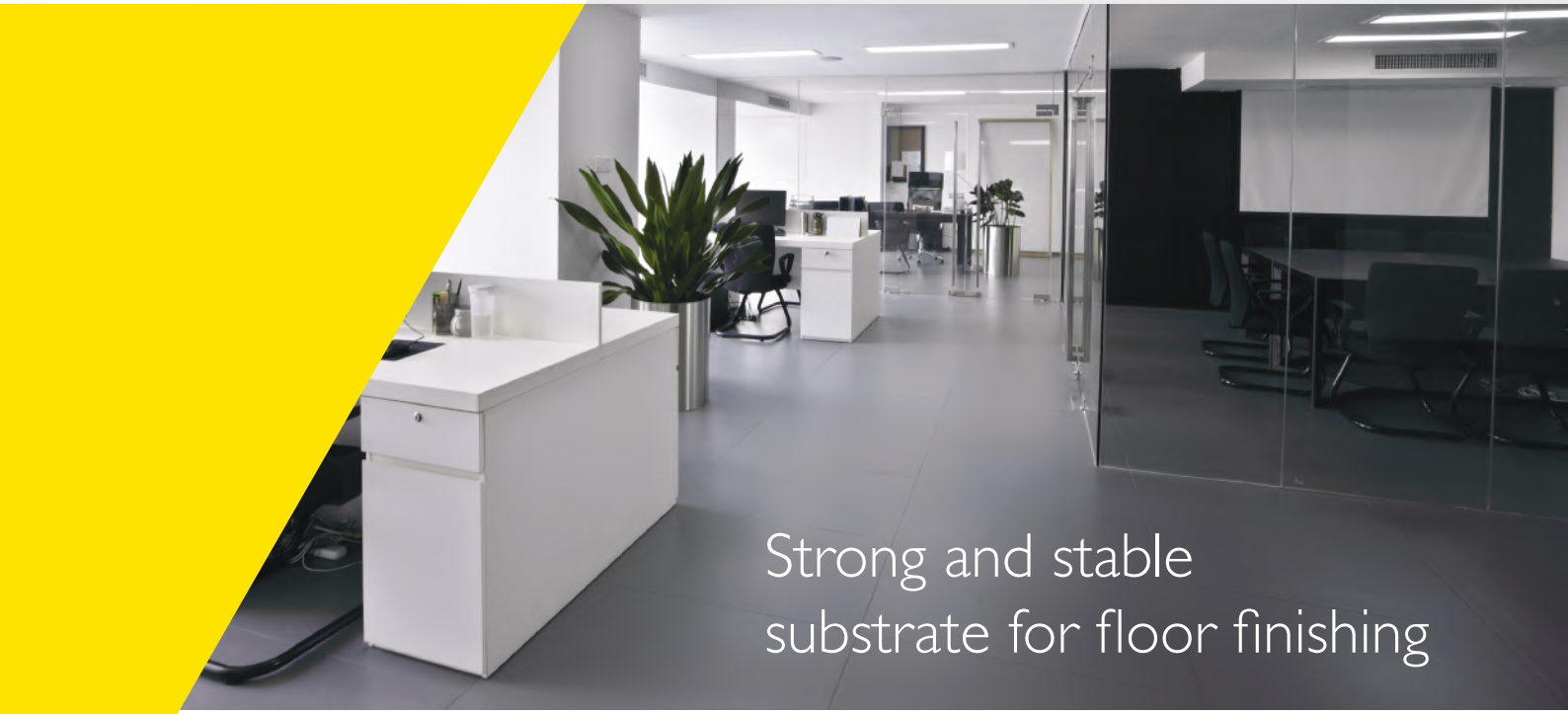
Kalsi
Advanced Fibre Cement

New Zealand Distributor:
IBS
SUSTAINABLE BUILDING PRODUCTS



Strong and stable
substrate for floor finishing

KalsiCTU Installation Guide

European Technology

etex inspiring ways of living

An industrial company with a proven history and a promising future

etex inspiring ways of living

What we do

Improving our customers' quality of living with ever more effective lightweight solutions.

