

CEDRAL

- ✓ maintenance free
- ✓ free from painting
- ✓ easy to install

Design & Installation Guide

Cedral Click

New Zealand



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Introduction



General information

With the visual appeal of natural timber, simplicity of installation and resistance to rot, Cedral is an attractive, low maintenance alternative to all types of weatherboard, and can be used internally or externally for residential and commercial buildings.

This Design and Installation Guide serves only as a general guide providing basic design considerations and information in relation to application and installation of Cedral Horizontal and Vertical façade systems for common external applications.

Cedral typical construction details are available as separate documents which must be read in conjunction with this Design and Installation Guide.

The information in this guide is comprehensive but not exhaustive, and the reader will need to satisfy themselves that the contents of this guide are suitable for their intended application. It is the responsibility of the project consultants (designer, architect and engineers) to ensure that the information and details provided in this document are appropriate for the project.

Disclaimer

The information in this document is correct at the time of issuing. However, due to our committed program of continuous material and system development we reserve the right to amend or alter the information contained in this document without prior notice. Please contact your local Cedral sales organisation or visit www.cedral.world to ensure you have the most current version. This document is supplied in good faith and no liability can be accepted for any loss or damage resulting from its use. Images and construction details contained in this document are not to a specific scale, and are indicative and for illustration purposes only.

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Product



For more technical information including Cedral Click manufacturing tolerances, profile dimensions and physical properties refer to Cedral Click Material Information Sheet

Cedral Click

Cedral Click is a flush fitting, fibre cement, tongue and groove cladding plank, providing a contemporary look to your façade, and is supplied with a simple 'Click Clip System' for a quick and easy installation. Cedral Click is available in a wood effect or a smooth, modern finish.



Length	3600 mm
Width	186 mm
Coverage width	174 mm
Thickness	12 mm
Weight	12.2 kg per plank



Cedral Click Wood



Cedral Click Smooth

Product features



Easy to install



Low maintenance



Resistant to rot and immune to attack by pests and insects



Water resistant



A2-s1, d0 (EN13501)
Type A for external cladding & Group 1-S for internal lining (NZBC)



UV resistant



Pre-finished with factory applied colour

Colour range

Cedral Click is supplied in a range of 22 factory applied colours, providing an aesthetic option to suit most project requirements. Bespoke colours are subject to minimum order quantities and extended lead times.

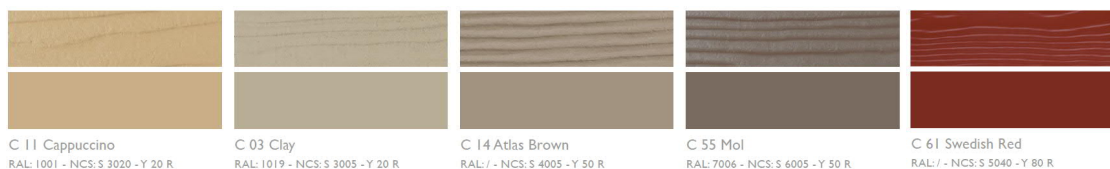
Mineral Colours



Forest Colours



Earth Colours

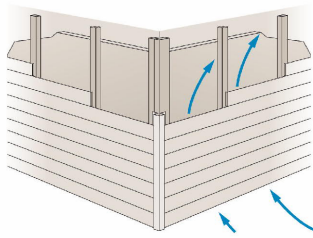


Ocean Colours



This colour chart shows the broad range of available colours. However, a 100% accurate representation of the colours is not technically feasible in this overview. The final choice of colours needs to be based on samples. Request a sample from your local Cedral distributor.

Cedral Click Facade



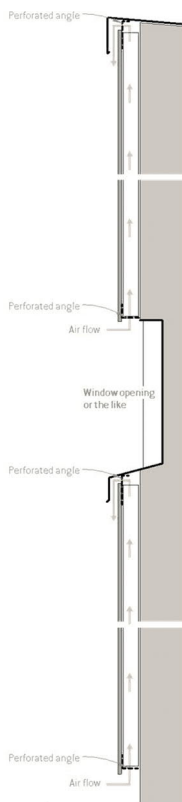
Ventilated facade

Cedral Click has been designed for a ventilated façade system. A ventilated façade is a kind of two stage construction, an inner structure with a protective outer skin, and the cladding panel or rainscreen. A ventilated façade consists of an insulated and weathertight structure, a ventilated cavity formed with a cladding support frame and the cladding panel.

Allowance for adequate ventilation is paramount in ensuring a successful Cedral façade. Ventilated façade provides a number of added benefits to the building and its occupants. These may include but are not limited to the following:

- o Positive contribution to energy savings
- o Assists with condensation management
- o Minimises thermal bridges by providing an opportunity for applying external insulation
- o Reduces thermal movement of the structure and cladding support frame
- o Dissipates radiant heat
- o Increases acoustic performance of the external wall
- o Provides an effective drainage path for any moisture passing the cladding skin
- o Eliminates the need for exposed caulking and sealant, therefore reducing maintenance requirements
- o Assists with keeping the weather barrier dry and healthy
- o Provides opportunities for concealing external services such as downpipes within the cavity
- o Proven to be a more sustainable and healthier façade construction
- o Architectural design flexibility

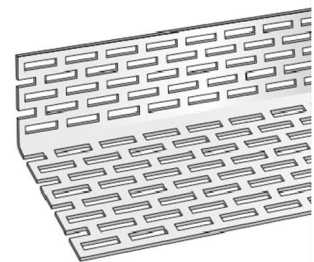
Air must be allowed to enter the cavity from bottom of the façade, window head, soffit, slab junctions, and the like, and exit from top of the façade, capping, window sill, slab and soffit interfaces, and the like. The size of air inlets and outlets depends on the height of the façade and the vertical distance between them. Generally, where the vertical distance between air inlet and outlet does not exceed 4 metres a bare minimum 10 mm gap is sufficient for ventilation.



All air inlets and outlets shall be protected against entry of birds and vermin into the cavity with a corrosion resistant perforated profile (angle).

The perforated angle should be of maximum 0.9 mm in thickness, where placed between the cladding panel and support frame, and be of a recommended minimum 50% open area with aperture size of maximum 3 mm to 5 mm. The bare minimum allowable open area percentage for the perforated profile is 35% in which case the specified minimum 10 mm gaps for ventilation need to increase to minimum 20 mm.

The perforations must be kept open and unobstructed to maintain drainage and ventilation of the cavity. The perforated angle shall be positioned to allow an adequate drip edge to the cladding panel.



Cedral Click Facade



Cedral Click Horizontal

Cedral Click may be installed horizontally on vertical timber or metal support frame forming a cavity behind the cladding for drainage and ventilation.

Cedral Click Vertical

For vertical installation of Cedral Click, the planks are installed to a layer of horizontal timber or metal support frame fixed to a layer of vertical timber or metal support frame, providing a cavity between the horizontal support frame and weather barrier or external insulation for drainage and ventilation.



General components

Cedral Click fixings

Cedral Click is fixed to timber or metal support frame with simple Cedral Click clip system.

Cedral Click stainless steel (304) clip and screw set
For fixing Cedral Click to timber frame

Cedral Click Horizontal ✓
Cedral Click Vertical ✓



Cedral Click stainless steel (304) clip and (4 mm) rivet set
For fixing Cedral Click to metal frame

Cedral Click Horizontal ✓
Cedral Click Vertical ✓



Where exposed fixings are required Cedral screws are used.

Cedral Click colour matched mushroom head screw
For fixing Cedral Click to timber batten where face fixing is required (TORX T20, stainless steel 304)

Cedral Click Horizontal ✓
Cedral Click Vertical ✓



Cedral metal screw
For fixing Cedral Click to metal support frame where face fixing is required (Phillips n°2, stainless steel 304)

Cedral Click Horizontal ✓
Cedral Click Vertical ✓



For fixing of Cedral flashings or the like to timber support frame Cedral clip screws, which are also available separate from the Cedral Click clip and screw set, may be used. For metal framing a suitable stainless steel low profile wafer head screw may be used for this purpose.

Cedral Click clip screw
Available separately mainly used for fixing Cedral flashings to timber frame

Cedral Click Horizontal ✓
Cedral Click Vertical ✓



Cedral Click flashings (profiles)

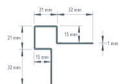
Unless stated otherwise, all Cedral Click profiles are colour coded aluminium profiles to match and complement the Cedral range, and are supplied in 3m lengths. The profiles are embossed on the rear with the Cedral brand.



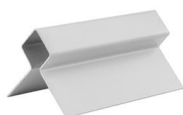
All Cedral profiles are supplied with a protective film which needs to be removed before installation. Disregard the printed arrows on the protective film when installing Cedral cladding.



Cedral Click external corner profile



Cedral Click Horizontal ✓
Cedral Click Vertical ✓



External corner junction (connector) profile
Used for connecting external corner pieces where required (colour black, length 300 mm)

Cedral Click Horizontal ✓
Cedral Click Vertical ✓



General components

Cedral Click internal corner profile



Cedral Click Horizontal ✓
Cedral Click Vertical ✓

Cedral Click end (connection) profile



Cedral Click Horizontal ✓
Cedral Click Vertical ✓

Cedral Click starter profile (Only available in aluminium mill finish)



Cedral Click Horizontal ✓
Cedral Click Vertical x

Cedral Click lintel profile



Cedral Click Horizontal ✓
Cedral Click Vertical ✓

Cedral Click starter (support) profile (Only available in aluminium mill finish)



Cedral Click Horizontal x
Cedral Click Vertical ✓

Other cladding components

0,75 mm flat EPDM strip 100 mm wide.

Applied on timber cavity battens for moisture protection as specified on the construction details



Cedral Click Horizontal ✓
Cedral Click Vertical ✓

EPDM compressible gasket
Tesa® 61102

A compressible closed-cell EPDM gasket used for sealing interfaces with flashings and the like (Minimum width: 9 mm)



Cedral Click Horizontal ✓
Cedral Click Vertical ✓

Expanding foam gasket
pro clima CONTEGA® FIDEN EXO

A pre-compressed sealing tape used to seal interfaces with window joineries and the like as specified on the construction details.

The required tape size depends on the gap which needs to be sealed. Refer to pro clima CONTEGA® FIDEN EXO datasheet to determine the required tape size.



Cedral Click Horizontal ✓
Cedral Click Vertical ✓

Cedral touch up paint

Touch up paint is available in all colours of Cedral. This should be applied sparingly with a small brush, only where there is damage to paint or on visible cut edges where required.



General components



For information about technical properties and correct application of pro clima products refer to pro clima technical documents, and SOLITEX EXTASANA® (ADHERO) Application and Fixing Guides.

Recommended Weather (resistive) barrier options

Weather barrier option 1

pro clima SOLITEX EXTASANA®

Cedral façade systems have been assessed with pro clima SOLITEX EXTASANA® to E2/VM1 for the purpose of compliance with Clause E2 of the NZBC for the following scope:

- Serviceability wind pressure: Up to $\pm 1515\text{Pa}$
- Ultimate wind pressure: Up to $\pm 2500\text{Pa}$
- Building height: Up to 10m

pro clima SOLITEX EXTASANA® shall be applied in accordance with pro clima SOLITEX EXTASANA® installation guidelines and relevant standards.



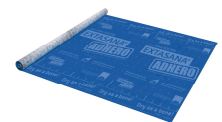
Cedral Click Horizontal ✓
Cedral Click Vertical ✓

Weather barrier option 2

pro clima SOLITEX EXTASANA® AHERO

Where a rigid air barrier is required the ADHERO version of pro clima SOLITEX EXTASANA® may be used with 6 mm Kalsi (RigidBacker) fibre cement sheeting.

pro clima SOLITEX EXTASANA® AHERO and Kalsi shall be applied in accordance with their respective installation guidelines and recommendations. Same wind pressure and building height limits as those of Option 1 apply unless otherwise specified by project engineer.



