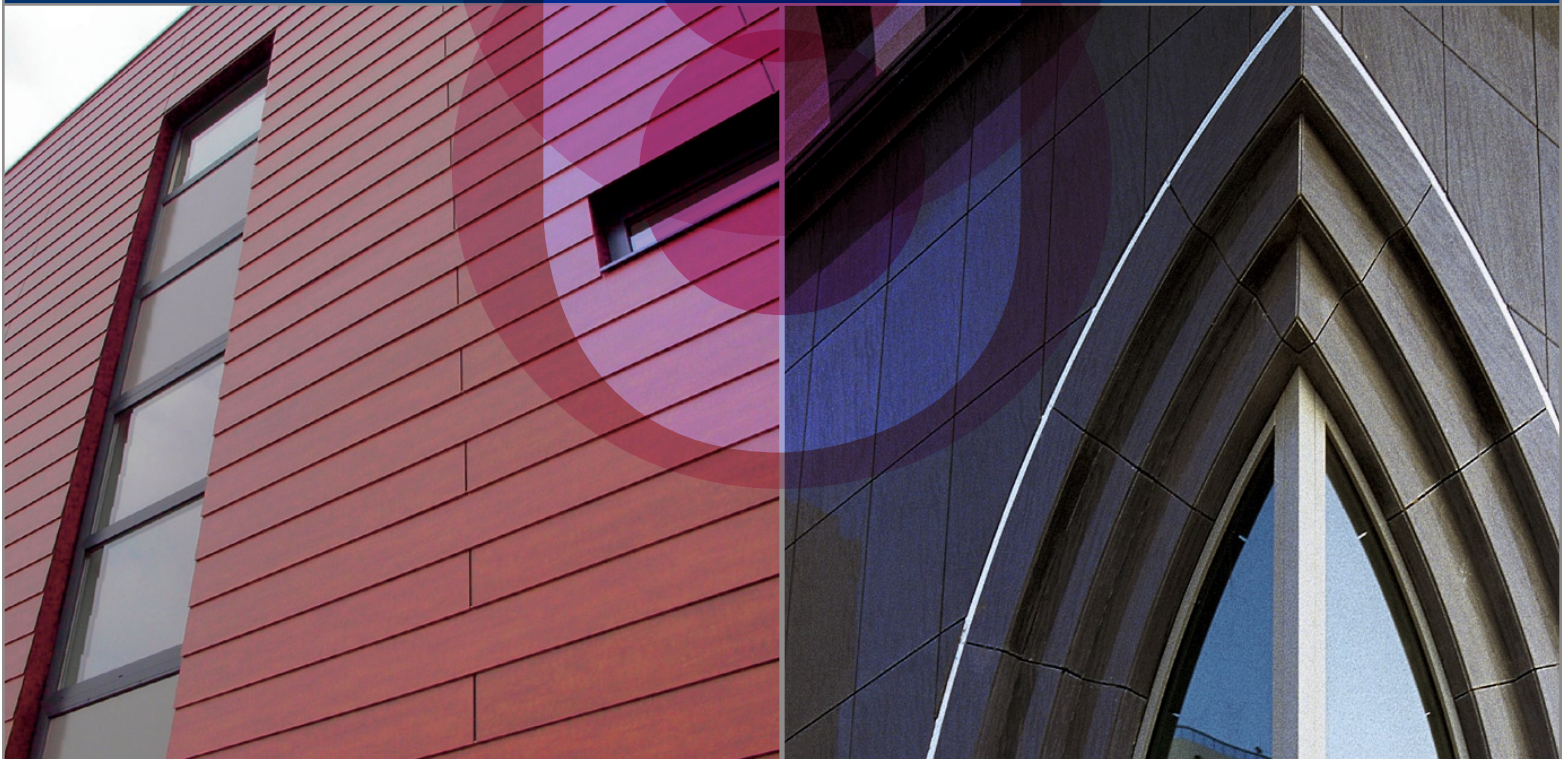


**FIBER CONCRETE  
HPL**

**CERAMIC  
NATURAL STONE**



**CLADDING CORP**



**ALLFACE**  
Smart Fixing Systems



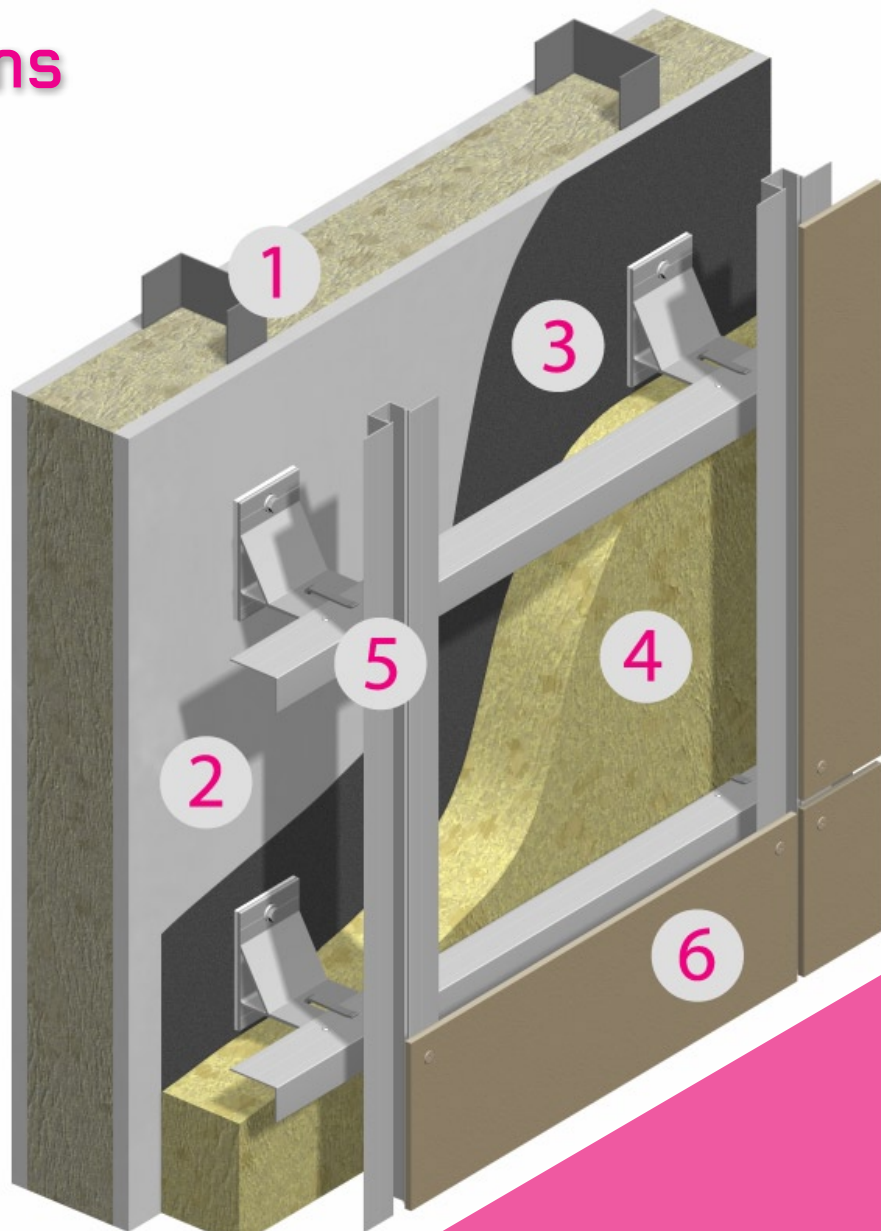
# Smart Fixing Systems

## ALLFACE - SOLUTION PROVIDERS

AllFace simplifies the complexity of façade design. AllFace works with you to determine the optimal fixing solutions based on your detailed project information. With our static calculation program, we provide fully-engineered façade attachment solutions and optimize the quality of fixing elements that are used. In doing so, we contribute to the economic efficiency of the project.

Starting with the statics of the target, the installation plans are prepared for clear, easy and quick fastening. By maintaining an open dialogue with our customers, we are able to point out difficulties and possible improvements in the planning stage to help save with overall costs. To help prepare your plans, we can provide CAD drawings with system details.

