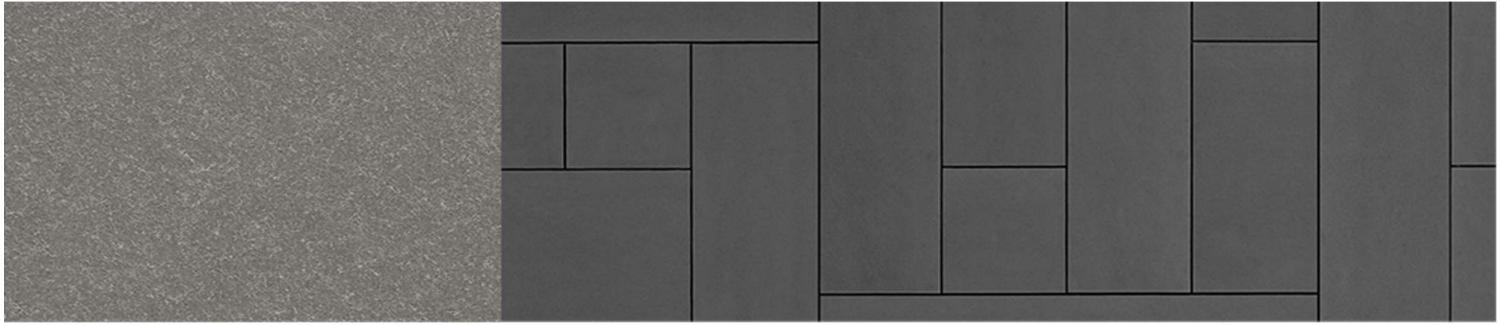


EQUITONE

EQUITONE [natura]
Material Information Sheet

1. Product Appearance

EQUITONE [natura] is a high-density fiber cement panel with a through-colored core, and a colored semi-transparent double-layer acrylic finish which results in the structure (fibers) of the material shining through.

Irregularities, differences in shade, and traces of the manufacturing process are part of the natural characteristics of the material. The rear receives a transparent back-sealing coating.

2. Color

EQUITONE [natura] is available in a wide range of standard and special colors, manufactured based on various through-colored core/baseboards as shown on the color chart below.

Color variations are part of the natural characteristics of the material. The allowable tolerance of shade between the EQUITONE [natura] materials is minimal and is measured according to the CIELAB color model. The allowable dry mean averages of three readings are ΔL* (brightness) of ±2.0, Δa* (+red/-green) of ±1.0, and Δb* (+yellow/-blue) of ±1.0 compared to the production benchmark sample and measured with the same device.

Available colors

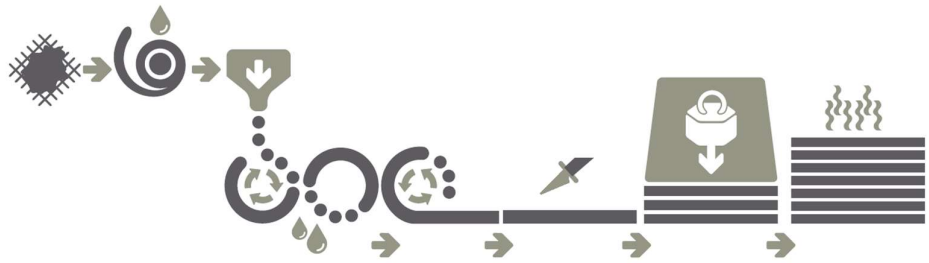
Note: It is not possible to realistically show available colors in literature, therefore the final choice of colors should be made with samples. Please order your samples on the website www.equitone.com.

3. Product Composition

EQUITONE [natura] panels consist of cement, water, mineral fillers, cellulose fibers, synthetic reinforcing fibers, inorganic color pigments (depending on the color), and an acrylic coating.

4. Production Method

EQUITONE [natura] is a highly compressed, air-cured fiber cement material manufactured in Germany (Europe).



EQUITONE [natura] panels are manufactured through the Hatschek process where the base materials which are mainly cement, fibers, cellulose, pigments, and water are first mixed together to form a slurry. This slurry is then pumped into several vats with rotating cylindrical sieves on the surface of which a film of fiber cement is formed through a sieving mechanism as they rotate, which is then transferred to a felt belt traveling overhead. This thin layer of fiber cement is then dewatered before being transferred via the felt belt to a forming drum on which several layers of fiber cement are collected and squeezed together until the required thickness is achieved. Once this occurs, this fresh sheet of fiber cement is cut by an automatic cutting knife. A conveyor then transports the sheet to where all the sheets are stacked with an interleaving steel plate. The stacked sheets are then highly compressed, resulting in a high-density material.