Cedral Click Horizontal ✓
Cedral Click Vertical ✓

Weather barrier components

Flashing tape

pro clima TESCON EXTORA®

A pressure sensitive adhesive tape for overlaps, end laps and taping on to flashings and the like. Used with both weather resistive barrier options.



Cedral Click Horizontal ✓
Cedral Click Vertical ✓

Sill tape

pro clima TESCON EXTONSEAL®

A flexible tape for use around window and door openings, used with both weather resistive barrier options.



Cedral Click Horizontal ✓
Cedral Click Vertical ✓

Sealing tape

pro clima TESCON® NAIDECK mono patch

A single-sided adhesive nail or screw sealing adhesive used with both weather resistive barrier options.



Cedral Click Horizontal ✓
Cedral Click Vertical ✓

Foil tape

pro clima TESCON® ADHISO WS

A pure aluminium tape for wet seal connections to TESCON EXTONSEAL® and EXTORA® and SOLITEX EXTASANA®.



Cedral Click Horizontal ✓
Cedral Click Vertical ✓

Grommet

pro clima ROFLEX and KALFEX

pro clima ROFLEX is used to seal pipe and pro clima KALFEX for cable penetrations. pro clima ROFLEX and KALFEX are used with both weather resistive barrier options.



Cedral Click Horizontal ✓
Cedral Click Vertical ✓

PRESSFIX

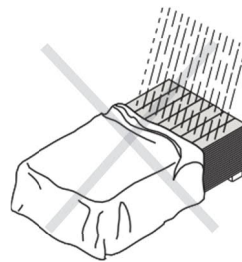
A malleable plastic tool for applying pressure to pro clima Adhesive TESCON® Tapes to ensure long term durable bonding.



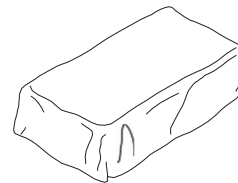
Storage & handling

Storage

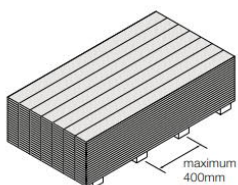
Cedral should be stored under cover on the pallets on which they are supplied. Any temporary transportation cover should be removed to release any trapped moisture and the pack re-covered with an opaque tarpaulin. The planks should be protected from mud staining. For best practice store Cedral in a covered area.



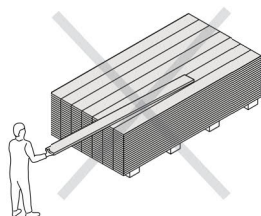
Must be protected from weather



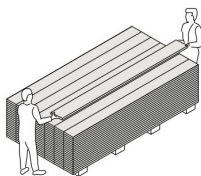
Store under cover, ideally inside



Ensure sufficient bearers, stack on a level surface and never stack against a wall



DO NOT drag planks off the stack



Planks must be lifted off the stack



DO NOT carry planks on the flat



Carry on edge but **DO NOT** store on edge

Handling

Care should be taken at all times when handling Cedral horizontally on the flat, as it can break. While Cedral is stored on the flat, it should be fully supported along its full length on purpose designed pallets.

Manual handling is best carried out with the planks carried on their sides. When a single person is carrying a plank, it should be turned on to its side before being lifted off the stack, and then the handler must keep their hands as far apart as possible to provide maximum support for the board.

Health & safety

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

- o Avoid dust inhalation with the use of cutting/sanding equipment fitted with dust extraction/suppression accessories wherever practical.
- o Ensure adequate ventilation of all work sites.
- o Avoid contact with eyes and skin by wearing an approved respirator (a dust mask compliant with AS/NZS 1715 and AS/NZS 1716) together with appropriate personal protective equipment (safety glasses, hard hat, boots and protective clothing).

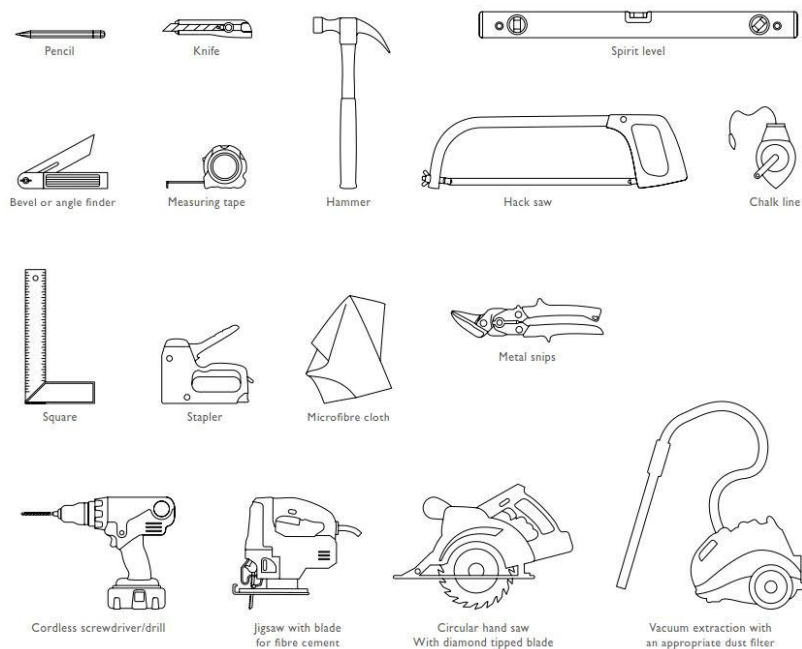


Refer to Cedral Lap and Click Material Safety Data Sheet (MSDS) for more information about health and safety, including common hazards associated with working with Cedral, and measures to minimise risk.

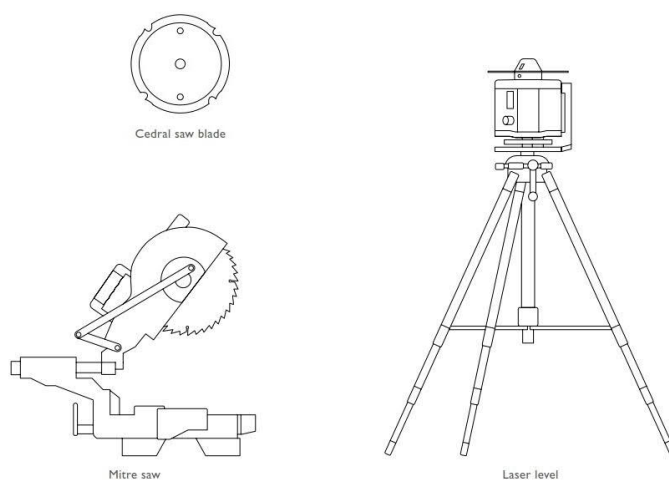
Work with Cedral

General tools & materials

For the installation of Cedral planks the following basic tools and materials are recommended.



For large size projects, the following tools may be also found useful.



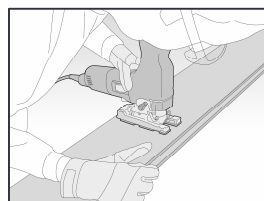
Work with Cedral

Cutting Cedral

The method of cutting is dependent on the amount of the required cutting. It is possible to cut the planks with a handsaw, electric jigsaw or circular saw.

Cutting using Jigsaw

Turning Cedral over and cutting on the reverse will ensure a clean finish on the front of the plank. Jigsaws are useful for detailing Cedral, for example, around openings. It is not recommended to solely use jigsaw for cutting Cedral on a project.



To ensure a neat cut use fibre cement jigsaw blades. Available from Cedral suppliers.

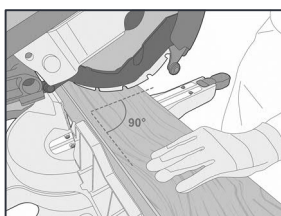
Cutting using handheld circular saw

A handheld circular saw with fibre cement blades is ideal for cutting large quantities.

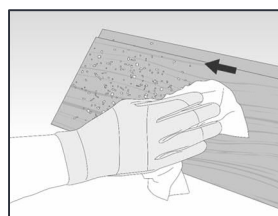


Diamond tipped blade (recommended)

A tungsten tipped blade of 36 teeth on a 180 mm diameter blade is recommended for cutting Cedral planks. With this method, cutting from the back of the board is advisable as the saw guide may leave marks across the board surface. Test cutting is recommended.



Ensure a square cut

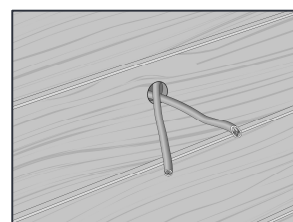


After cutting, wipe away dust with a clean, dry microfibre cloth

Drilling or cutting penetrations and cut-outs

Depending on the shape and size of the required cut-out, jigsaw, standard masonry or fibre cement bit or core hole saw may be used.

Always leave a minimum 5-10 mm clearance around any penetrations for movement allowance. Seal the gap with appropriate sealant.



Cutting and drilling must take place in a dry and well-ventilated environment.

Remove dust immediately with a dry micro-fibre cloth.

Permanent staining can result from cement dust if subjected to moisture.

Installation

Prior to installation of Cedral Click

Checking the following items is recommended before starting the installation of Cedral cladding. The following list is by no means exhaustive.



For a step-by-step guide and information on the application of pro clima weather barrier and its components refer to SOLITEX EXTASANA® (ADHERO) Application and Fixing Guides.

For further information regarding weather barrier refer to Design Consideration section.

Before installing weather barrier

- Ensure substructure has been designed serviceable for Cedral cladding (refer to the Design Considerations for further information).
- Ensure substructure is straight and plumb.
- Ensure substructure can adequately accommodate the required cladding framing; for instance, where substrate is timber or metal frame it must have adequate and correctly located structural noggins to accommodate the cladding framing for Cedral Click Horizontal.
- Check for and remove all sharp edges and burrs from substrate prior to application of a pliable membrane/sarking (weather barrier). Where a rigid weather barrier is intended to be used, check for any additional studs and noggins that may be required for fixing the rigid weather barrier.

Before installing Cedral cladding

- Ensure the weather barrier and its associated components have been installed free of any defect and in accordance with their manufacturers' recommendations, project requirements and applicable standards and regulations.
- Ensure all the required flashings have been installed correctly and in accordance with applicable standards and regulations, project requirements and Cedral Click Construction Details.
- Ensure all the windows/doors (or the like) and their associated components, including any sill tray and flashing, and head and jamb flashing, have been installed as per applicable standards and regulations, project requirements and Cedral Click Construction Details.
- Confirm the need for any additional structural support required for accommodating any external fixtures or surface mounted features. Under no circumstances should Cedral planks receive any additional structural loads. Any applied additional supports must not block the air flow and drainage within the cavity.
- Ensure adequate ground clearance as per Cedral Construction Details and regulatory requirements. Determine and mark bottom of the cladding.
- Confirm all the interfaces with Cedral, review architectural drawings as well as Cedral Construction Details and prepare accordingly.
- Ensure the cladding support frame has been installed correctly, straight and plumb, and in accordance with project engineering design and relevant standards, and spaced as per engineering requirements and Cedral span tables.



Check the quality of Cedral planks and components for any visual defects or damage prior to installation. Contact your local Cedral organisation for any issues. DO NOT install any planks or components which are either damaged or not aligned with the project requirements and specifications.