Building Performance

Leader in plasterboards and fibre cement boards, and the global reference in passive fire protection solutions for the residential and commercial segments.

Exteriors

Provider of innovative, durable, high performance and beautiful fibre cement exterior materials for architectural, residential and agricultural projects.

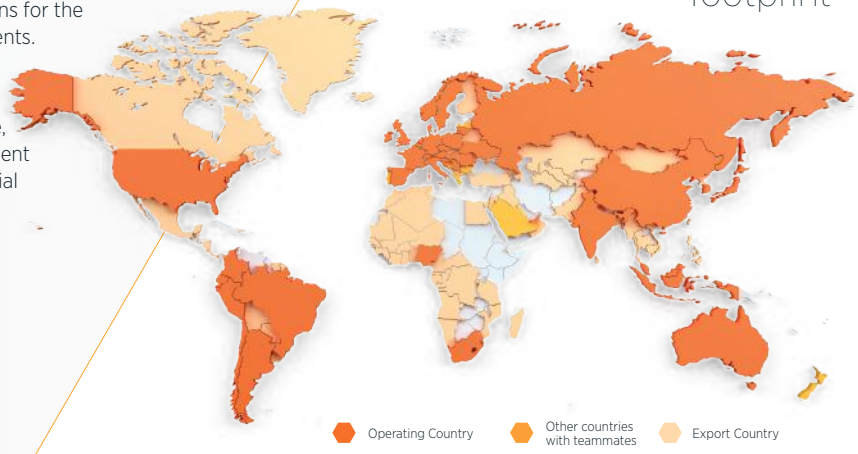
Industry

Front runner of engineering expertise to drive the future of high performance thermal and acoustic insulation as well as passive fire protection in the industrial, aerospace and energy sectors.

New Ways

As a new division created in January 2020, New Ways offers high-tech offsite modular solutions based on wood and steel framing.

Strong manufacturing global footprint



>110 Sites: plants, quarries, offices

42 Operating countries

>11,000* Teammates

* Excluding the Residential Roofing companies which have been divested in 2020 as well as the personnel of Knauf's former plasterboard business in Australia, as this operation was finalised in February 2021. The figures includes the personnel of FSi Limited, which was acquired by Etex in September 2020.

Our main Commercial Brands

CEDRAL · DURLOCK · Eternit · EQUITONE · Gyplac · Kalsi · Promat · Superboard · siniat

Inspiring ways of living

Our why

We want to inspire people around the world to build living spaces that are ever more safe, sustainable, smart and beautiful. Collaborative, customer-focused.

Our why

We work as one, fostering a collaborative and caring culture, a pioneering spirit and a passion to always do better for our customers.

Our what

Building on our experience and global market needs, we strive to improve our customers quality of living with ever more effective lightweight solutions.

Over a century of sustainable profitable growth

1905 Alphonse Emsens founds the Eternit fibre cement factory in Haren near Brussels in 1905 after acquiring the manufacturing technology from Austrian industrialist Ludwig Hatschek.

1937 Eternit expands across Europe and invests in important overseas export markets in Latin America.

1949 The building sector revives after the second world war and Eternit opens a fibre cement plant in Africa.

1950 Asia soon follows with a fibre cement plant in the Philippines.

1957 The company begins to diversify and adds plasterboard to its production portfolio.

1981 Etex adds passive fire protection activities to its portfolio with the acquisition of Promat.

2003 Split of the group into the entities: Etex for building materials activities and Aliaxis for plastic activities.

2011 Etex takes over the European and Latin American gypsum activities of the French group Lafarge.

2018-2019 Etex confirms its strategic shift to a lightweight construction specialist: while creating the JV E2E together with Arauco, it divests two clay and concrete roof tile businesses.

