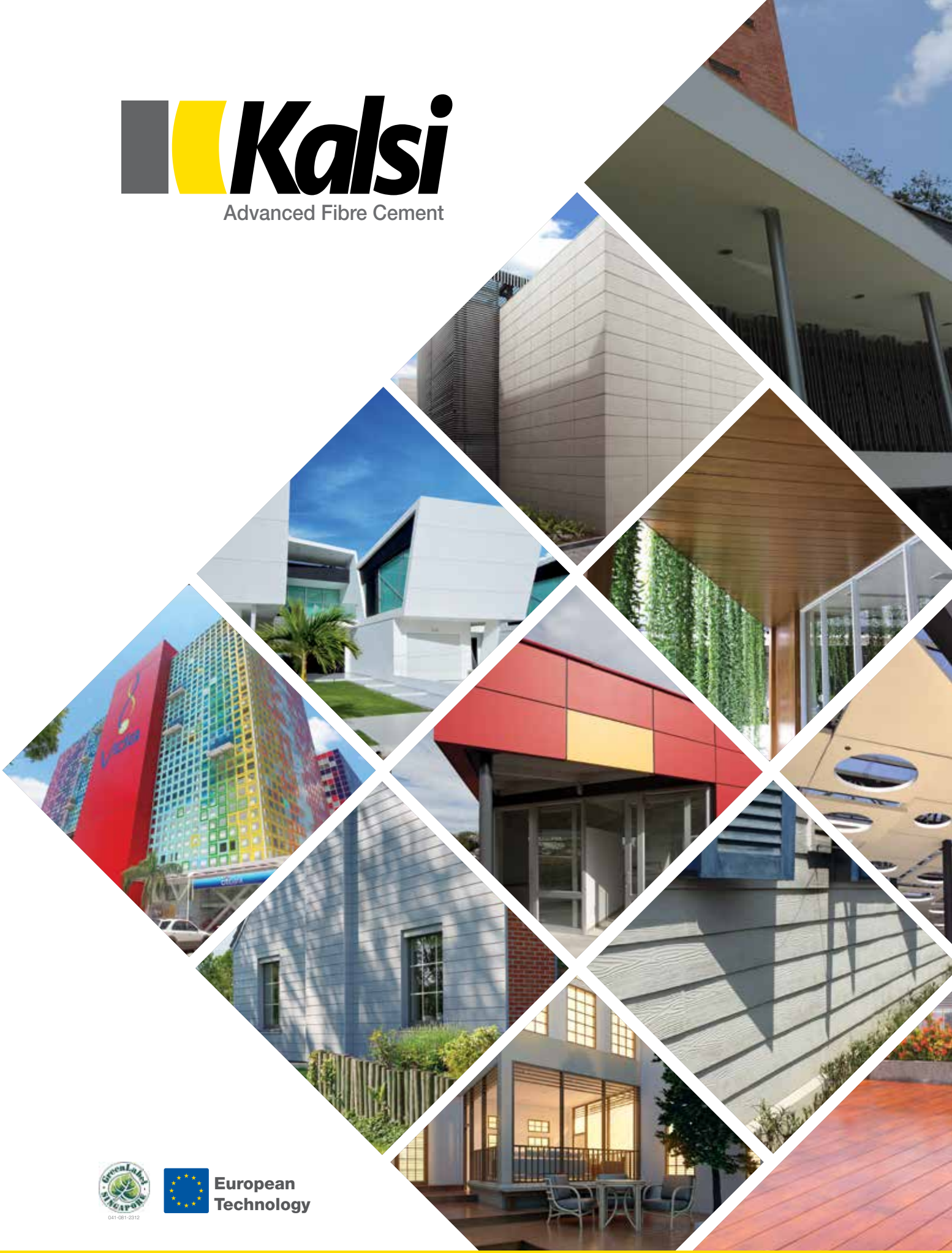
Kalsi

Advanced Fibre Cement



041-081-2312

European Technology

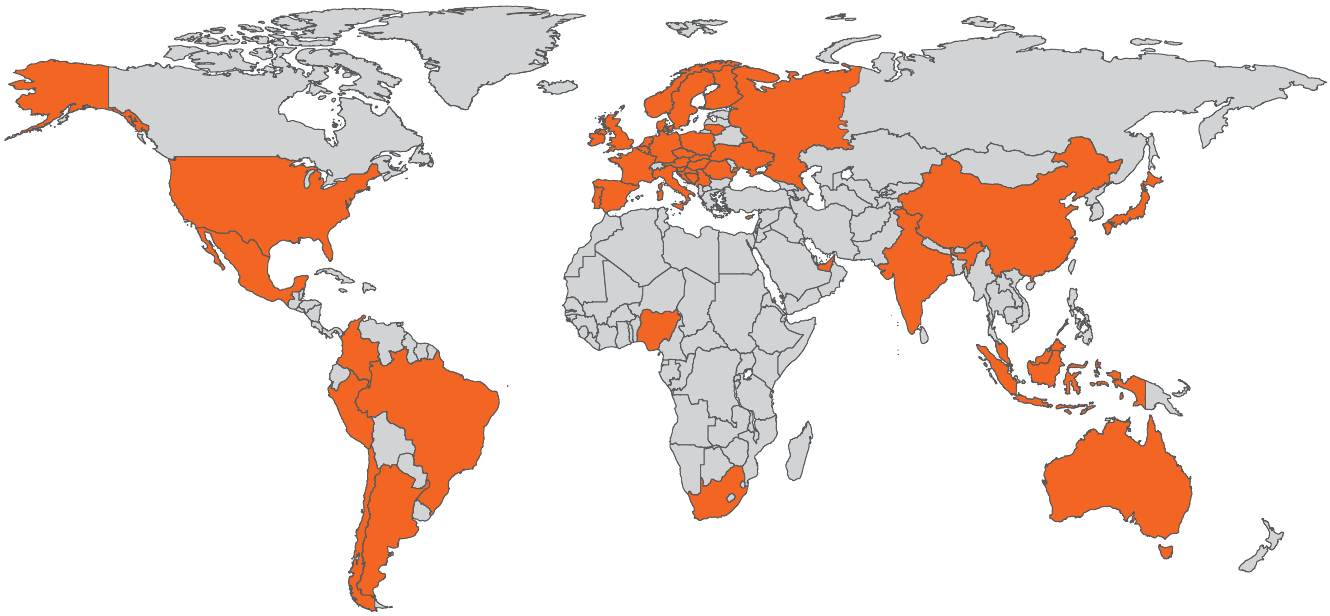
etex building performance

Etex is a Belgian industrial group manufacturing and selling building materials. Its core businesses are
Etex Building Performance: plasterboards, plasters and formulated products, fibre cement boards, passive fire protection and associated products, and dry construction solutions
Etex Façade: architectural and residential fibre cement cladding boards
Etex Industry: high performance insulation and fire protection solutions for industrial players, such as the oil & gas sector
Etex Roofing: roof systems, slates, tiles and corrugated sheets, and roofing components

With about 15,000 employees working at 107 production sites in 42 countries, and with annual sales of almost 3 billion euro, Etex is an international player in sustainable building solutions. In Belgium, in addition to its headquarters, Etex operates three production sites and two R&D centres. For more information, please visit our website: www.etexgroup.com

etex building performance

Etex Building Performance is all about the best combination of technologies, expertise, know-how and technical support making it the best choice in building materials for all kinds of projects where Dry Construction is a must, from the simplest ones to the most engineered solutions.