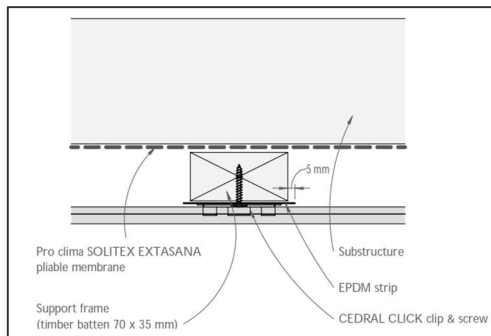
Installation

Cladding support frame (timber)

Cedral Click Horizontal on timber battens

Cedral Click may be fixed to vertical timber battens with minimum depth of 35 mm and width of 70 mm (35 x 70 mm).

An EPDM strip should be applied, e.g. with staples, to the face of all battens for further moisture protection. The EPDM strip should overhang at least 5 mm from the sides of the batten.



Cedral Click Horizontal - Plan view



Cover all battens with EPDM strip



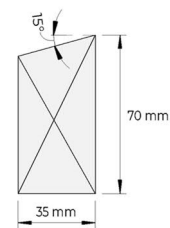
Ensure the cladding support frame is installed correctly, straight and plumb, and in accordance with project engineering design and relevant standards, and spaced as per engineering requirements and Cedral span tables.

Timber battens shall be of minimum preservative treatment of H3.1, and of minimum structural grade of SG6 as per the relevant standards.

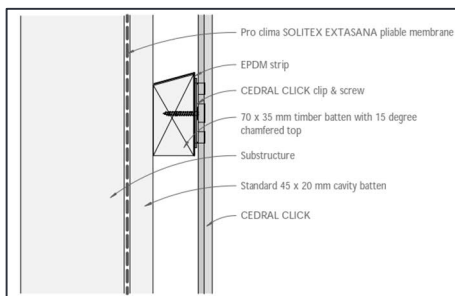
Cedral Click Vertical on timber battens

Cedral Click may be fixed vertically to horizontal timber battens with minimum depth of 35 mm and width of 70 mm (35 x 70 mm) chamfered at the top with 15-degree slope. Suitable vertical 45x20 mm cavity battens are used behind the horizontal chamfered battens to form a 20 mm gap between weather barrier and the horizontal battens for ventilation and drainage purposes.

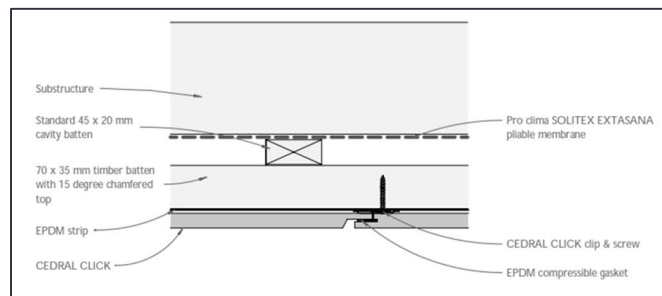
An EPDM strip should be applied to all the horizontal battens for further moisture protection. The EPDM strip in this case should cover both the top and front face of the batten as shown in the following image.



Chamfered batten section



Cedral Click Vertical - Vertical section view



Cedral Click Vertical - Plan view

Installation



Ensure the cladding support frame is installed correctly, straight and plumb, and in accordance with project engineering design and relevant standards, and spaced as per engineering requirements and Cedral span tables.

Metal support frame shall be of adequate corrosion resistance required for the project.

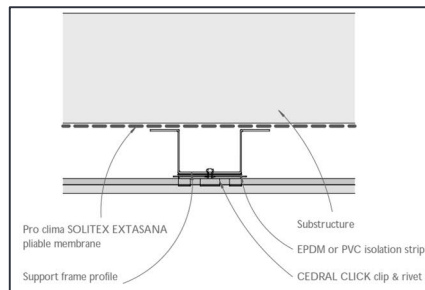
It is recommended that for best practice and to prevent any risk of bimetal corrosion a suitable EPDM or PVC isolation strip/tape is applied to the face of the steel (galvanised or zincalume) support frame profiles to form a separation between the profiles and stainless steel or aluminium Cedral components.

Metal support frame profiles should be compliant with AS/NZS 4600 – Cold-formed steel structures and other applicable standards.

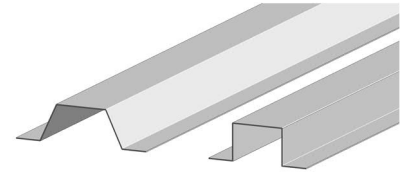
Cladding support frame (metal)

Cedral Click Horizontal on metal support frame

Cedral Click may be fixed to vertical metal top hat profiles with minimum gauge (thickness) of 1.1 mm BMT, minimum depth of 35 mm, and minimum width of 50 mm.



Cedral Click Horizontal - Plan view



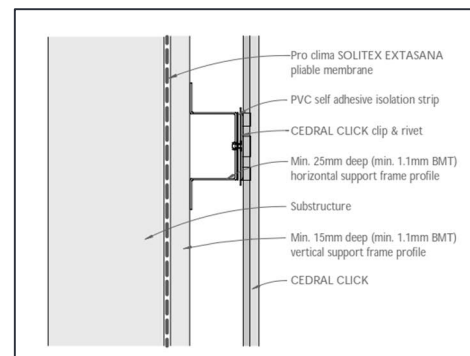
Examples of standard top hat sections



Top hat's minimum size

Cedral Click Vertical on metal support frame

For vertical installation of Cedral Click, the planks are fixed to horizontal metal top hat profiles with minimum gauge (thickness) of 1.1 mm BMT, minimum depth of 25 mm, and minimum width of 50 mm. A layer of minimum 15 mm deep (minimum 1.1 mm BMT) vertical top hats are used between the horizontal top hats and weather barrier to form a minimum 15 mm gap behind the horizontal top hats for ventilation and drainage purposes.



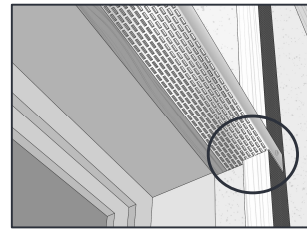
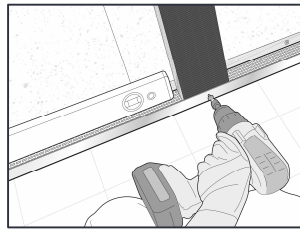
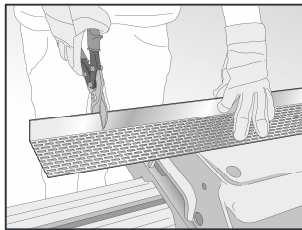
Cedral Click Vertical – Vertical section view

Installation

Cedral Click Horizontal installation

Step 1 – Install perforated profiles or angles

The perforated profiles are for protecting the cavity against birds, rodents and some insects while allowing drainage and air to flow through the system. It may be fixed to support frame using nail or low profile wafer head screw. The profile may need to be notched in some places, e.g. above openings, for fixing to support frame. The locations where a perforated profile may be required may include bottom/top of the façade, window/door head, window sill, and above/below inters tory flashings and the like.



All Cedral profiles and flashings may be cut using a hack saw or metal snips.

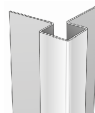
For ease of installation and to allow fitting the cladding planks in place all Cedral profiles should be installed with a flat or low profile head stainless steel screw. For fixing to timber batten, Cedral clip screws may be used for fixing the profile. Ensure the screw head sits flat on the profile surface.



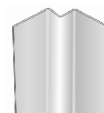
Step 2 – Install vertical profiles

These profiles include:

- o External and internal corner profiles
- o Jamb profiles of windows/doors (or the like)
- o End (connection) profiles



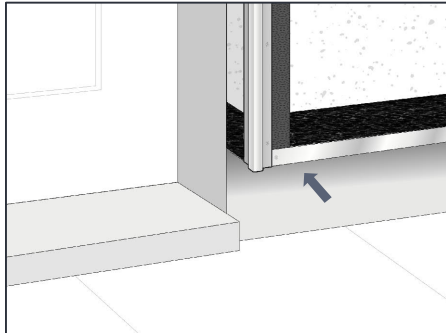
External corner profile



Internal corner profile



End (connection) profile



Ensure the bottom of the external and internal corner and end profiles are flush with the installed ventilated profile which indicates bottom of the cladding.



Ensure vertical profiles are installed straight and plumb

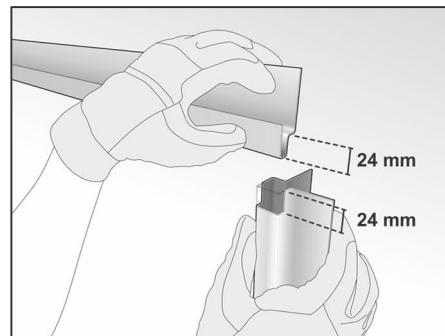


For typical construction details and interfaces as well as better understanding of the common location and application of Cedral profiles refer to Cedral Construction Details which are available as separate documents.

Depending on the project detailing and requirements, external corner profile may be used as a jamb profile at openings (doors/windows). In this or similar case, where the profile meets a lintel profile above the opening it may be notched accordingly for a neat finish.



Corner profile meeting a lintel profile above an opening



Notch the corner profile where meeting a lintel profile. The lintel profile may need to be cut longer on the flange located on the opening reveal; refer to Cedral Construction Details for further details.

Remember safety

Profile edges can be sharp.
Wear gloves!

Installation



The typical minimum ground clearance (distance from bottom of the cladding to finished floor) is 150 mm, or greater to the regulatory requirements, for Cedral cladding. Determine and mark the required ground clearance for the correct position of the starter profile. Refer to Cedral Construction Details document for common details.

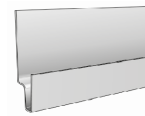
Step 3 – Install horizontal profiles

Now that all vertical profiles are in place it is easy to measure the distance between the profiles to determine the required length of horizontal profiles.

Horizontal profiles may include the following:

- o Cedral lintel profile
- o Cedral starter profile

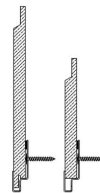
Lintel profile is usually used above openings (doors/windows). Cedral lintel profile contains a 5 mm diameter drainage hole at 250 mm centres to moisture drainage.



Lintel profile



Starter profile
For Cedral Click Horizontal

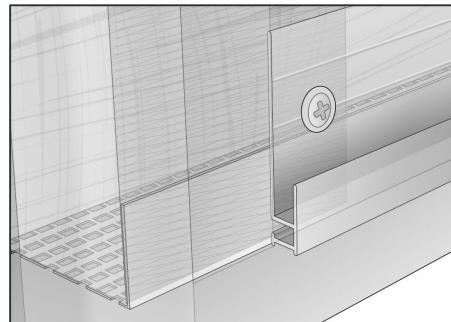


Lintel profile can be used with both full and cut width plank.

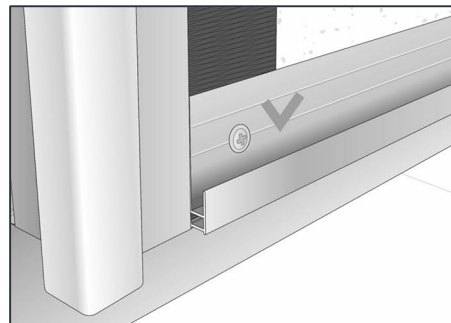
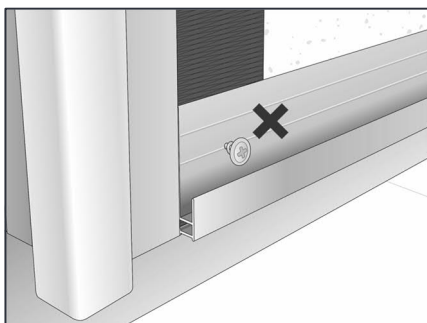
Starter profile is installed to support the first row of planks e.g. across the bottom of the façade and above an inter storey flashing. It is very important that the starter profile is installed perfectly level.



