

UNiCEM

United Fibre Cement Boards

الوواح المتحددة الإسمنتية



REVAMP YOUR WORLD LEAVING THE MOST POWERFUL AND CREATIVE TOUCHES ON A WIDE-RANGE OF MODERN APPLICATIONS

Made in KSA
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A NEW PRODUCT BY
المتحدة للصناعات التعدينية
United Mining Industries

UMI CLASSIFIED AMONG THE TOP
13 GYPSUM PLANT WORLDWIDE
THE LIVING INNOVATIONS





**“
We CARE Better WORLD,
Sustainable DEVELOPMENT ”
And STANDARD LIVING**



UMI

HISTORY & MISSION

UMI (United Mining Industries Ltd.) Fiber Cement Board and Plasterboard manufacturing company based in Saudi Arabian that produces fiber cement and plasterboard and related accessories products for Domestic and Export Marketing.

UMI is a joint venture company of three major Groups in Construction and Building Materials Industry in GCC which are Al Muhaidib, Al Mojel and Al Rashed. Initially producing Gypsum Powder from our own quarry in Yanbu, KSA diversified into Plasterboards, Joint Compound and Fiber Cement Board.

UMI's mission to enhance the quality of Fiber Cement Board products in local and regional market to provide efficient, eco-friendly and economical solutions.

Having locally procured major raw materials (excluding Fiber Pulp), low energy cost and being located in the middle of the region helps us to provide excellent Product to help sustain Green Building Solutions.

Our aim is to save environment and protect our ecological atmosphere. We use GREEN materials to produce and FCB is recyclable and degenerate material.

UNICEM Fiber Cement Boards are manufactured to meet requirements of ISO 8336:2009 and ASTM C1186 (2012).



UNiCEM

GO
GREEN

Better Environment
Better Tomorrow



WHY GREEN?

- USES RECYCLED RAW MATERIALS
- CAN BE REUSED
- REDUCES ENERGY CONSUMPTION
- CONVENIENT SUBSTITUTE TO WOOD.
- NON TOXIC





About UNICEM United Fiber Cement Board:

MATERIAL COMPOSITION:

UNiCEM United Fiber Cement Boards are made from a mix of cement, cellulose fiber and fire resistant fillers on Hatschek machines.

The products having excellent resistance against fire, termite and moisture makes it ideal material for varying applications.

The curing is done through AUTOCLAVING PROCESS which involves High Pressure Steam Curing for dimensional stability and durability.

The Hydration process changes the chemical structure of the cement/silica and bonding agents to produce highly durable and versatile fiber cement board.

After autoclave, UNICEM United Fiber Cement Boards are allowed to go through a short stabilization period to get them in equilibrium with the ambient moisture content under a controlled environment.

UNICEM boards are stacked systematically palette for dispatch to clients.

MANUFACTURING PROCESS:

UNiCEM United Fiber Cement boards consist of cement, sand, and cellulose fibers that are manufactured in layers to form sheets of varying thicknesses. The boards are manufactured using a process called autoclaving, which uses high-temperature steam curing to form the board and to increase the strength

and stability of the sand and cement. The cellulose fibers help to prevent cracking. A wood grain pattern is added to the surface of siding boards before the material is cured.

HATSCHEK PROCESS METHOD:

The success of fiber cement manufactured by the Hatschek process is largely due its formation in thin paper like films that are placed one on the other until the desired sheet thickness is reached. Formation of the sheet by this means distributes the reinforcing fibers in two dimensions taking best advantage of the reinforcing fibers to increase the in-plane strength of the sheet. Thus the strength of sheets made in this fashion is approximately 50% greater than sheets formed to full thickness in one action in the filter press process.

Sheet formation on the Hatschek Machine occurs in 4 stages:

- Initial formation of a filter layer on the surface of the sieve.
- Building of a very watery layer of fiber cement over the filter layer as the sieve rotates in contact with the slurry in the vat.
- Low intensity dewatering of the wet film as it transfers to the felt and
- High intensity dewatering of the film as it passes through the nip of the accumulator roller.

HATSCHEK PROCESS HISTORY:

The Hatschek machine was first developed for the production of asbestos cement in the 1890's when it was patented by the inventor, Ludwig Hatschek. The machine is still used in the same basic form today and although modern Hatschek machines are much more productive than the early models.