2020 Etex finalises its strategic shift by completely exiting its Residential Roofing activities. Acquisition of FSi (UK) and a majority stake in Tecverde (Brazil; through the joint venture E2E).

2021 Acquisition of a top-3 plasterboard business in Australia, as well as a majority stake in e-Loft (France)

www.etexgroup.com

KalsiCTU

KalsiCTU fibre cement board is a great Ceramic Tile backer board for dry construction applications. Immune to long-term moisture exposure, KalsiCTU fibre cement boards do not feed or promote mould growth in humid areas. Its delamination strength, can be up to 70% higher than a water resistant plasterboard.

KalsiCTU fibre cement board, offers a very low moisture movement, which makes it a very stable and robust substrate for ceramic and stone tiling; the board will not bow or deform during service.

The following application guide, provides the basic recommendations for tiling trades in interior applications. For more information or specific needs, please contact our Technical Department.

KalsiCTU Technical Specifications

Dimensions

Length (mm)	Width (mm)	Thickness (mm)
1200	900	6
1800	900	6

KalsiCTU General Properties

General Technical Properties

Dimensional Conformity (tested to AS/NZS 2908.2)		Pass
Length	mm	± 8
Width	mm	± 5
Thickness		± 10%
Straightness of edges	mm/m	3
Squareness of edges	mm/m	4
Density (tested to AS/NZS 2908.2)	kg/m^3	≥1250
Modulus of rupture (tested to AS/NZS 2908.2) (Type B . Category 3)	MPa	≥10
Water permeability (tested to AS/NZS 2908.2)		Pass
Moisture content (tested to ASTM C1185)		≤15%
Water absorption (tested to ASTM C1185)		≤33%
Moisture movement (tested to ASTM C1185)		≤0.04%
Thermal conductivity (tested to ASTM C518-76)	W/m°K	0.27

Reaction To Fire

Combustibility (EN13501-1+A1)	A1 Non-Combustible
Surface spread of flame (tested to BS 476 Part 7)	Class 1
Fire propagation index (tested to BS 476 Part 6)	I = 1.6
Heat and Smoke Release (tested to AS/NZS 3837)	Group 1
Fire Hazard Properties (tested to AS/NZS 1530.3)	
Ignitability Index	0
Spread of Flame Index	0
Heat Evolved Index	0
Smoke Developed Index	0-1

Scope of Limitations

Scope of Use

- In all buildings where the structure is suitable for the intended building work.
- As a tile substrate over existing or new reconstituted wood floors (e.g. plywood, particle board and Orientated Strand Board (OSB) and tongue and groove timber.
- As a wet area lining for bathrooms, kitchens, laundries and internal rooms with high humidity.

Limitations

- When you are specifying and installing KalsiCTU the KalsiCTU Installation Guide must be followed.
- KalsiCTU should not be installed on timber framing where the moisture content is greater than 18%.
- Tiles must be installed with a flexible tile adhesive that's also compatible with KalsiCTU. Talk to your preferred adhesive manufacturer for recommendations.
- When used as a wall lining ensure stud centres do not exceed 400mm. In high impact areas KalsiCTU 6mm may not be suitable.

Working with KalsiCTU

Site Work

Loading and unloading

KalsiCTU fibre cement boards are usually supplied on pallets suitable for forklift. If crane offloading by slings is envisaged, special notification must be made in advance or upon placing orders.

All pallets and crates can be safely handled by using a barge lift or hoisting equipment and straps. Steel cables should not be used as it will damage both the pallet and the panels within.

When the crates have to be removed from a box container, care must be taken NOT to expose crates or pallets to the shock of any impact, as the shock could result in cracks in the boards.

Transport to site

Always drive the delivery vehicle as close as possible to the location where the panels are to be installed. When transporting the panels, it is essential to firmly secure the pallets to prevent the panels from sliding or moving while in transit.