Ensure the starter profile is installed true level and next to the corner/end profiles



The starter profile is installed over the ventilated profile.

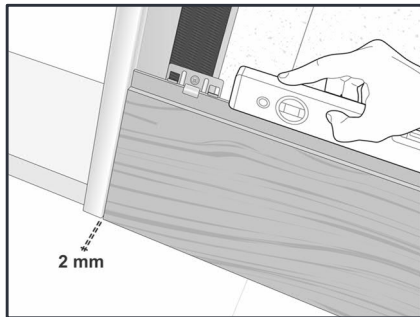


Use Cedral Click clip screw or rivet for fixing of the starter profile to support frame. Ensure the screw or rivet sits flush with the profile surface.

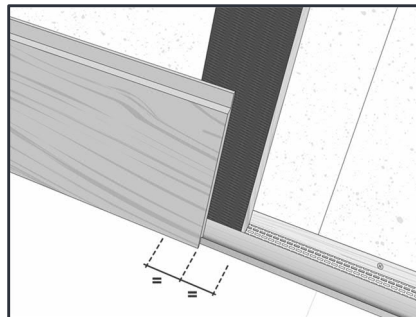
Installation

Step 4 – Install Cedral Click

Now it is time to finish the cladding. Start the installation at a lower corner of the building and install the first plank, fastening it to each batten using the Cedral Click clip & screw, for fixing to timber batten, or Cedral Click clip & rivet, for installation on metal profiles. It is recommended that for better alignment of the façade the clip is positioned adjacent to any vertical profile and not over it.

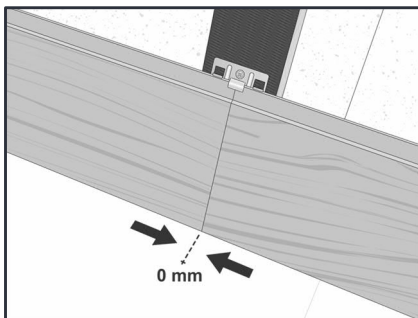


Position the first plank on the starter profile, keeping a 2 mm gap. Fit the bottom of the strip into the profile. Slide the Cedral click clip onto the strip. Provide one clip at every batten.

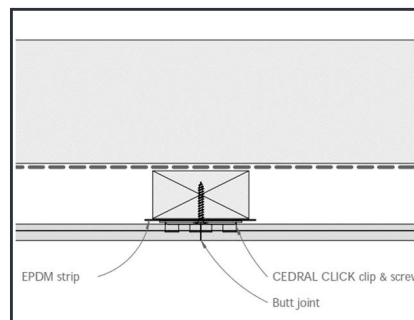


Make sure that the plank end aligns with the middle of the vertical batten (support frame).

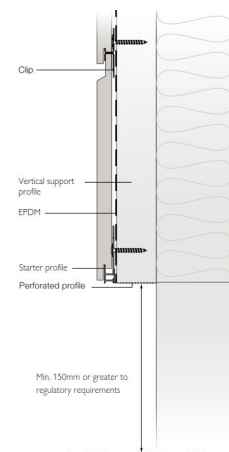
Insert the next Cedral plank next to the first, until the first row is completed. The cut-off piece of the first row can then become the starting piece of the next row, as long as butt joints meet on a vertical batten. Then work your way up and continue successive rows, following a staggered pattern, until doors or windows interrupt the build-up.



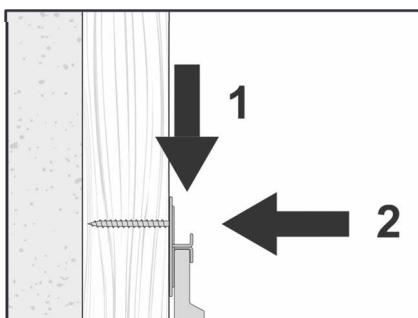
Mount the next plank. Place abutting planks in such a way that the ends touch (no gap) and they always meet on a support frame profile. Planks should be loosely butted (no force).



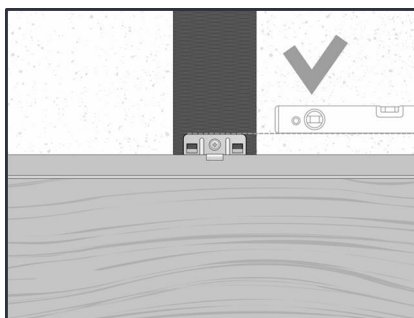
The clip must be centred at the butt joint.



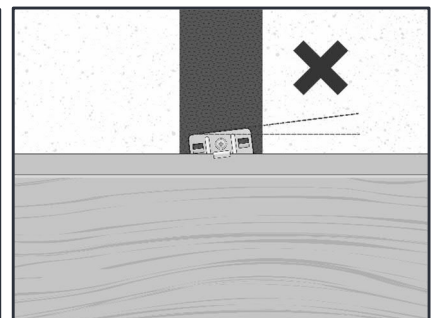
Schematic base detail (Refer to Cedral Construction Drawings for detailed drawings)



First place the clip over the plank; then screw/rivet into place.



Screw (or rivet in case of fixing to metal) the clip into place using the matching screw/rivet (supplied with the clips) to ensure that it remains pressed tightly to the strip and is level with it. Slightly incline the screw if necessary, so it pushes the clip down when fixed.



Before installing the Cedral planks, double check that the starter profile is level and that it starts at the same height everywhere. Also double-check to ensure that the vertical airflow remains unobstructed.

Each time a plank is fitted it is best to do a quick visual check to ensure that the plank is fixed to all battens with clips and that no clip or fixings is missing. Ensure clips are level and the plank is inserted correctly.

For information about maximum spacings of Cedral Click clips with respect to wind loading (fixings span tables) refer to Span Table section of this document.

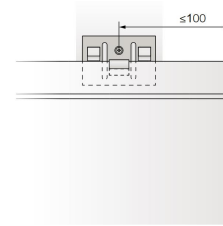
For typical construction details, including generic detailing around windows/doors, refer to Cedral Construction Details documents.

A minimum 10 mm control joint is required at every max. 20 metres in a continuous run of cladding. Refer to Design Consideration section of this document for further details on movement and control joints.

Installation

Fixings edge distance

The distance from the centre of the Cedral Click clip to the edge of the Cedral plank should not generally exceed 100 mm. In specific instances the edge distance may be increased to 150 mm as specified in Cedral Click Construction Details documents.

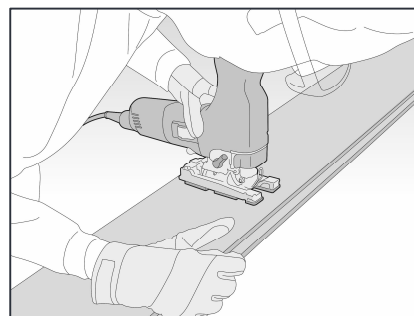


Interface with window sill flashing

To trim the last plank under the window sill flashing, first mark the location of the sill on the plank. For this, turn the strip over and trace the outline of the sill on the back of the plank. Provide a 10 mm gap between the sill flashing and the plank for ventilation.



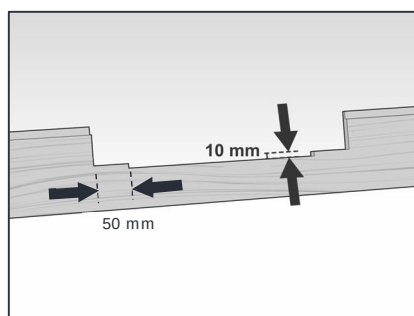
Mark the location of the plank.



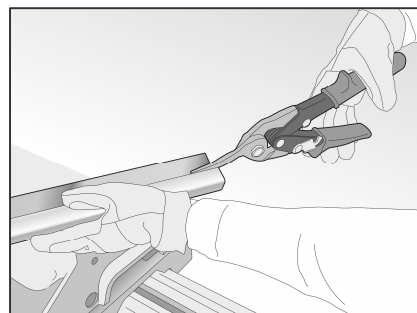
Use a jigsaw to cut out the space you marked on the back of the plank to accommodate the window sill flashing and ventilation.



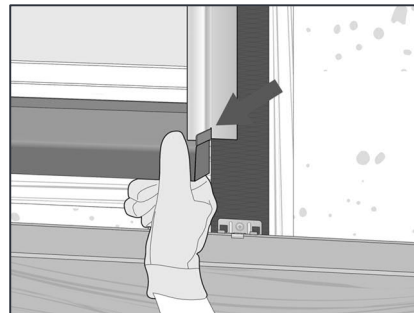
Install the trimmed plank, which now matches the window and sill. Take extra care not to break the plank where the edges have been cut out.



Mark 50 mm from each end and trim the plank by 10 mm as shown in the image for a 10 mm ventilation gap under the sill flashing.



Cut the jamb profile or flashing and adequately notch it at the bottom to accommodate the window sill upstand. It is recommended that the sill flashing has a minimum 15 mm upstand at each end.



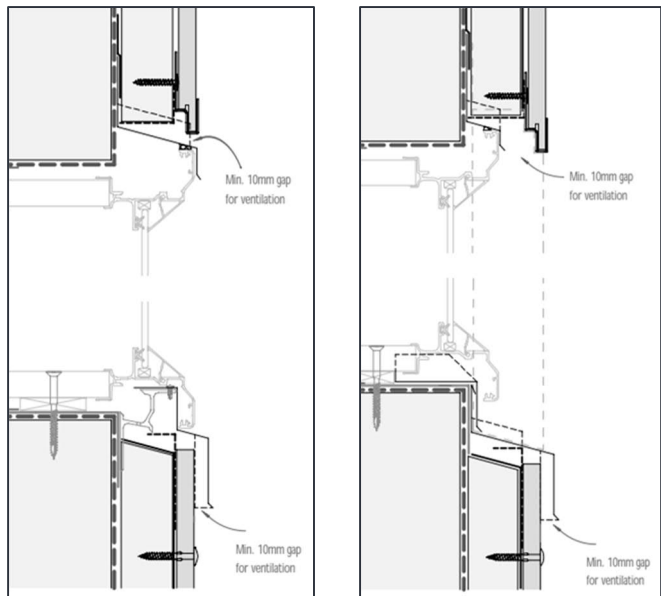
Installation

Interface with window head

Planks above windows and doors may need to be trimmed. To do so, position the plank in place and ensure on the full width side it is fully engaged with the clips of the below row, and then mark and trace the outline of the top of the window on the back of the plank. Cut the plank using a jigsaw.



Allow minimum 10 mm gap at window/door head and sill interface for ventilation.



Ensure ventilation gaps are allowed at window/door heads and the like. For full details refer to Cedral Construction Details documents.

Face fixing of Cedral Click

Where there is no space to use the Cedral Click clips, the planks are face fixed using Cedral face fixings. In this instance, a colour coded mushroom head Cedral screw is used for face fixing of Cedral Click to timber battens. Cedral metal screw is used for fixing to metal support frame.



Cedral Click colour matched mushroom head screw

Instances where face fixings may be required may include the following:

- o For the top last row of planks where either the planks are trimmed (not in full width) or that there is no space to insert the Cedral Click clips.
- o For the planks located just under the window sill flashing, capping, inter storey flashings or the like where there is no space to insert the Cedral Click clips.
- o For Cedral Click located on window/door reveals where Cedral Click clips cannot be fitted.



