



FAIRVIEW™

DEFINING ARCHITECTURE SINCE 1989



clayton™

TERRACOTTA FAÇADE SYSTEM / MANUFACTURED BY FAIRVIEW

TECHNICAL MANUAL

## CONTENTS

<b>1. About Clayton</b>	3
1.1 Key Features	3
1.2 Profile Sizing	4
1.3 Finish	5
1.4 Technical & Design Benefits	6
<b>2. General Technical Description</b>	7
2.1 Technical Data	7
2.2 Substructure	8
<b>3. Accessories</b>	9
<b>4. Installation</b>	10
4.1 Horizontal & Vertical Installation Options	10
4.2 Clayton Installation Components	11
4.3 Wall Bracket & T-Profile Installation Method	13
4.4 Top Hat Installation Method	17
4.5 Stud Frame Installation Method	21
4.6 Clayton Tile Installation Option	24
<b>5. Connection Details</b>	25
<b>6. Clayton Terracotta Baguettes</b>	29
6.1 Baguette System	30
6.2 Baguette Shapes	31
6.3 Baguette System Installation Instructions	32
6.4 Baguette Installation Accessories	33

## 1. ABOUT CLAYTON™

Manufactured from clay, sculptured into shape and then fired at high temperatures, Clayton comes in a range of colours and textures that offer warmth and a tactile sensation that is not achievable with other building products.

The mass and density of the terracotta tiles combine to create higher thermal insulation, improved noise reduction, as well as UV and weather resistance that are far superior than other façade products. Clayton is deemed non-combustible under C2D10(5)(G) NCC 2022 and is suitable for type A, B and C constructions, including public buildings and high traffic areas such as schools.

Clayton is a truly low maintenance building product that is aesthetically pleasing, eco-friendly and a sustainable alternative to achieving beautiful biophilic designs.

### 1.1 KEY FEATURES



#### COLOURS

Incredibly versatile in colour, Clayton blends beautifully with palettes featuring both warm and cool shades. By blending different types of clay materials and controlling the firing temperature of the kiln, it is possible to produce a variety of natural fired colours. Pigments, oxides and glazes can be used in the clay to extend the range of colour options available to achieve any desired colour, tone or finish. A unique feature of terracotta is the result of the firing process during manufacturing which essentially locks the colour into the panel, ensuring your design will last for the life of the building.



#### TEXTURES & FINISHES

Available in different textures, this allows designers to play and experiment with the shadow effects on the structure. Clayton terracotta façades can be processed with a wide variety of surface texture treatments, including natural, sandblasted, wire struck, corrugated, grooved and linear. This feature of Clayton offers limitless design options for architects.



#### SHAPES & PROFILES

Terracotta cladding is no longer confined to a flat shape. Advances in production technology now means terracotta façades can take almost any shape, size and finish. The cladding can also be installed both horizontally or vertically, maximising the design flexibility for a project. Available as a façade or sunscreen system, Clayton offers unparalleled beauty, creativity and aesthetics to a building.



#### DURABLE & LONG LASTING

Terracotta as a natural material is robust and resistant to damage, helping to create a façade that will retain its appearance and have minimal impact on the environment due to reduced wastage and replacement rates. Its life expectancy far exceeds that of other cladding materials.



#### ENERGY SAVINGS & THERMAL BENEFITS

Clayton terracotta façades are able to withstand harsh weather conditions and protect the building to improve energy efficiency. Clayton is available as part of a rainscreen system, with a ventilated cavity to help keep a building's airflow and temperature regulated. Due to their higher thermal mass, materials such as terracotta reduce thermal transfer of heat to the rest of the building, and assist in maintaining the desired internal building temperatures.



#### COST EFFECTIVE & EASY INSTALLATION

Clayton terracotta façades come in easy-install systems for convenience, efficiency and the ability to install across large-scale façades with reduced labour, time and costs. The terracotta rainscreen cladding system does not use grout or sealants, therefore, reducing the need to maintain the joints. The surface of the Clayton terracotta façade is anti-static and therefore dust resistant. If the surface is dusty, it is easily washed off by rain. This self-cleaning function can reduce the cleaning and maintenance costs of Clayton, especially for high-rise buildings.



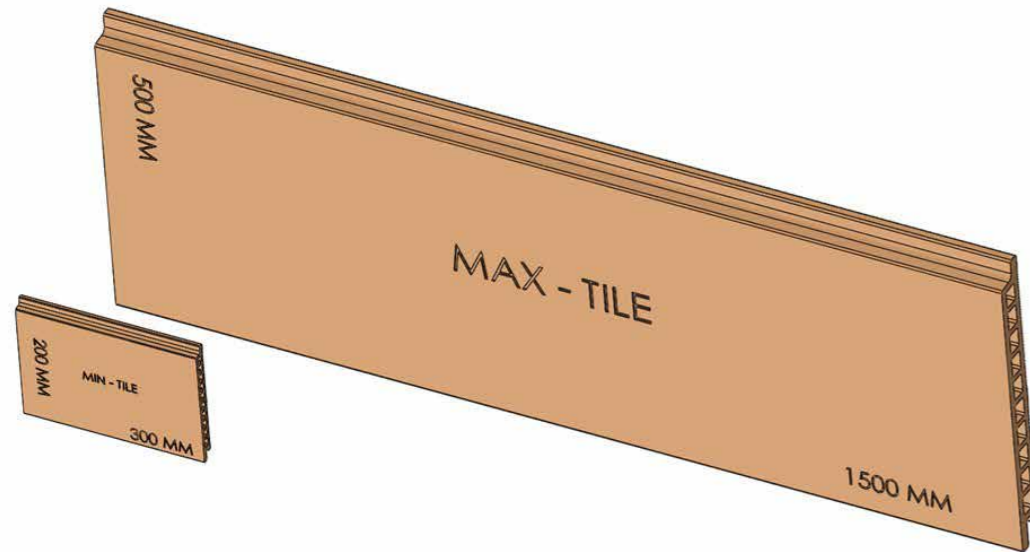
#### SAFE, ECO-FRIENDLY & SUSTAINABLE

Terracotta is an environmentally friendly material made from 100% clay that can be easily recycled, repurposed into other uses or broken down quickly and put back into the Earth, reducing the amount of waste that ends up in landfill. Made from the earth's natural resources with minimal processing, natural cladding materials reduce energy consumption in manufacturing.

## 1.2 PROFILE SIZING

In conjunction with a versatile finish range, Clayton terracotta façades are offered in a number of profile sizes.

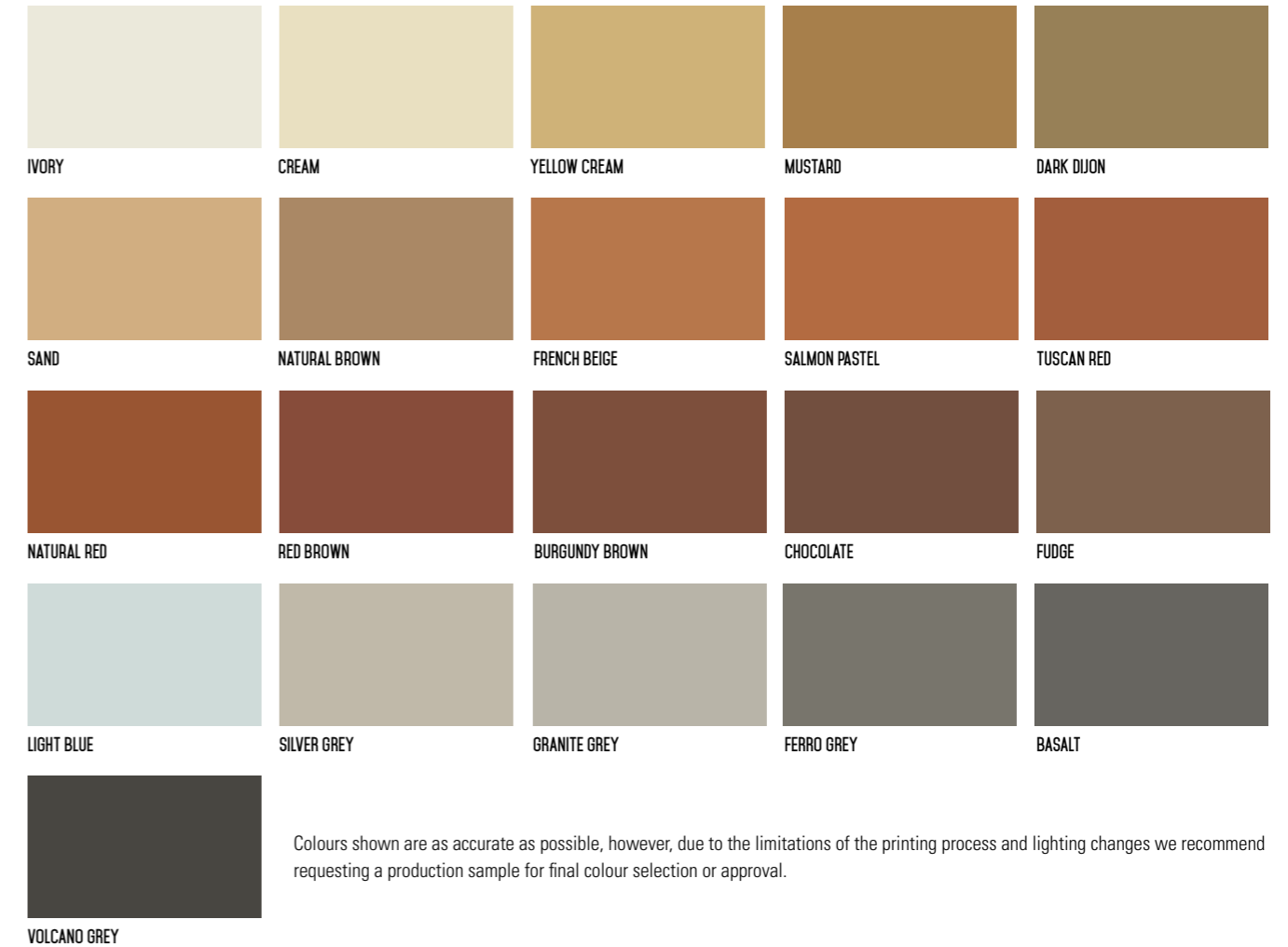
PROFILE SIZING		
Thickness	Length range (mm)	Standard width choices (mm)
18mm	300-1500	206, 306, 356, 406, 456, 506
20mm	300-1500	206, 306, 406, 456, 506
30mm	300-1500	210, 310, 360, 410, 460, 510



\*Custom profiles and sizes are available. Please contact a Fairview representative for more information.

## 1.3 FINISH

### STANDARD COLOURS



### SPECIALISED FINISHES



## 1.4 TECHNICAL BENEFITS OF CLAYTON TERRACOTTA FAÇADE

- Sustainability: lifetime of 50 years
- Free choice of insulation options
- Improved noise deduction
- Frost-proof
- Deemed non-combustible as per NCC 2022 C2D10 (5)(G)
- Great durability against impact
- Virtually maintenance-free
- Colour never fades

## DESIGN BENEFITS OF CLAYTON TERRACOTTA FAÇADE

- Choose from a wide range of profiles (refer to the Clayton Product Information brochure for the full range). Custom profiles can also be achieved.
- Extensive colour range available in both glazed and non-glazed finishes. Custom colours and colour matching can be achieved.

## BENEFITS OF A VENTILATED FAÇADE

### THERMAL

Significant reductions in HVAC reliance through:

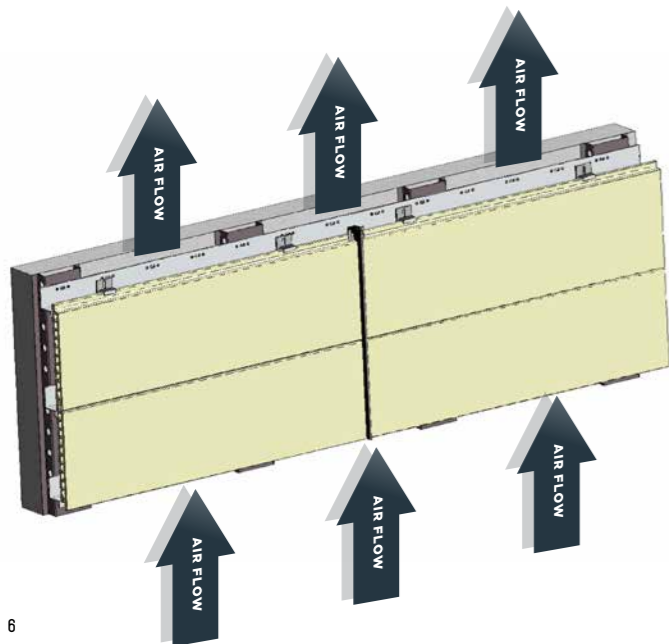
- A reduction in the amount of heat the building absorbs in hot weather conditions from the partial reflection of solar radiation by the outside façade, and the naturally ventilated air cavity.
- In cold weather conditions ventilated walls retain heat, resulting in a lower reliance on heating. HVAC electricity consumption typically accounts for around 40% of total building consumption.

### ACOUSTIC

Ventilated façade systems, coupled with the higher thermal mass of Clayton terracotta tiles, results in lower noise absorption. With road traffic noise being the primary source of external noise affecting buildings, a reduction in noise transfer into the building can greatly improve occupant comfort.