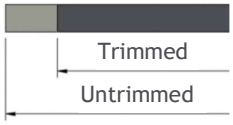
This is followed by a curing process where the panels harden under ambient temperature and without vapor pressure.

Subsequently, EQUITONE [natura] receives an industrially applied multiple-layer coating on the front face, and a physically equivalent sealing coating on the rear face.

In case of factory-trimmed panels the edges are trimmed and additionally sealed with Luko edge sealer.

5. Dimensions and Tolerances (Imperial)

EQUITONE [natura] is available in a standard thickness of 5/16” and in 15/32” thicknesses for specific applications or fixings. The panels are available in either untrimmed (production dimension) or trimmed (maximum usable size) formats.



The panel must not be installed with untrimmed edges. Approximately 19/32” needs to be trimmed from each of the untrimmed (raw) edges. Cut edges need to be sealed with Luko edge sealer.

Dimensions		
Thickness	5/16 in	15/32 in

Width	
Trimmed	49 in
Untrimmed	50 in

Length	
Trimmed	98 in or 122 in
Untrimmed	99 1/2 in or 123 in

Tolerances[1] (for cut and trimmed panels)		
Thickness	± 0.0236 in	± 0.0354 in
Width	± 0.0394 in	
Length	± 0.0394 in	
Squareness	± 0.0394 in/ft	

Tolerances[1] (for untrimmed panels)		
Thickness	± 0.0236 in	± 0.0354 in
Width	± 1/4 in	
Length	± 5/16 in	
Squareness	± 0.0394 in/ft	

Weight per m² (air dry)		
	3.15 lb/ft²	4.67 lb/ft²

Weight per panel (without pallet)		
98 x 49 in (trimmed)	106 lb	157 lb
122 x 49 in (trimmed)	132 lb	195 lb
99 1/2 x 50 in (untrimmed)	110 lb	163 lb
123 x 50 in (untrimmed)	136 lb	202 lb

Packaging		
Number of panels on a pallet	30	20

Usable surface per pallet		
98 x 49 in (trimmed)	1010 ft²	673 ft²
122 x 49 in (trimmed)	1250 ft²	834 ft²

Color tolerance (CIELAB) [2]	
ΔL*, brightness	± 2.0
Δa*, + red/ - green	± 1.0
Δb*, + yellow/ - blue	± 1.0

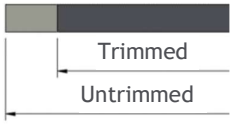
[1] Factory tolerances for trimmed and untrimmed panels outperform the requirements of the EN 12467 Level I and II dimensional tolerances, respectively; as well as all criteria set forth on ASTM C1185.

[2] Color tolerance are only to be measured on dry surfaces.

[3] Imperial values are approximate and are based on the metric values.

5.1 Dimensions and Tolerances (Metric)

EQUITONE [natura] is available in a standard thickness of 8 mm and also in 12 mm thicknesses for specific applications or fixings. The panels are available in either untrimmed (production dimension) or trimmed (maximum usable size) formats.



The panel must not be installed with untrimmed edges. Approximately 15 mm needs to be trimmed from each of the untrimmed (raw) edges. Cut edges need to be sealed with Luko edge sealer.

Dimensions		
Thickness	8 mm	12 mm

Width	
Trimmed	1250 mm
Untrimmed	1280 mm

Length	
Trimmed	2500 mm or 3100 mm
Untrimmed	2530 mm or 3130 mm

Tolerances[1] (for cut and trimmed panels)		
Thickness	± 0.6 mm	± 0.9 mm
Width	± 1 mm	
Length	± 1 mm	
Squareness	± 1.0 mm/m	

Tolerances[1] (for untrimmed panels)		
Thickness	± 0.6 mm	± 0.9 mm
Width	± 6 mm	
Length	± 8 mm	
Squareness	± 1.0 mm/m	

Weight per m² (air dry)		
	15.4 kg/m²	22.8 kg/m²

Weight per panel (without pallet)		
2500 x 1250 mm (trimmed)	48.1 kg	71.3 kg
3100 x 1250 mm (trimmed)	59.7 kg	88.4 kg
2530 x 1280 mm (untrimmed)	49.9 kg	73.8 kg
3130 x 1280 mm (untrimmed)	61.7 kg	91.4 kg

Packaging		
Number of panels on a pallet	30	20

Usable surface per pallet		
2500 x 1250 mm (trimmed)	93.75 m^2	62.5 m^2
3100 x 1250 mm (trimmed)	116.25 m^2	77.5 m^2

Color tolerance (CIELAB) [2]	
ΔL*, brightness	± 2.0
Δa*, + red/ - green	± 1.0
Δb*, + yellow/ - blue	± 1.0

[1] Factory tolerances for trimmed and untrimmed panels outperform the requirements of the EN 12467 Level I and II dimensional tolerances, respectively.