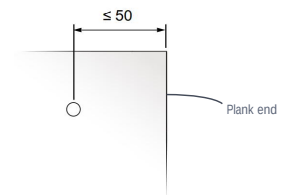
Face fixing the last row of Cedral Click using Cedral face fixings

Installation

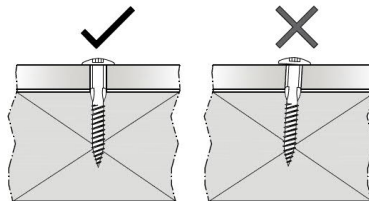
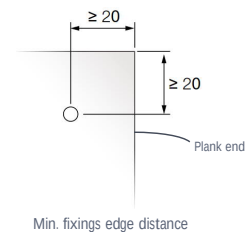
For the application of the Cedral mushroom head screw to timber batten, no pre-drilling of plank is required. However, for fixing Cedral metal screw to metal support frame pre-drilling is required where the screw is to be within 50 mm from the end of the plank.

The screws must be inserted perpendicular to the panel surface using an electric drill with a high quality bit suitable for the type of screw head. Do not overtighten the screws.

Minimum fixings edge distance: 20 mm
Maximum fixings edge distance: 100 mm

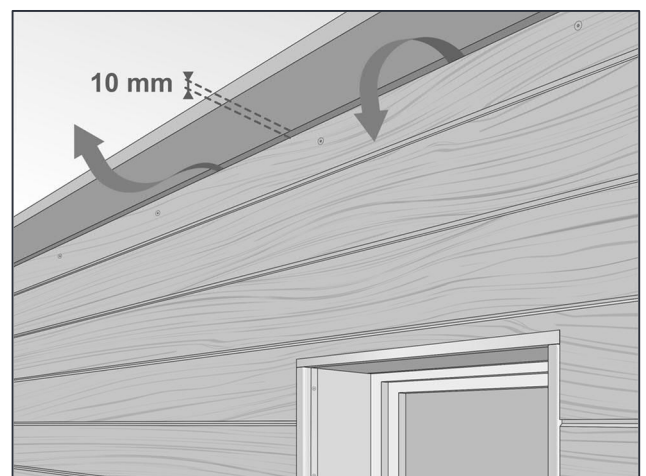


Predrilling required where Cedral metal screw falls within 50 mm from plank end



Ensure the screw is applied perpendicular and flush with panel face

The top row planks may require cutting or trimming in height to ensure allowance for a minimum 10 mm ventilation gap at the top of the façade. In multistorey buildings or where Cedral meets underside of a slab or floor level, a larger gap may be required depending on the required movement allowance of the slab or floor level, which needs to be confirmed by the project engineer.



Min. 10 mm gap is required at the top of the façade for ventilation.

Installation

Cedral Click Vertical installation

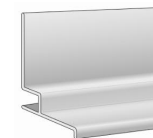
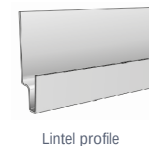
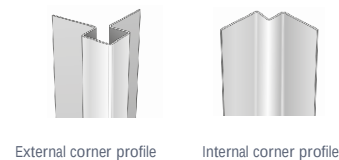
Cedral Click may be installed vertically to horizontal support frame. The installation of Cedral Click Vertical involves similar installation principles as those of Cedral Click Horizontal. The following is a brief outline of the installation procedure and recommendations, which must be read in conjunction with the installation requirements outlined for Cedral Click Horizontal.

Step 1 – Install perforated profiles or angle

To protect the cavity from entry of vermin, apply the perforated profiles where required as shown in Cedral Construction Details documents.

Step 2 – Install vertical profiles

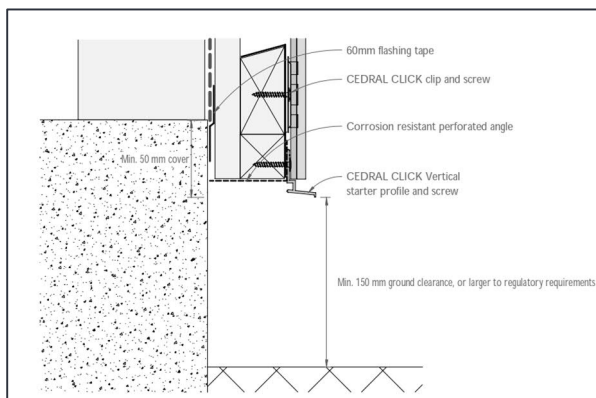
As with Cedral Click Horizontal, vertical profiles and flashings are installed before installing the horizontal profiles for easier and more accurate determination of the length of the required horizontal profiles. These profiles may include Cedral external and internal corner profiles, jamb profiles of windows/doors (or the like) and end (connection) profiles.



Step 3 – Install horizontal profiles

After the installation of all vertical profiles, horizontal profiles are installed. This includes Cedral lintel profiles where required.

Another Cedral horizontal profile that needs to be installed at the bottom of the façade, at horizontal joints, above openings and inter storey flashings and the like to support Cedral Click Vertical planks is Cedral Click starter (support) profile. This profile is different to the starter profile of Cedral Click Horizontal and is to support the weight of Cedral Click Vertical. Cedral Click Vertical starter profile is fixed with either Cedral Click clip screw to timber batten or Cedral rivets (4 mm stainless steel rivets) to metal frame, with adequate edge distance.



Example of the application of Cedral Click Vertical starter profile – Vertical section of typical base detail (for more information refer to Cedral Construction details documents)



All Cedral profiles and flashings may be cut using a hack saw or metal snips.

For ease of installation and to allow fitting the cladding planks in place all Cedral profiles should be installed with a flat or low profile head stainless steel screw. For fixing to timber batten, Cedral clip screws may be used for fixing the profile. Ensure the screw head sits flat on the profile surface.



For typical construction details and interfaces as well as better understanding of the common location and application of Cedral profiles refer to Cedral Construction Details documents.



Where metal support frame is used, depending on its section profile the standard Cedral Click Vertical starter profile may be too short and hence not suitable for the application, in which a corrosion resistant metal angle of 100x15 mm with 1.2 mm BMT may be used in lieu of the standard starter profile. Maximum length to be limited to 3 m.



Use Cedral Click clip screw or rivet for fixing of the starter profile to support frame. Ensure the screw or rivet sits flush with the profile surface.

Installation



For more and detailed information about typical construction details and interfaces refer to Cedral Construction Details documents.



For the application of the Cedral mushroom head screw to timber batten, no pre-drilling of plank is required. However, for fixing Cedral metal screw to metal support frame pre-drilling is required where the screw is to be within 50 mm from the end of the plank.

The screws must be inserted perpendicular to the panel surface using an electric drill with a high quality bit suitable for the type of screw head. Do not overtighten the screws.

Maximum panel fixings edge distance is 100 mm or as specified on Cedral Construction Details.

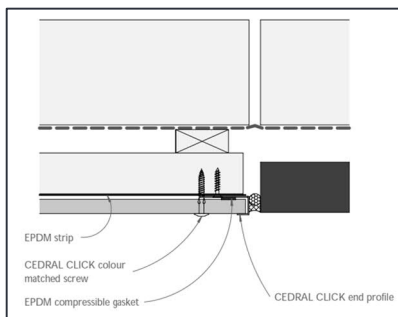
Ensure to allow for adequate ventilation gaps where required, e.g. at the bottom/top of the façade, interface with window/door head and window sill flashings and the like, as per Cedral Construction Details.

Step 4 – Install Cedral Click

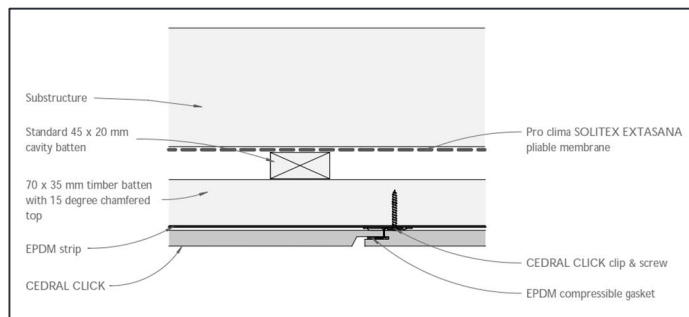
To install Cedral Click vertically, first rest the plank on the installed starter profile, and then fix it in a similar way to Cedral Click Horizontal.

Before placing the first plank in position, a continuous strip of the recommended EPDM gasket is required, for weathertightness, on the vertical profile over which the cladding is to be installed.

Position the first plank with the tongue facing where the next plank is to be installed to allow its installation using Cedral Click clip system. Now face fix the plank with Cedral screws along the clipless side with adequate spacing and edge distance (refer to Span Tables section of this document) before placing and fixing the clips to support frame, using Cedral Click clip screw/rivet.

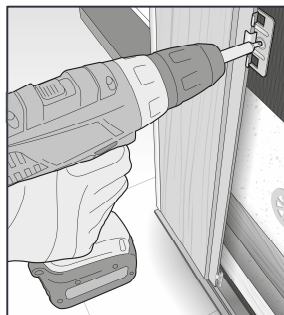
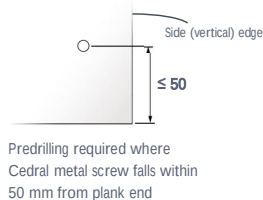


Example of first Cedral Click Vertical plank interface – Plan



Vertical joint detail of Cedral Click Vertical – Plan view

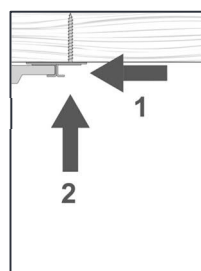
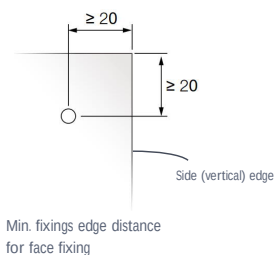
Before installing the next plank run a continuous strip of the recommended compressible EPDM gasket along the edge of the Cedral Click tongue for weathertightness, as shown in the plan view detail above. Once the strip is in place, position the next plank on the support profile and fit it into the installed clips. Place the next clips onto this new plank and fix into place. Continue until complete. The last plank like the first one needs to be face fixed using Cedral screws on the clipless side.



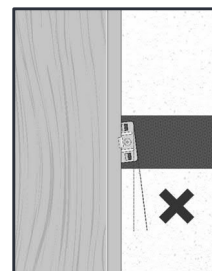
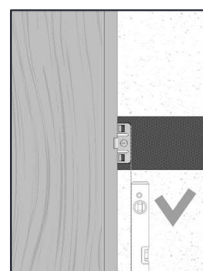
First Cedral Click plank is installed truly straight with the tongue side facing where the next plank will be located.



The first and last planks are face fixed using Cedral face fixings on the clipless side of the plank with adequate edge distance.



First place the clip over the plank; then screw/rivet into place.



Screw (or rivet in case of fixing to metal) the clip into place using the matching screw/rivet (supplied with the clips) to ensure that it remains pressed tightly to the strip and is level with it. Slightly incline the screw if necessary, so it pushes the clip down when fixed.

Span tables

General information

The information provided in this section (Span tables) is based on the information received from an independent consultant who has been engaged to provide their opinion, engineering design and report based on independently conducted laboratory testing, technical data sheets of Cedral materials and components, relevant standards, and/or their experience.

It is the responsibility of project consultants and engineers to ensure the provided information in this document is appropriate to the project and intended application. The overall performance of an installed Cedral façade or wall assembly is the responsibility of the project designer, architect, engineers and consultants, builder and/or certifier. The project wind category and maximum wind pressure applied to the cladding or façade shall be determined by the project engineer.

