mada PLUS PROCEM CEMENT Jointing Compound

Mada PROCEM Cement Jointing Compound is a 2-component high-adhesion, high-flexibility jointing material. A powder based on special cement and a secondary, liquid-based, acrylic polymer element with fibers and special additives. Used for jointing and finishing Mada PLUS PROCEM cement board.

OTHER RESOURCES



* For additional information consult Mada Technical Team

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BUILDING EXCELLENCE

ProGuard

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