[2] Color tolerance are only to be measured on dry surfaces.

6. Material Properties (ASTM)

Classification				
Flexural strength classification		ASTM C1186	Grade III	
Dimensional tolerances for trimmed panels		ASTM C1186	Pass	

Physical requirements and characteristics				
Mean density	dry	ASTM C1185	111.8	lb/ft^3
Moisture movement	30-90 %	ASTM C1185	0.05	%
Flexural strength ultimate[1]	dry	ASTM C1185	3,358	psi
Flexural strength ultimate[1]	wet	ASTM C1185	2,160	psi
Water tightness		ASTM C1186	Pass	
Moisture content		ASTM C1185	3.9	%

Durability requirements				
Frost resistance (freeze/thaw)		ASTM C1186	Pass	
Warm water resistance test		ASTM C1186	Pass	
Mean water absorption		ASTM C1185	14.5	%

Fire and safety				
Material burning characteristics		ASTM E84	Class A	
Flame spread index			0	
Smoke development index			0	
Assembly fire resistance rating		ASTM E119	1	hr.
Hose stream test		ASTM E119	Pass	
Vertical tube furnace (B)		ASTM E137	Pass, Non-combustible	

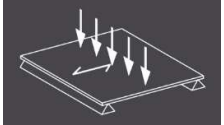
Other characteristics				
Thermal movement	α	-	$5.5e^{-6}$	in/in°F
Thermal conductivity	λ	ASTM C518	0.236	BTU/h ft°F

Notes:

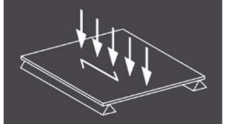
1. Appropriate safety factors should be applied to ultimate values.
2. EQUITONE [natura] cladding panels strength classification conforms to the requirements of ASTM C1186 “Standard Specifications for Flat Fiber-Cement Panels.”
3. EQUITONE [natura] cladding panels have been evaluated per ICC acceptance criteria AC90 to meet the minimum requirements of the International Building Code (IBC).
4. Results are in accordance with the procedures defined in ASTM C1185 “Standard Test Methods for Sampling and Testing Non-Asbestos Fiber-Cement Flat Sheet, Roofing and Siding Shingles, and Clapboards.”

6.1 Material Properties (EN)

EQUITONE [natura] cladding panels conform to the requirements of EN 12467:2012+A2:2018 “Fiber cement flat sheets – Product specification and test methods.” The results below are presented as defined by the standard.



[1]Bending strength perpendicular, load perpendicular to the production (longitudinal) direction



[2]Bending strength parallel, load parallel to the production (longitudinal) direction

Classification				
Type of product		EN 12467	NT	
Durability classification		EN 12467	Category A	
Strength classification		EN 12467	Class 4	
Dimensional tolerances for trimmed panels		EN 12467	Level I	
Dimensional tolerances for untrimmed panels		EN 12467	Level II	

Physical requirements and characteristics				
Mean density	dry	EN 12467	1750	kg/m^3
Characteristic dead load gk (8 mm)	-	-	0.17	kN/m^2
Characteristic dead load gk (12 mm)	-	-	0.26	kN/m^2
Moisture movement	30-90 %	EN 12467	0.1	%
Characteristic bending strength perp.[1]	ambient	EN 12467	24.0	MPa
Characteristic bending strength par.[2]	ambient	EN 12467	18.5	MPa
Partial safety factor ym[3]	ambient	-	2.0	-
Mean module of elasticity	ambient	EN 12467	12,000	MPa
Water impermeability test	-	EN 12467	No drops/Pass	

[3] Recommendation for the safety concept according to the Eurocode standard if no national regulation exists.