### MOISTURE MANAGEMENT

Ventilated façades don't suffer from mould, fungi and rot, making them extremely durable and virtually maintenance free. The natural bottom to- top airflow through the cavity assists in eliminating moisture accumulation on the façades, helping to prolong the structural integrity and ultimately the lifespan of a building.



## 2. GENERAL TECHNICAL DESCRIPTION

### MATERIALS/CONCEPTS

Clayton tiles are extruded ceramic facade products. Once extruded, the tiles are fired in a kiln at 1200 degrees centigrade. This process locks the shape and colour into the tile for the life of the building.

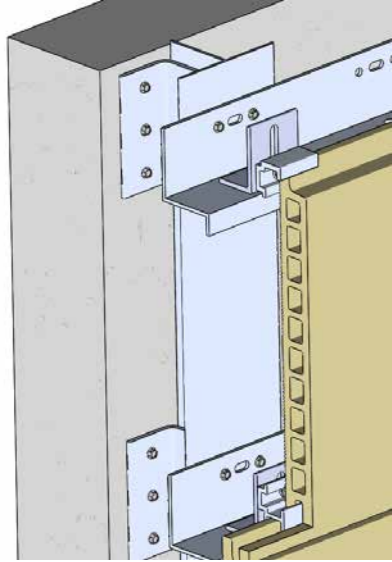
Clayton ceramic tiles are deemed non-combustible under section C2D10 (5)(G) of the National Construction Code.

### 2.1 TECHNICAL DATA

TECHNICAL DATA	30MM TILE
Bibulous Rate	3.8%
Gravity Density	22.5kN/M3
Frost Resistance	No cracks or peeling after 100 freeze-thaw cycles
Rupture Modulus	54MPa
Elastic Modulus	40.7GPa
Fire Performance	A1
Noise Reduction	30dB
Linear Coefficient of Thermal Expansion	5.97 X 10 C

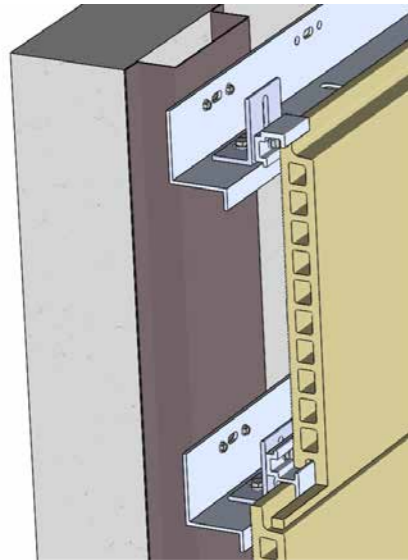
## 2.2 SUBSTRUCTURE

The substructure consists of aluminium profiles in the grade 6063 T6. Clayton is offered with three installation methods to greatly improve flexibility in design and installation efficiencies. These options include:



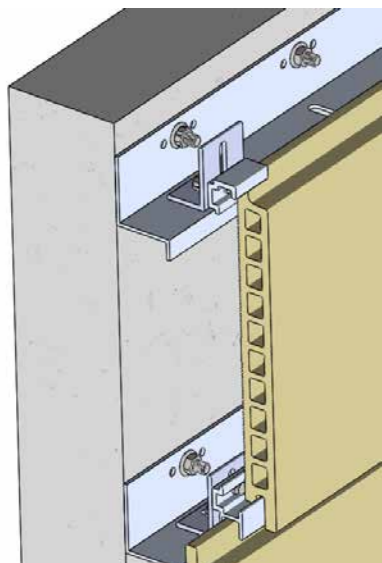
### WALL BRACKET & T-PROFILE

The substructure consists of vertical T-profiles, anchored to the building with wall brackets. Clayton tiles are fixed by aluminium clips to the vertical profiles. This fixing method provides the maximum cavity depth allowing for insulation to be placed within the façade cavity.



### TOP HAT

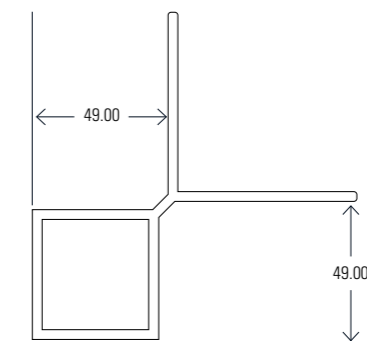
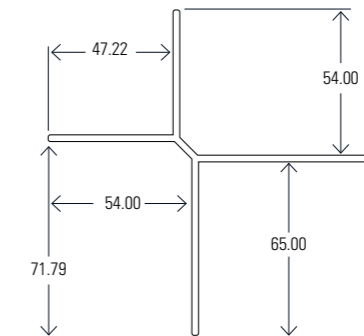
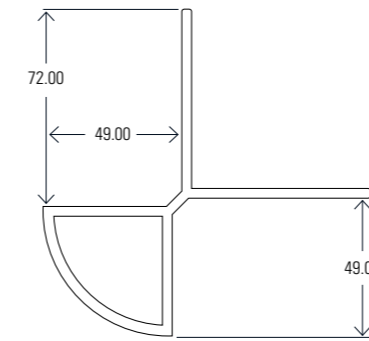
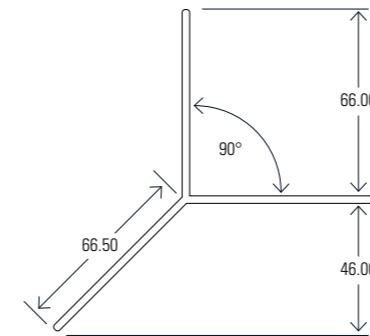
The substructure consists of vertically mounted top hats installed at predetermined distances, depending on the loading requirements for the building. The vertical top hats permit the tile carrier to be fixed to the substructure allowing the terracotta tiles to be fixed onto the façade.



### STUD WALL

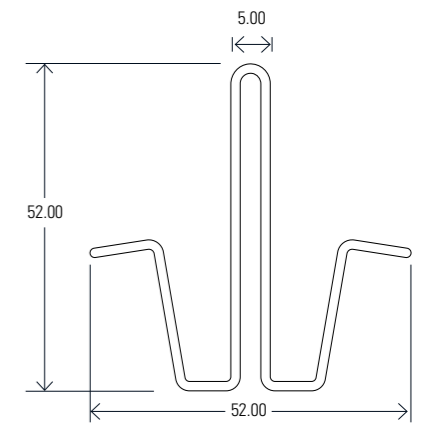
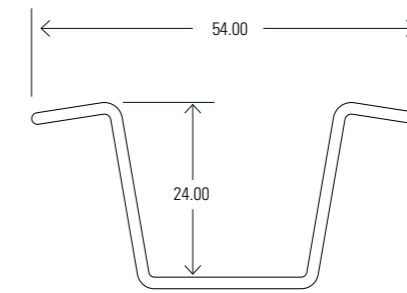
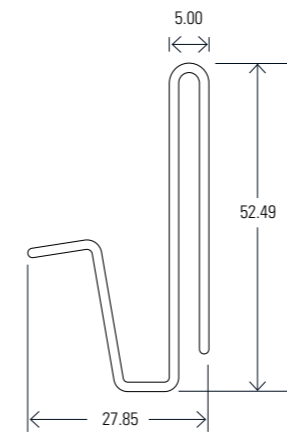
The substructure consists of the tile carrier rail mounted directly onto the stud framing. This fixing method allows for the shallowest depth cavity, while the minimum use of sub-framing components speeds up the installation process and reduces the installation costs.

## 3. ACCESSORIES



### CORNER PROFILES

Aluminium corner profiles will be supplied in mill finish aluminium or powder coated black as standard. Other colours are available on request, however colour selection should be based on RAL colours.



### JOINT ABUTMENT PROFILE

Abutment joints are designed with a joint width of 5mm.

### SPRING PROFILE

Spring profiles are used for connections such as building corners with a miter cut where no joint profiles are possible. The Spring profiles keep the tile locked into the clip and reduce the likelihood of movement.

### JOINT PROFILE

Made from roll formed steel, joint profiles are available in 5mm wide vertical joints in a length of 3m. They are supplied in the Monument colour as default, but can be offered in any Colorbond colour as requested.

## 4. INSTALLATION

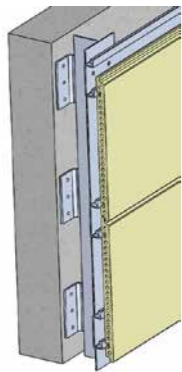
Clayton terracotta tiles have been designed with maximum flexibility in mind, ensuring an efficient and cost-effective installation process that is suitable to each building. The Clayton installation system can be installed directly onto the subframe (e.g. concrete, brick or stud wall), onto a top hat frame, or using a wall bracket and T-profile system that allows you to increase the wall cavity depth to allow for insulation or additional ventilation.

The next section provides step-by-step component installation for each of the three installation methods.

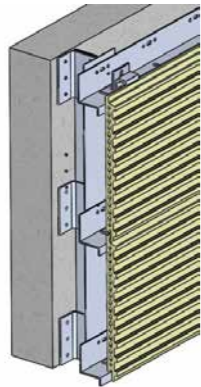
The next section provides installation options, installation components and a step-by-step method for each of the three installation methods.

### 4.1 HORIZONTAL AND VERTICAL INSTALLATION OPTIONS

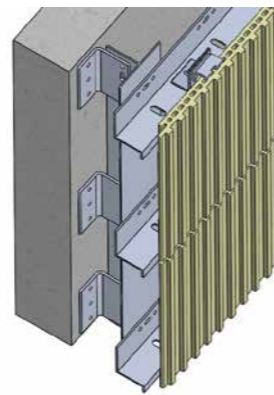
#### 18MM HORIZONTAL INSTALLATION



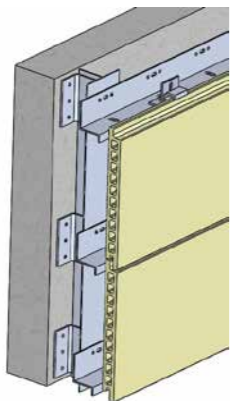
#### 20MM HORIZONTAL INSTALLATION



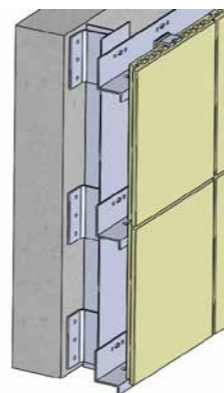
#### 20MM VERTICAL INSTALLATION



#### 30MM HORIZONTAL INSTALLATION



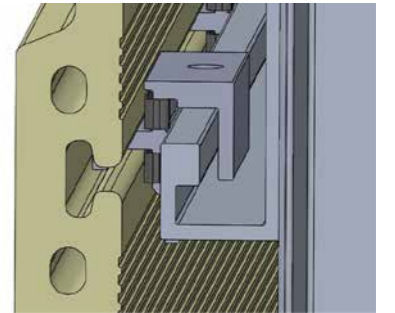
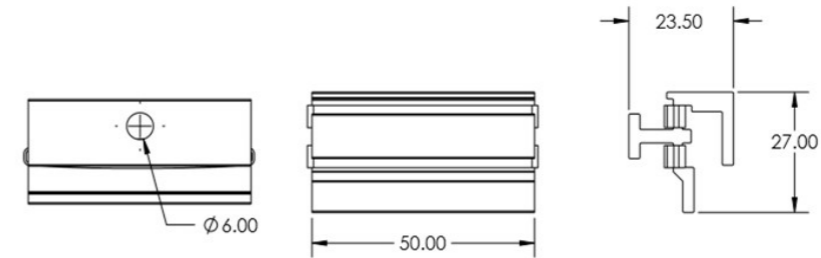
#### 30MM VERTICAL INSTALLATION



## 4.2 CLAYTON INSTALLATION COMPONENTS

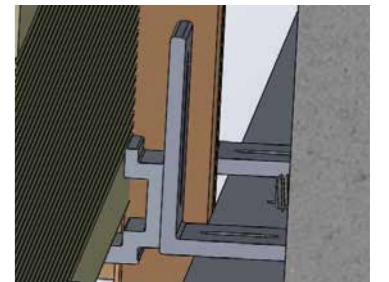
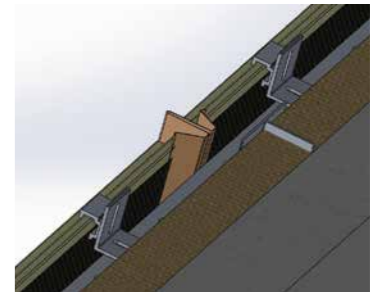
### 18MM TILES HORIZONTAL INSTALLATION