Cedral Click span tables

The following spans tables may be used for both Cedral Click Horizontal & Vertical.

Table 1 – Maximum fixings/batten spacing for Cedral Click Horizontal / Vertical
For buildings within the scope of NZS 3604

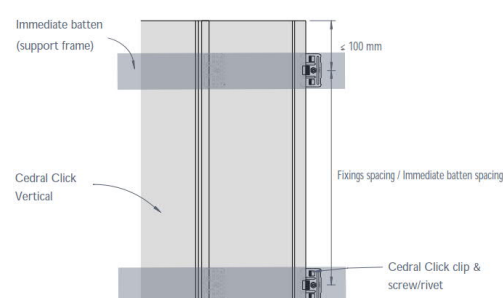
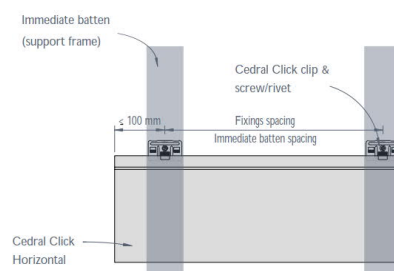
NZS 3604 wind category	Max. Cedral fixings spacing & Max. batten spacing (mm)	
	General zones	Corner zones
Low	600	600
Medium	600	600
High	600	600
Very high	600	600
Extra high	600	600

Table 2 – Maximum fixings spacing with respect to ultimate pressure applied to Cedral Click Horizontal / Vertical

Ultimate wind pressure in kPa (AS/NZS 1170.2)	Max. Cedral fixings spacing & Max. batten spacing (mm)
1	600
1.5	600
2	600
2.5	450
3	400
3.5	300
4	300

Table 3 – Maximum ultimate pressure applied to Cedral Click Horizontal / Vertical with respect to Cedral fixings/batten spacing

Max. Cedral fixings spacing & Max. batten spacing (mm)	Max. ultimate wind pressure in kPa (AS/NZS 1170.2)
600	2
550	2.20
500	2.42
450	2.69
400	3
350	3.46
300	4



Notes for Table 1, 2 & 3

- Wind loads have been determined for external pressures only; it is assumed that internal pressures are resisted by appropriately designed internal linings.
- Wind loads have been determined in accordance with AS/NZS 1170.2.
- General zone: Areas greater than 1200 mm from an external building corner. Corner zone: Areas less than 1200 mm from an external building corner.
- Maximum panel cantilever must not exceed 150 mm.
- Support frame, if timber, is to be 35x70 H3.1 with minimum SG6 grade timber batten (timber group J4), and, if metal frame, to be of minimum 1.1 mm BMT and G250.
- Framing deflection is limited to Span/250 with the serviceability wind load equal to 68% of the ULS wind load.
- The values apply to both multiple (plank fixed to three or more battens) and single span (plank fixed only to two battens) cladding.



The information in this document is comprehensive but not exhaustive, and the reader must satisfy themselves that the contents of this guide, including but not limited to all engineering information, are correct, current and suitable for the intended application, thereby accepting responsibility for their use.

It is the responsibility of the project designer, architect, engineers and consultants to ensure that the information provided in this document is appropriate for their project.

Span tables



The design of cladding support frame is the responsibility of the project façade or structural engineer.

The connection of the support frame to substructure should be designed by the project façade or structural engineer.

Support frame span tables general information

This section serves only as a general guide providing information in relation to the design of cladding support frame, and is provided based on an engineering report received from an independent consultant. It is the responsibility of the project designer or engineer to ensure the provided information in this section is correct and appropriate to their intended application. The information is intentionally limited to timber support frame, and does not extend to metal support frame design due to the different varieties of metal frame types and profiles that could be used for cladding framing; refer to 'Cladding support frame (metal)' part of 'Installation' section of this document for the minimum requirements (sizes) for metal support frame.

Cedral may be fixed to timber or metal support frame fixed to an appropriately designed substructure which could be a timber or metal stud frame (or the like), masonry, or concrete. Both support frame and substructure should be designed in accordance with the New Zealand Building Code and applicable standards including but not limited to the following:

- o NZS 3604 – Timber framed buildings
- o AS/NZS 4600 – Cold-formed steel structures
- o NZS 3404 – Steel structures

In this section, general guidance has been provided on the span of timber support frame (batten) fixed to timber / metal framed substructure. The fixings of the support frame to substructure should be determined by the project engineer.

Support frame span tables for Cedral Click Horizontal

Timber support frame (batten) fixed to *timber* framed substructure

Cedral Click may be fixed horizontally to vertical timber support frame fixed to an appropriately designed timber framed substructure.

The following provides information in relation to the maximum span of timber battens (maximum spacing between timber batten fixings connecting the batten to a timber stud frame, substructure) with respect to wind loading.

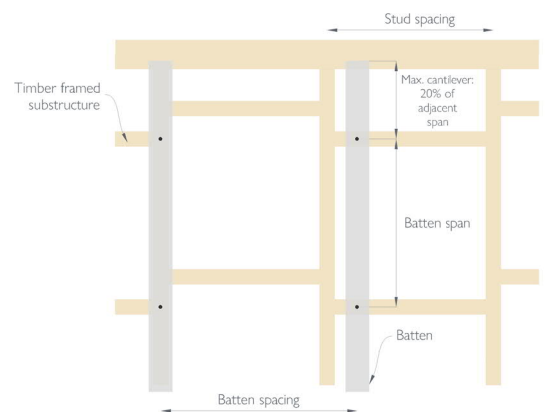


Table 4 – Timber batten span with respect to wind category – Cedral Click Horizontal
For buildings within the scope of NZS 3604

NZS 3604 wind category	General zones							Corner zones						
	Batten spacing (mm)							Batten spacing (mm)						
	600	550	500	450	400	350	300	600	550	500	450	400	350	300
	Max batten span (mm)							Max batten span (mm)						
Low	1350	1400	1450	1500	1550	1650	1700	1100	1150	1150	1200	1250	1300	1400
Medium	1250	1250	1300	1350	1400	1450	1550	1000	1000	1050	1100	1150	1200	1250
High	1100	1100	1150	1200	1250	1300	1400	850	900	950	950	1000	1050	1100
Very high	1000	1050	1050	1100	1150	1200	1250	750	800	850	900	950	950	1050
Extra high	950	950	1000	1050	1100	1150	1200	700	750	750	800	850	900	950

Span tables

Table 5 – Timber batten span with respect to wind loading – Cedral Click Horizontal

Ultimate wind pressure in kPa (AS/NZS 1170.2)	Batten spacing (mm)						
	600	550	500	450	400	350	300
	Max batten span (mm)						
1.0	1000	1050	1100	1100	1150	1200	1300
1.5	900	900	950	1000	1000	1050	1100
2.0	750	800	850	900	900	950	1000
2.5	650	700	750	800	850	900	950
3.0	600	650	650	700	750	800	900
3.5	550	600	600	650	700	750	800
4.0	450	500	550	600	650	700	750

Notes for Table 4 & 5

- The values are based on 70 x 35 mm SG6 timber batten (timber group J5).
- Refer to Cedral Click span tables to determine the Batten spacing.
- Wind loads have been determined in accordance with AS/NZS 1170.2.
- General zone: Areas greater than 1200 mm from an external building corner. Corner zone: Areas less than 1200 mm from an external building corner.
- Max cantilever of batten is 20% of span.
- Framing deflection is limited to Span/250 with the serviceability wind load equal to 68% of the ULS wind load.

Timber support frame (batten) fixed to *metal* framed substructure
Cedral Click may be fixed horizontally to vertical timber support frame fixed to an appropriately designed metal framed substructure.

The following provides information in relation to the maximum span of timber battens (maximum spacing between timber batten fixings connecting the batten to a steel stud frame, substructure) with respect to wind loading.

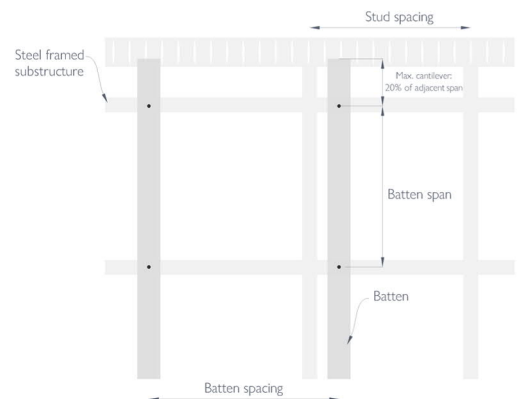


Table 6 – Timber batten span with respect to wind category – Cedral Click Horizontal
For buildings within the scope of NZS 3604

NZS 3604 wind category	General zones							Corner zones						
	Batten spacing (mm)							Batten spacing (mm)						
	600	550	500	450	400	350	300	600	550	500	450	400	350	300
Max batten span when fixed to 0.50BMT G550 steel stud frame (mm)														
Low	1350	1400	1450	1500	1550	1650	1700	1100	1150	1150	1200	1250	1300	1400
Medium	1250	1250	1300	1350	1400	1450	1550	1000	1000	1050	1100	1150	1200	1250
High	950	1050	1150	1200	1250	1300	1400	850	900	950	950	1000	1050	1100
Very high	750	800	900	1000	1150	1200	1250	700	750	850	900	950	950	1050
Extra high	600	650	750	800	950	1050	1200	550	600	700	750	850	900	950
Wind category	Max batten span when fixed to 0.75BMT G550 steel stud frame (mm)													
	600	550	500	450	400	350	300	600	550	500	450	400	350	300
Low	1350	1400	1450	1500	1550	1650	1700	1100	1150	1150	1200	1250	1300	1400
Medium	1250	1250	1300	1350	1400	1450	1550	1000	1000	1050	1100	1150	1200	1250
High	1100	1100	1150	1200	1250	1300	1400	850	900	950	950	1000	1050	1100
Very high	1000	1050	1050	1100	1150	1200	1250	750	800	850	900	950	950	1050
Extra high	950	950	1000	1050	1100	1150	1200	700	750	750	800	850	900	950

Span tables

Table 6 – Timber batten span with respect to wind category – Cedral Click Horizontal (Continued)
For buildings within the scope of NZS 3604

NZS 3604 wind category	General zones							Corner zones						
	Batten spacing (mm)							Batten spacing (mm)						
	600	550	500	450	400	350	300	600	550	500	450	400	350	300
	Max batten span when fixed to 1.20BMT G2 steel stud frame (mm)													
Low	1350	1400	1450	1500	1550	1650	1700	1100	1150	1150	1200	1250	1300	1400
Medium	1250	1250	1300	1350	1400	1450	1550	1000	1000	1050	1100	1150	1200	1250
High	1100	1100	1150	1200	1250	1300	1400	850	900	950	950	1000	1050	1100
Very high	1000	1050	1050	1100	1150	1200	1250	750	800	850	900	950	950	1050
Extra high	950	950	1000	1050	1100	1150	1200	700	750	750	800	850	900	950

Table 7 – Timber batten span with respect to wind loading – Cedral Click Horizontal

