MASTER CTS

ASATEEN GROUP

CONTROLLED TECHNICAL EDITION

MASTER BOARD

DF-01 Technical Data Sheet

Controlled technical reference for product identity, performance data, application guidance, packaging, and referenced standards.

Contents

Product Identity and Technical Overview

Controlled technical identity, basis, and opening description.

2. Product Identity

Field	Approved source-supported entry
Document Type	DF-01 Technical Data Sheet
Product Name	MASTER BOARD
System / Division	MASTER CTS (Construction Technology Systems)
Material Class	High-density fiber cement board / industrialized envelope system
Primary Form	Flat panel / board
Standard Panel Size	1200 x 2400 mm
Thickness Range	4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30 mm

3. Technical Overview

MASTER BOARD is presented in the approved source as an industrialized envelope system for structural and building-skin applications. The source states that it is manufactured by the Hatschek process and high-pressure steam curing (autoclaving at temperatures >170°C), producing a Tobermorite-based cementitious structure intended to support dimensional stability, moisture resilience, and Class A1 non-combustibility across interior and exterior interfaces.

4. Product Description

The product is described as a high-density fiber cement board reinforced with Northern Bleached Softwood Kraft (NBSK) cellulose fibers and fiberglass. The source further states that the NBSK fibers act as internal hygroscopic regulators and that the board is offered in smooth, stone, wood, and brick / brickstone surface finishes with straight-edge or tapered-edge variants.

5. Composition / Material Basis

Field	Approved source-supported entry
Composition	Cement, cellulose fibers, and fiberglass
Manufacturing Logic	Autoclaved high-pressure steam treatment with Hatschek processing
Matrix / Structure	Stable Tobermorite crystalline structure
Environmental Profile	Asbestos-free; no formaldehyde adhesives; insect-proof; rot-resistant
Appearance	Off-white / creamy cementitious pulp appearance; flat on both sides

Key Technical Properties

Table-first property summary and product configuration.

6. Key Technical Properties

Property	Reported value / description
Surface Finish Options	Smooth, stone, wood, brick / brickstone
Edge Variants	Straight edge or tapered edge
Fire Reaction	A1 (non-combustible)
Machinability	Easily cut using standard woodworking tools, circular saws, or fiber-cement scissors
Weight Profile	Lightweight construction compared to masonry
Climate Adaptation	Resists temperatures up to 750°C in fire conditions
Biological Resistance	Naturally insect-proof; resists fungus and mold

Configuration / engineering control	Approved source-supported entry
Length / Width tolerance	± 5 mm (TS EN 12467)
Thickness tolerance	± 10% (where t is thickness)
Edge perpendicularity	≤ ± 2 mm/m
Straightness on edges	≤ 0.1% x edge length
Loading capacity (18 mm board)	644 kg/m² at 417 mm support gap; 284 kg/m² at 625 mm support gap
Freeze-thaw resistance	Resistant up to 50 cycles of heating and rain without visible cracks or delamination

Performance Characteristics

Primary source-stated performance dataset.

7. Performance Characteristics

Property	Value	Unit	Standards / notes
Dry Apparent Density	≥ 1300	kg/m³	TS EN 12467
Bending Strength (Ambient)	≥ 12	N/mm²	Average parallel / perpendicular
Bending Strength (Wet)	≥ 7	N/mm²	Average parallel / perpendicular
Modulus of Elasticity	≥ 4000	N/mm²	Typical values reach 4500
Compressive Strength (24h Water)	> 35	MPa	After 20 ± 2°C conditioning
Compressive Strength (7d Lab)	> 40	MPa	Laboratory conditioning
Thermal Conductivity (λ)	0.2166	W/mK	TS EN 12667
Thermal Resistance (10 mm)	46.168×10^{-3}	m²K/W	TS EN 12667
Thermal Resistance (12 mm)	55.401×10^{-3}	m²K/W	TS EN 12667
Thermal Expansion	0.00493	mm/mK	DIN 51045
Water Absorption (2h)	< 15	%	By weight

Performance Characteristics

Continuation of the source-stated performance dataset and supporting sample reports.