Etex´s international network of companies

Kalsi

Kalsi, our fibrecement boards, are the result of decades of committed effort to offer the best choice in fibre cement technology supported by Etex´s worldwide network of R&D centres that provide high performance solutions

Our raw materials, obtained from renewable sources, ensure a low carbon footprint. Cellulose is obtained from sustainable forests. Cement and aggregates from local quarries. Our low energy production processes are clean and efficient. All production waste is recycled.

Kalsi boards are the right balance of light weight, strength and durability. They are easy to work as wood, but they solve all the construction problems associated to timber in many building applications.

Resistant to water, mold growth, impact and harsh weather conditions, our fibre cement solutions are the best alternative for builders and home owners ready to explore creative building solutions and improve their way of living.

Kalsi boards are the perfect replacement of wood, concrete and masonry in dry construction solutions.


1
1
4
3
5
6
6
2

Kalsi

1. Cladding
2. Plank
3. Partition
4. Ceiling
5. Wet area
6. Floor
7. Special applications
8. Roof underlay

Dry Construction

Dry Construction

Dry construction is a building technology that utilises composite boards installed over metal or timber subconstruction. It is often used to build exterior walls (claddings), interior walls (partitions), ceilings, floors and some other applications.

The cost effectiveness, strength, durability, design flexibility, adaptability, recyclability and sustainability are just some of the many advantages of dry construction over brick, block and wood. It not only makes good economic sense to choose the dry construction method, but good environmental sense, too... because CO2 emissions are minimised. Dry construction buildings are easier to renovate than brick, block and wood.

"Dry construction is the perfect replacement for wood, it helps to conserve natural forests"

Main Benefits Of Dry Construction

- Green and sustainable
- Cost effective
- Rapid installation
- Reduced wastage
- Easy installation of pipes and other services
- Light weight
- Durable
- Better resistance to seismic activity

The various components -- boards, studs and accessories -- assembled to create Eternit dry construction systems are easily dismantled at the end of the building's lifecycle. They are 100% recyclable and recoverable.

Kalsi

Kalsi is the brand name of our fibre cement boards and planks.

Manufactured from a precise combination of cement, silica and cellulose, the boards are cured and stabilised in an autoclave -- a special process involving steam, high temperatures and pressure -- that ensures optimum dimensional stability and mechanical resistance.

Kalsi fibre cement boards and planks are durable and highly resistant to most environmental conditions. They are the best alternative to wood, concrete and masonry constructions.

Kalsi fibre cement boards and planks are manufactured in modern production facilities around the Asia Pacific region. The company's factories meet all modern benchmarks for quality and environmental impact.

"Cost effective, durable and highly resistant to moist, water and impacts"

Physical and mechanical properties

	Value	Standard
Dimensional conformity • Thickness • Length • Width • Straightness of edges • Squareness of edges	Level II (Pass)	ISO 8336: 2009
Density*	≥1250 kg/m^3	ISO 8336: 2009
Moisture content	≤15%	ASTM C1185
Water absorption	≤31%	ASTM C1186
Moisture movement	≤0.04%	ISO 8336: 2009
Water permeability	Pass	ISO 8336: 2009
Thermal conductivity	0.25 W/mK	ISO 8336: 2009
Modulus of rupture Category A (saturated condition) Category C (ambient condition)	 ≥7MPa ≥10MPa	ISO 8336: 2009

Durability

Warm water performance	Pass	ISO 8336: 2009
Soak-dry performance	Pass	ISO 8336: 2009
Freeze-thaw performance (category A)	Pass	ISO 8336: 2009
Heat-rain performance (category A)	Pass	ISO 8336: 2009

Reaction to fire

Non-combustibility	Non-combustible	BS 476 Part 4: 1970
Surface spread of flame	Class 1	BS 476 Part 7: 1997
Fire propagation index	I = 1.6 i(1) = 1.0 i(2) = 0.3 i(3) = 0.3	BS 476 Part 6: 1989

Benefits

- Resistant to the attack of termites, insects and most other vermin
- Moist,mould and water resistant
- Wide variety of thicknesses and applications
- Impact resistant
- Dimensionally stable
- Easy to work and install

GreenLabel SINGAPORE

041-081-2312

Board Finishes

For ease of installation, and to improve functionality and aesthetic performance, Kalsi fibre cement boards and planks are provided in several surface and edge finishes.

Surface finishes

Kalsi fibre cement boards are available with different surface finishing to enhance their overall performance, installation process and aesthetic appearance.

Standard:

The standard surface of Kalsi fibre cement boards is smooth and off-white in colour, making it appropriate for typical applications. Standard finish is recommended for textured coatings.

Brushed:

The standard surface is brushed with a special machine to create delicate wood grain lines over the exposed surface of the boards.

Top sanded:

The standard surface is finely sanded to provide a premium finish with an improved upper surface, ideal for smooth paints and areas subject to the glare of lighting hot spots.

Wood grain:

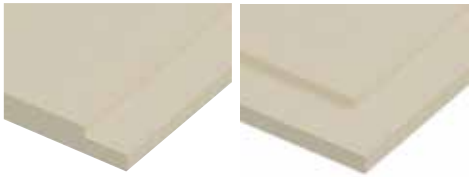
The wooden pattern comes in attractive textures that can be enhanced by a wide range of modern architectural finishes.

Edge finishes

Kalsi® fibre cement boards come with squared or recessed edges to achieve express of flush joint solutions.