#### TOP & BOTTOM CLIP

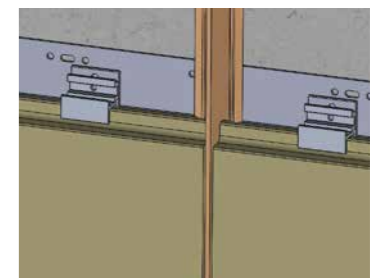


### 20MM & 30MM TILES HORIZONTAL INSTALLATION

#### TOP & BOTTOM CLIP

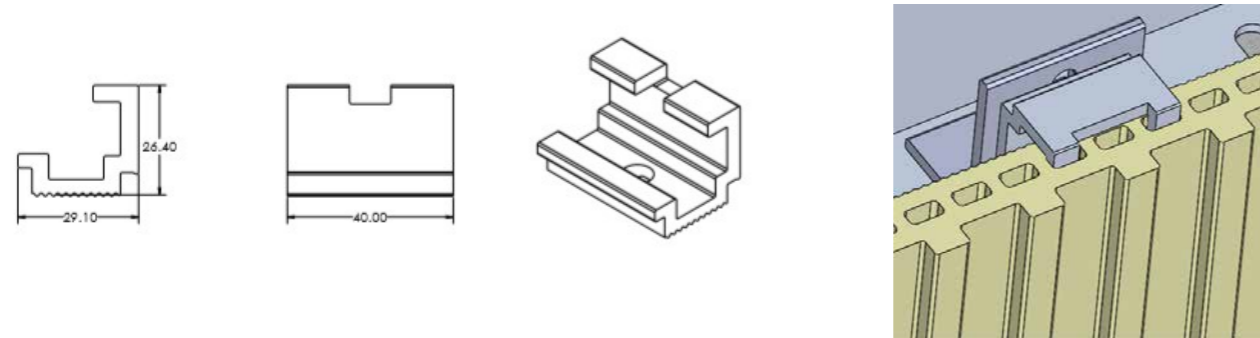


#### MIDDLE CLIP

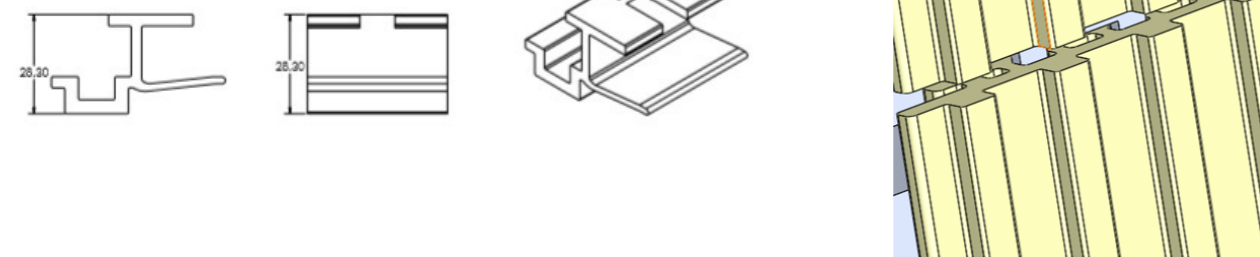


## 20MM & 30MM TILES VERTICAL INSTALLATION

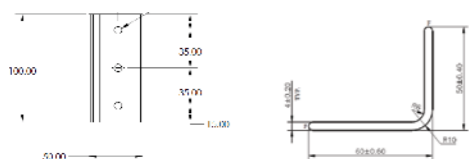
### TOP & BOTTOM CLIP



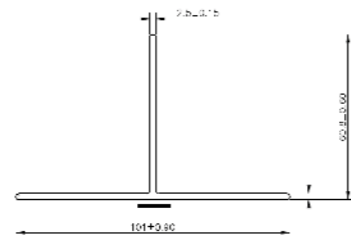
### MIDDLE CLIP



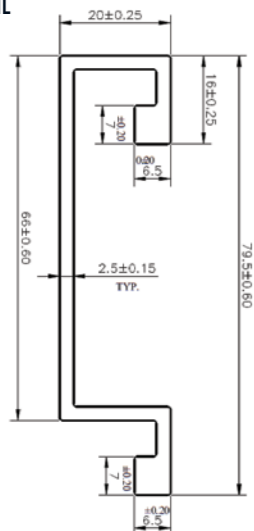
### WALL BRACKET



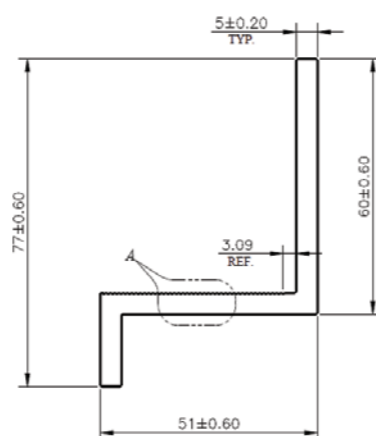
### T-PROFILE



### 18MM SLOTTED RAIL



### 20MM & 30MM SLOTTED RAIL



## 4.3 WALL BRACKET AND T-PROFILE INSTALLATION METHOD

### BASIC CONCEPT

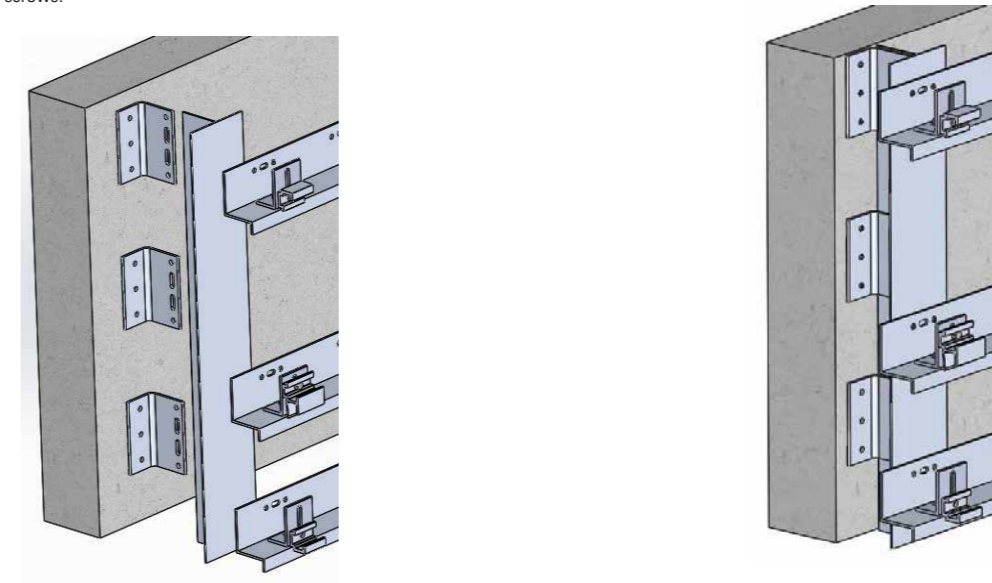
The substructure consists of vertical T-profiles, anchored to the building with wall brackets. The Clayton tiles are to be fixed by aluminium clips onto the vertical T-profiles. Joint profiles should be placed in the vertical joints, which prevents movement of the facade tiles and makes sure that the tiles sit securely in the clips. Also, water is prevented from penetrating the vertical joints.

### INSULATION

The combination of the wall bracket and T-profile creates a deeper cavity which allows space to install insulation in between the substructure and the back of the facade. This can be ideal in circumstances where there is no space to fit the insulation within the substructure (i.e. within the stud framing).

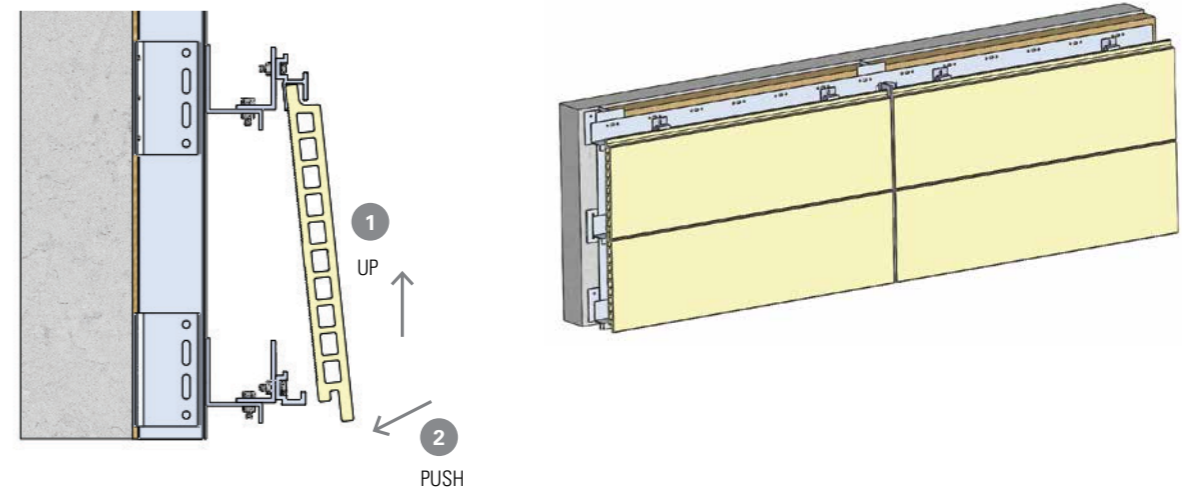
### INSTALLATION OF CLAYTON TILES

1. Tile clips are fixed to the slotted horizontal rail. Always allow a minimum of two clips per Clayton tile, then fix the slotted horizontal rail to the T-profile with screws.
2. Ensure you fix bottom clips for the bottom row of tiles, intermediate tile clips for the middle tiles and top tile clips for the top row of tiles.



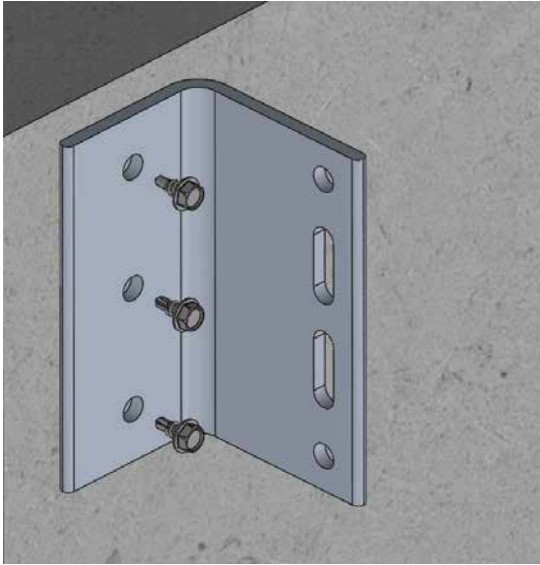
3. Install the next slotted horizontal rail at fixed intervals depending on the tile height. Insert the top of the tile first, slide the tile up the clip then move the lower side of the tile towards the wall and lower onto the lower tile clip.

4. Repeat this procedure for subsequent tiles.

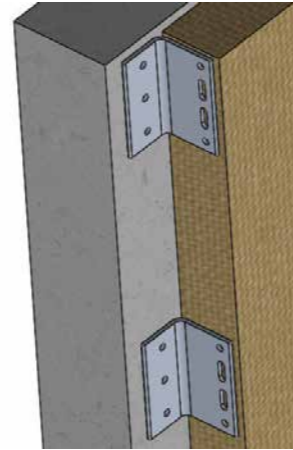


## WALL BRACKET AND T-PROFILE INSTALLATION INSTRUCTIONS

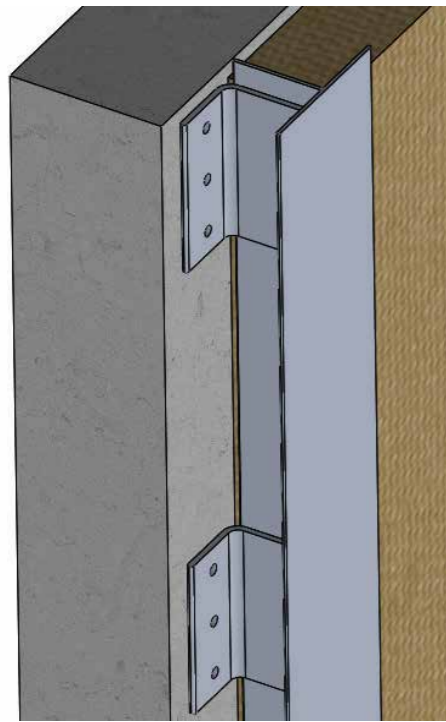
1. Anchoring of wall consoles.



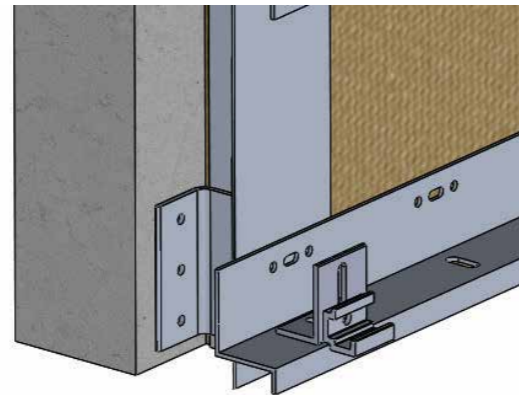
2. Installation of thermal insulation.