Property	Value	Unit	Standards / notes
Water Absorption (24h)	< 25	%	By weight
Water Vapor Resistance (μ)	13.31	—	TS EN ISO 12572
Mean Water Vapor Resistance (Z)	0.187	m²hPa/mg	TS EN 12086
Porosity	< 30	%	Laboratory conditions
Moisture Movement	0.05	%	Between 30-90% RH
Thickness Change (Water)	< 1	%	After 24h immersion
Pull-out Value (10 mm board)	168	N	Using 4.2 x 65 mm screw
Pull-out Value (18 mm board)	300	N	Using 4.2 x 65 mm screw
Sound Insulation (12 mm)	31	dB	Indicative value
Sound Insulation (18 mm)	33	dB	Indicative value
Loading Capacity (18 mm / 417 mm support gap)	644	kg/m²	Source-stated engineering property
Loading Capacity (18 mm / 625 mm support gap)	284	kg/m²	Source-stated engineering property

Sample test reports (Ref: 125/2022)	Reported result
10 mm sample	1393 kg/m³ density; 16.5 MPa Modulus of Rupture (Humid); 81% Flexural Strength Ratio after wet / dry cycling
12 mm sample	1428 kg/m³ density; 19.8 MPa Modulus of Rupture (Humid); 87% Flexural Strength Ratio after wet / dry cycling

Application Areas and Usage Guidance

Source-stated scope, installation controls, and packaging basis.

8. Application Areas

Application area	Source-stated scope
Exterior (10 mm)	Wall cladding, facades, balcony screens, fences, soffits, fascia, parapets, and site fencing
Interior & Partitions (8 mm)	Partition walls, dividing walls, suspended ceilings, and internal linings
Floors & Structural (20 mm)	Floor and floor build-up applications (mezzanines), shaft walls, and fire walls
Wet Areas	Backer board under ceramic in bathrooms, kitchens, and swimming pools
Roofing	Under-roof applications and roof linings
Specialized	Prefabricated building walls, sound-insulation zones, and heat-insulation systems

9. Application Method / Usage Guidance

Control point	Source-supported guidance
Cutting / machining	Use standard woodworking tools, circular saws, or fiber-cement scissors
Surface treatment	Accepts acrylic paint, wallpaper, ceramic tile, and PVC coatings
Primer requirement	Alkaline-resistant primer is required during surface preparation for optimal finish adhesion
Max screw spacing	300 mm
Edge distance	20-30 mm from board edges
Joint gap	5 mm (recommended for exterior thermal movement)
Panel overlap support	2.5 cm overlap for positioning; 40 cm overlap for polyethylene steam equalizer layers
Sealing	Polyurethane mastic joint sealing where required

10. Packaging

Field	Source-supported entry
Packaging / logistics	Delivered on wooden pallets, wrapped in nylon / stretch film, and secured with rubber straps and cardboard edge protectors

Storage, Standards, and Notes

Final controlled evidence blocks and source limitations.

11. Storage / Shelf Life

Control point	Source-supported guidance
Storage position	Store in a dry covered area and keep flat in a horizontal position
Stack height	Must not exceed 3 meters
Package weight	Must not exceed 2.5 to 3 tons
Stacking alignment	Pallets must be of the exact same size with wooden legs vertically aligned
Temporary outdoor storage	Cover with waterproof polyethylene or PVC tarpaulin while allowing air circulation at the top
Temporary wedge support	If used, wedges must be spaced at maximum 50 cm intervals
Manual handling	Carry boards manually in a strictly vertical orientation to minimize bending stress and prevent micro-cracking
Forklift handling	Forks must enter at least 3/4 of the pallet depth
Shelf life	Not stated in the approved source

12. Referenced Test Methods / Standards

Reference	Source treatment in this DF-01
TS EN 12467	Presented only as the source-stated reference for fiber-cement flat sheet properties, tolerances, and freeze-thaw performance
EN 13501-1	Presented only as the source-stated fire classification reference
ISO 1182:2020	Presented only as the source-stated non-combustibility test reference
TS EN 12667	Presented only as the source-stated thermal conductivity / thermal resistance reference
DIN 51045	Presented only as the source-stated thermal expansion reference
TS EN ISO 12572	Presented only as the source-stated water vapor resistance reference
TS EN 12086	Presented only as the source-stated mean water vapor resistance reference

13. Notes / Controlled Limitations

• Only values and statements supported by the approved technical source are included in this DF-01.
• Comparative-framework and quality-of-living narrative content from the source is not reproduced because it falls outside the restrained DF-01 evidence scope.
• Iraqi Civil Defense Approval No. 24/1892 (22/11/2023) and laboratory document ID F/TC/7.8/CO/01 (22/02/2022) are retained only as source-stated references, not as a standalone certification dossier.
• Green-building, LEED, and environmental-credit language is not presented here as independent compliance certification.

MASTER CTS

Construction Technology Systems

A Division of ASATEEN GROUP

ASATEEN GROUP

Integrated Construction, Mobility & Services

info@asateengroup.com

www.asateengroup.com

+964 771 774 9997

Baghdad - Iraq