Storage

KalsiCTU fibre cement boards are supplied with protective plastic sheeting wrapped around the timber crates. This protection should not be removed until site and structural conditions are prepared and ready for panel installation.

All KalsiCTU fibre cement boards must be stored flat on pallets and placed inside in covered and dry conditions, optimising protection for stored panels against exposure to weather and other unfavourable conditions.

Figure 1
Protective Plastic Sheeting

Handling of KalsiCTU fibre cement boards

The following must be taken into consideration when handling KalsiCTU fibre cement boards.

Figure 2
Whenever possible, lift the panel from the stack below rather than slide panel or drag off the stack. This will prevent damage by scratches to the lower panel.

Figure 3
Always carry the panel on edge but DO NOT store on edge

Working with KalsiCTU

Cutting KalsiCTU Fibre Cement Boards

KalsiCTU fibre cement boards offer easy workability with conventional tools, on or off construction sites. The method of cutting is dependent on the amount of cutting. Cutting of the panel can be achieved using stationary table saws, circular saw and jigsaws. Cutting must take place in a dry environment. Dust control is required.

It is recommended that fibre cement saw blades (see figure 4) are used to cut the panels on site. These blades have been designed especially for fibre cement and when correctly employed, a high level of finish can be achieved. The blade is uniquely designed with vibration damping composite body construction and diamond tipped teeth shaped to give a tear-free edge.

When small amounts of cutting are required on site, an alternative to the recommended fibre cement saw blade is a carbide-tipped flat trapezoidal tooth blade. This has limited life and will need regular changing.

Figure 4
Fibre cement blade.

Drilling KalsiCTU Fibre Cement Boards

KalsiCTU fibre cement boards should be drilled using preferred and more efficient tungsten cubicle tipped drills with point angles of 60° to 80° rather than the usual 120° type.

Design Specifications

Compliance

Designers and/or contractors responsible for the intended project should follow the details and recommendations specified in this manual.

It is also wise to keep in mind that all designs and constructions should comply with appropriate and relevant requirements of current legal building codes, regulations and standards, both domestic and international.

The information provided in this installation guidelines is valid at the time of publication. Please consult Etex or its nearest official representative for further versions or updates.

Fixing KalsiCTU Fibre Cement Boards

Consideration of fasteners durability will be influenced by material choice, environmental factors and compatibility of materials in contact with fasteners. In general, the fasteners of choice should be resistant to corrosion.

KalsiCTU fibre cement boards can fixed with jolt head galvanised or stainless steel nails.

Fixing requirements

55 x 2.8mm flat head and jolt head galvanized or stainless steel

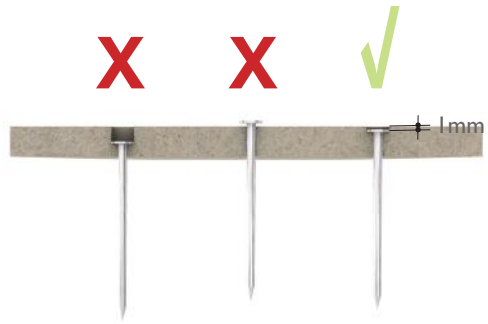


Figure 5
Position of fasteners

Floor Installation

Preparation

The installer must check that the subfloor is structurally sound and in good conditions. All unevenness, deformations, warping or loose pieces, must be properly fixed and removed before KalsiCTU is laid over the substrate. If KalsiCTU is not totally supported by the subfloor, it will crack and affect the quality of rigid finishes installed on top of it (stone, ceramic tiles, etc.).

Subfloors must comply with the local building codes and standards. Maximum allowable deflections for rigid finishes cannot be greater than L/360.

Remove existing floor coverings, check the floor is clean of dust, grease and any dirt and reasonably flat and well nailed down.

Ensure the floor and supporting framework is adequate to support the tiling, is firmly fixed and the underside is well ventilated and free from damp.

If the floor is warped it may need sanding flat.