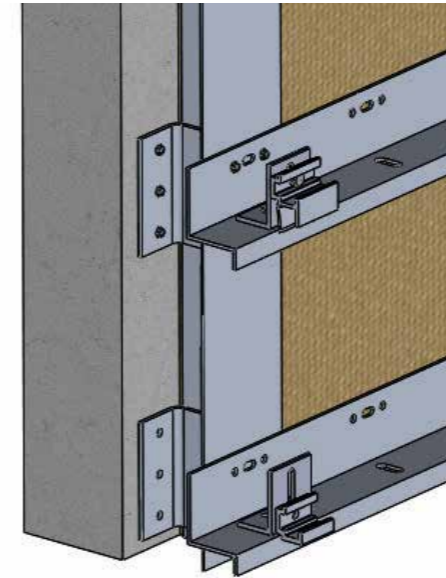
3. Installation of aluminium T-profiles on wall consoles.



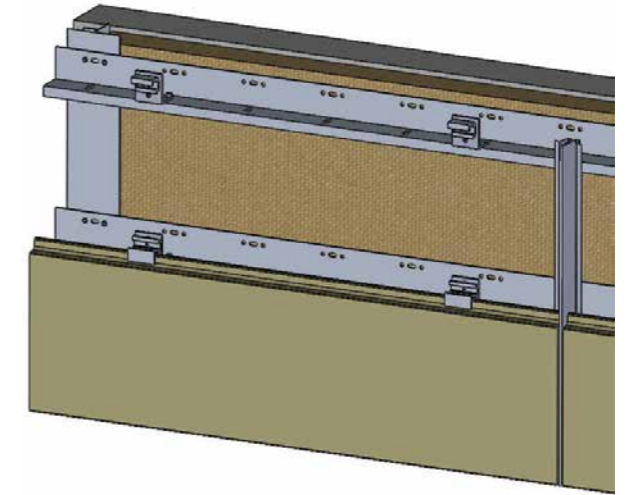
4. Fixing slotted carrier rail and bottom row of the tile clips.



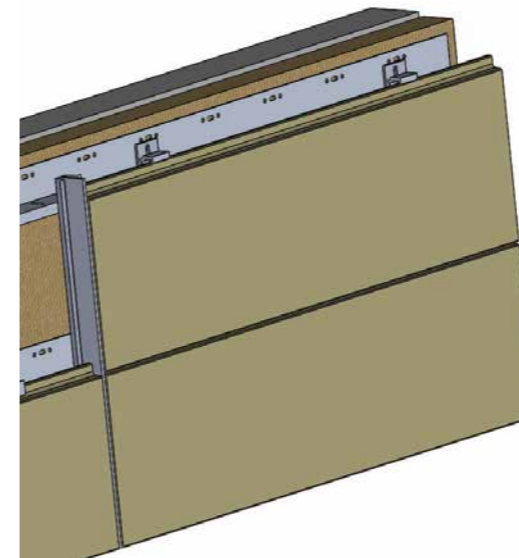
5. Fixing the slotted horizontal rail with middle tile clips.



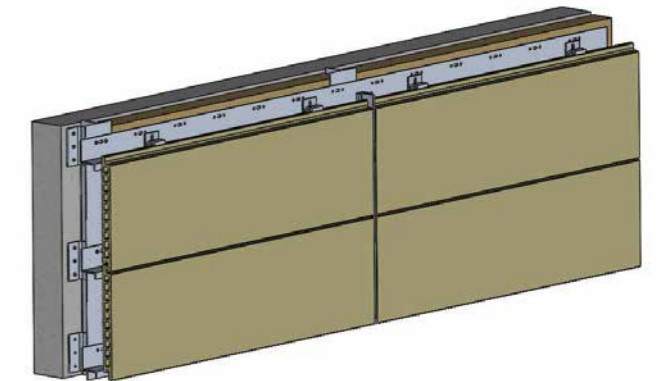
6. Installation of the bottom tile row.



7. Installation of middle tile rows with middle clips.

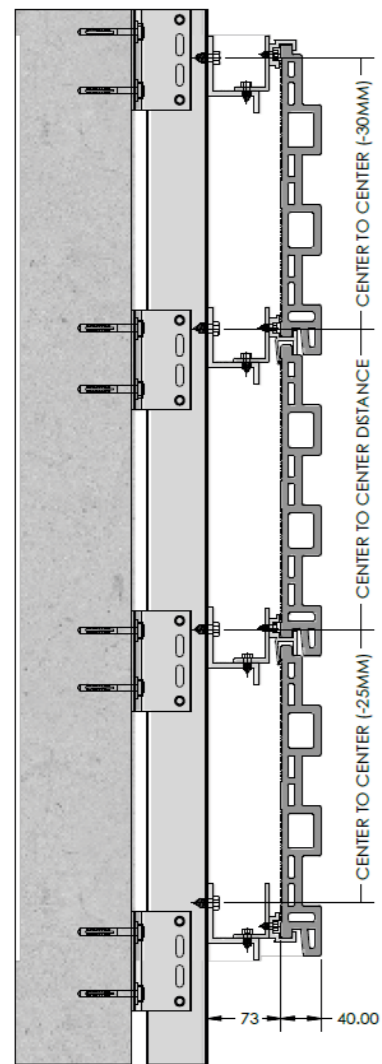
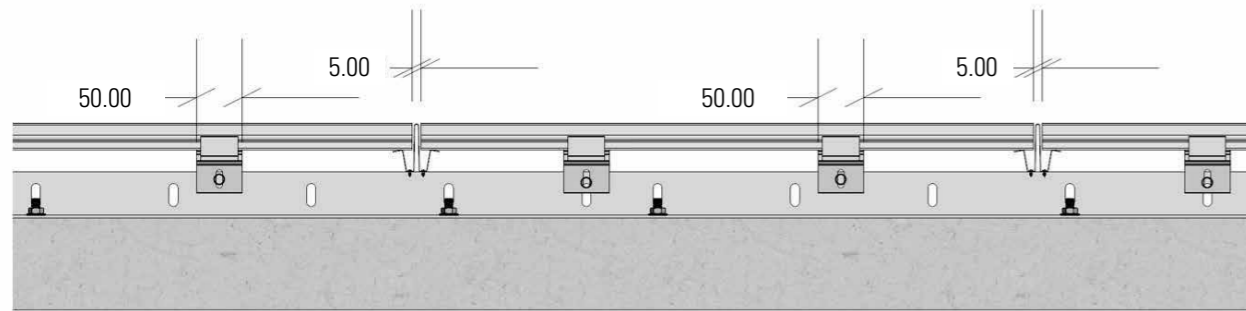


8. Installation of the top tile row.





## WALL BRACKET AND T-PROFILE INSTALLATION DIMENSIONS



## 4.4 TOP HAT INSTALLATION METHOD

### BASIC CONCEPT

The substructure consists of vertical top hats, anchored to the building. The Clayton tiles are to be fixed by aluminium clips onto the vertical top hats.

Joint profiles should be placed onto the vertical joints which prevents movement of the facade tiles and makes sure that the tiles sit securely in the clips. Also, water is prevented from penetrating the vertical joints.

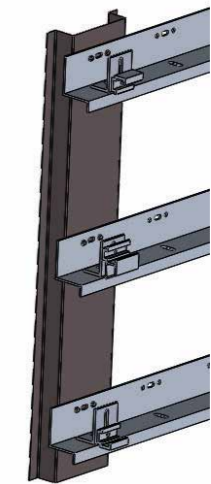
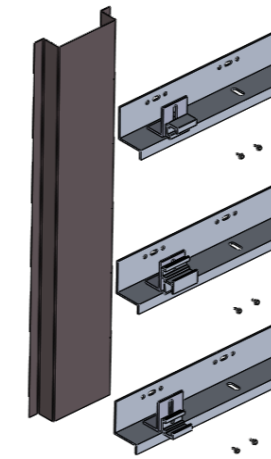
### INSULATION

The top hats provide an additional depth (between 24-35mm) which, depending on the selected insulation, may allow for additional insulation to be used.

It is important to ensure adequate ventilation behind the façade, therefore the space between the slotted horizontal carrier rail and the back of the tiles must be left open.

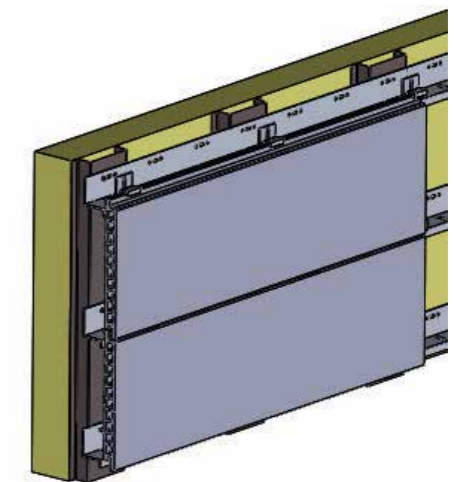
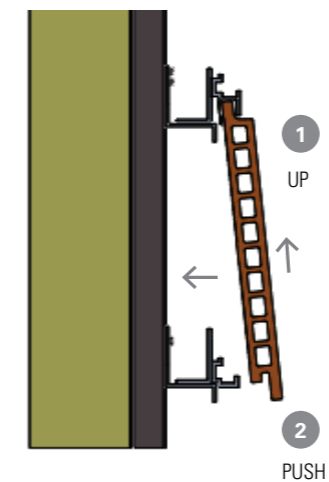
### INSTALLATION OF CLAYTON TILES

1. Tile clips are fixed to the slotted horizontal rail. Always allow a minimum of two clips per Clayton tile, then fix the slotted horizontal rail to the T-profile with screws.
2. The substructure consists of vertical T-profiles, anchored to the building with wall brackets. The Clayton tiles are to be fixed by aluminium clips.



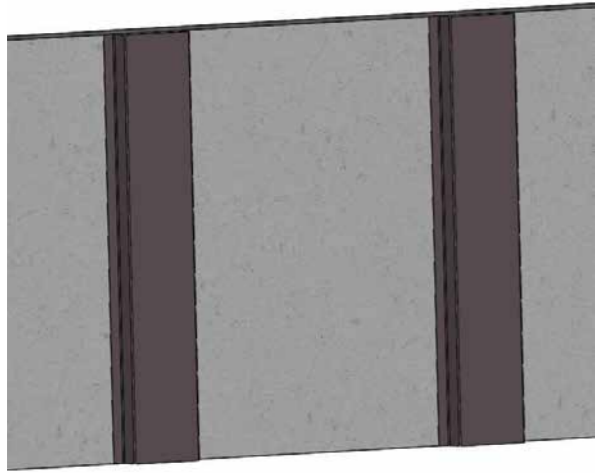
3. Install the next slotted horizontal rail at fixed intervals depending on the tile height. Insert the top of the tile first, slide the tile up the clip then move the lower side of the tile towards the wall and lower onto the lower tile clip.

4. Repeat this procedure for subsequent tiles.

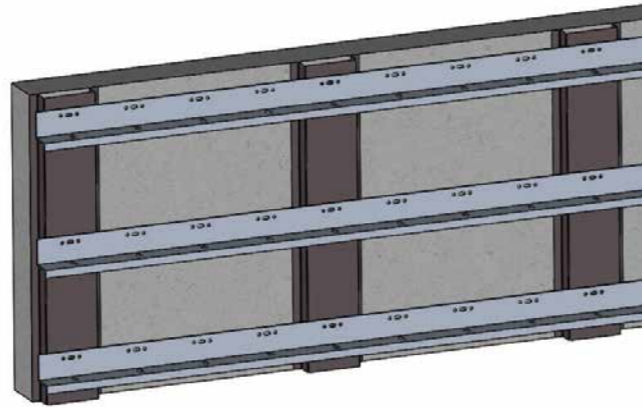


## TOP HAT INSTALLATION INSTRUCTIONS

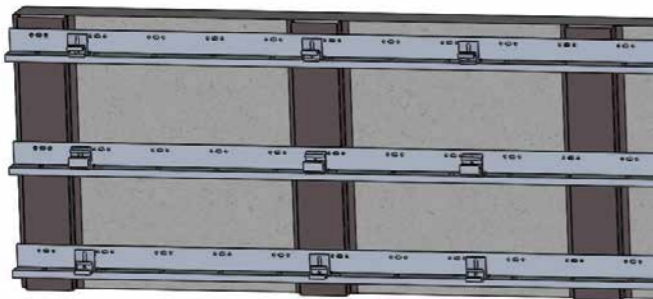
1. Top hats installed vertically on the substrate.



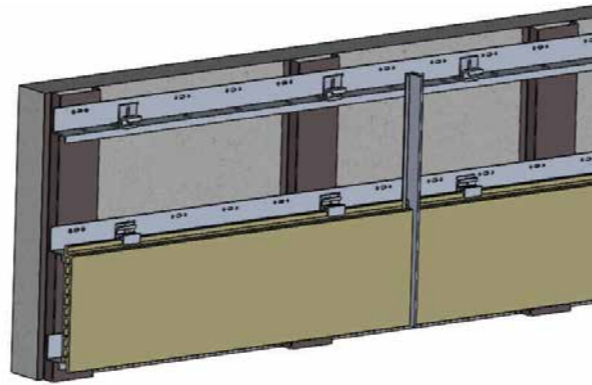
2. Installation of the slotted horizontal rail.



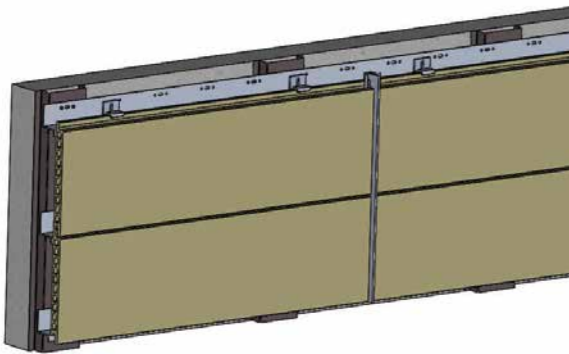
3. Fixing the slotted horizontal rail with tile clips.