ADVANTAGES:

UNiCEM United Fiber Cement Boards doesn't warp or fade. It can withstand ultraviolet rays and is impenetrable by insects and birds. It doesn't dent or bump under direct impact and will not become brittle in cold temperatures. Fiber cement boards can be used in historical renovations, where other cladding materials are not allowed. Because of their long life, fiber cement boards also cut down on repair and maintenance costs. Many warranties guarantee the material for 25 years and longer.

ENVIRONMENTAL FRIENDLY:

Fiber cement boards are made from natural cellulose fibers and are completely non asbestos. The recycled contents in the product composition make it more environmental friendly. This product does not contain asbestos, formaldehydes or harmful chemicals.

It is the best substitution to wood with a contemporary range of green products suitable for all modern constructions.

MAINTENANCE:

UNiCEM United Fiber Cement Boards are strong and designed to hold up under extreme climates where intense sunlight, moisture or wind is common. This material is also resistant to fire, termite and rotting. Fiber cement board needs one coat primer and two coat paint. When painted, it will soak it up well, and with quality paint it won't peel or chip as painted vinyl or steel does. It is designed to be a low-maintenance building material, but it does require regular cleaning and inspecting caulked joints around windows and doors yearly.

APPLICATION:

UNiCEM United Fiber Cement Boards are mostly used for Internal & External Wall cladding, wall partitions, mezzanine flooring, Roof Underlay, False Ceiling, Office cubical partitions, Fixed Wardrobes, Kitchen cabinets, Duct Covering.

Fiber cement boards are a good alternative for Plywood for better fire protection and longer durability.

The uniqueness of these boards lies in the versatility of being a composite material to be used for both interiors and exteriors (with protective coating). The superiority of product lies in its durability and resistance to fire, moisture and Termite offers a great maintenance free environment.

APPEARANCE:

UNiCEM United Fiber Cement Boards are light gray in color with a smooth surface on facing sheet for Paint and rough surface on other side for gluing ceramic tiles, etc.

Unicem boards are available in Square Edge (SE) and Tapered Edge (TE). Tapered edges are good solutions for seamless joint on Partition walls and Cladding.

BRAND PRINTING:

UNiCEM United Fiber Cement Boards printed on facing side with Brand Name, Dimension, and Thickness, Manufacturing date and time, standards and Production Country Name.





STANDARDS:

UNICEM United Fiber Cement Boards are produced as per ASTM C 1186 Type "A" Grade 1 - (Direct Exposure to Sun, Rain and Snow) Standard Specification for Exterior Grade Flat Fiber Cement Boards.

BOARD PERFORMANCE:

Thermal Conductivity:

UNICEM United Fiber Cement Boards are tested for 0.21 W/mK for 6mm thick board.

Effect of Temperature:

UNICEM United Fiber Cement Boards are not recommended to be stored in temperature above 500 for prolonged period.

Effect of condensation:

UNICEM United Fiber Cement Boards are vapor permeable. If vapor condenses on the surface, the board will retain its strength.



TECHNICAL DATA:

UNiCEM United Fiber Cement Boards were tested in accordance with the American Society for Testing & Materials (ASTM) standards of the following:

Standard Code	Description
ASTM C473	Facial Dimensions; Squareness; Thickness
ASTM C666	Freeze-Thaw Disintegration
ASTM C947	Flexural Strength
ASTM C1185	Wet Flexural Strength
ASTM C1288	Standard Specification for Discrete Non-Asbestos Fiber-Cement Interior Substrate Sheets
ASTM D1037	Linear Variation or Moisture Movement; Fastening Holding (saturated); Falling Ball Impact
ASTM D2394	Compression Indentation
ASTM E84	Flame Spread/Smoke Developed
ASTM G22	Bacteria Resistance; Fungus Resistance





COMPLIANCE:

UNiCEM United Fiber Cement Boards Meets or exceeds American Society for Testing & Materials (ASTM) standards.

MOISTURE RESISTANCE CHARACTERISTICS:

UNiCEM United Fiber Cement Boards offers resistance to moisture and is highly dimensionally stable. It will not swell, decay, delaminate or deteriorate.

FIRE RESISTANCE CHARACTERISTICS:

UNiCEM United Fiber Cement Boards products have a Class A (1) Flame Spread Rating — 0, Smoke developed — 5, per ASTM E84.