Sheet Layout

KalsiCTU must be installed in a staggered pattern. Position the sheet length across the direction of the floor underlay. The sheet edge must not coincide with the underlay floor joint.

Allow a gap of at least 5mm between the edge of the KalsiCTU and the perimeter / vertical walls. This gap can be covered by the skirt, but the lower edge of the skirting cannot be adhered to the surface of KalsiCTU and the finish. This gap is needed to absorb the natural moisture and thermal movement of flooring system.

Sheet Fixing

KalsiCTU can be nailed or screwed onto the subfloor layer. Maximum distance between fixing elements cannot be greater than 150mm. Corners must be fixed following the pattern shown on Figure 6.

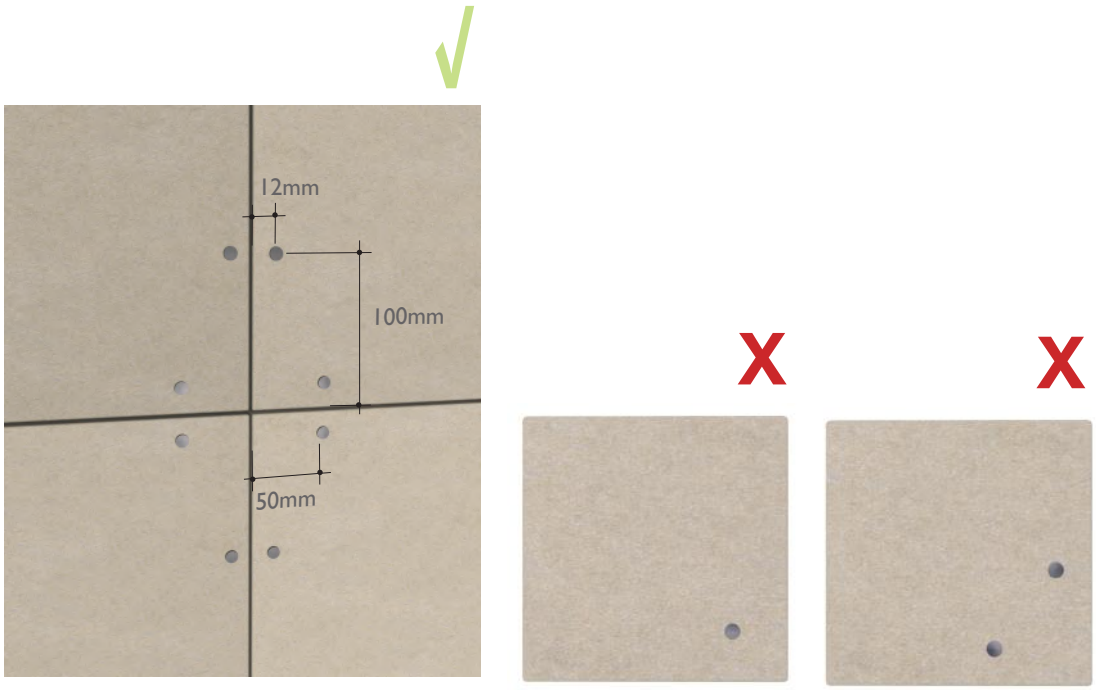


Figure 6
Correct fastener's position

Screw or nail the board as per Figure 7. Lay tiles and adhesives in accordance with the manufacturer's recommendations.

