

## EQUITONE [lunara] Material Information Sheet

### 1. Product Appearance

EQUITONE [lunara] 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.

Its unique texture has a random-looking, non-repeating surface structure, covered with tiny irregular elevations and depressions providing a natural appearance. Thanks to the special production process each panel has its own individual and unique character, no two panels are alike. Color-deviating inclusions contribute to the natural appearance of the surface.

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 facade.

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 facade are  $\Delta L^* = \pm 2.5$ .

Available colors



LA 20



LA 60

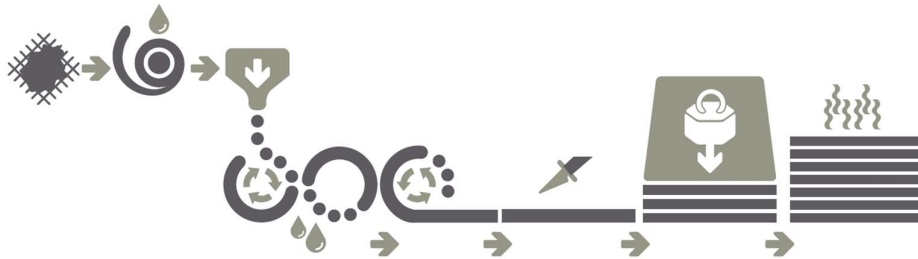
Note: It is not possible to realistically show available colors in literature, therefore the final choice of colors should be made with samples. Please order your samples on the website [www.equitone.com](http://www.equitone.com).

### 3. Product Composition

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

### 4. Production Method

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



EQUITONE [lunara] panels are manufactured through the Hatschek process where the base materials which are mainly cement, sand, cellulose, pigments, and water are first mixed 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 then mechanically processed to create a unique surface.

Subsequently and finally, EQUITONE [lunara] panels receive a hydrophobation making them water-repellant.

## 5. Dimensions and Tolerances (Imperial)

EQUITONE [lunara] is available in a standard thickness of 3/8". 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 3/8" needs to be trimmed from each of the untrimmed (raw) edges.

### Dimensions

Panel thickness base sheet	3/8 in
Nominal thickness (for static bending strength calculation)	5/16 in

### Width

Trimmed	48 in
Untrimmed	48 3/4 in

### Length

Trimmed	98 in or 120 in
Untrimmed	99 in or 121 in

### Tolerances<sup>1</sup> (for trimmed panels)

Thickness (at crest)	3/8 in ( $\pm 1/16$ in)
Thickness (in valley)	5/16 in ( $-1/32$ in / $+1/16$ in)
Width	$\pm 1/8$ in
Length	$\pm 1/8$ in
Squareness	$\pm 1/16$ in/ft

### Tolerances<sup>1</sup> (for untrimmed panels)

Thickness (at crest)	3/8 in ( $\pm 1/16$ in)
Thickness (in valley)	5/16 in ( $-1/32$ in / $+1/16$ in)
Width	$\pm 3/16$ in
Length	$\pm 3/16$ in
Squareness	$\pm 1/16$ in/ft

### Weight per m<sup>2</sup> (nominal, ambient)

3.8 lb/ft<sup>2</sup>

### Weight per panel (without pallet)

98 x 48 in (trimmed)	125 lb
120 x 48 in (trimmed)	153 lb
99 x 48 3/4 in (untrimmed)	128 lb
121 x 48 3/4 in (untrimmed)	156 lb

Packaging	
Number of panels on a pallet	30
Usable surface per pallet	
98 x 48 in (trimmed)	984.9 ft <sup>2</sup>
120 x 48 in (trimmed)	1201.25 ft <sup>2</sup>
Color tolerance (CIELAB) <sup>2</sup>	
$\Delta L^*$ , brightness	$\pm 2.5$

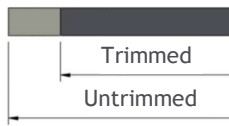
<sup>1</sup> Factory tolerances for trimmed and untrimmed panels outperform the requirements of the EN 12467 Level I and II dimensional tolerances, respectively; as well as all criteria set forth on ASTM C1185.

<sup>2</sup> Color tolerance is only to be measured on dry surfaces.

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

## 5.1 Dimensions and Tolerances (Metric)

EQUITONE [lunara] is available in a standard thickness of 10 mm. 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 10 mm needs to be trimmed from each of the untrimmed (raw) edges.