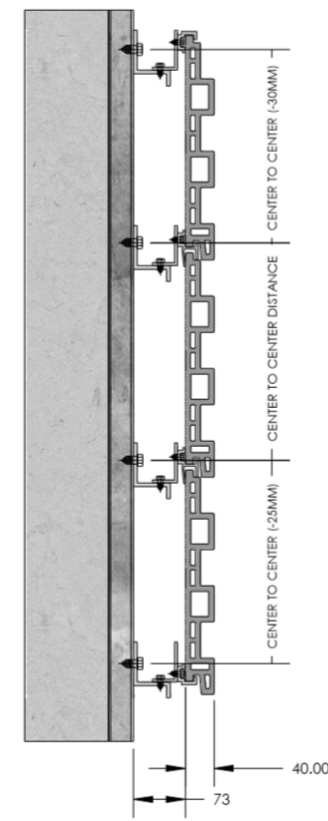
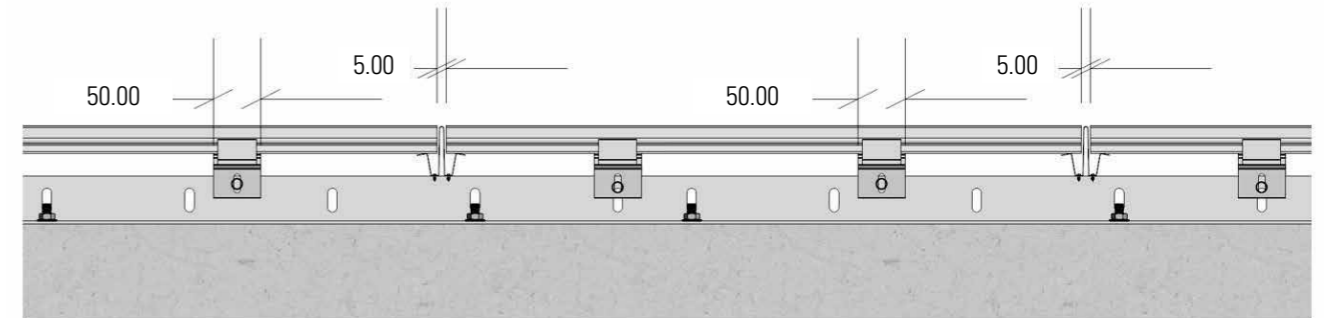
4. Installation of the first tile row with bottom clamps and fixing of joint profiles.



5. Installation of middle rows with middle clamps and top tile row.

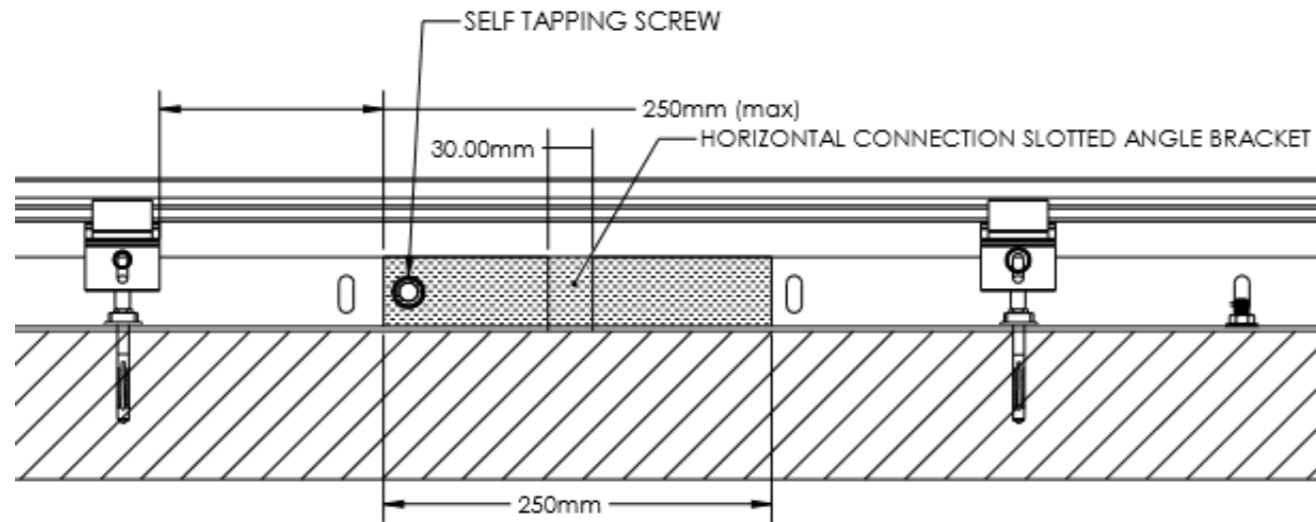


## TOP HAT INSTALLATION DIMENSIONS



## HORIZONTAL CARRIER RAIL JOINER PIECE

The horizontal carrier rail will be supplied in lengths of 5.8m - it is important to join two rails with a horizontal connection piece to ensure the rails are aligned.



## 4.5 STUD FRAME INSTALLATION METHOD

### BASIC CONCEPT

The substructure consists of the slotted horizontal rail mounted directly onto the stud framing.

The stud framing will need to have adequate strength to support the loading requirements of the building. A façade engineer will need to ensure adequate stud framing strength. Joint profiles are installed at the vertical joints between tiles and help to prevent movement of the tiles and ensure the tiles sit securely in the tile clips.

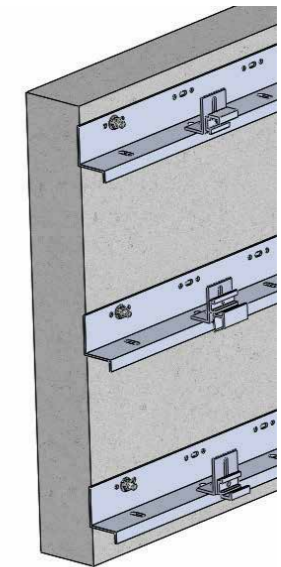
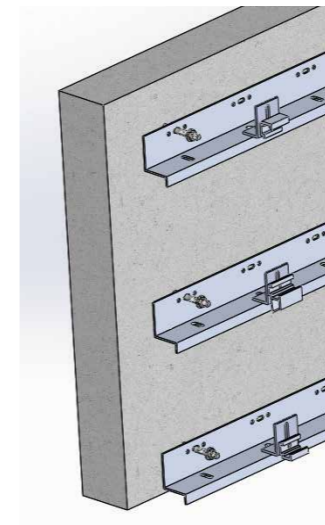
### INSULATION

This installation method results in the smallest cavity depth, therefore the insulation needs to be installed within the substrate (i.e. within the stud wall).

It is important to ensure adequate ventilation behind the façade, therefore the space between the slotted horizontal rail and the back of the tiles must be left open.

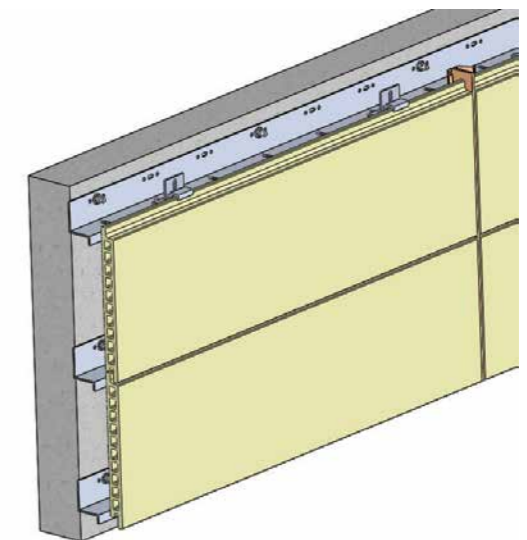
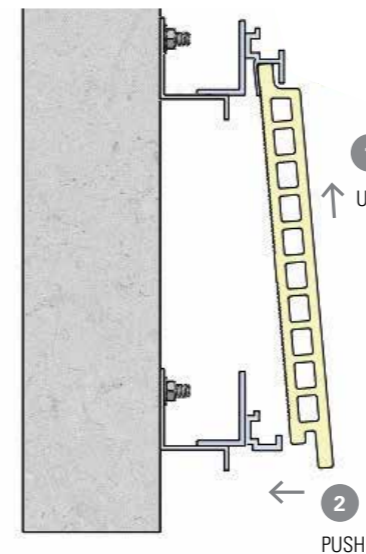
## INSTALLATION OF CLAYTON TILES

1. Tile clips are fixed to the slotted horizontal rail. Always allow a minimum of two clips per Clayton tile, then fix the slotted horizontal rail to the stud framing with screws.
2. Ensure you fix bottom clips for the bottom row of tiles, intermediate tile clips for the middle tiles and top tile clips for the top row of tiles.



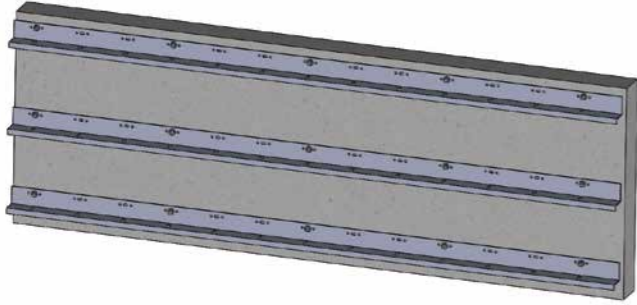
3. Install the next slotted horizontal rail at fixed intervals depending on the tile height. Insert the top of the tile first, slide the tile up the clip then move the lower side of the tile towards the wall and lower onto the lower tile clip.

4. Repeat this procedure for subsequent tiles.

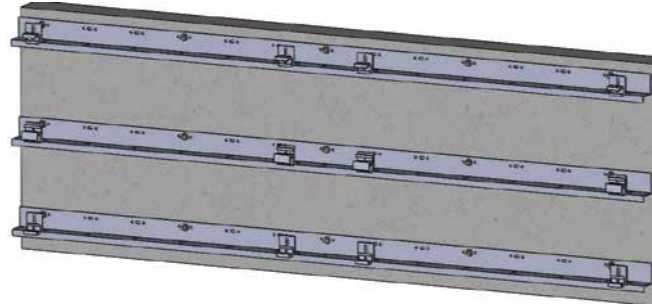


## STUD WALL INSTALLATION INSTRUCTIONS

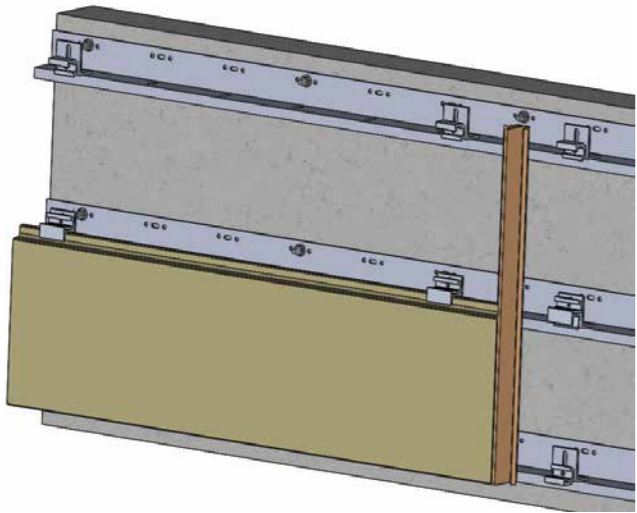
1. Installation of the slotted horizontal rail.



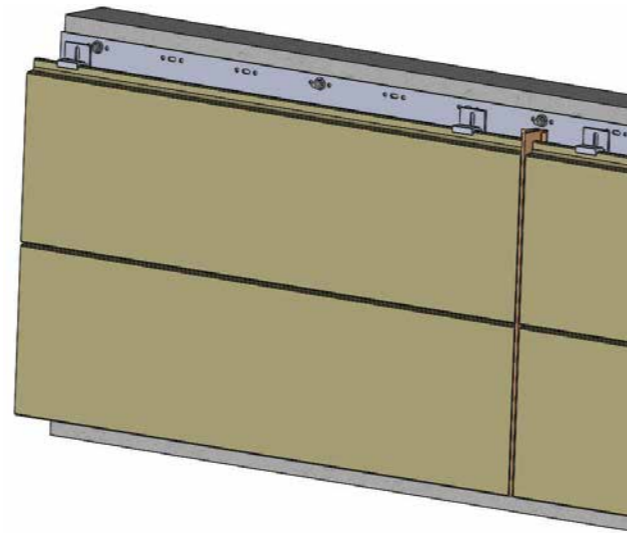
2. Fixing the slotted horizontal rail with the top, middle and bottom tile clips.



