EQUITONE
Fibre cement facade materials

1. Product Appearance

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

The surface finish is matt with a UV hardened PU topcoat (front side), providing a hard, dirt resistant surface finish with a high abrasion resistance and a permanent and durable graffiti protection.

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

EQUITON [natura] PRO is available in a wide range of standard and special colors, manufactured based on various different through colored core/base boards 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] PRO 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

| NU 164 | NU 162 | NU 154 | NU 861 | NU 961 | NU 891 | NU 892 | NU 250 | NU 294 | NU 411 | NU 594 | NU 593 | NU 662 |

| NU 161 | NU 163 | NU 211 | NU 252 | NU 281 | NU 251 | NU 073 | NU 074 | NU 412 | NU 661 | NU 991 | NU 972 | NU 331 | NU 359 |

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

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3. Product Composition

EQUITONE [natura] PRO panels consist of cement, water, mineral fillers, cellulose fibres, synthetic reinforcing fibres, inorganic color pigments (depending on the color), an acrylic coating and a UV-cured functional top layer.

4. Production Method

EQUITONE [natura] PRO is a highly compressed, air cured fibre cement material manufactered in Germany (Europe).
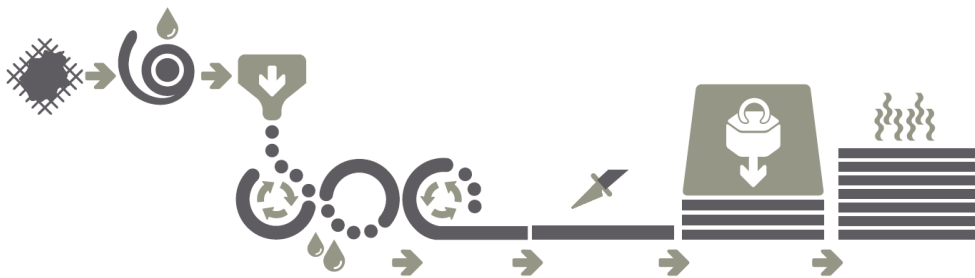
EQUITONE [natura] PRO panels are manufactured through the Hatschek process where the base materials which are mainly cement, fibres, cellulose, pigments and water are first mixed together to form a slurry. This slurry is then pumped into several vats with rotating cylindrical sieves on the surface of which a film of fibre cement is formed through a sieving mechanism as they rotate, which is then transferred to a felt belt traveling overhead. This thin layer of fibre cement is then dewatered before being transferred via the felt belt to a forming drum on which several layers of fibre cement are collected and squeezed together until the required thickness is achieved. Once this occurs, this fresh sheet of fibre 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 vapour pressure.

Subsequently EQUITONE [natura] PRO receives an industrially applied multiple layer coating on the front face, and a physically equivalent sealing coating on the rear face. Finally a UV hardened PU top-coat is applied to the front side.

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

5. Dimensions and Tolerances (Metric)

EQUITONE [natura] PRO 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.

Trimmed

Untrimmed

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 pallet	30	20

Usable surface per pallet		
2500 x 1250 mm (trimmed)	93.75 m²	62.5 m²
3100 x 1250 mm (trimmed)	116.25 m²	77.5 m²

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

[1]Factory tolerances for trimmed panels outperform the requirements of the EN12467 Level I dimensional tolerances.

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

5.1 Dimensions and Tolerances (Imperial)

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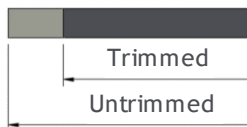
Trimmed

Untrimmed

The panel must not be installed with untrimmed edges. Approximately 19/32 in 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)		
2500 x 1250 mm (trimmed)	106 lb	157 lb
3100 x 1250 mm (trimmed)	132 lb	195 lb
2530 x 1280 mm (untrimmed)	110 lb	163 lb
3130 x 1280 mm (untrimmed)	136 lb	202 lb

Packaging		
Number of panels on pallet	30	20

Usable surface per pallet		
2500 x 1250 mm (trimmed)	1010 ft²	673 ft²
3100 x 1250 mm (trimmed)	1250 ft²	834 ft²

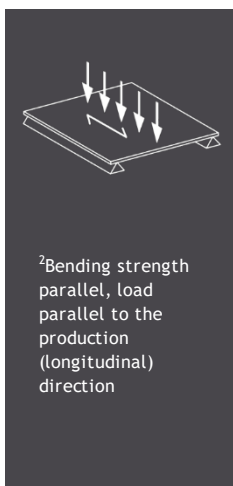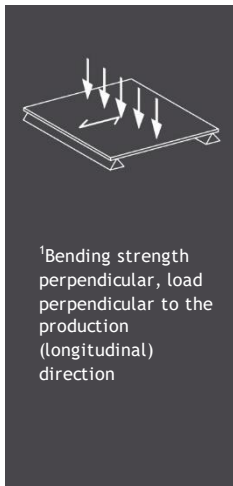| Color tolerance (CIELAB) [2]	
ΔL*, brightness	± 2.0
Δa*, + red/ - green	± 1.0
Δb*, + yellow/ - blue	± 1.0

[1] Factory tolerances for trimmed and untrimmed panels outperform the requirements of the EN12467 Level I and II dimensional tolerances, respectively; as well all criteria set fourth on ASTM C 1185.

