

Wedge

MAGNESIUM OXIDE BUILDING BOARDS

WedgeMAG™

Non-combustible A1 building boards for high-performance walls, ceilings, cladding, flooring and fire-rated assemblies.

A1

NON-COMB.

240min

FIRE RATING

50yr

WARRANTY

ARCHITECTURAL SPECIFICATION & PRODUCT GUIDE ·
2025



HIGH STRENGTH · LONG LIFE · FIRE RESISTANT ·
HEAT & SOUND INSULATED

A new-generation mineral board engineered for architects and specifiers

WedgeMAG magnesium oxide (MgO) board is a large-format inorganic construction panel that neither burns nor releases flammable vapours — it remains stable when heated to approximately **800 °C** and does not spread flame or smoke.

Formulated from magnesium oxide, magnesium sulphate, perlite and reinforcing fibre, WedgeMAG is a chloride-free alternative to fibre cement and gypsum sheeting. It is now specified across exterior sheathing, wall and ceiling linings, facades, soffits, flooring and prefabricated wall systems.

Architects, engineers and contractors select MgO board for its fire resistance, strength, and resistance to mould and mildew — with a materially lower environmental footprint. A unique property of the panel is that it actively consumes CO₂ from the air throughout its life cycle, continuously improving indoor air quality.

The result is lower construction cost at installation and reduced maintenance expense over the building's lifespan.



STANDARD FORMATS

Standard size	2440 × 1220 mm
Available lengths	2440 / 3050 mm
Thickness range	3 – 25 mm
Reinforcement	Fibreglass mesh, both faces

Non-combustible

Euroclass A1 · ASTM E136 · will not feed a fire

Chloride-free

MgSO₄ chemistry — no "sweating" or corrosion

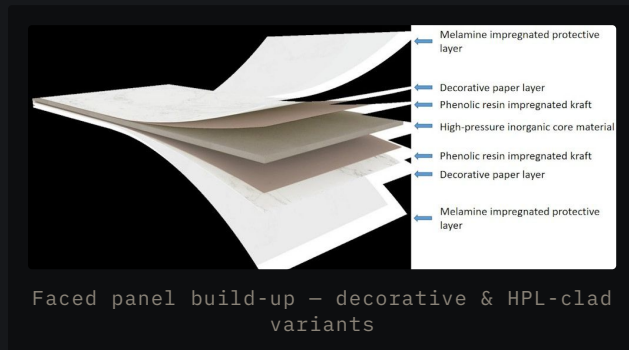
Moisture-stable

Will not rot, warp or delaminate when wet

Mould-proof

No growth — ASTM D3273 · healthier interiors

Every layer engineered to perform



The high-pressure inorganic core is reinforced with fibreglass mesh on both faces and cured into a dense, dimensionally stable sheet. Decorative, melamine or phenolic-faced build-ups add finished surfaces without compromising the non-combustible core.

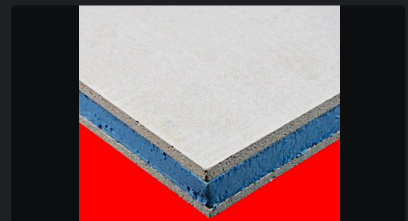
CORE COMPOSITION (BY WEIGHT)

Magnesium Oxide · MgO	50–60%
Magnesium Sulphate · MgSO ₄	25–30%
Reinforcing fibre	5–6%
Perlite (volcanic mineral)	3–4%

Perlite improves insulation and reduces weight; fibreglass mesh adds tensile reinforcement and prevents cracking. Contains **no asbestos, no formaldehyde, no free chloride**.

Why chloride-free matters

Older magnesium *chloride* boards suffer from halogenide — excess free chlorine draws moisture to the surface, causing "sweating", corrosion of fixings, cracking and eventual failure. WedgeMAG uses magnesium **sulphate** chemistry, which is far less hygroscopic, for lasting stability.



The properties specifiers ask for — in one board



Fire — non-combustible

Euroclass A1 · up to 240 min fire rating · withstands 1200 °C without releasing toxic fumes.



Moisture-resistant

No leakage under water gauge; will not rot, swell or warp — ideal for wet areas and humid climates.



Mould & mildew proof

No growth (ASTM D3273). Resists rodents and insects; supports healthier indoor air quality.



Acoustic insulation

Up to 48 dB sound insulation — reduces transmission between rooms and floors.



High strength

Compressive up to 40 MPa · bending up to 30 MPa · screw pull-out up to 1800 N.



Thermal insulation

Low conductivity (from 0.12 W/m·K) improves envelope energy efficiency.



Eco-friendly

Natural, recyclable minerals; minimal waste; absorbs CO₂ across its service life.



Long service life

30–50 year durability · backed by a 50-year product warranty.



Easy to install & finish

Cut, drill and fasten with standard tools; paint, tile, plaster or clad.