We advise façade manufacturers and architects world wide with regard to general and specific themes of rainscreen wall design and we train customers and installation teams onsite.



## RAINSCREEN/REAR-VENTILATED FACADE

The hung, rear-ventilated façade (RVF) covers the load-bearing wall of a building. With a RVF, the façade elements are mounted with the help of a fixing system at a distance from the building's outside wall. Besides the varied architectural possibilities, this method of construction has considerable ecological and economical benefits.

### RVF ADVANTAGES

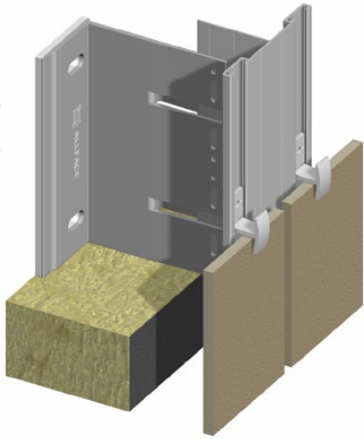
- > **Energy Efficiency**  
Variable lengths of wall brackets allow for installation of any desired thickness of insulation
- > **Sustainable Construction**  
Façade components are often natural, 'green' products and substructure components can be recycled
- > **Lightweight Systems**  
Easy to install systems can reduce the amount of structural support necessary for a building
- > **Noise Control**  
Multilayered structure of RVF provides opportunity for added acoustic properties