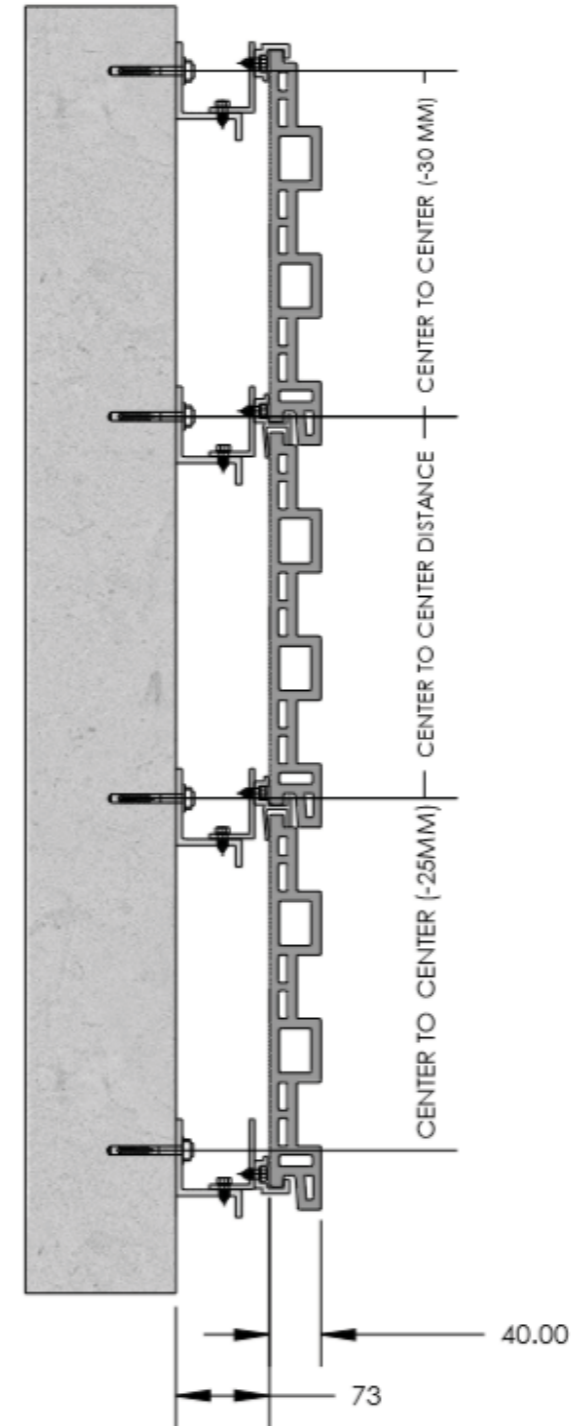
3. Installation of the first tile row with bottom and middle tile clips and fixing the joint profiles.



4. Installation of middle tile rows with middle tile clips and top tile row.



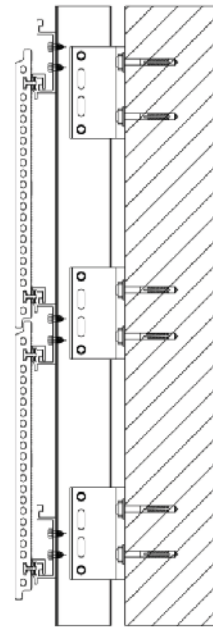
## STUD WALL INSTALLATION DIMENSIONS



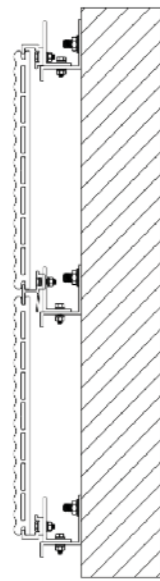
## 4.6 CLAYTON TILE INSTALLATION OPTION

Depending on the tile size, Clayton terracotta tiles can be installed in either vertical or horizontal installations. The below installation details show the available options and wall build up.

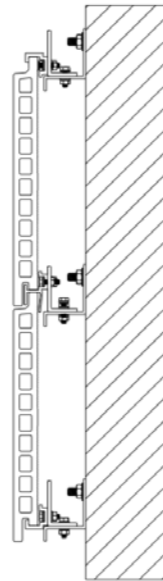
18MM HORIZONTAL DETAIL



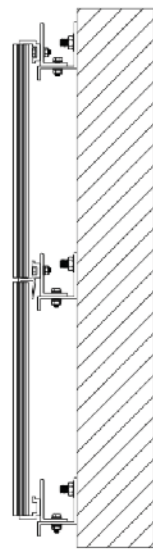
20MM HORIZONTAL DETAIL



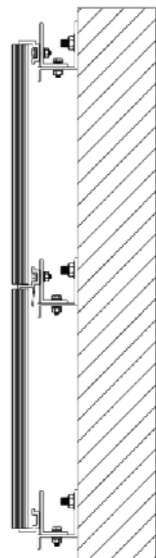
30MM HORIZONTAL DETAIL



20MM VERTICAL DETAIL

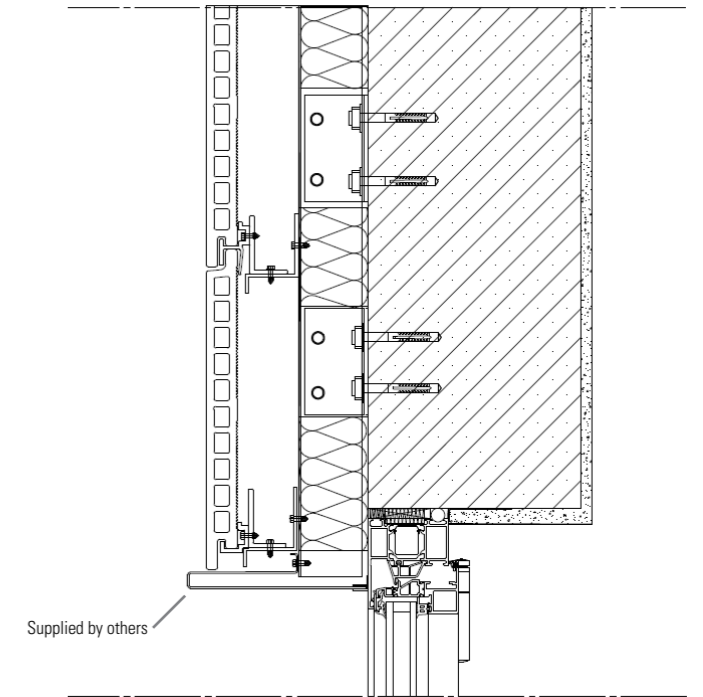
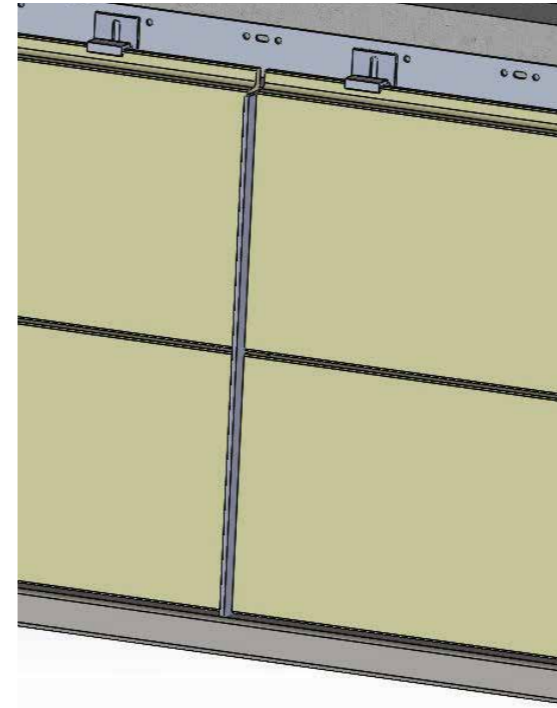


30MM VERTICAL DETAIL

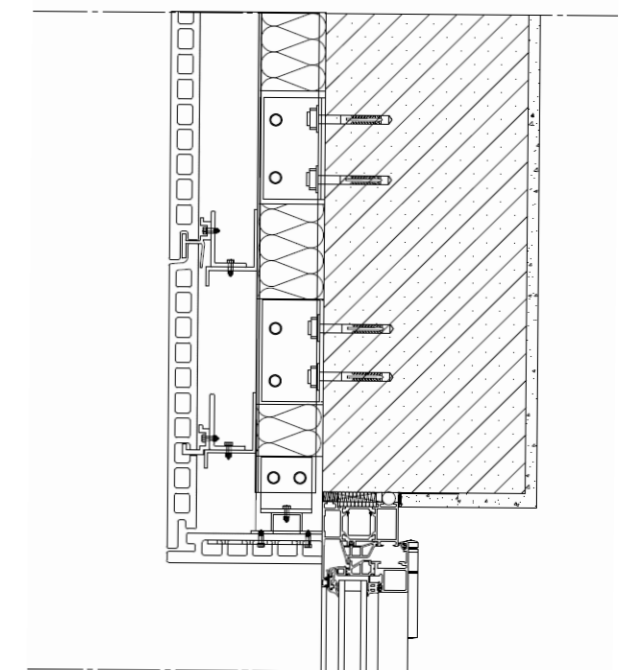
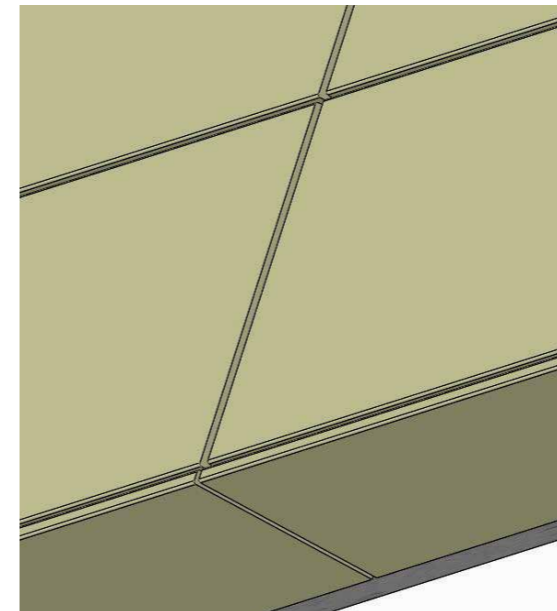


## 5. CONNECTION DETAILS

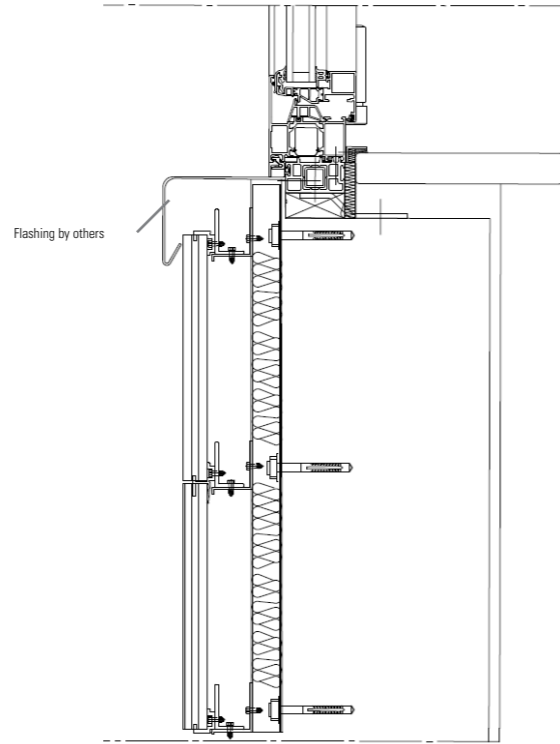
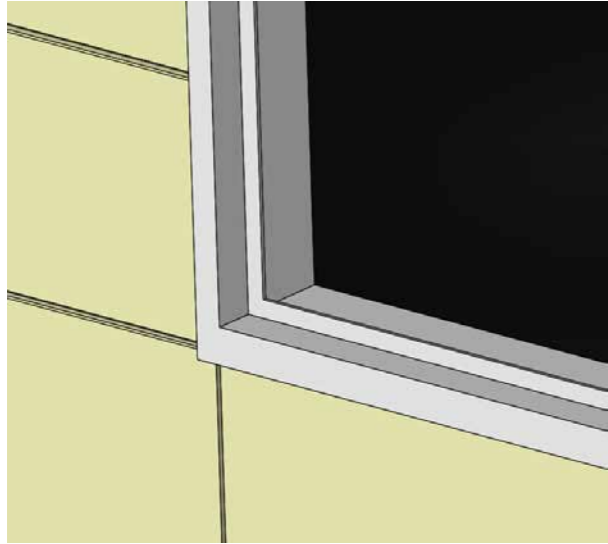
LINTEL WITH ALUMINIUM SHEET