1200°C

TEMP. RESISTANCE

0.03%

CHLORIDE (INTERIOR)

50

FREEZE-THAW CYCLES

–20°C

FROST RESISTANCE

Four boards for the full spectrum of assemblies

WedgeMAG

STANDARD MGO / MGS04

3–25 mm

The workhorse board for interior wall & ceiling linings, SIP facers, partitions, sheathing, cladding, flooring and tile backer.

Fire rating	A1 · 240 min
Acoustic	42–48 dB
Density	900–1350 kg/m³

WedgeMAG Acoustic

SOUND-RATED LINING

6–16 mm

Optimised for partitions, ceilings and multi-storey floors where noise control between spaces is critical.

Sound insulation	up to 43 dB
Impact	up to 8 kJ/m²
Fire rating	A1 · 240 min

WedgeMAG-P Glass Magnesium

AEROGEL COMPOSITE CORE

6–25 mm

Glass-perlite MgO panel with an aerogel core for premium thermal & acoustic performance in high-spec envelopes.

Long-term temp.	1200 °C
Acoustic	> 48 dB
Thermal conductivity	0.12 W/m·K

WedgeMAG-P Perlite Magnesia

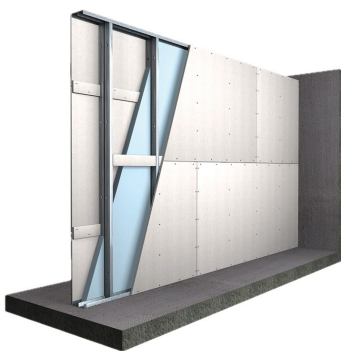
CERAMIC-FIBRE / AEROGEL CORE

6–100 mm

Thick composite insulation panel with a ceramic-fibre blanket or aerogel core for fire-barrier and high-heat applications.

Thickness	up to 100 mm
Short-term temp.	1400 °C
Acoustic	48 dB

Common to all boards: Reaction to fire A1 (EN 13501-1 / BS 476), 50-year warranty, no asbestos or formaldehyde, standard sheet 2440 × 1220 mm, fibreglass-mesh reinforcement, and full dimensional tolerance to EN 12467:2012+A1:2016.



TYPICAL ASSEMBLY

WedgeMAG panels fix directly to light-gauge steel or timber framing with insulation infill — forming non-combustible, moisture-stable wall, floor and ceiling assemblies across the full board range.

Interior & lining grades - 3–9 mm

Wall & ceiling linings, SIP facers and partitions. Base material MgSO₄. Test standards: ASTM C1186, ASTM C1185, EN 12467, ASTM D5328, ASTM D1037.

PARAMETER	MAG-3	MAG-4	MAG-5	MAG-6	MAG-8	MAG-9
Base material	MgSO₄	MgSO ₄	MgSO ₄	MgSO ₄	MgSO ₄	MgSO ₄
Thickness, mm	3	4	5	6	8	9
Density, kg/m ³	900	900	916	960	960	980
Fire rating, min	240	240	240	240	240	240
Non-combustibility	A1	A1	A1	A1	A1	A1
Max temp. resistance, °C	1200	1200	1200	1200	1200	1200
Acoustic insulation, dB	42	42	42	42	42	42
Impact resistance, kJ/m ²	3.5	3.5	3.5	3.5	3.5	4.5
Compressive strength, MPa	12	12	14	14	15	15
Bending strength dry, MPa	14	14	14	14	14	14
Bending strength wet, MPa	6	6	6.7	7	8.5	8.5
Screw pull-out, N	688	770	790	850	890	980
Thermal conductivity, W/m·K	0.12	0.12	0.12	0.12	0.13	0.13
Water absorption, %	28	28	28	28	28	28
Freeze-thaw cycles	50	50	50	50	50	50
Chloride content, max %	0.03	0.03	0.03	0.03	0.03	0.03
Mould / mildew	No	No	No	No	No	No
Warranty, years	50	50	50	50	50	50



EDGE PROFILES

Interior grades are available with square or tapered (recessed) edges. Tapered edges allow flush, seamless jointing with tape and compound for a monolithic painted or plastered finish.

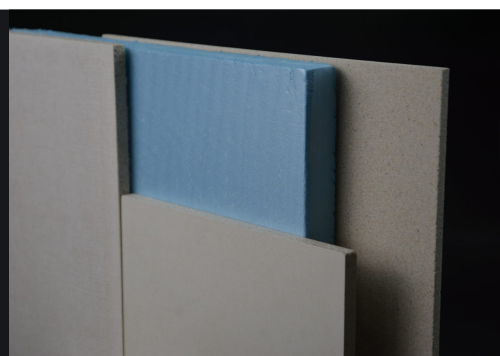
Structural & exterior grades · 10–25 mm

Exterior sheathing, cladding, flooring, subflooring and tile backer. Higher density & strength for structural and weather-exposed assemblies.