### TYPICAL WALL SECTION

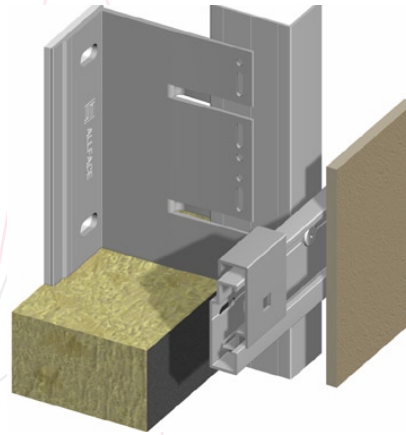
- (1) Backup Wall (Metal Stud)
- (2) Sheathing
- (3) Air/Vapor Barrier
- (4) Rigid Insulation
- (5) ALLFACE substructure
- (6) Façade Panel

## THE BASICS

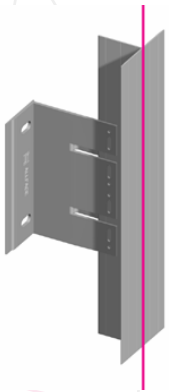
As a façade material is selected, there are two criteria that need to be reviewed to determine which AllFace attachment system will best suit your project. First, do you prefer a visible or concealed system? (As a rule of thumb, visible systems tend to be less expensive to install than concealed or invisible systems.) Once this is determined, we can turn to the second criteria—wall condition. What type of construction wall is being used on the project? (In North America, stud/sheathing or block/tilt-up are the most common.) Depending on which of these walls are used will determine if you need to select a horizontal or vertical system.



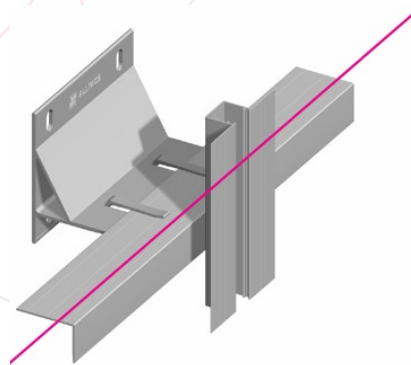
**Visible** > These system have some type of visual attachment point – either a clip, screw or rivet. The attachment point can be emphasized as a design element or minimized by matching the color or surface of the façade material selected.



**Concealed / Invisible** > Depending on the product, some façade materials are designed to conceal attachment points to the sub-framing system. Other materials are attached through undercut anchor systems. Such expanding undercut anchors allow a flat panel material to be drilled on the backside and fix the hanger element.



**Vertical Systems** > These systems are used for mounting on block/tilt-up or masonry walls. The primary profile is mounted vertically on an F1 bracket.



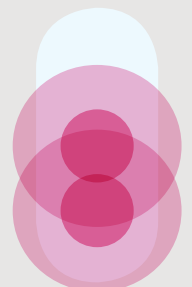
**Horizontal Systems** > For constructions made with steel walling and sheathing, horizontal systems are used exclusively, with the primary profile mounted horizontally on an F2 bracket.

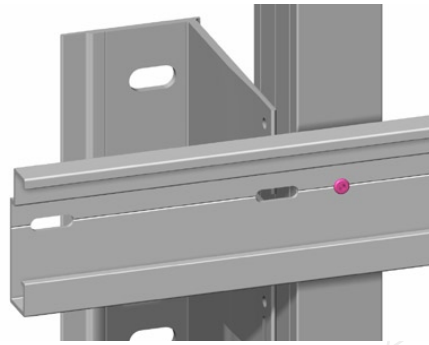
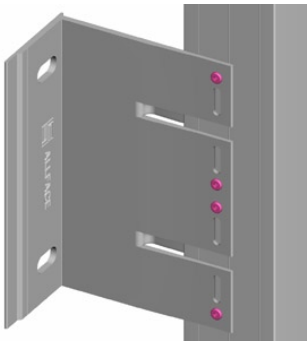


**ALLFACE**  
Smart Fixing Systems

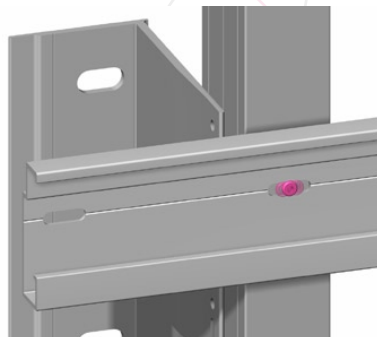
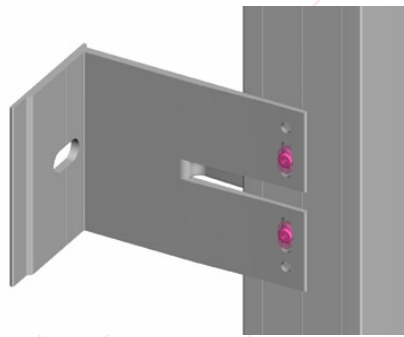
### 2-D ADJUSTABILITY

ALLFACE's Smart Fixing Solutions allow to two dimensional adjustments. The "shim-less" environment saves on installation time.

