

## EQUITONE [linea] Material Information Sheet

### 1. Product Appearance

EQUITONE [linea] is a high-density through-colored fiber cement panel with no coating. The panel has an honest, pure, and natural appearance with natural color variations and hues. The natural characteristic of the panel may be accentuated by the production process as well as light or dark inclusions.

The front face of the panel features grooves. The top of the ridges are characterized by fine sanding lines in the longitudinal direction. The revealed texture of the fiber cement core in the grooves enhances the 3D surface aspect of the panel.

The panel has been made water-repellent by means of hydrophobation.

### 2. Color

The color is throughout the panel. Natural color variations, accentuated by the orientation of the panel, the viewing angle, and the effects of light and moisture, strengthen the natural look of the façade.

Color variations and random hues are part of the natural characteristics of the material. Each panel has its own individual character.

Color differences are measured according to a simplified CIELAB color model, by which only the parameter lightness  $\Delta L$  of the color is followed. Tolerated color differences on a dry façade are  $\Delta L^* = \pm 2.5$ .

Available colors



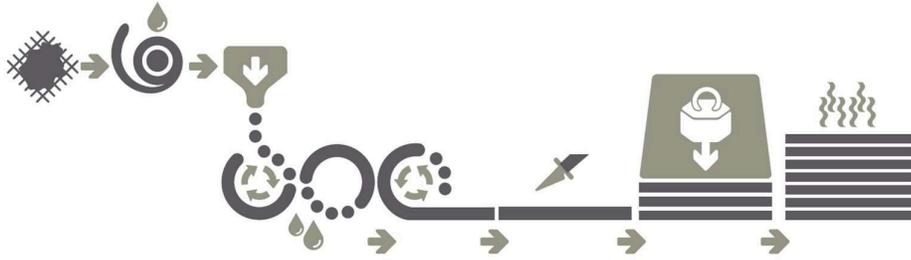
Note: It is not possible to realistically show available colors in literature, therefore the final choice of colors should be made with samples. Please order your samples on the website [www.equitone.com](http://www.equitone.com).

### 3. Product Composition

EQUITONE [linea] panels consist of cement, quartz sand, cellulose, natural calcium silicate, inorganic color pigments, water, and additives.

### 4. Production Method

EQUITONE [linea] is a highly compressed, autoclaved fiber cement material manufactured in Belgium (Europe).



EQUITONE [linea] panels are manufactured through the Hatschek process where the base materials which are mainly cement, sand, 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 in an autoclave where the panels harden under high temperature and pressure. After curing the panels receive their final finish. The surface is mechanically processed to create a grooved surface.

Subsequently and finally, EQUITONE [linea] panels receive a hydrophobation making the surface water repellent. The back side receives no hydrophobation.

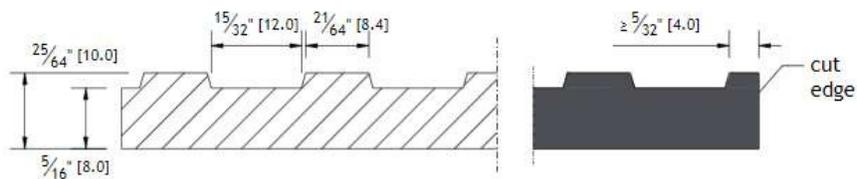
## 5. Dimensions and Tolerances (Imperial)

EQUITONE [linea] is available in a standard thickness of 3/8". The panels are always trimmed.

Dimensions	
Panel thickness	5/16 in (valley) / 3/8 in (including ridges)
Nominal thickness (for static bending strength calculation)	5/16 in
Number of ridges on a full-width panel	57
Number of valleys on a full-width panel	56
Width	
Trimmed	48 in
Length	
Trimmed	98 in or 120 in
Tolerances <sup>1</sup> (for trimmed panels)	
Total thickness	± 1/16 in
Thickness in valley	5/16 in (-1/32 in / +1/16 in)
Width	± 1/8 in
Length	± 1/8 in
Squareness	± 1/16 in/ft
Weight per ft <sup>2</sup> (nominal, ambient)	
	3.44 lb/ft <sup>2</sup>
Weight per panel (without pallet)	
98" x 48" (trimmed)	113 lb
120" x 48" (trimmed)	138 lb
Packaging	
Number of panels on a pallet	30
Usable surface per pallet	
98" x 48" (trimmed)	984.9 ft <sup>2</sup>
120" x 48" (trimmed)	1201.3 ft <sup>2</sup>
Color tolerance (CIELAB) <sup>2</sup>	
ΔL*, brightness	± 2.5

The dimensions of the grooves are purely indicative. These are nominal dimensions subject to manufacturing tolerances. The grooves are longitudinal in the panel.

When cutting [linea] panels the center of the valleys or ridges should be kept as a reference. When cutting through a ridge, a minimum of  $5/32$ " of the ridge should be kept at panel edges to prevent damage to the edge.



<sup>1</sup> Factory tolerances for trimmed panels outperform the requirements of the EN 12467 Level I dimensional tolerances, as well as all criteria set forth on ASTM C1185.

<sup>2</sup> Color tolerance are only to be measured on the top of the ridges, not in the valleys, and only on dry surfaces.

<sup>3</sup> Imperial values are approximate and are based on the metric values.

## 5.1 Dimensions and Tolerances (Metric)

EQUITONE [linea] is available in a standard thickness of 10 mm. The panels are always trimmed.