Square cut:

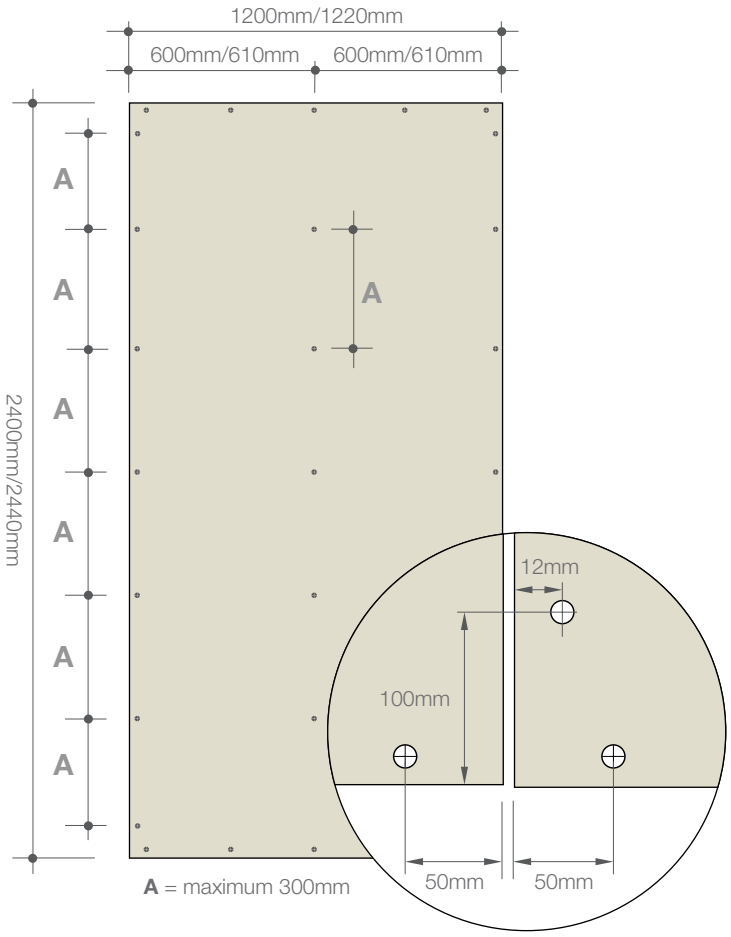
Standard for board edges which are cut at 90°. Ideal in expressed joint cladding.



Bevelled edges:

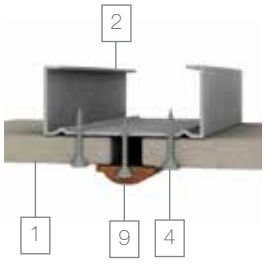
Boards bevelled on two or four edges ease joint finish, provide a smooth and flat surface.

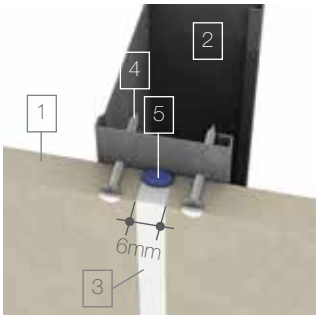
Fixing



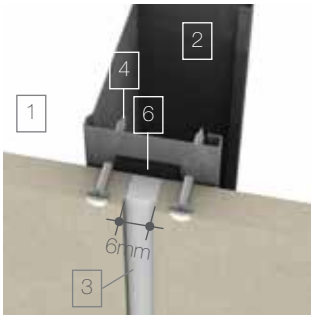
Joint Treatment

Visible Joint (Interior / Eaves)

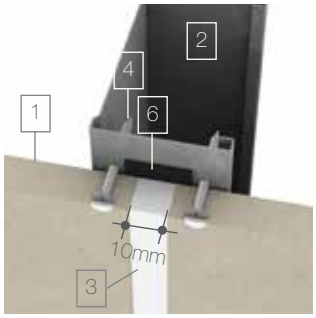




Option **A**

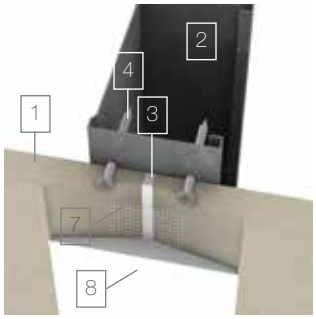


Option **B**



Option **C**

Invisible Joint (Interior)



1. Kalsi board
2. Steel stud
3. Polystyrene filler
4. Drywall screw
5. 6mm backer rod
6. Bond breaking tape
7. 50mm fibreglass mesh tape
8. Acrylic joint compound
9. Wooden molding (optional)

series Wood

— by Kalsi —

series Wood

by Kalsi

Kalsi

KalsiPlank





KalsiDeck




KalsiPlank

KalsiPlank is fibre cement siding designed for residential cladding. Easy to cut, nail and drill, KalsiPlank is a simple, pragmatic solution to most of the problems associated with timber.

KalsiPlank comes in four attractive surfaces finishes: Smooth, Jati, Meranti and Cedar.

There are two options for overlapping the planks, Overlapped Siding and Interlocking Siding.

KalsiPlank
KalsiPlank Jati
KalsiPlank Cedar

KalsiPlank IL
KalsiPlank Jati-IL
KalsiPlank Meranti-IL

"KalsiPlank is a brilliant solution to most of the problems associated with timber"

KalsiPlank Overlapped Siding Dimensions

	Thickness (mm)	Width (mm)	Length (mm)	Weight (kg)
KalsiPlank	8	200	3000	7.01
	8	300	3000	10.51
	9	200	4000	11.2
KalsiPlank Jati	8	200	3000	7.01
	8	300	3000	10.51
KalsiPlank Cedar	9	200	4000	11.2

KalsiPlank Interlocking Siding Dimensions

	Thickness (mm)	Width (mm)	Length (mm)	Weight (kg)
KalsiPlank IL KalsiPlank Jati-IL KalsiPlank Meranti-IL	10	200	3000	8.75