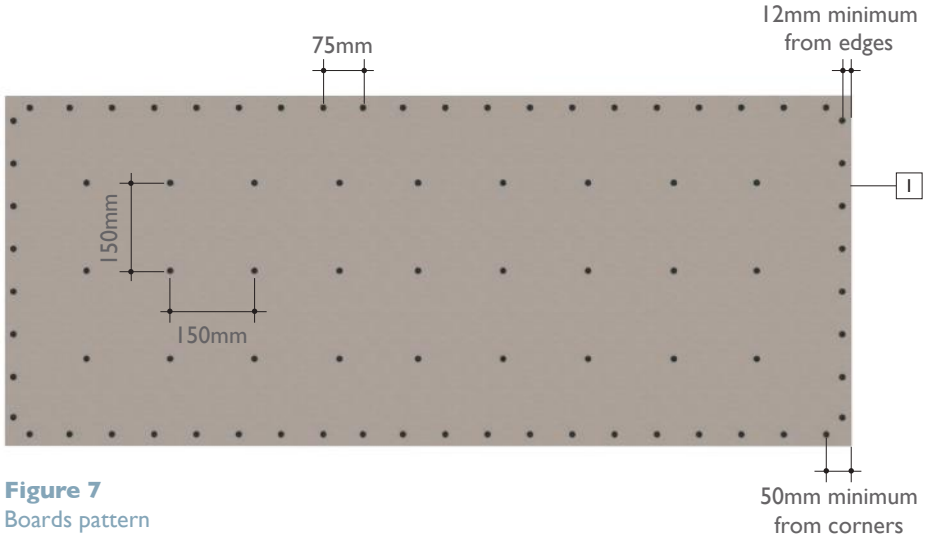


Figure 7
Boards pattern

1. KalsiCTU 6mm

Floor Installation

Control Joints

Movement stress from dimensional changes due to varying temperature or moisture conditions can cause cracking and other symptoms of stress. Control joints are required where existing movement joints are located if a floor is longer than 5000mm. Please note that control joints must not be covered by any rigid floor covering such as tiles. The control joint between the boards must be greater than 5mm and less than 10mm. Place a backing rod into the joint and compress firmly until it is resting on the timber or steel joist. Apply a flexible sealant to the remainder of the joint.