INSTALLATION:

Preparatory Work— Handle and store product according to UNiCEM recommendations in “Installation Guide”. Keep panels clean and dry, protected from the weather. Store on a smooth, flat surface — not on the ground. If product becomes wet, allow it to dry before installation.

PRODUCT ATTRIBUTES AND BENEFITS:

ATTRIBUTES	BENEFITS
Asbestos free	Breathe easy environment
Moisture resistant	Long lasting
Sound/ Thermal insulation	Comfortable interiors
Termite resistance	Not degraded by any living organisms.
Dimensional stability	With-in tolerance limits
Fire resistance	Non combustible; Non toxic
Flexible	Ensures double handling
Easy workability	Very easy to work with the carpenter tools (sawing, cut and snap, screwing, nailing and stapling)
Good adhesion	Can take all type of finishes (paint/wall paper)
Eco friendly	Wood substitute and environmental friendly
Weather resistance	Withstands cyclic weather changes





BOARD SIZES & THICKNESSES

Product	Thickness Mm	Width mm	Length mm
Board Square Edge	5, 6, 9, 12, 16, 18, 20	600 610 1200 1220	2400, 2440 2700, 3000 3200
Boards Recess Edge	9 & 12	1200 1220	2400, 2440 2700, 3000 3200
Wood Texture Planks	8	230	2500
Designer Board Internal Cladding	6 ,8 & 12	600 610 1200 1220	1200 2400 2440
Designer Board Ceiling	5 & 6	600 610	600 610 1200 1220

BOARD APPLICATION CHART (RECOMMENDED)

Application	Specific Usage	Board	Designer Board
		Recommended Thickness in mm	Recommended Thickness in mm
Partitions	Partition with concealed Cold Roll Metal Frame / Wooden Frame	9, 12	9
Wall Paneling / Internal Cladding	Partition with concealed Cold Roll Metal Frame / Wooden Frame	6, 9	6, 8
False Ceiling	Suspended false ceiling with visible / Concealed Aluminum Grid System.	5, 6 & 9	5, 6 & 9
External Cladding	Fascia Panels/ External cladding on metal work	9, 12	8
Floorings	Mezzanine flooring with 2*2 metal / wooden support	16, 18, 20	NA
Roof lining	Roof lining with wooden grid 2*2 support for laying of tiles	10, 12	NA





BOARD SIZES & THICKNESSES

Parameters	Specifications
Standard size	1200X2400 mm
Density	≥1300 kg/m ³
Moisture contentt	≤10%
PH value (acid-base)	8-9
Flexural strength	≥ 10 MPA
Impact strength	≥7.1 kg/m ² (8mm)
Adhesion bond strength	≥7.9 kg/m ² (10mm)
Screw withdraw strength	0.9-1.0 N need test
Fire resistance	Up to 2 hours (ASTM E136) Up to 3 hours (BS EN 12467)
Length variation due to water absorption	0.06%
Thermal conductivity at 50 °C	≤0.21/W.mk
Water absorption “ after 48 hours”	≤34%
Asbestos content	Not detected
Formaldehyde content	Not detected
Sound insulation	12mm 53dB with 60mm Rock wool Density 80mm
Maintenance	Require low maintenance and fewer resources forreplacement
Workability	Easy workability
Service duration	Up to 25 years



المتحدة للصناعات التعدينية United Mining Industries

من إبداعات الحياة
THE LIVING INNOVATION

Approved for ARAMCO projects under vendor No. 10049516



Intertek





**UNITED
BOARDS**

**UNITED
CEILINGS**

**UNITED
GYPSUM**

**UNITED JOINT
COMPOUND**

**UNITED DRYWALL
JOINT TAPE**

**UNITED
CORNER
TAPE**

**UNITED JOINT
TAPE**

UNICEM
United Fibre Cement Boards

**United
Drywall
Screw**

Unicel
Ceilings
Made in K.S.A.

UNiCEM

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الوَّاج الممتدة الإسمنتية

المصنع الأول في الشرق الأوسط
THE FIRST PLANT IN THE MIDDLE EAST

UMI CLASSIFIED AMONG THE TOP
13 GYPSUM PLANT WORLDWIDE

THE LIVING INNOVATIONS

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