Surface finishes

Wood grain

Smooth

Meranti

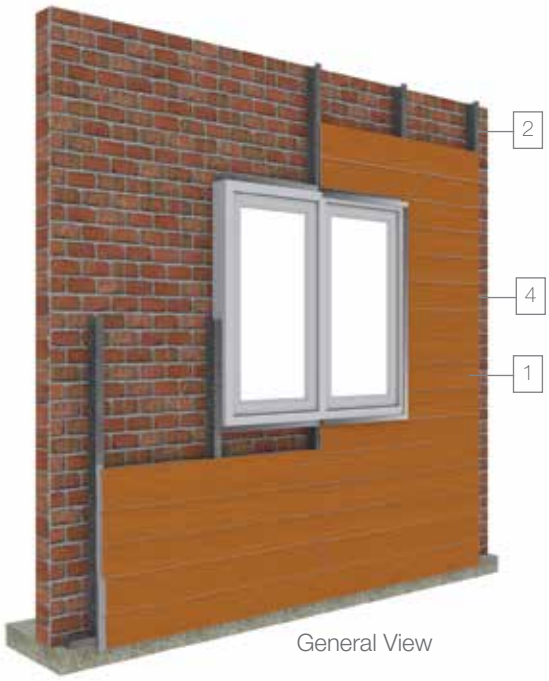
Edge finishes

Square Edges

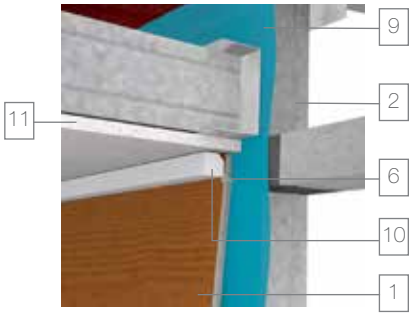
Interlocking Edges

KalsiPlank

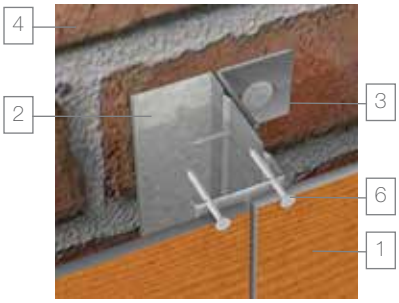
Technical Details



General View

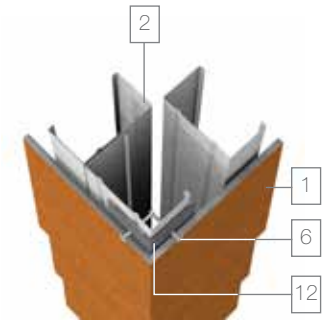


Soffit Detail

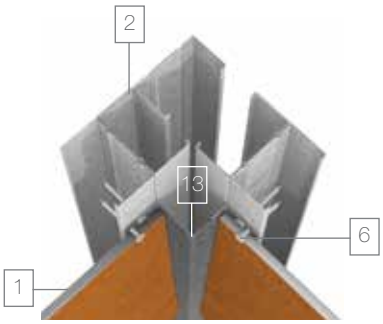


Board Jointing Detail

Vertical Fixing Detail



Eternal Corner Detail



Internal Corner Detail

Bottom Treatment Detail

1. KalsiPlank
2. Steel framing
3. Metal bracket
4. Mansory
5. Anchor bolt
6. Screw
7. Bottom track
8. Starter pack
9. Vapour permeable membrane (lightweight cladding)
10. Trim/polyurethane sealant
11. Soffit
12. Corner flashing
13. Mould corner

KalsiDeck

KalsiDeck is a wood replacement product designed for interior and exterior decking and staircase application.

KalsiDeck is available in two different designs:

KalsiDeck Meranti
KalsiDeck Meranti-VL

"KalsiDeck® is a brilliant solution to most of the problems associated with timber"

KalsiDeck Standard Dimensions

	Thickness (mm)	Width (mm)	Length (mm)	Weight (kg)
KalsiDeck Meranti KalsiDeck Meranti-VL	20	200	2400	14.5

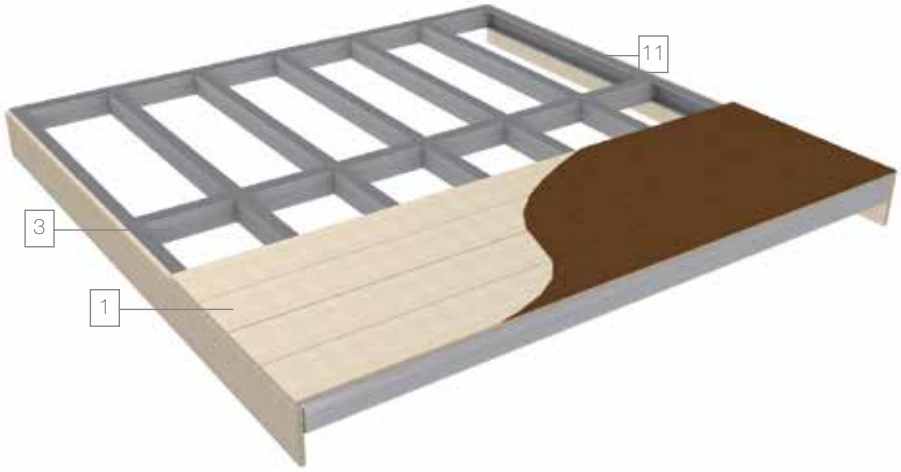
Surface finishes

Meranti

Meranti-VL

KalsiDeck

Technical Details

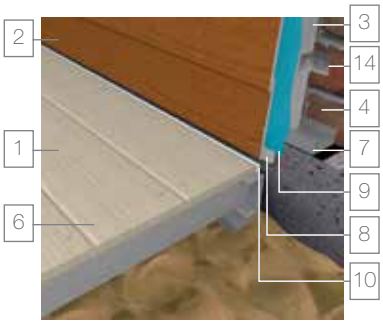


General View

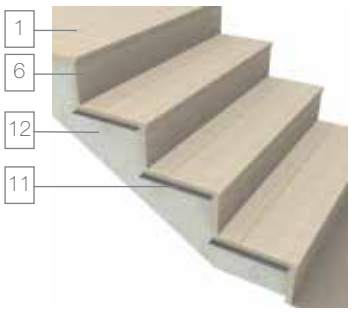
Jointing Detail

General Installation

Internal Deck Detail



External Deck Detail



Staircase Detail

1. KalsiDeck
2. KalsiPlank
3. Steel framing
4. Mansory
5. Anchor bolt
6. Screw
7. Bottom track
8. Starter pack
9. Vapour permeable membrane
10. Polyurethane sealant
11. Rubber/foam absorber
12. Concrete floor
13. Wall cladding
14. Metal bracket

Kalsi Board Range

KalsiLing

KalsiLing is a fibre cement board especially designed for ceiling application in both dry and wet areas. It's a lightweight but durable board that offers exceptional dimensional stability and years of functional service.

KalsiLing in thicknesses of 3mm to 4.5mm must be nailed to timber framing. The joints between the boards are designed to remain open and can be finished in conjunction with wooden joiners etc or moldings.

KalsiLing in thickness of 6mm can be nailed onto timber structure or screwed over a steel frame. Joints between the boards can be flushed or left open.

KalsiLing can also be used as a ceiling tiles. The extra-smooth surface ready to receive a wide range of finishes.