Dimensions	
Panel thickness	8 mm (valley) / 10 mm (including ridges)
Nominal thickness (for static bending strength calculation)	8 mm
Number of ridges on full-width panel	57
Number of valleys on full-width panel	56
Width	
Trimmed	1220 mm
Length	
Trimmed	2500 mm or 3050 mm
Tolerances <sup>1</sup> (for trimmed panels)	
Total thickness (including ridges)	± 1 mm
Thickness in valley	8 mm (-0.5 mm / +1.0 mm)
Width	± 2 mm
Length	± 2 mm
Squareness	± 1.0 mm/m
Weight per m <sup>2</sup> (nominal, ambient)	
	16.8 kg/m <sup>2</sup>
Weight per panel (without pallet)	
2500 x 1220 mm (trimmed) 3050 x 1220 mm (trimmed)	51.2 kg
1220 mm (trimmed)	62.5 kg
Packaging	
Number of panels on a pallet	30
Usable surface per pallet	
2500 x 1220 mm (trimmed)	91.5 m <sup>2</sup>
3050 x 1220 mm (trimmed)	111.6 m <sup>2</sup>
Color tolerance (CIELAB) <sup>2</sup>	
ΔL*, brightness	± 2.5

## 6. Material Properties (ASTM)

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

Physical requirements and characteristics				
Mean density	dry	ASTM C1185	101.0	lb/ft <sup>3</sup>
Moisture movement	30-90 %	ASTM C1185	0.02	%
Flexural strength ultimate <sup>1</sup>	dry	ASTM C1185	4,475	psi
Flexural strength ultimate <sup>1</sup>	wet	ASTM C1185	3,886	psi
Water tightness		ASTM C1186	Pass	
Moisture content		ASTM C1185	5.9	%

Durability requirements				
Frost resistance (freeze/thaw)		ASTM C1186	Pass	
Warm water resistance test		ASTM C1186	Pass	
Mean water absorption		ASTM C1185	19	%

Fire and safety				
Material burning characteristics		ASTM E84	Class A	
Flame spread index			0	
Smoke development index			5	
Assembly fire resistance rating		ASTM E119	1	hr.
Assembly hose stream test		ASTM E119	Pass	
Vertical tube furnace (B)		ASTM E136	Pass, Non-combustible	

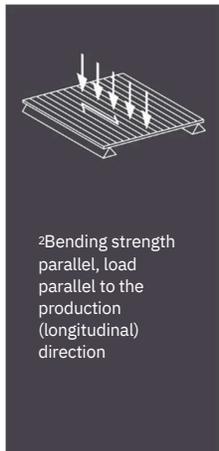
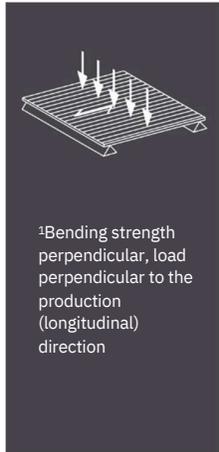
Other characteristics				
Thermal movement	$\alpha$	-	5.5e-6	in/in°F
Thermal conductivity	$\lambda$	ASTM C518	0.226	BTU/h ft°F

### Notes:

1. Appropriate safety factors should be applied to ultimate values.
2. EQUITONE [linea] cladding panels strength classification conforms to the requirements of ASTM C1186 "Standard Specifications for Flat Fiber-Cement Panels."
3. EQUITONE [linea] 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[linea] cladding panels conform to the requirements of EN 12467:2012+A1:2018 “Fiber-cement flat sheets – Product specification and test methods”. The results below are presented as defined by the standard.



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

Physical requirements and characteristics				
Characteristic dead load g (8 mm)	dry	EN 12467	1,630 0,16	kg/m <sup>3</sup>
	k	-	0.20	kN/m <sup>2</sup>
Characteristic dead load g (10 mm)		EN 12467	<0.08	kN/m <sup>2</sup>
Moisture movement	30-90 %	EN 12467	30.0	%
Characteristic bending strength perp.1	ambient	EN 12467	20.0	MPa
Characteristic bending strength par.2	ambient	EN 12467	2.0	MPa
Partial safety factor $\gamma_{m3}$	ambient	EN 12467	14,000	-
Mean module of elasticity	ambient	EN 12467		MPa
Water impermeability test				No drops/Pass

<sup>3</sup> Recommendation for the safety concept according to the Eurocode if no national regulations exist.

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 13501-1	A2-s1,d0
Flame spread rating	ULCS102	0
Smoke development classification	ULCS102	5
Material combustibility	ULCS114	Non-combustable

Other characteristics				
Thermal movement	$\alpha$	-	0.01	mm/mK
Thermal conductivity	$\lambda$	ASTMC518	0.39	W/mK
Moisture content at 20°C, 65% humidity		-	6	M.-%
Poisson's ratio	$\nu$	-	0.2	-

Note to the units: 1 K (degree Kelvin) = 1°C, 1 MPa (Mega Pascal) = 1 N/mm<sup>2</sup>, M.-% = mass percentage

Note: EQUITONE [linea] 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 [linea] 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 facade
- UV-resistant
- Resistant to extreme temperatures
- Weather resistant
- Resistant to many living organisms (fungi, bacteria, insects, vermin, etc.)
- Resistant to many chemicals
- Strong and rigid panel
- Hail impact tested
- Can be ideally combined with [tectiva] and [lunara] in the same color
- The unique 3D design plays with natural light to produce compelling visual effects

Working with the material:

- The material is easy to drill, cut, and install with the proper tools
- Cut edges do not need to be sealed
- Do not use adhesive, tapes, and/or sealants on the finished surfaces of the material

## 8. Applications

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

- Ventilated façade 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 [linea] 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](http://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 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](http://www.equitone.com).

EQUITONE [linea] 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 and can be found at [www.equitone.com](http://www.equitone.com).

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](http://www.equitone.com).

EQUITONE autoclaved 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

## 12. Information



Please visit [www.equitone.com](http://www.equitone.com) for contact details further information and technical documents.

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