

### 1. Product Description

KalsiCeiling is a non combustible fiber cement panel, manufactured on Hatschek machine from a precise combination of cement, silica and natural organic reinforcing fibers. During the production, the boards are cured and stabilized in an autoclave process involving high temperature and pressure control, ensuring a final product with optimum dimensional stability and exceptional mechanical properties.

### 2. Applications

KalsiCeiling is suitable for ceiling applications in both dry and wet areas,

- a. It can be nailed to timber framing with the joints between boards designed to remain open and can be finished by applying wooden joiners, mouldings or etc.
- b. It can be screws over a steel frame. Joints between boards can be blushed or left open.

It is a superb alternative to plasterboard ceiling by offering a durable and yet lightweight solution with simple, fast and clean installation.

### 3. Benefits

KalsiCeiling is an advanced building material, serving as the best alternative to conventional wood, plasterboard or other wood/ cement based products;

- a. Wide variety of thicknesses and applications
- b. Dimensionally stable
- c. Impact resistant
- d. Moist, mould and water resistant
- e. Resistant to attack of termites, insects and other vermin
- f. Easy to install and work with
- g. Environmental-friendly, no harmful gas emission
- h. Non-combustible

### 4. Dimensions and tolerances:

Available Dimensions

Product	Thickness (mm)	Width x Length (mm)
KalsiCeiling	3.5	1200 x 2400, 1220 x 2440
	4.5	1200 x 2400, 1220 x 2440
	6.0	1200 x 2400, 1220 x 2440

Dimensional Tolerance

Thickness	± 0.6 mm
Width	± 6 mm
Length	± 8 mm
Squareness of Edges	≤ 0.4 %
Straightness of Edges	≤ 0.3 %

Weight (ex-works) based on nominal density plus variation

Thickness (mm)	Weight (kg/m <sup>2</sup> )	Weight (kg/sheet)
3.5	+/- 4.97	+/- 14.8
4.5	+/- 6.39	+/- 19.1
6.0	+/- 8.52	+/- 25.4

Thicknesses, sizes, and types of the sheets which differ from those available as standard, are available subject to minimum order quantities. Please contact Etex Building Performance Indonesia for more information.

### 5. Technical Properties

The product has been tested based on internationally recognized standards and test methods for the fiber cement flat sheet and building material requirements such as ISO 8336, EN 12467, ASTM C1185, BS 476 relevant parts on material reaction to fire and EN13501 fire classification standards.

Physical and Mechanical Properties	Value	Standard
Dimensional Conformity - Thickness - Length - Width - Straightness of edges - Squareness of edges	Level II (Pass)	ISO 8336
Density (average)	> 1250 kg/m <sup>3</sup>	ISO 8336
Bending strength (Category A - Class 2 average) (Category C - Class 3 average)	> 7.0 MPa > 10.0 MPa	ISO 8336
Bending Elastic Modulus (ambient)	> 8500 MPa	ISO 8336
Water absorption	33 ± 2 %	ASTM C1185
Moisture content	10 - 15 %	ASTM C1185
Moisture movement (Hygric) – Relative Humidity from 30% to 90%	≤ 0.04 %	ISO 8336
Thermal conductivity	0.25 W/mK	ASTM C518:2010
Durability	Value	Standard
Heat-rain performance – Category A : 50 Cycles	Passed	ISO 8336
Warm water performance	Passed	ISO 8336
Soak-dry performance – Category A : 50 Cycles	Passed	ISO 8336
Freeze-thaw performance – Category A : 100 Cycles	Passed	EN 12467
Reaction to Fire	Value	Standard
Non Combustibility	Non Combustible	BS 476 Part 4:1970
Surface spread of flame	Class 1	BS 476 Part 7:1997
Fire propagation index	l = 2.3 i1 = 2.1 i2 = 0.1 i3 = 0.1	BS 476 Part 6:1989
Heat Emission	Pass	BS 476 Part 11:1982
Fire classification using test data from reaction to fire tests	Class A1	EN 13501-1:2007 + A1:2009

All material properties and physical performance are mean values given for information and guidance only. If certain properties are critical for particular application, it is advisable to consult Etex Building Performance Indonesia. Etex Building Performance Indonesia reserves the right to amend this information sheet without prior notice.

### 6. Health and safety aspects

During the mechanical machining of panels, airborne dust which may be hazardous to health, may be released.

Avoid direct contact of dust with skin and eyes as they may cause irritation.

The use of dust extraction equipment is advised. Respect regulatory occupational exposure limits for total inhalable and respirable dust.

For more information, please check the Material Safety Data Sheet before working with the product.

### 7. Certification

All Etex Building Performance Indonesia products are manufactured in line with the ISO standards. Etex Building Performance Indonesia manufacturing facility achieved the certificates of ISO 9001:2008, ISO 14001:2015 and OHSAS 18001:2007. These certificates can also be downloaded from [www.kalsi.co.id](http://www.kalsi.co.id).

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