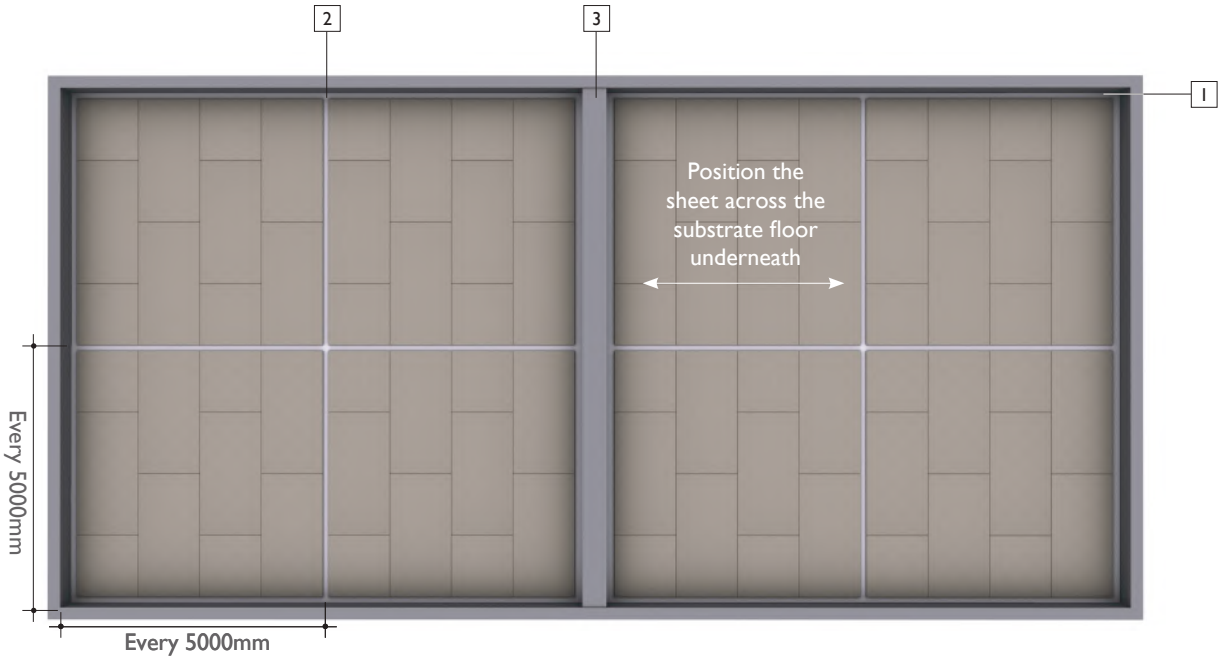


Figure 9
Movement and perimeter joints

1. Perimetral dilatation (5mm from walls and perimetral boundaries)
2. Movement joints
3. Walls and perimetral boundaries

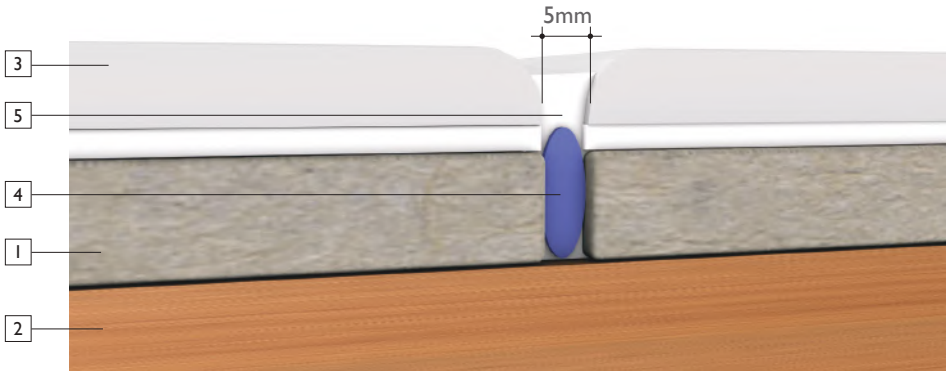


Figure 10
Movement joints

1. KalsiCTU 6mm
2. Floor substrate
3. Tiles / Finishing
4. Backer rod
5. Sealant

Finishing

KalsiCTU can be covered with ceramic tiles or stone veneers. Polymer modified tile adhesive can be used. The installer must observe the recommendations given by the manufacturer at all times. Some adhesives might require adhesive primers before their application.

Figure 8
Installation of KalsiCTU

1. Joists
2. Floor substrate
3. KalsiCTU 6mm
4. Tiles adhesive
5. Tiles / Finish

Health & Safety

As for all products containing quartz (e.g. concrete and clay), KalsiCTU when machined mechanically (cutting, sanding, drilling) will release dust which may contain quartz particles. Inhalation of high concentrations of dust may irritate the airways. Dust may also cause irritation of the eyes and/or skin. Inhalation of dust containing quartz, in particular the fine (respirable size) dust particulate matter, in high concentrations or over prolonged periods of time, can lead to lung disease (silicosis) and an increased risk of lung cancer.

- Avoid dust inhalation by using cutting equipment which features dust extraction or suppression accessories where practicable.
- Ensure adequate ventilation in the work place.
- Avoid contact with the eyes and skin and inhalation of dust by wearing appropriate personal protective equipment (safety goggles, protective clothing) and approved respirator, a dusk mask of at least type P2.

For more information, consult the appropriate Product Data Sheet, available upon request.

For further information, refer to:

- The Absolutely Essential Health and Safety Toolkit
- Worksafe New Zealand Quick Guide

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SUSTAINABLE BUILDING PRODUCTS

Independent Building Supplies Ltd
1/7 Fraser Road, Panmure, Auckland, 1072
+64 0800 367 759
+64 0800 500 549
info@ibs.co.nz

Installation Guide

Promat Australia Pty Ltd
1 Scotland Road, SA 5031 Mile End South
1800 Promat (776 628)
+61 8 8352 1014
PAPL.mail@etexgroup.com
www.kalsi-building-solutions.com

Disclaimer:
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