Ultimate wind pressure in kPa (AS/NZS 1170.2)	Batten spacing (mm)						
	600	550	500	450	400	350	300
	Max batten span when fixed to 0.50BMT G550 steel stud frame (mm)						
1.0	750	800	900	1000	1100	1200	1300
1.5	500	500	600	650	750	850	1000
2.0	350	400	450	500	550	600	750
2.5	300	300	350	400	450	500	600
3.0	250	250	300	300	350	400	500
3.5	200	200	250	250	300	350	400
4.0	150	200	200	250	250	300	350
Ultimate wind pressure	Max batten span when fixed to 0.75BMT G550 steel stud frame (mm)						
1.0	1000	1050	1100	1100	1150	1200	1300
1.5	750	850	900	1000	1000	1050	1100
2.0	550	600	700	750	850	950	1000
2.5	450	500	550	600	700	800	900
3.0	350	400	450	500	550	650	750
3.5	300	350	400	450	500	550	650
4.0	250	300	350	350	400	500	550
Ultimate wind pressure	Max batten span when fixed to 1.20BMT G2 steel stud frame (mm)						
1.0	1000	1050	1100	1100	1150	1200	1300
1.5	750	850	900	1000	1000	1050	1100
2.0	550	600	700	750	850	950	1000
2.5	450	500	550	600	700	800	900
3.0	350	400	450	500	550	650	750
3.5	300	350	400	450	500	550	650
4.0	250	300	350	350	400	500	550

Notes for Table 6 & 7

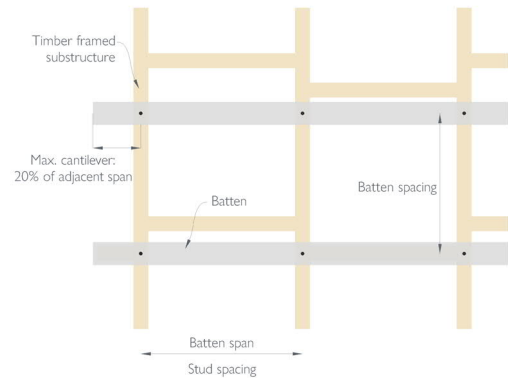
- The values are based on 70 x 35 mm SG6 timber batten (timber group J5).
- Refer to Cedral Click span tables to determine the Batten spacing.
- Wind loads have been determined in accordance with AS/NZS 1170.2.
- General zone: Areas greater than 1200 mm from an external building corner. Corner zone: Areas less than 1200 mm from an external building corner.
- Max cantilever of batten is 20% of span.
- Framing deflection is limited to Span/250 with the serviceability wind load equal to 68% of the ULS wind load.
- For fixing of vertical battens to noggins (dowels), the noggins and their connections to studs must be structural otherwise a layer of horizontal support frame will be required to accommodate the vertical battens to which Cedral is fixed.

Span tables

Support frame span tables for Cedral Click Vertical

Timber support frame (batten) fixed to *timber* framed substructure

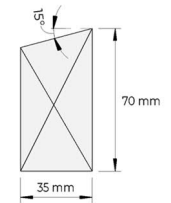
Cedral Click may be fixed vertically to horizontal timber battens with minimum depth of 35 mm and width of 70 mm (35 x 70 mm) chamfered at the top with 15-degree slope. These battens are then fixed through a suitable vertical (min.) 45x20 mm cavity battens, placed between weather barrier and the horizontal battens, to an appropriately designed timber stud frame.



The following provides information in relation to the maximum span of the chamfered horizontal timber battens (maximum spacing between timber batten fixings connecting the batten to a timber stud frame, substructure) with respect to wind loading.

Table 8 – Timber batten span with respect to wind category – Cedral Click Vertical
For buildings within the scope of NZS 3604

NZS 3604 wind category	General zones							Corner zones						
	Batten spacing (mm)							Batten spacing (mm)						
	600	550	500	450	400	350	300	600	550	500	450	400	350	300
	Max batten span (mm)							Max batten span (mm)						
Low	1200	1200	1200	1200	1200	1200	1200	900	900	900	1200	1200	1200	1200
Medium	1200	1200	1200	1200	1200	1200	1200	900	900	900	900	900	1200	1200
High	900	900	900	1200	1200	1200	1200	600	900	900	900	900	900	900
Very high	900	900	900	900	900	1200	1200	600	600	600	600	900	900	900
Extra high	900	900	900	900	900	900	1200	600	600	600	600	600	900	900



Chamfered batten section

Table 9 – Timber batten span with respect to wind loading – Cedral Click Vertical

Ultimate wind pressure in kPa (AS/NZS 1170.2)	Batten spacing (mm)						
	600	550	500	450	400	350	300
	Max batten span (mm)						
1.0	900	900	900	900	900	1200	1200
1.5	600	900	900	900	900	900	900
2.0	600	600	600	600	900	900	900
2.5	600	600	600	600	600	600	900
3.0	600	600	600	600	600	600	600
3.5	450	600	600	600	600	600	600
4.0	450	450	450	600	600	600	600

Notes for Table 8 & 9

- The values are based on 70 x 35 mm SG6 timber batten (timber group 15) with 15-degree chamfered top as per the above image.
- Refer to Cedral Click span tables to determine the Batten spacing.
- Wind loads have been determined in accordance with AS/NZS 1170.2.
- General zone: Areas greater than 1200 mm from an external building corner. Corner zone: Areas less than 1200 mm from an external building corner.
- Max cantilever of batten is 20% of span.
- Framing deflection is limited to $\text{Span}/250$ with the serviceability wind load equal to 68% of the ULS wind load.

Span tables

Timber support frame (batten) fixed to *metal* framed substructure

Cedral Click may be fixed vertically to horizontal timber battens with minimum depth of 35 mm and width of 70 mm (35 x 70 mm) chamfered at the top with 15-degree slope. These battens are then fixed through a suitable vertical (min.) 45x20 mm cavity battens, placed between weather barrier and the horizontal battens, to an appropriately designed metal stud frame.

The following provides information in relation to the maximum span of the chamfered horizontal timber battens (maximum spacing between timber batten fixings connecting the batten to a timber stud frame, substructure) with respect to wind loading.

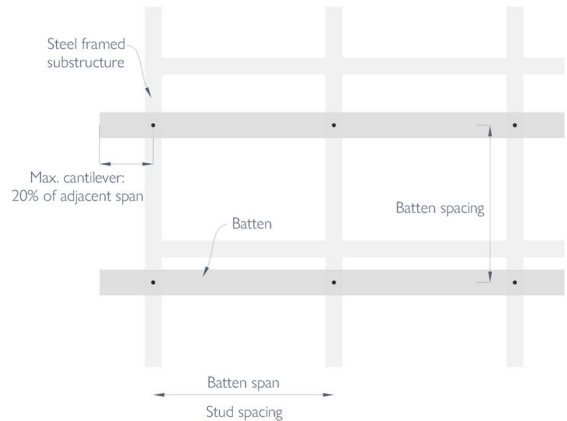


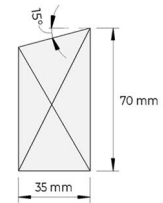
Table 10 – Timber batten span with respect to wind category – Cedral Click Vertical
For buildings within the scope of NZS 3604

NZS 3604 wind category	General zones							Corner zones						
	Batten spacing (mm)							Batten spacing (mm)						
	600	550	500	450	400	350	300	600	550	500	450	400	350	300
Max batten span when fixed to 0.50BMT G550 steel stud frame (mm)														
Low	1200	1200	1200	1200	1200	1200	1200	900	900	900	1200	1200	1200	1200
Medium	1200	1200	1200	1200	1200	1200	1200	900	900	900	900	900	1200	1200
High	900	900	900	1200	1200	1200	1200	600	900	900	900	900	900	900
Very high	600	600	900	900	900	1200	1200	600	600	600	600	900	900	900
Extra high	600	600	600	600	900	900	1200	450	600	600	600	600	900	900
Max batten span when fixed to 0.75BMT G550 steel stud frame (mm)														
Low	1200	1200	1200	1200	1200	1200	1200	900	900	900	1200	1200	1200	1200
Medium	1200	1200	1200	1200	1200	1200	1200	900	900	900	900	900	1200	1200
High	900	900	900	1200	1200	1200	1200	600	900	900	900	900	900	900
Very high	900	900	900	900	900	1200	1200	600	600	600	600	900	900	900
Extra high	900	900	900	900	900	900	1200	600	600	600	600	600	900	900
Max batten span when fixed to 1.20BMT G2 steel stud frame (mm)														
Low	1200	1200	1200	1200	1200	1200	1200	900	900	900	1200	1200	1200	1200
Medium	1200	1200	1200	1200	1200	1200	1200	900	900	900	900	900	1200	1200
High	900	900	900	1200	1200	1200	1200	600	900	900	900	900	900	900
Very high	900	900	900	900	900	1200	1200	600	600	600	600	900	900	900
Extra high	900	900	900	900	900	900	1200	600	600	600	600	600	900	900

Span tables

Table 11 – Timber batten span with respect to wind loading – Cedral Click Vertical

Ultimate wind pressure in kPa (AS/NZS 1170.2)	Batten spacing (mm)						
	600	550	500	450	400	350	300
	Max batten span when fixed to 0.50BMT G550 steel stud frame (mm)						
1.0	600	600	900	900	900	1200	1200
1.5	450	450	600	600	600	600	900
2.0	300	300	450	450	450	600	600
2.5	300	300	300	300	450	450	600
3.0	-	-	300	300	300	300	450
3.5	-	-	-	-	300	300	300
4.0	-	-	-	-	-	300	300
Ultimate wind pressure	Max batten span when fixed to 0.75BMT G550 steel stud frame (mm)						
1.0	900	900	900	900	900	1200	1200
1.5	600	600	900	900	900	900	900
2.0	450	600	600	600	600	900	900
2.5	450	450	450	600	600	600	900
3.0	300	300	450	450	450	600	600
3.5	300	300	300	450	450	450	600
4.0	-	300	300	300	300	450	450
Ultimate wind pressure	Max batten span when fixed to 1.20BMT G2 steel stud frame (mm)						
1.0	900	900	900	900	900	1200	1200
1.5	600	600	900	900	900	900	900
2.0	450	600	600	600	600	900	900
2.5	450	450	450	600	600	600	900
3.0	300	300	450	450	450	600	600
3.5	300	300	300	450	450	450	600
4.0	-	300	300	300	300	450	450



Notes for Table 10 & 11

- The values are based on 70 x 35 mm SG6 timber batten (timber group J5) with 15-degree chamfered top as per the above image.
- Refer to Cedral Click span tables to determine the Batten spacing.
- Wind loads have been determined in accordance with AS/NZS 1170.2.
- General zone: Areas greater than 1200 mm from an external building corner. Corner zone: Areas less than 1200 mm from an external building corner.
- Max cantilever of batten is 20% of span.
- Framing deflection is limited to $\text{Span}/250$ with the serviceability wind load equal to 68% of the ULS wind load.

Design considerations

Application

Cedral Click may be used internally or externally on all types of buildings provided that the façade is designed according to applicable loads including project wind loading, project location, general guidelines provided in this document, applicable standards and regulations, and New Zealand Building Code. For applications beyond 20 metres in height refer to Etex Exteriors ANZ technical department for further advice.

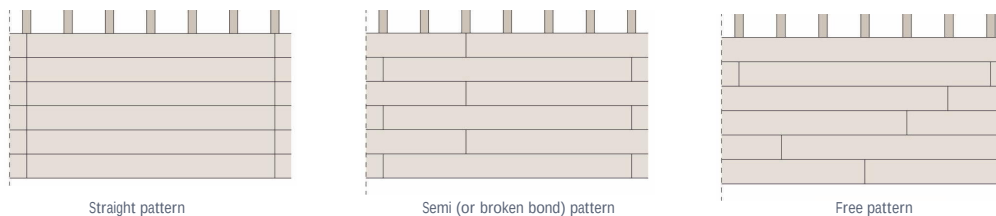
limitations

Cedral Click is *not* suitable for the following applications:

- o Non-vertical external applications e.g. window sill, parapet capping or the like where the plank face is not vertical
- o Non-ventilated external applications
- o Internal applications exposed to direct moisture (wet areas)
- o Contact with standing snow or ice
- o Exposure to temperatures exceeding 80°C

Façade layout

Depending on the project aesthetics requirements, Cedral Click Horizontal and Vertical planks may be installed with straight, semi (or broken bond), or free pattern.