"KalsiLing is stable, resistant to water and durable"

KalsiLing Standard Dimensions

Thickness (mm)	Width (mm)	Length (mm)	Weight per m^2 of sheet (kg/m^2)
3	1000	1000	4.5
	1000	2000	
	1220	1220	
3.5	603	1213	5.2
	1220	1220	
	1200	2400	
	1220	2440	
4.5	1220	1220	6.6
	1200	2400	
	1220	2440	
6	1200	2400	8.7
	1220	2440	
	1200	2700	
	1200	3000	

* Other dimensions are available upon request. The properties in above table are mean values provided for informational purposes only

Surface finishes

Standard

Top Sanded

Edge finishes

Square Edges

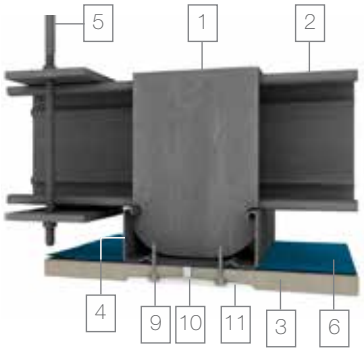
4 Bevelled Edges

2 Bevelled Edges

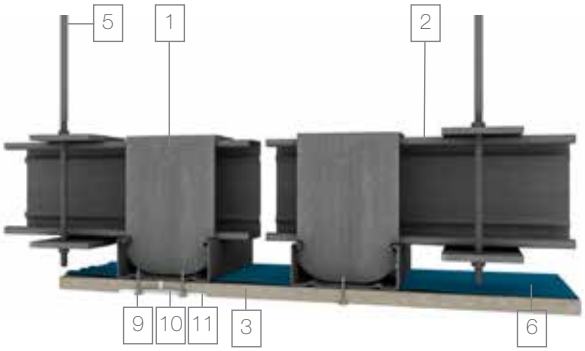
KalsiLing

Technical Details – Suspended ceiling

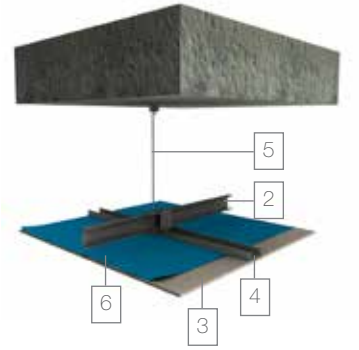
General View



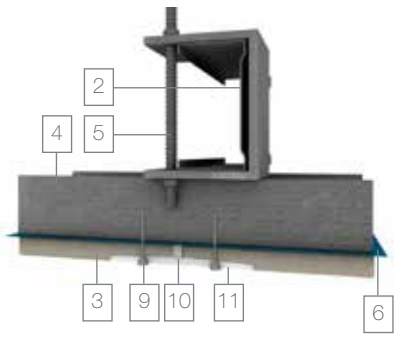
Joint Detail



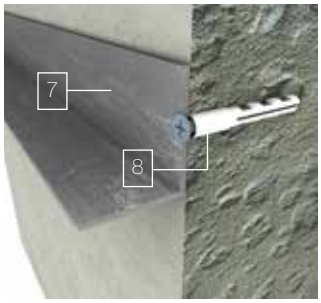
Expansion Joint



Structure Assemble



Hanger To Structure



Ceiling To Wall

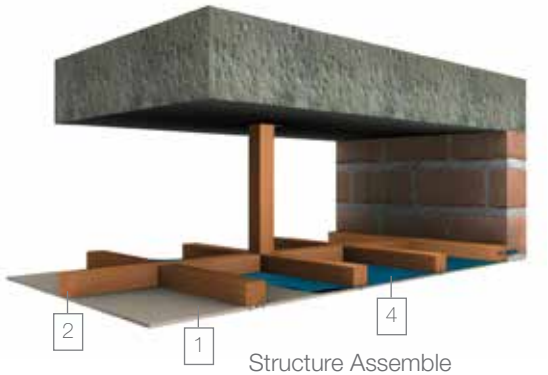
1. Fixing hooks
2. Primary profile
3. KalsiLing
4. Secondary profile
5. Suspension rod/wire
6. Vapour membrane/barrier
7. L angle stud
8. Wall plug
9. Drywall screw
10. 50mm fibreglass mesh tape
11. Multipurpose joint compound