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

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

6. Material Properties (EN)

EQUITONE [natura] PRO cladding panels conform to the requirements of EN 12467:2012+A2:2018 "Fibre cement flat sheets – Product specification and test methods". The results below are presented <u>as defined by the standard</u>.
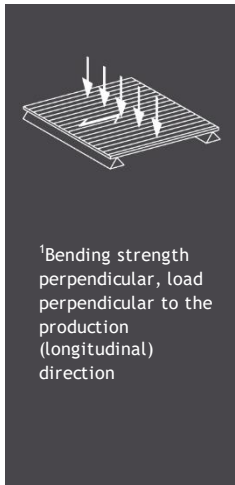
[1]Bending strength perpendicular, load perpendicular to the production (longitudinal) direction

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

Classification			
Type of product		EN12467	NT
Durability classification		EN12467	Category A
Strength classification		EN12467	Class 4
Dimensional tolerances for trimmed panels		EN12467	Level I
Dimensional tolerances for untrimmed panels		EN12467	Level II

Physical requirements and characteristics				
Mean density	dry	EN12467	1750	kg/m³
Moisture movement	30-90 %	EN12467	0.1	%
Mean bending strength perpendicular[1]	ambient	EN12467	24.5	MPa
Mean bending strength parallel[2]	ambient	EN12467	19.5	MPa
Average bending strength	wet	EN12467	≥18.0	MPa
Mean module of elasticity	ambient	EN12467	12,000	MPa
Water impermeability test		EN12467	No drops/Pass	

Durability requirements		
Freeze-thaw test for category A panel	EN12467	Pass
Heat-rain tests for category A panel	EN12467	Pass
Warm water test	EN12467	Pass
Soak-dry test	EN12467	Pass

Fire and safety		
Reaction to fire	EN13501	A2-s1,d0

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.-%
Brinell surface hardness (HBWmean)		ISO6506-1	75	N/mm²
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] PRO panels also comply with the requirements of ISO8336:2017 "Fibre-cement flat sheets – Product specification and test methods"

6.1 Material Properties (ASTM)

EQUITONE [natura] PRO cladding panels conform to the requirements of ASTM C 1185-08 (2012) "Standard Specifications for Flat Fiber-Cement Panels.". The results below are presented <u>as defined by the standard</u>.

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

Classification			
Flexural strength classification		ASTM C 1185-5	Grade III
Dimensional tolerances for trimmed panels		ASTM C 1185-7	Pass

Physical requirements and characteristics				
Mean density	dry	ASTM C 1185-6	111.8	lb/ft^3
Moisture movement	30-90 %	ASTM C 1185-8	0.05	%
Flexural Strength	dry	ASTM C 1185-5	3,358	psi
Flexural Strength	wet	ASTM C 1185-5	2,160	psi
Water Tightness		ASTM C 1185-11	Pass	
Moisture Content		ASTM C 1185-10	3.9	%

[2]Bending strength parallel, load parallel to the production (longitudinal) direction
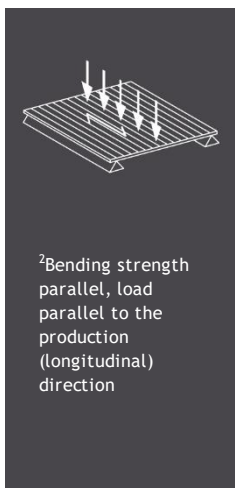
Durability requirements			
Frost Resistance (Freeze/Thaw)	ASTM C 1185-12	Pass	
Warm water resistance test	ASTM C 1185-13	Pass	
Mean water absorption	ASTM C 1185-9	14.5	%

Fire and safety		
Flame spread index	ASTM E 84-07	0
Smoke development index	ASTM E 84-07	0
Hose stream test	ASTM E 119.12A	Pass
Vertical tube furnace (B)	ASTM 136.19A	Pass

Other characteristics				
Thermal movement	α	-	0.667e^{-4}	in/ft°F
Thermal conductivity	λ	ASTM C518	0.236	BTU/h ft°F

Note: EQUITONE [natura] PRO panels also comply with the requirements of ASTM C 1185-08 (2012) "Standard Test Methods for Sampling and Testing Non-Asbestos Fibre-Cement Flat Sheet, Roofing and Sliding Shingles, and Clapboards" and "ICC-ES AC90, Acceptance Criteria for Fibre Cement Siding used as Exterior Wall Siding.".

The EQUITONE [natura] PRO surface has the following properties:
- Oesterle scratch resistance 2.5 N
- Mohs hardness 4
- Pencil hardness 4H
- Indentation test 6 N according to DIN 53153, EN ISO 2815

The UV-hardened surface coating is smooth and easy to clean. It offers high protection against normal and spray paints. The anti graffiti coating satisfies the placement test requirements and those of Test Cycle 2 of the quality control association Gütegemeinschaft Anti-Graffiti e.V. for protective anti-graffiti surface systems (ILF test report 4-013/2006 of the Institut für Lacke und Farben e.V.). Graffiti can be removed with the usual graffiti cleaning agents available in the trade.

7. Advantages

Providing the application guidelines are followed, EQUITONE [natura] PRO fibre-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 facade
- 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 panels
- Hail impact tested
- Permanent and durable graffiti protection.

Working with the material:

- The material is easy to drill, cut and install with the proper tools

8. Applications

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

- Ventilated facade / 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)
- Roof applications or inclined facades with panels facing up

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] PRO can not 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.

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.

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

EQUITONE [natura] PRO 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 fibre cement panels. More information available in the Material Sustainability Datasheet.

12. Information

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

www.equitone.com