Dimensions	
Panel thickness base sheet	10 mm
Nominal thickness (for static bending strength calculation)	8 mm
Width	
Trimmed	1220 mm
Untrimmed	1240 mm
Length	
Trimmed	2500 mm or 3050 mm
Untrimmed	2520 mm or 3070 mm
Tolerances <sup>1</sup> (for trimmed panels)	
Thickness (at crest)	10 mm ( $\pm 1.0$ mm)
Thickness (in valley)	8 mm ( $-0.2$ mm / $+1.0$ mm)
Width	$\pm 3$ mm
Length	$\pm 3$ mm
Squareness	$\pm 1.0$ mm/m
Tolerances <sup>1</sup> (for untrimmed panels)	
Thickness (at crest)	10 mm ( $\pm 1.0$ mm)
Thickness (in valley)	8 mm ( $-0.2$ mm / $+1.0$ mm)
Width	$\pm 5$ mm
Length	$\pm 5$ mm
Squareness	$\pm 2.0$ mm/m
Weight per m <sup>2</sup> (nominal, ambient)	
	18.6 kg/m <sup>2</sup>
Weight per panel (without pallet)	
2500 x 1220 mm (trimmed)	56.7 kg
3050 x 1220 mm (trimmed)	69.2 kg
2520 x 1240 mm (untrimmed)	58.1 kg
3070 x 1240 mm (untrimmed)	70.8 kg

#### Packaging

Number of panels on a pallet	30
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#### 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>

$\Delta L^*$ , brightness	$\pm 2.5$
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<sup>1</sup> Factory tolerances for trimmed and untrimmed panels outperform the requirements of the EN 12467 Level I and II dimensional tolerances, respectively.

<sup>2</sup> Color tolerance is only to be measured on dry surfaces.

## 6. Material Properties (ASTM)

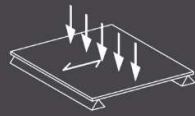
Classification				
Flexural strength classification		ASTM C1186	Grade IV	
Dimensional tolerances for trimmed panels		ASTM C1186	Pass	
Physical requirements and characteristics				
Mean density	dry	ASTM C1185	101.0	lb/ft³
Moisture movement	30-90 %	ASTM C1185	0.02	%
Flexural strength ultimate¹	dry	ASTM C1185	4,475	psi
Flexural strength ultimate¹	wet	ASTM C1185	3,886	psi
Water tightness		ASTM C1185	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 C1186	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	α	-	5.5e <sup>-6</sup>	in/in °F
Thermal conductivity	λ	ASTM C 518	0.226	BTU/h ft °F

### Notes:

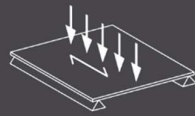
1. Appropriate safety factors should be applied to ultimate values.
2. EQUITONE [lunara] cladding panels strength classification conforms to the requirements of ASTM C1186 "Standard Specifications for Flat Fiber-Cement Panels."
3. EQUITONE [lunara] cladding panels have been evaluated per ICC acceptance 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 [lunara] 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.



<sup>1</sup>Bending strength perpendicular, load perpendicular to the production (longitudinal) direction



<sup>2</sup>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	1630	kg/m <sup>3</sup>
Characteristic dead load $g_k$ (8mm)	-		0.16	kN/m <sup>2</sup>
Characteristic dead load $g_k$ (10mm)	-		0.20	kN/m <sup>2</sup>
Moisture movement	30-90 %	EN 12467	<0.08	%
Characteristic bending strength perp. <sup>1</sup>	ambient	EN 12467	30.0	MPa
Characteristic bending strength par. <sup>2</sup>	ambient	EN 12467	20.0	MPa
Partial safety factor $\gamma_m^3$	ambient	EN 12467	2.0	-
Mean module of elasticity	ambient	EN 12467	14,000	MPa
Water impermeability test		EN 12467	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	ULC S102	0
Smoke development classification	ULC S102	5
Material combustibility	ULC S114	Non-combustable

Other characteristics				
Thermal movement	$\alpha$	-	0.01	mm/mK
Thermal conductivity	$\lambda$	ASTM C518	0.39	W/mK
Moisture content at 23°C, 80 % 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 [lunara] 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 [lunara] 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
- Can be ideally combined with [tectiva] and [linea] in the same color

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 [lunara] 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 [lunara] 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 [lunara] 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 C2CP II 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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