Durability requirements			
Freeze-thaw test for Category A panel	EN 12467	Pass	
Heat-rain tests for Category A panel	EN 12467	Pass	
Warm water test	EN 12467	Pass	
Soak-dry test	EN 12467	Pass	

Fire and safety			
Material fire classification	EN 13501	A2-s1,d0	
Flame spread rating	ULC S102	0	
Smoke development classification	ULC S102	5	
Material combustibility	ULC S114	Non-combustable	

Other characteristics				
Thermal movement	α	-	0.01	mm/mK
Thermal conductivity	λ	ASTM C518	0.407	W/mK
Moisture content at 20°C, 65 % humidity		-	< 6	M.-%
Poisson’s ratio	ν	-	0.2	-

Note to the units: 1 K (degree Kelvin) = 1°C, 1 MPa (Mega Pascal) = 1 N/mm², M.-% = mass percentage

Note: EQUITONE [natura] panels also comply with the requirements of ISO8336:2017 "Fiber-cement flat sheets – Product specification and test methods."

7. Advantages

Providing the application guidelines are followed, EQUITONE [natura] fiber-cement panels have the following superior mix of properties compared to other materials:

- Recyclable according to Environmental Product Declaration (EPD)
- Expected average reference service life of 50 years (based on EPD)
- Fire safe (no fire ignition, no spread of fire)
- Improved sound insulation of the façade
- UV-resistant
- Resistant to extreme temperatures and frost
- Weather resistant
- Resistant to many living organisms (fungi, bacteria, insects, vermin, etc.)
- Resistant to many chemicals
- Material appearance due to transparent coating
- Strong, rigid panel
- Hail impact tested

Working with the material:

- The material is easy to drill, cut, and install with the proper tools.
- Do not use adhesive, tapes, and/or sealants on the finished surfaces of the material.

8. Applications

EQUITONE [natura] can be used in several ventilated applications, including, but not limited to:

- Ventilated facade or rainscreen cladding
- Window and door reveal
- Exterior ceiling: decorative cladding of ceiling
- Soffits, eaves, and verge boards
- Interior wall and ceiling lining (subject to local regulations)

For restrictions on the above-mentioned applications read the specific application guidelines.

The panels may be face or concealed-fixed with Etex proprietary or recommended fixing solutions.

EQUITONE [natura] cannot be used in the following applications, but not limited to: Internal applications exposed to direct moisture e.g. wet areas, situations with direct contact with standing snow or ice, applications where exposed to long-term temperatures exceeding 80°C / 176°F, and roof applications.

9. Health and Safety Aspects

During the mechanical machining of panels, dust can be released which can irritate the airways and eyes. Depending on the working conditions, adequate machinery with dust extraction and/or ventilation should be foreseen. The inhalation of fine (respirable size) quartz-containing dust, particularly when in high concentrations or over prolonged periods of time can lead to lung disease and an increased risk of lung cancer. For more information, please visit www.equitone.com for the most recent Safety Information Sheet.

10. Maintenance and Cleaning

Refer to the relevant "EQUITONE Cleaning Information" Guide.

11. Certification

The manufacturer can - within the framework of the European Regulation N° 305/2011 (CPR) - present the Declaration of Performance (DOP) of the product such confirming that the product has a CE marking. The CE marking guarantees that the product is in accordance with the basic requirements determined by the harmonized European standard and applicable to the product. The Declaration of Performance is presented in accordance with the CPR and can be found at www.equitone.com.

EQUITONE [natura] is certified with an Environmental Product Declaration according to ISO 14025 or EN 15804. The life cycle assessment includes raw material and energy production, the actual manufacturing phase, and the use phase of the fiber cement panels. More information is available in the Material Sustainability Datasheet.

EQUITONE fiber cement façade materials have also achieved a cradle-to-cradle bronze rating according to C2CPII version 3.1. The cradle-to-cradle product innovation institute evaluates products based on five categories: material health, product circularity, clean air and carbon, water and soil stewardship, and social fairness. More information can be found at www.equitone.com.

EQUITONE air-cured products are certified with an ESR report according to ICC AC90. AC90 evaluates the physical properties, weather resistance, wind load resistance, durability, and fire resistance of fiber cement products for use as exterior siding. More information is available in the ESR 3910 report.

The manufacturing facility holds the latest versions of the following ISO certificates

- ISO 9001 Quality Management System
- ISO 14001 Environmental Management System
- ISO 45001 Occupational Health and Safety
- ISO 50001 Energy Management System

12. Information

Please visit www.equitone.com for contact details, further information, and technical documents.

www.equitone.com

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