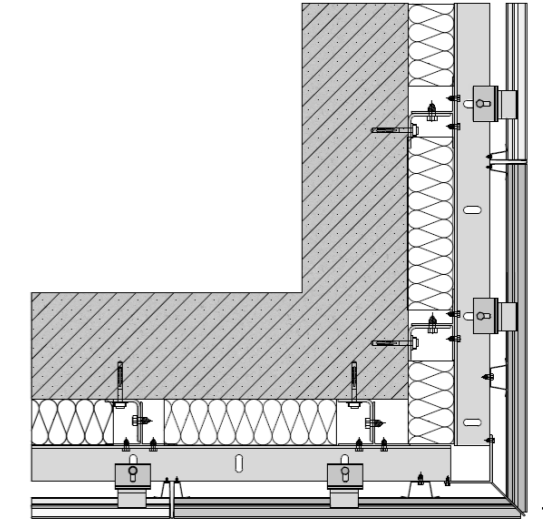
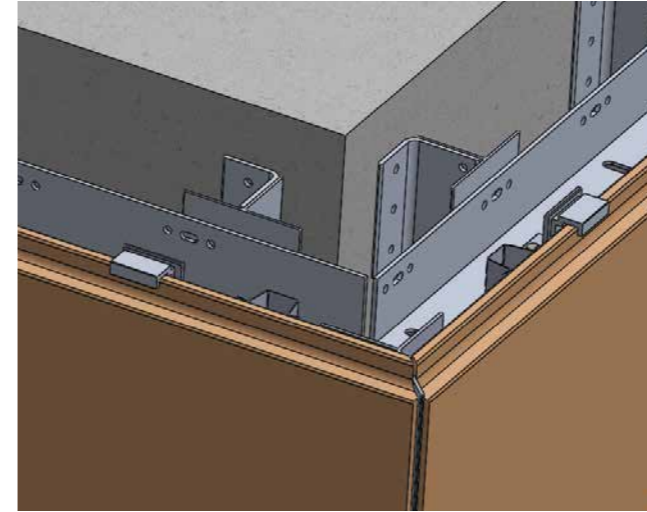
LINTEL WITH TILES



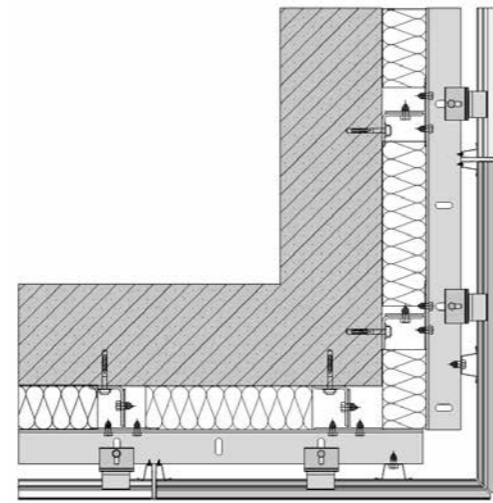
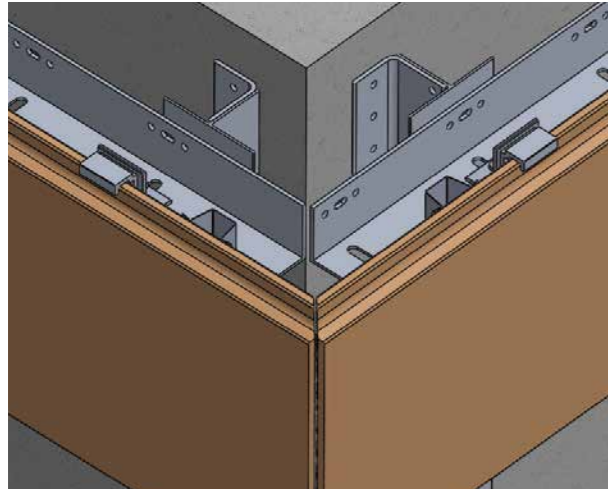
WINDOW SILL



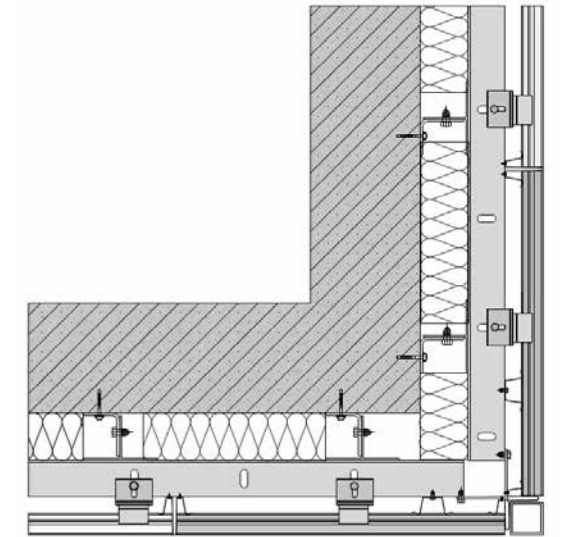
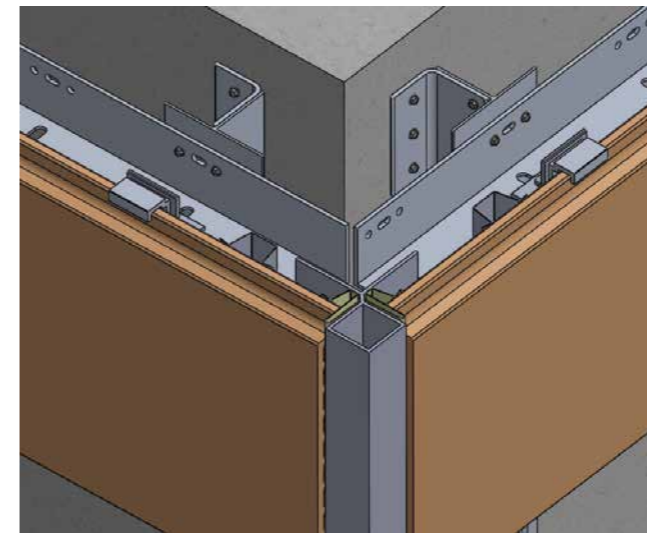
CORNER WITH CLOSED ALUMINIUM PROFILE



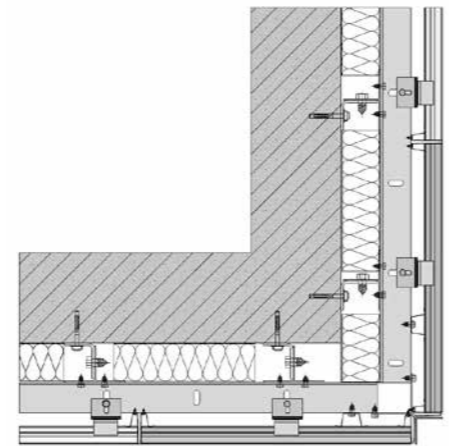
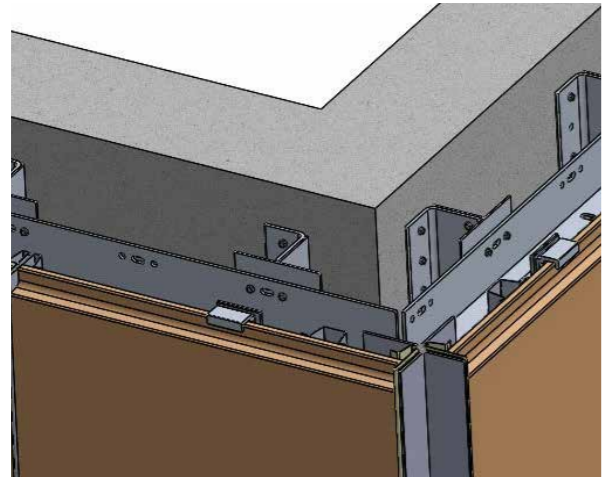
CORNER WITH MITER CUT



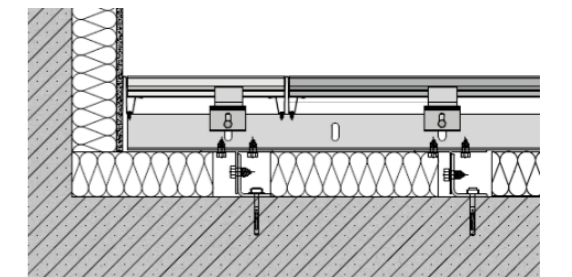
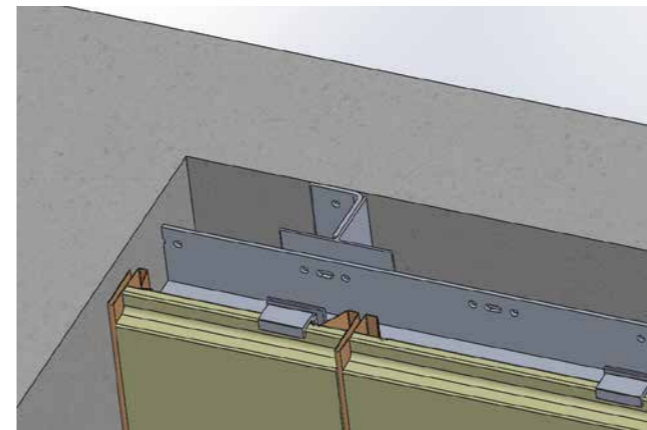
CORNER WITH Y-PROFILE



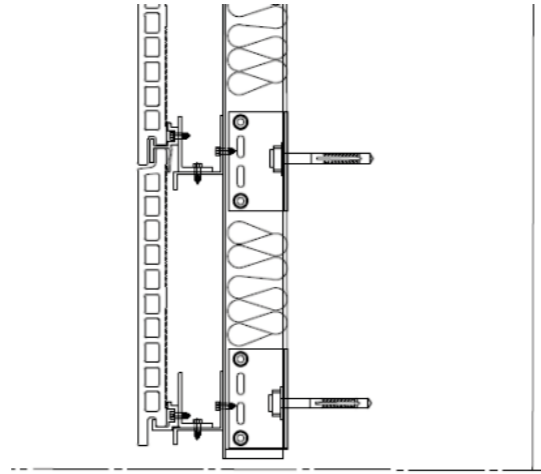
CORNER WITH OPEN ALUMINIUM PROFILE



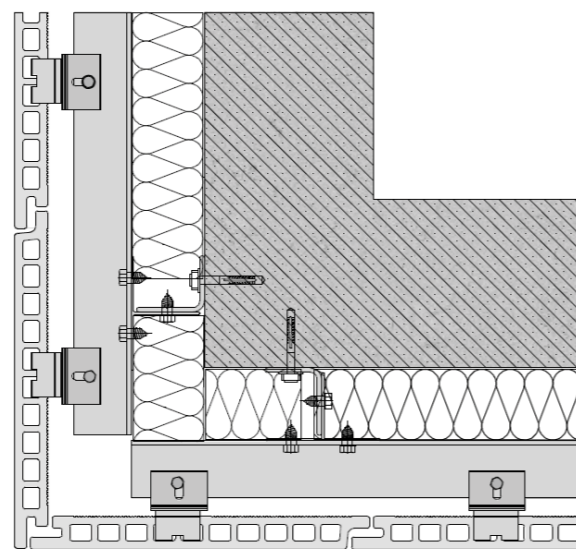
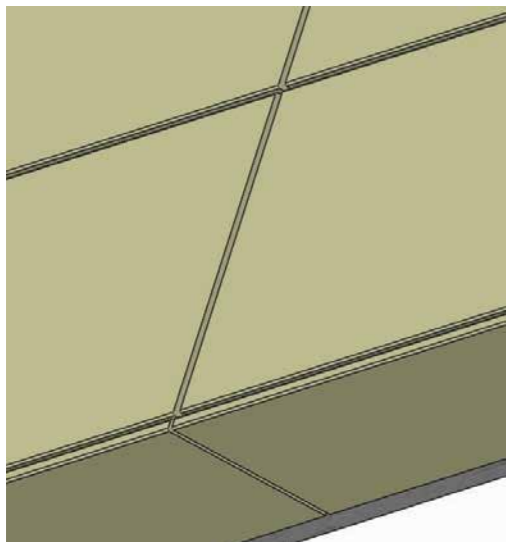
INSIDE CORNER PLASTER



### LOWER FINISH



### CONNECTION WALL/CEILING



## 6. CLAYTON TERRACOTTA BAGUETTES

Used as an architectural design element, baguettes add colour, depth and form to any building while also being used as a sun shade or screen. Available in various shapes and colours, baguettes will add a distinctive modern appearance while reducing the amount of radiant heat reaching the building.