PARAMETER	MAG-10	MAG-12	MAG-16	MAG-18	MAG-20	MAG-25
Base material	MgSO₄	MgSO ₄	MgSO ₄	MgSO ₄	MgSO ₄	MgSO ₄
Thickness, mm	10	12	16	18	20	25
Density, kg/m ³	1000	1050	1250	1250	1350	1350
Fire rating, min	240	240	240	240	240	240
Non-combustibility	A1	A1	A1	A1	A1	A1
Max temp. resistance, °C	1200	1200	1200	1200	1200	1200
Acoustic insulation, dB	42	43	43	43	48	48
Impact resistance, kJ/m ²	5	6	8	8.5	9	10
Compressive strength, MPa	15	18	35	35	35	40
Bending strength dry, MPa	14	16	30	30	30	30
Bending strength wet, MPa	10	13	16	17	18	18
Screw pull-out, N	1000	1480	1600	1650	1650	1800
Thermal conductivity, W/m·K	0.13	0.167	0.167	0.167	0.167	0.167
Water absorption, %	28	10	20	20	20	20
Freeze-thaw cycles	50	50	50	50	50	50
Chloride content, max %	0.03	0.1	0.1	0.1	0.1	0.1
Mould / mildew	No	No	No	No	No	No
Warranty, years	50	50	50	50	50	50

DENSE INORGANIC CORE

Structural grades reach densities up to 1350 kg/m³, delivering the compressive strength, impact resistance and screw hold demanded by loadbearing sheathing and weather-exposed assemblies — with a chloride-free core.



Certified material test report

Representative 12 mm board (WEMAG S12) tested to full ASTM & EN standards, alongside the specialty insulation panels.

WEMAG S12 · Reference board		12 mm
Base materials	MgO, MgSO ₄ , Perlite	
Thickness	12 mm	
Standard size	2440 × 1220 mm	
Short-term temp. resistance	1400 °C	
Long-term temp. resistance	800 °C	
Density (EN 12467 / ASTM C1186)	1050 kg/m³ min	
Fire rating	240 min	
Reaction to fire (EN 13501-1 / BS 476)	A1	
Acoustic sound insulation	43 dB	
Impact shock (ASTM D5328)	6 kJ/m²	
Compressive strength	18 MPa	
Bending strength dry (ASTM C1185)	16 MPa	
Bending strength wet	13 MPa	
Screw pull-out	1480 N	
Direct screw withdrawal (ASTM D1037)	1000 N	
Water absorption (ASTM C1185)	10 %	
Water impermeability (EN 12467)	Passed	
Thermal conductivity (EN 12667)	0.186 W/m·K	
Surface burning & smoke (ASTM E84)	Class A	
Mould growth (ASTM D3273)	No growth	
Free chloride content	None	
Asbestos / formaldehyde	None	
Warranty	50 years	

Specialty insulation panels		
	Glass Mag.	Perlite Mag.
Core	Aerogel	Ceramic / aerogel
Thickness, mm	6–25	6–100
Long-term °C	1200	1200
Density, kg/m³	800–1050	800–1050
Acoustic, dB	> 48	48
Thermal, W/m·K	0.12	0.12
Fire	A1	A1

DIMENSIONAL TOLERANCE · EN 12467	
Width	±2 mm
Thickness	±0.2 mm
Edge straightness	±0.02 mm
Squareness	±0.08 mm/m

COMPOSITE CONSTRUCTION

MgO board faces bonded to a CC-XPS insulation core combine the fire and moisture performance of the board with the thermal efficiency of the core — in a single, ready-to-fix panel.

Specified from foundation to finish



Interior walls & ceilings



Exterior cladding & facades



Structural sheathing



Partitions & SIP facers



Prefab & modular systems



Ventilated facade systems

- Tile backer & wet areas**
 Strong, moisture-stable substrate for tile in bathrooms and kitchens.
- Flooring & subflooring**
 Stable, moisture-resistant base under tile, hardwood or laminate.
- Fire-rated assemblies**
 Non-combustible core for fire-rated walls, shafts and ceilings.
- Soffits, fascias & roof underlay**
 Weather-durable protection for exposed and semi-exposed details.