KalsiLing

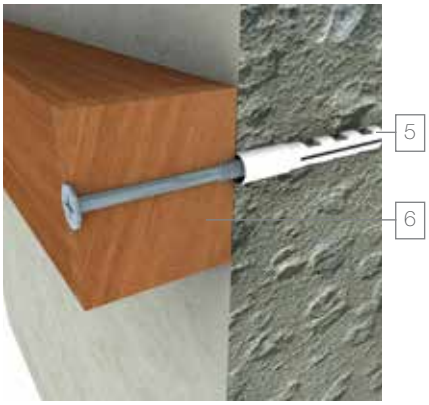
Technical Details – Timber framing

General View

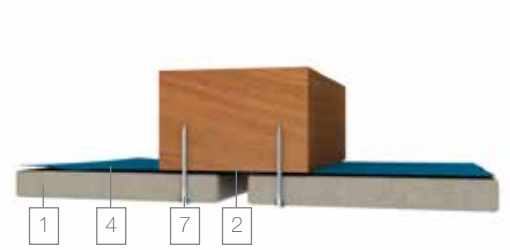
Hanger Detail



Structure Assemble



Ceiling To Wall Detail

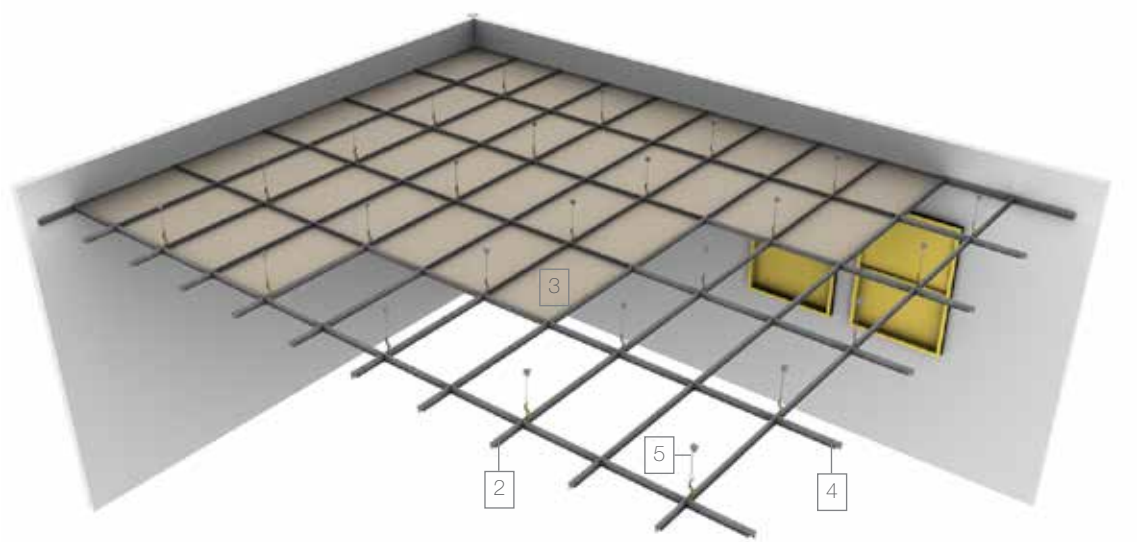


Jointing Detail

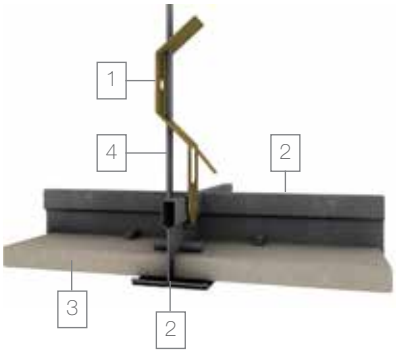
1. KalsiLing
2. Timber batten 40mm x 60mm
3. Metal bracket
4. Vapour membrane/barrier
5. Wall plug
6. Wood molding
7. Nail

KalsiLing

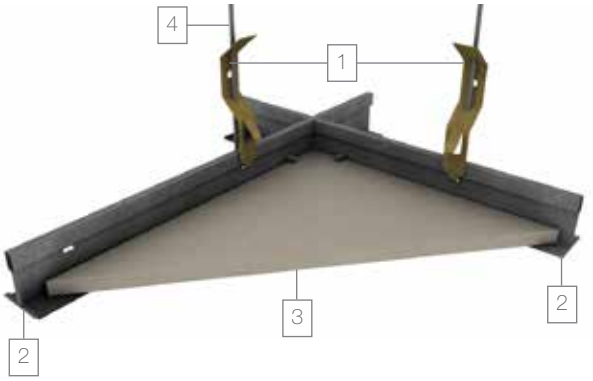
Technical Details – Suspended ceiling (T Grid)



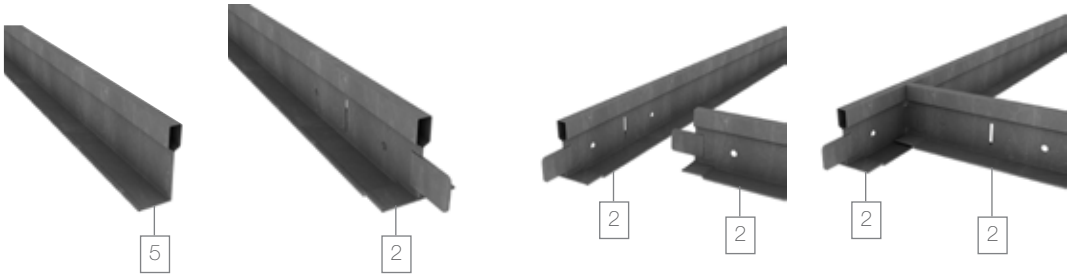
General View



T-profile Detail



Structure Assemble



1. Fixing hooks
2. T-profile
3. KalsiLing
4. Suspension rod/wire
5. L angle stud

KalsiLing

Project Reference

KalsiPart

KalsiPart is the ideal solution for the most demanding internal wall applications subject to high traffic or humid conditions:

KalsiPart provides excellent acoustic insulation. The inclusion of mineral wool in the wall cavity improves both thermal and acoustic performance.

All kinds of conduit, wiring, pipe and other services are easily installed in the cavity of every KalsiPart system.

"KalsiPart is resistant to impact, moisture and water. It is the ideal solution for high traffic areas"

KalsiPart Standard Dimensions

Thickness (mm)	Width (mm)	Length (mm)	Weight per m^2 of sheet (kg/m^2)
8	1200	2400	11.7
	1220	2440	
	1200	2700	
	1200	3000	

* Other dimensions are available upon request. The properties in above table are mean values provided for informational purposes only