SQUARE



LOUVER



CIRCULAR



LAMERA



RECTANGULAR



CAMBERED

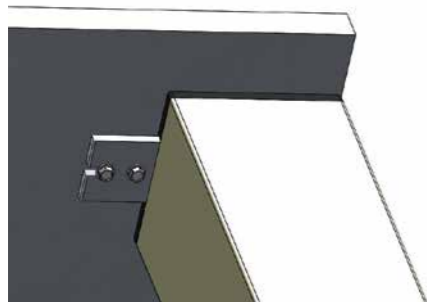
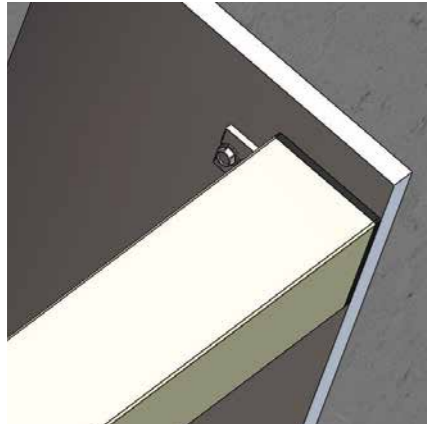


ARC

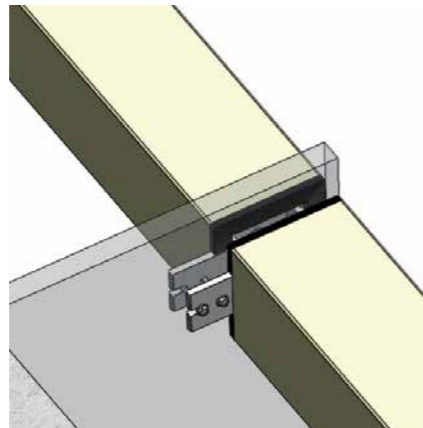
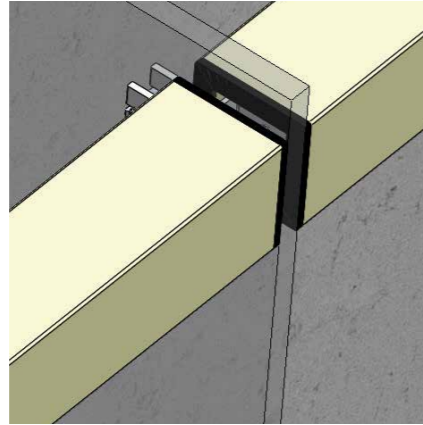


## 6.1 BAGUETTE SYSTEM

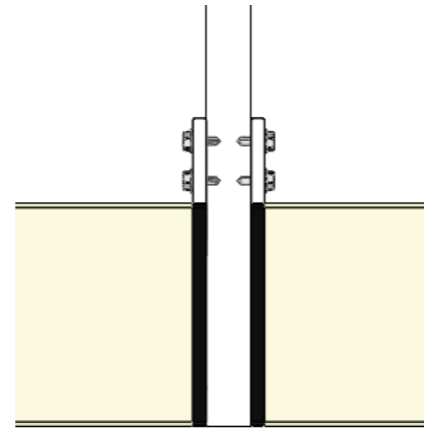
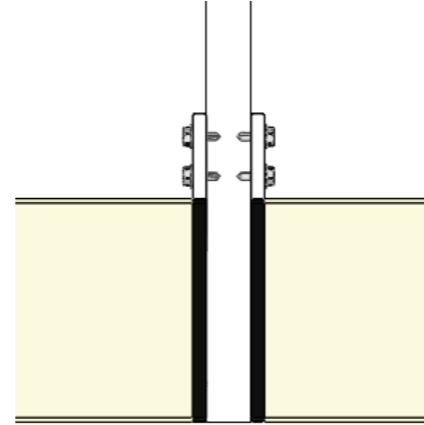
BAGUETTE SYSTEM SINGLE SUPPORT:



DOUBLE SUPPORT:

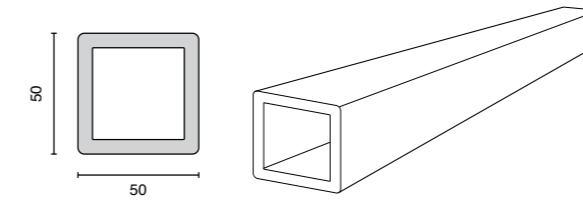


DOUBLE SUPPORT (TOP VIEW):

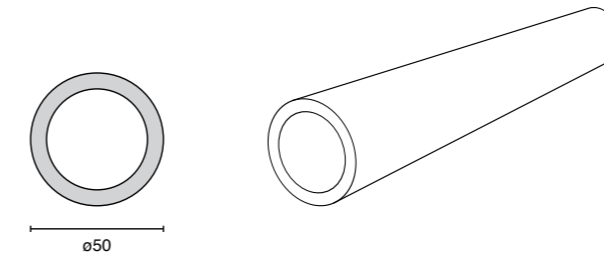


## 6.2 BAGUETTE SHAPES

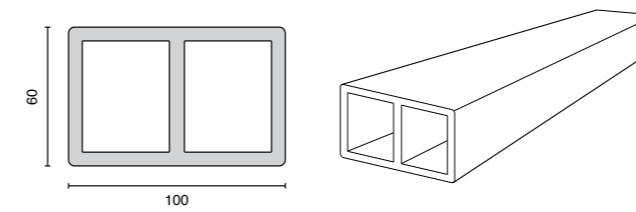
SQUARE



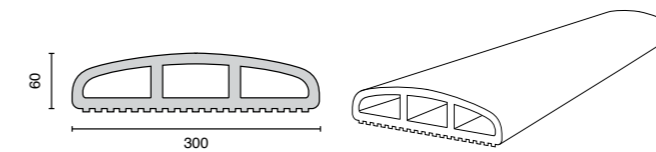
CIRCULAR



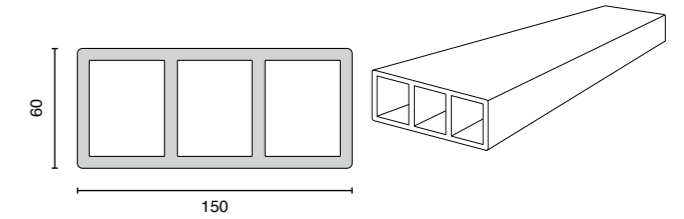
RECTANGULAR



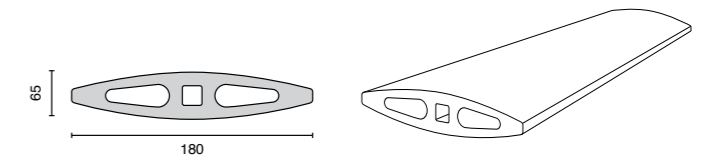
ARC



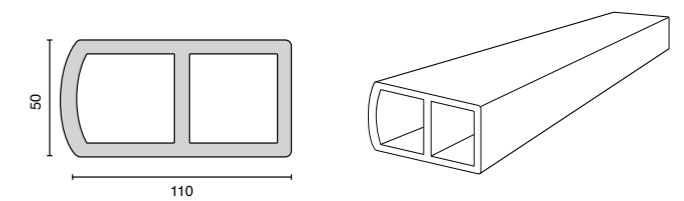
LOUVER



LAMERA



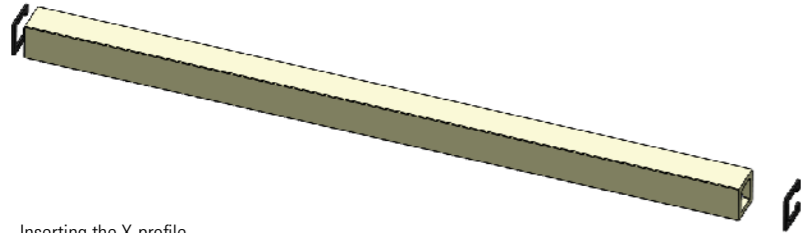
CAMBERED



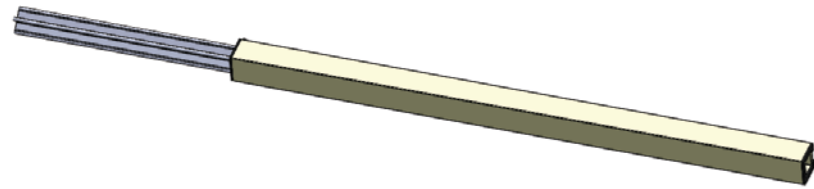


## 6.3 BAGUETTE SYSTEM INSTALLATION INSTRUCTIONS

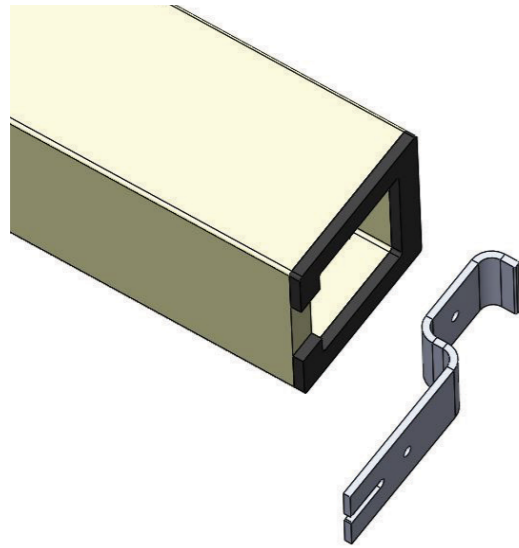
1. Gluing of EPDM pads (optionally).



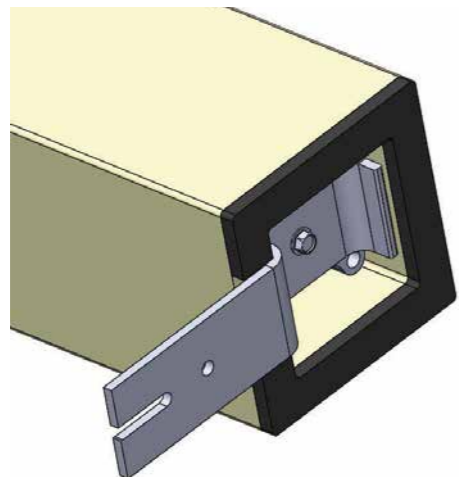
2. Inserting the X-profile.



3. Securing the baguette support with one baguette screw.

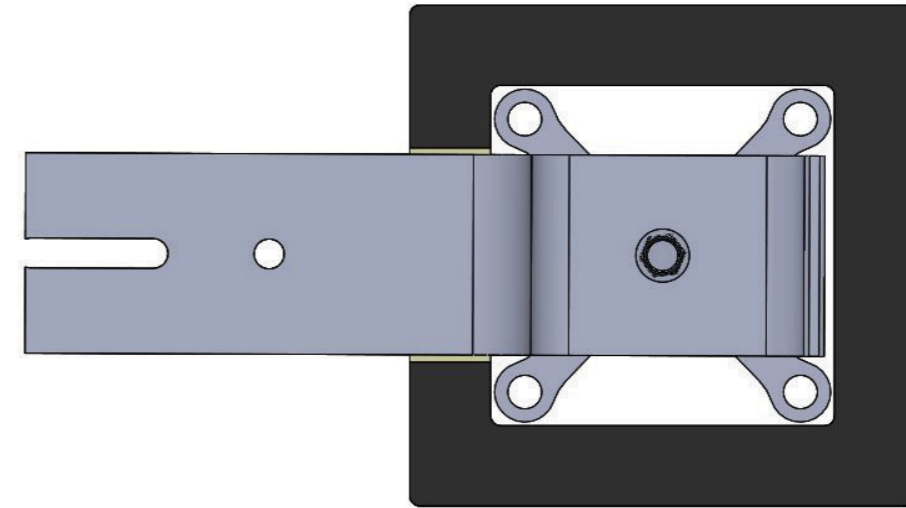


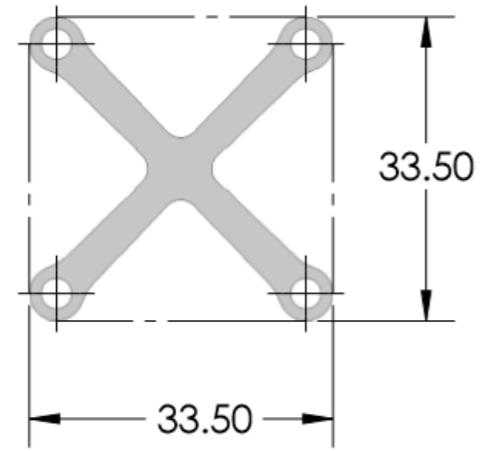
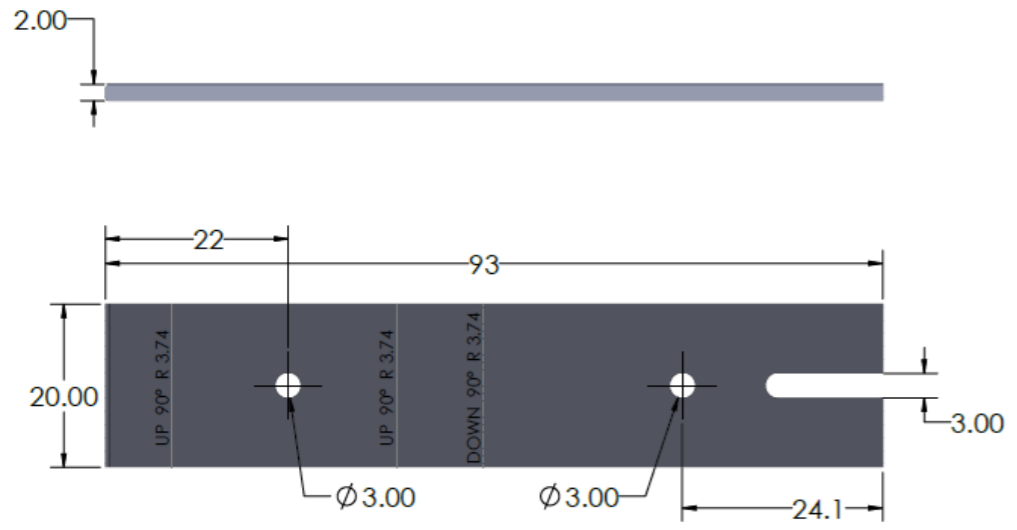
4. Installing the baguette on the vertical base substructure



## 6.4 BAGUETTE INSTALLATION ACCESSORIES

Baguette support







FAIRVIEW™

DEFINING ARCHITECTURE SINCE 1988



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NEW ZEALAND  
UNITED KINGDOM

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[FV.COM.AU](http://FV.COM.AU)

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