On site — fixing WedgeMAG boards to a pitched roof ceiling

WedgeMAG vs. conventional boards

PROPERTY	WedgeMAG	Fibre Cement	Gypsum	OSB / Ply
Weight	Medium	High	Medium	Medium
Fire resistant (120 min)	9–12 mm	20 mm	48 mm	N/A
Water resistant	Very high	Medium	Poor	Poor
Mould / insect resistant	Excellent	Good	Poor	Poor
Flexibility	Excellent	Poor	Poor	Poor
Fastening strength	Excellent	Poor	Poor	Excellent
Impact resistance	Very high	Very high	Very low	Medium
Bending strength	Very high	Very high	Very low	High
Chloride content	None	Yes	None	None
External wall use	Yes	Yes	No	Coat req.
Durability life, years	30–50	40–50	15–20	30–50

The chloride-board problem

Magnesium *chloride* boards contain excess free chlorine, which is hygroscopic. In service, water droplets form on the surface — the board appears to "sweat", corroding fixings and eventually cracking or falling apart. WedgeMAG's magnesium **sulphate** chemistry avoids halogenide, delivering long-term stability with chloride content as low as 0.03%.



Surface behaviour under moisture & salt exposure

Tested, rated and code-compliant

ICC-ES EVALUATION REPORT

Wedge MAGS-1000 MgO sulphate boards are recognised in an ICC-ES Evaluation Report for compliance with the **2021, 2018 & 2015 IBC and IRC** — evaluated for structural use, physical properties, non-combustibility, surface-burning characteristics and fire-resistance-rated assemblies.

Approved for exterior structural sheathing (½" boards), floor underlayment, interior substrates and sandwich-panel facers.

A1

Reaction to fire
EN 13501-1 · BS 476

Class A

Surface burning
ASTM E84-12

E136

Non-combustible
ASTM classification

50 yr

Product warranty

TEST STANDARDS REFERENCED

EN 13501-1	Reaction to fire — Class A1
BS 476 Part 4	Non-combustibility
EN ISO 1182 / 1716	Non-combustibility & heat of combustion
ASTM E136	Non-combustible material classification
ASTM E84-12	Surface burning — Class A
ASTM C1186	Flat fibre-cement sheets (physical)
ASTM C1185	Flexural strength & dimensional change
EN 12467:2012+A1:2016	Fibre-cement flat sheets
EN 12667:2001	Thermal conductivity & resistance
ASTM C177	Steady-state thermal transmission
ASTM D5328	Impact shock resistance
ASTM D1037	Direct screw withdrawal
ASTM D3273	Resistance to mould growth
2015/18/21 IBC & IRC	ICC-ES code compliance

No asbestos · no formaldehyde · no free chloride. Made from natural, recyclable minerals with minimal production waste — and actively absorbs CO₂ throughout its service life.

Works with standard trade tools & sequences

01 Cut & drill

Score-and-snap for straight cuts; use carbide-tipped blades and bits for full cuts and openings. Boards are dense — allow for tool wear.

02 Frame & set out

Fix to timber or light-gauge steel framing at centres per assembly. Maintain a 3–5 mm gap between boards and at perimeters for movement.

03 Fasten

Use corrosion-resistant screws; countersink flush without over-driving. High screw pull-out (up to 1800 N) gives secure, lasting fixings.

04 Joint & reinforce

Fill joints with a suitable jointing compound and alkali-resistant mesh tape; feather and sand for a seamless surface.

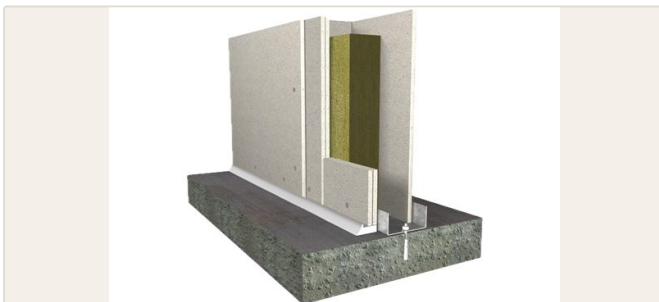
05 Finish

Paint, tile, plaster, wallpaper or clad directly. For exterior use, protect with a water-resistive barrier per code.

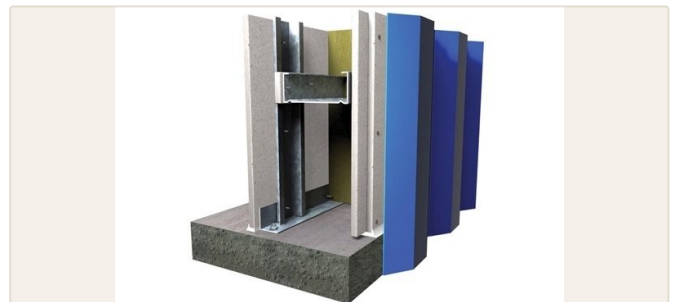


HANDLING NOTES

- Store flat, off the ground, under cover and dry.
- Carry boards on edge; support long spans to avoid flex.
- Acclimatise to site conditions before fixing.
- Wear standard dust protection when cutting.



Board on framing with mineral-wool infill at the slab junction



Insulated cavity wall with external MgO cladding layer



Wedge

Specify with confidence. Build to last.

For samples, CAD details, assembly specifications or project support,
contact the Wedge technical team.

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