Surface finishes

Standard

Top Sanded

Edge finishes

Square Edges

4 Bevelled Edges

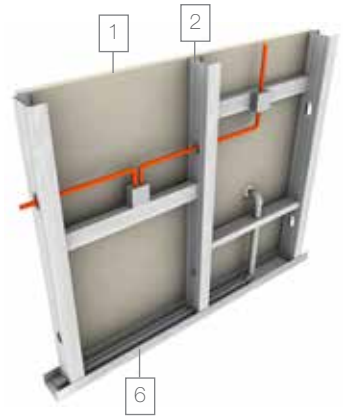
2 Bevelled Edges

KalsiPart

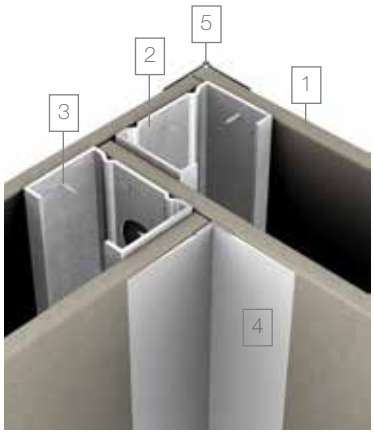
Technical Details

General View

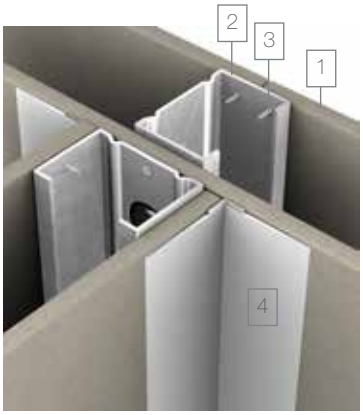
Ceramic Tiling



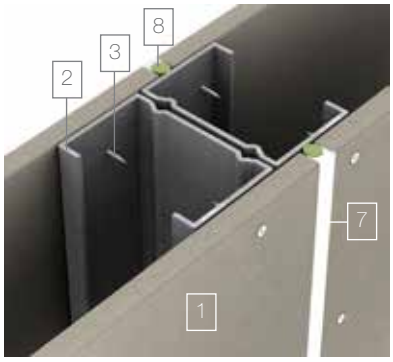
Conduit And Service Installation



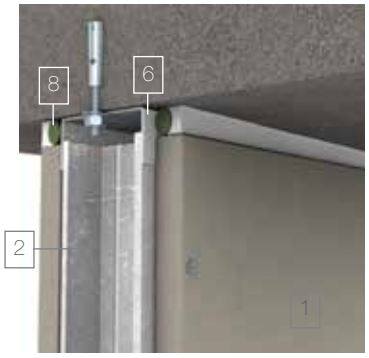
L Corner Detail



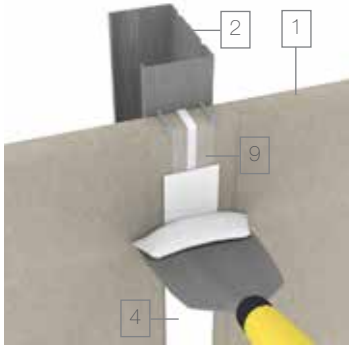
T Corner Detail



Expansion Joint



Deflection Track System



Joint Treatment

1. KalsiPart
2. Steel stud
3. Drywall screw N°6 x 1"
4. Multipurpose joint compound
5. Corner bead
6. Horizontal channel
7. Polystyrene filler
8. 6mm backer rod
9. 50mm fibreglass mesh tape

KalsiPart

Project Reference

KalsiClad

KalsiClad is a board specifically designed for external wall cladding. Its light weight and versatility are the best features for new or renovation projects which demand design flexibility, and modern, contemporary solutions.

KalsiClad can be finished with expressed or flushed joints.

KalsiClad can be coated with an exterior acrylic or texture coating for monolitic render.

"KalsiClad is an external, light weight yet strong solution for new and renovation projects"

KalsiClad Standard Dimensions

Thickness (mm)	Width (mm)	Length (mm)	Weight per m^2 of sheet (kg/m^2)
10	1200	2400	14.5
	1220	2440	
12	1200	2400	17.5
	1220	2440	

* Other dimensions are available upon request. The properties in above table are mean values provided for informational purposes only

Surface finishes

Standard

Top Sanded

Edge finishes

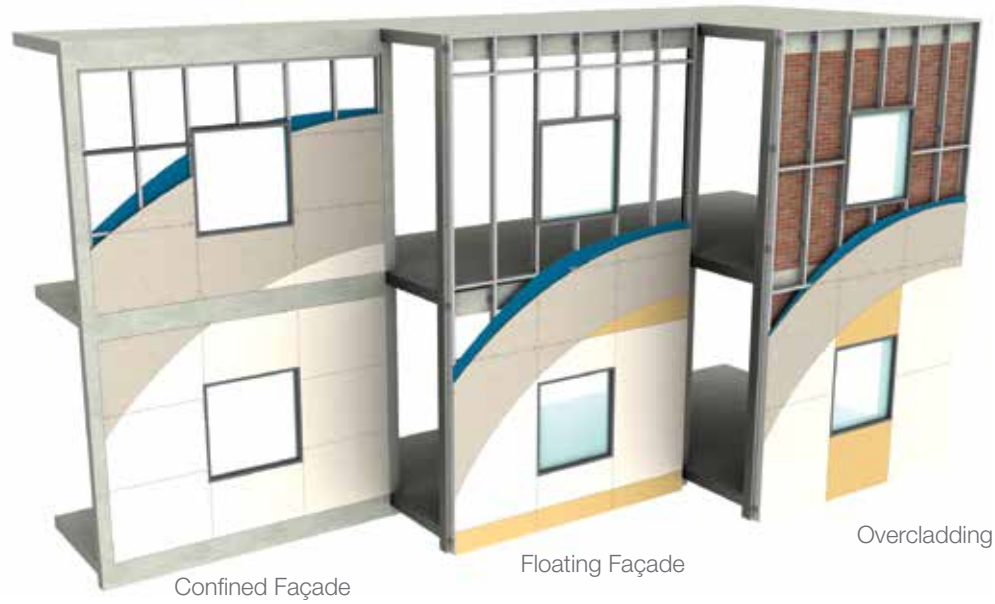
Square Edges

4 Bevelled Edges

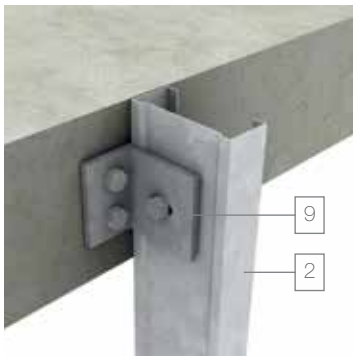
2 Bevelled Edges

KalsiClad

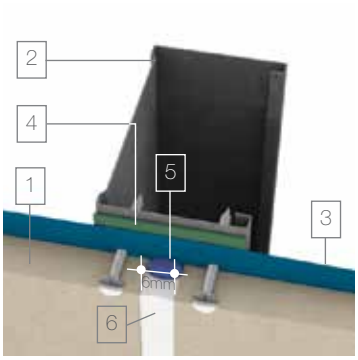
Technical Details



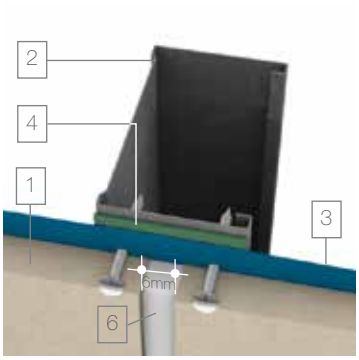
General View



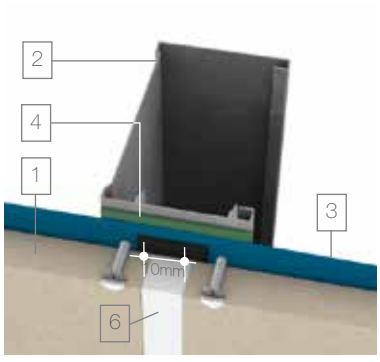
Bracket To Slab Detail



6mm Joint Treatment (Option A)

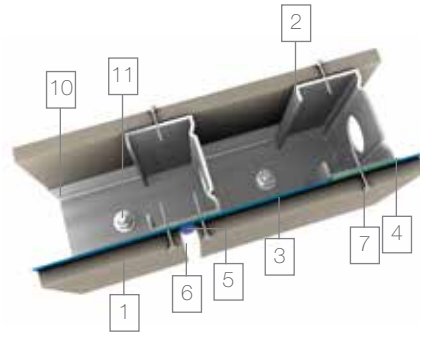


6mm Joint Treatment (Option B)



10mm Joint Treatment

Construction To Bottom Detail



Expansion Joint

1. KalsiClad
2. Steel stud
3. Vapour membrane/barrier
4. Thermostop*
5. 6mm backer rod
6. Polystyrene filler
7. Drywall screw
8. Bond breaker film
9. Metal bracket
10. Steel channel
11. Anchor bolt
12. Flashing

*If required by local building codes and/or local atmospheric conditions

KalsiClad

Project Reference

KalsiFloor

KalsiFloor is a strong fibre cement board suitable for internal flooring applications. KalsiFloor can be directly finished (with carpet or vinyl tiles) in residential projects or offices, or with reinforced mortar screed in industrial and heavy duty applications.

