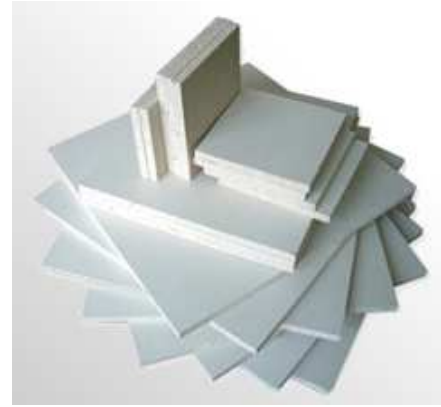


QUALITY STANDARDS AND TESTING



*At **Genesis Ecomag** our mission is to create and manufacture world-class green building materials and innovative construction solutions, services and support to our customers to make this World a greener place to live for the generations to come.*

What we do

Ecomag is the first GCC-based manufacturer of high quality Magnesium Boards. MgO boards are a must for all renovation, extension and new construction projects. Ecomag provides our clients with better quality for money than any other supplier. When quality matters, go for Ecomag Boards

Our commitments to Quality

- Best quality raw materials sourcing
- World-class industrial processes
- Automated production line
- Internal chemical department
- In-house testing laboratory
- Full Quality Assurance policy
- CSR and HSE compliance



Our products protect your investment and our environment



**Fire
Rated**



**Water
Rated**



**Impact
Rated**



**Scratch
Resistant**



**Moisture
Resistant**



**Acoustic
Rated**

State of the art industrial processes

Genesis Ecomag Board Factory

- Brand new 5,000 sqm factory
- Fully automated production line
- MgO experienced specialists
- In-house testing laboratory
- Air-conditioned curing area
- Automated sanding machinery
- Permanent stock
- 3 loading gates
- Integration and assembly workshop
- 1,000,000 sqm production per year



High Quality Benchmarks

S/NO.	TEST	STANDARD
1	Flexural Strength	ASTM C 1185
2	Dimensions & Tolerances	ASTM C 1325; ASTM C 1186
3	Moisture Movement	ASTM C 1186
4	Water Absorption	ASTM C 1186
5	Standard Test Method for Resistance to Growth of Mold & Mildew	ASTM D 3273
6	Compression Indentation	ASTM C 1325
7	Nail Head Pull-Through	ASTM C 1325
8	Falling Ball Impact	ASTM C 1325
9	Shear Bond Strength	ASTM C 1325
10	Humidified Deflection	ASTM C 1396
11	Surface Burning Characteristics	ASTM E 84
12	Non-Combustible Construction	ASTM E136
13	Underwriters Laboratory Fire Rating	UL263 & ASTM E119
14	Xenon Arc Accelerated Weathering	ASTM G155
15	Freeze/Thaw	ASTM C1185
16	Structural Performance	ASTM E330, AC386
17	Transverse Load	IAW AC376, ASTM E72
18	Wet Racking Shear	IAW AC376, ASTM E72 Section 15.05
19	Standard Test Method for Coefficient of Linear Thermal Expansion	ASTM D696

Complying with Industry Quality standards



Testing specifications for Ecomag Boards

Bending Test

- Subject:** Bending test on 12mm thick.
- Test Method:** BS EN 310 : 1993 determination of modulus of elasticity in bending and of bending strength.

Reference	1	2	3	4	5
Maximum load (N)	256.5	240.1	237.2	276.5	237.3
Modulus of elasticity (N/mm ²)	5532	5105	4785	5471	5157
Average modulus of elasticity (N/mm ²)	5210				
Bending strength at maximum load (N/mm ²)	12.8	11.5	11.3	13.7	11.3
Average bending strength at maximum load (N/mm ²)	12.1				

Moisture Content Test:

- Subject:** Moisture content test 12 mm thick.
- Test Method:** BS EN 322: 1993 determination of moisture content.