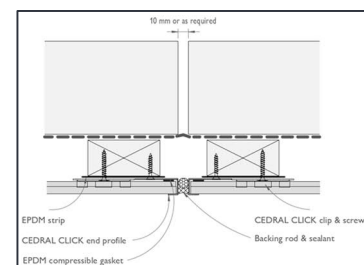


Movement & control joints

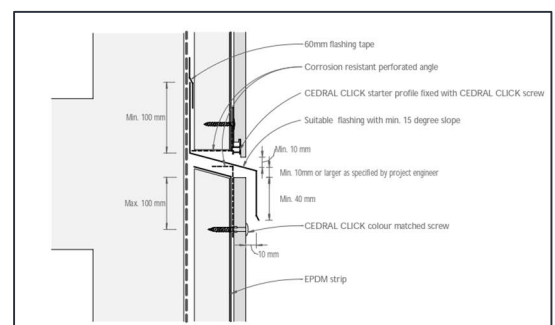
Cladding and its support framing must not bridge over a building movement or control joint while fixed to both side of the joint. Adequate separation in both cladding and its support framing is required at any movement or control joint or the like.

Usually at the slab levels where differential movement of the slab and/or frame shrinkage may be a concern a horizontal control joint is considered and an inter storey flashing is incorporated as required.

The inter storey flashing also assists with effective moisture management of the façade by compartmentalisation of the cavity by floor level. The following image shows an example of horizontal control joint or inter storey detail. For full construction details in relation to both general horizontal and vertical control joints interfaces refer to Cedral Construction Details.



Example of vertical control joint detail
Cedral Click Horizontal



Example of horizontal control joint (inter storey) detail
Cedral Click Horizontal

Design considerations

Weatherproofing

System compliance

Cedral façade systems have been assessed to E2/VM1 for the purpose of compliance with Clause E2 of the NZBC for the following scope:

- o Serviceability wind pressure: Up to $\pm 1515\text{Pa}$
- o Ultimate wind pressure: Up to $\pm 2500\text{Pa}$
- o Building height: Up to 10m

For higher wind pressures and building heights a project specific assessment or design by project (façade) engineer is required to ensure suitability and compliance.

Weather (resistive) barrier

The type of weather barrier plays an important role in the effective moisture and condensation management of an external wall. It is the responsibility of the project (façade) engineer or designer to specify an appropriate type of weather barrier. For residential projects located in NZS 3604:2011 Wind Zones up to Very High, pliable membrane (wall wrap or underlay) is generally used. Projects located in Extra High Wind Zone or with higher wind pressures generally require a rigid air barrier.

Cedral has been tested and assessed with pro clima SOLITEX EXTASANA® pliable membrane for the purpose of the compliance with Clause E2 of the NZBC. Where a rigid air barrier is required the ADHERO version of pro clima SOLITEX EXTASANA® may be used with 6 mm Kalsi (RigidBacker) fibre cement sheeting. Weather barrier shall be installed in accordance with their respective installation guidelines and supplier's or manufacturer's recommendations, applicable standards and regulations.

Both standard and ADHERO versions of pro clima SOLITEX EXTASANA® have a high level of vapour permeance (classified as Class 4 as per AS/NZS 4200.1) and are compliant with AS/NZS4200.1, and NZBC E2/AS1 (Table 23, NZS 2295) requirements for wall underlay. The low vapour resistance (high vapour permeance) assists with condensation management where a breather type (vapour permeable) membrane or wall wrap is required. It is recommended that a condensation risk analysis is conducted by project engineer or designer for the appropriate selection of the required weather barrier.

The drained and fully ventilated cavity of Cedral façade system does assist further with managing condensation as well as keeping the cavity components and weather barrier dry.

In ensuring an effective moisture management of an external wall, the appropriate selection and application of the required flashing / sill tapes (and the like), sealant and flashings play an important part. Pro clima offers a range of tape, weatherproofing and sealing solutions some of which have been incorporated and recommended as part of Cedral systems. Consult with your project (façade) engineer for the selection of the required flashings and sealant suitable for your project and intended application. Generally, silicone sealant tends to perform better than other standard sealant types in terms of movement flexibility and UV stability.

Thermal performance and energy efficiency

It is the responsibility of the project designer or engineer to ensure the building envelop including external walls are designed to meet the thermal and energy efficiency requirements of the project, the NZBC (Clause H1) and applicable regulations. The thermal insulation values of external wall may be determined as per the NZBC and the methods of NZS 4218 (Thermal insulation - Housing and small buildings), and the overall thermal resistance (R-values) may be verified by using NZS 4214 (Methods of determining the total thermal resistance of parts of buildings).

Reducing thermal bridging is also important in managing energy efficiency and condensation. Where substructure and support frame are metal, application of a thermal break with a minimum R-value of R0.25 may be required between



For information about technical properties and correct application of pro clima products refer to pro clima technical documents, and SOLITEX EXTASANA® (ADHERO) Application and Fixing Guides.

For general construction details and interfaces refer to Cedral Construction Details documents.



Design considerations

the substructure and support frame as per the requirements of the NZBC. Consult with your project engineer to determine the need for suitable thermal break to ensure compliance with the NZBC.

To benefit from all the advantages of a ventilated façade and to significantly reduce or even eliminate thermal bridging, appropriate external insulation may also be used. Refer to Etex Exteriors ANZ technical department for further information on this type of application.

Fire safety

Cedral façade materials are classified as Type 'A' cladding materials and fully meet the fire properties requirements of external wall cladding materials as outlined in the Verification Method C/VM2 of the NZBC, with Peak Heat Release Rate (kW/m²) of less than (<) 100 and Total Heat Released (MJ/m²) of less than (<) 25 as determined in accordance with ISO 5660.1 at an irradiance of 50 kW/ m² for a duration of 15 minutes.

Cedral façade materials are classified as a 'Group 1-S' fire resistant material in accordance with the Verification Method C/VM2 (Appendix 'A') and ISO5660, and as such are safe and suitable for internal lining and ceiling applications.

In multistorey buildings where fire cavity barriers may be required within the façade cavity, it must be ensured that it does not block drainage and ventilation paths within the cavity. A minimum of 20 mm gap is required between the rear of the cladding and front face of the fire cavity barriers. To achieve this a fire cavity barrier suitable for ventilated façade, which are usually intumescent type, may be used. Consult with your project designer or (fire) engineer to determine the need for and the type of any fire cavity barriers appropriate to your project and intended application.

Corrosion zones

Cedral Click planks may be used in all New Zealand corrosion categories provided that all system components, including support frame, flashings and fixings, are of adequate corrosion resistance appropriate for the project location. Based on an independent assessment, Cedral Click and its proprietary flashings, fixings and clips may be used in all New Zealand corrosion zones of B, C, D, and E. It is the responsibility of the project designer or engineer to ensure the project is designed in accordance with NZS 3604, AS/NZS 2728 and NZBC E2/AS1, and that Cedral Click system is appropriate for the intended application. Ensure all components of the façade including capping and flashings are designed according to project wind and corrosion category.

External fixtures

Generally, no additional structural loads should be transferred to Cedral planks. Small surface mounted features like small cameras and lights may be fixed to Cedral if they are fixed *only to one* plank and *not* bridged and fixed to two or more planks. Larger surface mounted features, external fixtures, gutters, and down pipes must be fixed through an oversized hole in Cedral to structure or a dedicated support frame. The hole in Cedral should be oversized by at least 5-10 mm; the hole must be fully sealed with appropriate sealant. Services, e.g. pipes, and any additional support frame applied in the cavity for the support and fixing of any external fixtures must *not* block drainage and ventilation paths in the cavity.

Maintenance & Warranty

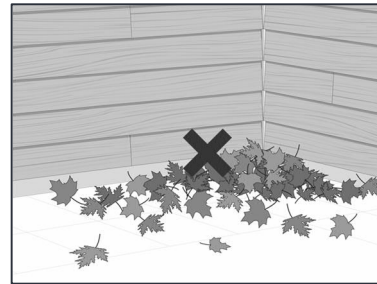
Maintenance

Cedral façade is low maintenance; however, it is recommended to regularly check the facade for any possible soiling and clean as required. Regular periodic inspections and maintenance are recommended to ensure long term performance of the façade and to prevent costly repairs and rectifications in time.

All ventilation and drainage gaps must always be kept unobstructed. All flashings and seals should be regularly inspected, and any damage should be immediately repaired.

Where the façade is protected by a soffit or the like, and hence not sufficiently exposed to rain, a more regular inspection and wash down may be required to prevent any salt and dirt build up. Coastal projects may also require more regular inspections and wash down.

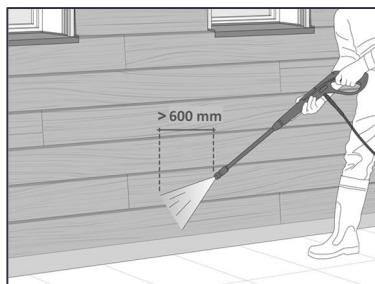
Where cleaning of the façade is required, it should be conducted in accordance with Cedral Cleaning and Maintenance Document and the manufacturer's recommendations of the applied cleaning product or system. Any cleaning product used must be ammonia free. Solvent based cleaners such as Acetone, white spirit, etc. attack the paint surface and are therefore not suitable.



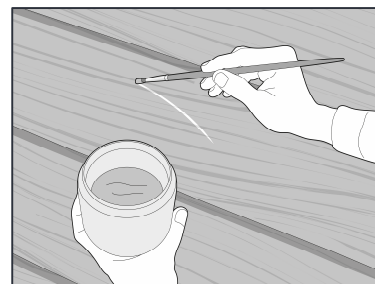
Make sure that ventilation stays open always e.g. leaves, snow, vegetations and/or soil accumulations must be removed.



General cleaning may be done using water, a mild detergent, and a sponge.

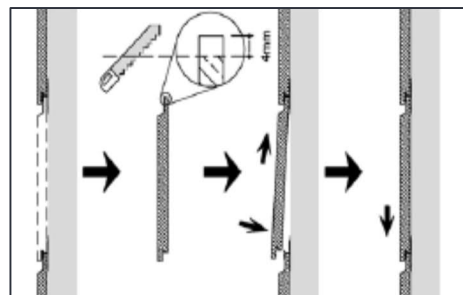


Any pressure washing must be done by an experienced person. A pressure rating of 20-30 bar is generally advised. The nozzle must always remain at least 600 mm away from the facade. Water is to be sprayed flat and wide; rotating, dirt-cutting sprays are not suitable.



Scratches and chips may be painted with Cedral touch up paint. Gently tap and smooth out the paint for the best results.

For replacement of any damaged panels, carefully remove the damaged plank. Cut 4mm off at the top of new plank, and then push it up, in and down into position. Surface fix the plank with Cedral face fixing screws to all supporting battens. At least one row of fixings applied at mid height of the plank is required. Note that a slight colour difference may be expected between new and existing planks.



Replacement of a damaged plank

Warranty

Cedral product warranty is 15 years in New Zealand. Refer to Cedral Product Warranty document for further information.



For further information about cleaning and maintenance refer to Cedral General Cleaning and Maintenance document.

For further warranty information and conditions refer to Cedral Product Warranty document.



Notes



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