KalsiFloor is a superb alternative to concrete slabs because it is an incredible lightweight solution.

KalsiFloor is fast and clean to install.

"KalsiFloor is an ideal substrate for internal flooring"

KalsiFloor Standard Dimensions

Thickness (mm)	Width (mm)	Length (mm)	Weight per m^2 of sheet (kg/m^2)
18	1200	2400	26.2
	1220	2440	
20	1200	2400	29.2
	1220	2440	

* Other dimensions are available upon request. The properties in above table are mean values provided for informational purposes only

Surface finishes

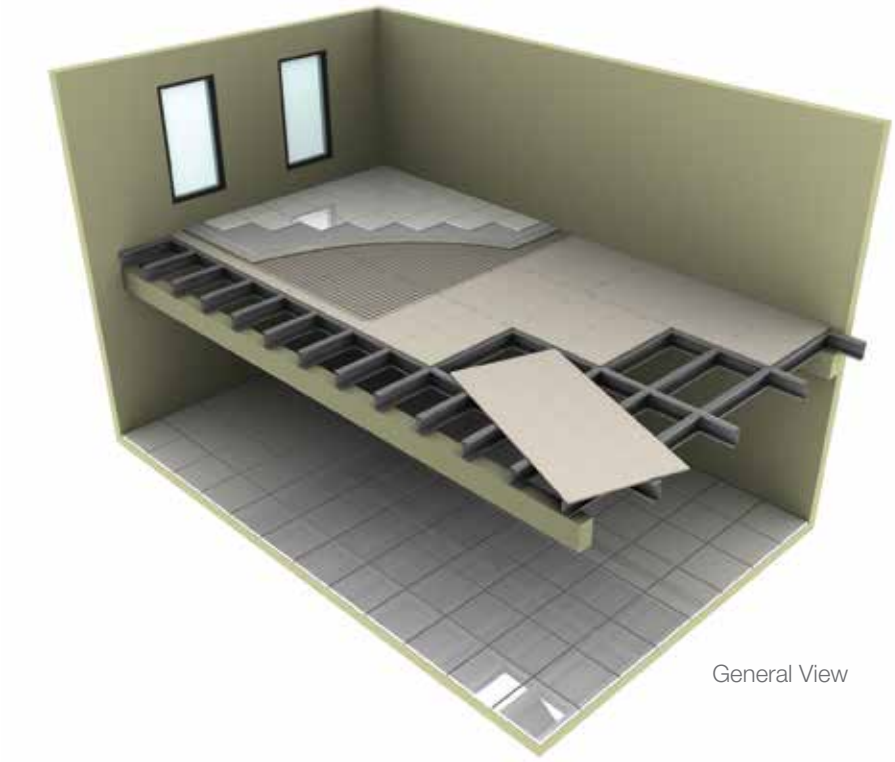
Standard

Edge finishes

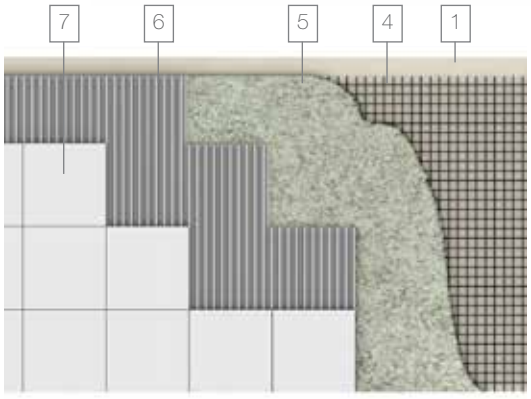
Square Edges

KalsiFloor

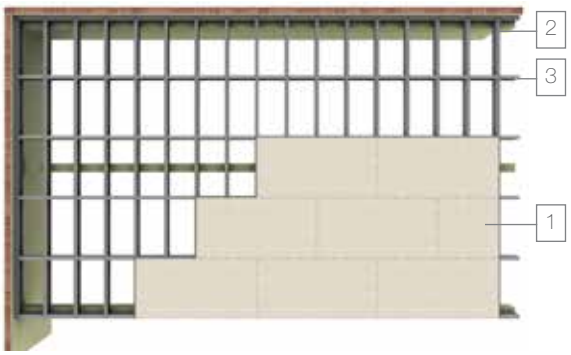
Technical Details



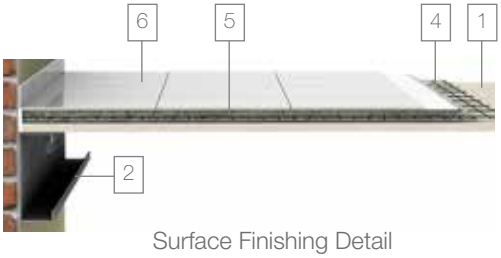
General View



Surface Finishing Detail



Installation Practice



Surface Finishing Detail

1. KalsiFloor
2. Steel purlin
3. Steel bracer
4. Steel reinforcement
5. Mortar/screed
6. Tile adhesive
7. Finishing (ceramic tile, stone)

KalsiFloor

Project Reference

Tools

Easy workability is another feature of Kalsi® fibre cement products. They are normally installed with conventional tools.

System Components

Kalsi® fibre cement can be installed with standard and common accessories easily found in most hardware outlets.

	Screws (board to steel frame)		Joint compound (multipurpose)		Steel stud / runner
	Screws (steel frame)		Mesh tape (2" fibreglass)		Steel channel
	Anchors		Backer rod		Clip
			PU Sealant		Mineral wool

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Important note

Some project reference images depicted in this document are not necessarily fabricated from the outlined Kalsi products and systems; most correspond to structures using fibre cement boards manufactured by Etex network companies in several locations worldwide. The sole purpose of these images is to illustrate the general appearance and the versatility of Kalsi products and systems as proven by the international expertise of Etex Building Performance.

Your local supplier