Sample Reference	1	2	3	4	5
Initial Mass, (g)	31.50	31.51	31.71	31.50	31.00
Final Mass, (g)	28.70	28.80	29.02	28.79	28.40
Moisture content, (%)	9.8	9.4	9.3	9.4	9.2
Average Moisture Content, (%)	9.4				

Swelling In Thickness Test:

- Subject:** swelling in thickness test on 12 mm.
- Test Method:** BS EN 317: 1993 determination of swelling in thickness after immersion in water.

Reference	1	2	3	4	5
Initial thickness, (mm)	12.48	12.42	12.19	12.28	12.35
Final thickness, (mm)	12.51	12.45	12.22	12.31	12.38
Thickness swelling, (%)	0.2	0.2	0.2	0.2	0.2
Average Thickness swelling, (%)	0.2				

Tensile strength test:

- Subject:** tensile strength test on 12mm thick.
- Test Method:** BS EN 310 : 1993 determination of tensile strength perpendicular to the plan of the board.

Reference	1	2	3	4	5
Maximum tensile load (N)	5120	4330	5740	4940	4470
Maximum tensile strength (N/mm ²)	2.05	1.73	2.30	1.98	1.79
Average tensile strength (N/mm ²)	1.97				

Screw Withdrawal Test:

- Subject:** Screw withdrawal test on 12mm thick.
- Test Method:** BS EN 320 : 1993 determination of resistance to axial withdrawal of screws.

Reference	1	2	3	4	5	6	7	8	9	10
Maximum load (N)	1097	1026	1123	964	1066	997	1022	1095	1012	997
Average Maximum load (N)	1040									
Average withdrawal strength (N/mm)	87									

Cyclic Tests:

- Subject:** Cyclic tests in humid condition on 12 mm thick.
- Test Method:** BS EN 321 : 1993 Cyclic tests in humid condition.

Swelling in thickness

Reference	1	2	3	4	5	6	7	8	9	10
Initial Thickness (mm)	12.32	12.30	12.31	12.22	12.40					
Final Thickness (mm)	12.32	12.28	12.30	12.20	12.39					
Thickness Swelling (%)	0.0	-0.2	-0.1	-0.2	-0.1					
Average thickness swelling (%)	-0.1									

Tensile strength

Reference	Drop height (mm)	Impact strength (mm/mm)
1	275	23
2	250	21
3	250	21
4	275	23
5	275	23

Impact Resistance Test:

- Subject:** Impact Resistance test on 12mm thick.
- Test Method:** BS 5669 : part 1: 1989 determination of resistance to impact.

Reference	1	2	3	4	5
Maximum tensile load (N)	12.32	12.30	12.31	12.22	12.40
Maximum tensile strength (N/ mm ²)	12.32	12.28	12.30	12.20	12.39
Average tensile strength (N/ mm ²)	0.0	-0.2	-0.1	-0.2	-0.1

In-house testing laboratory

Genesis Ecomag Lab'

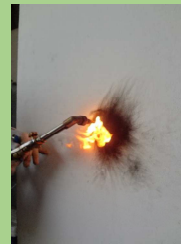
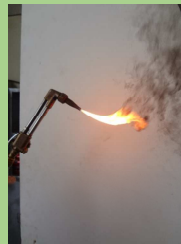
- R&D department for MgO mix researches
- Graduated chemist
- Raw materials rating & testing
- In-house product testing laboratory
- Systematic random testing
- Benchmarks compliance
- Independent labs certifications
- Quality assurance policy



In-house chemist research & processes



In-lab chemical tests for MgO mix formula stability



In-lab physical tests for installation, impact resistance, fire rating and water rating

Third party testing

Wehrhahn, a Germany based testing lab completed a complete set of physical tests on Ecomag MgO boards.

Date of test report: 28 August 2012

Sample size: 28 Ecomag boards

Results: the results showed outstanding behaviors in terms of

- bending strength
- low water absorption
- no loss of mass
- good dimensional stability when immersed in
- weak conductivity leaching
- no source of decomposition and swelling.