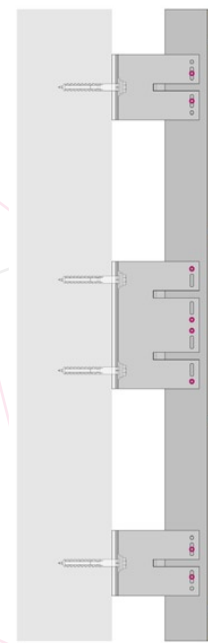




**Fixed Point** > The fixed point passes the dead weight and wind loads to the load-bearing wall. The connection between the wall bracket and profile is therefore implemented immovably in the “round holes”.



**Sliding Point** > In contrast, the connection between a sliding point and the profile is designed to be a sliding connection in elongated holes. As a result, the profile is not impeded in the event of length changes and there are no jammed connections. For a sliding point, only wind pressure loads are passed to the load-bearing wall.



Gleitpunkt

Festpunkt

Gleitpunkt

**Thermal Linear Expansion** > When mounting vertical or horizontal systems, temperature related linear expansion of the profiles must be taken into consideration. For this reason, AllFace brackets have elongated holes allowing for thermal expansion of the section. The length of the profiles is determined by the storey-height or façade separation.

**Thermal Separation** > In order to avoid thermal bridges or alternatively to minimize heat losses, thermal separation elements are built in between the wall bracket and the load-bearing wall.

**QUESTION:** I have always used shims. What's a shim-less system?

**ANSWER:** The expertise and industry knowledge that the ALLFACE engineers bring to the table is what has helped develop the F1 and F2 brackets. These “self-shimming” brackets come in a variety of sizes, giving you the greatest adjustability to accommodate any type of unforeseen wall condition. The slotted connections of these brackets are what allow them to be self-shimming, meaning that gone are the days of installing multiple shims between each and every fastening point to make your structure plumb and true.

**QUESTION:** Why use an engineered system?

**ANSWER:** The intention of the ALLFACE systems is to work with the installer to provide a support framing system that not only satisfies the project's structural loads, but performs sufficiently as a rear ventilated rainscreen cladding system. Each project undergoes a computer simulated static analysis from which we provide an output of installation drawings. This step-by-step process of installation is provided to equip the installer with the necessary information to make the installation straightforward and successful.

**QUESTION:** Don't engineered sub-framing systems cost more than a conventional system?

**ANSWER:** As is every project, there are various alternatives for the cladding support system. We think that the service we offer gives the installer the most value and leads to the most cost effective installation approach. The ALLFACE solution can offer dramatic savings by reducing time in the field. The higher the hourly cost of labor, the greater savings of the overall installed material cost. The majority of installers who have used our systems would never go back to conventional stick built systems that they have to assume the liability for designing.

**QUESTION:** How does the “Smart” system take care of expansion and contraction?

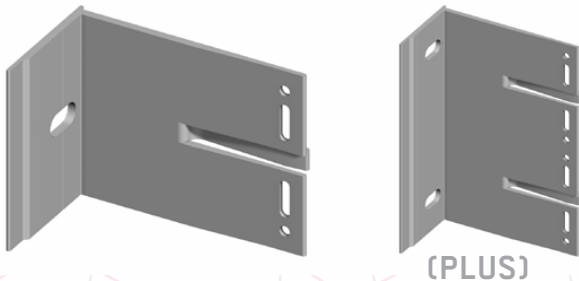
**ANSWER:** The ALLFACE systems use an approach that incorporates both fixed and sliding connection points. The fixed connection points accommodate the deadload of the cladding system, while the slotted-sliding connection points allow for movement from expansion and contraction of metals. At the discontinuous ends of the rail profiles, gaps are provided that allow for lateral movements and movements from expansion and contraction.

## WALL BRACKET F1

The wall bracket F1 is used for vertical fixing on solid walls.

### Technical Features / Benefits:

- Wind pressure is passed directly to the building element - no tensile load on the dowel.
- Each F1 can be used for a fixed point or a sliding point.
- The F1 PLUS is mainly used as a fixed point due to its high bearing capacity through construction height and 2 wall mountings.
- Dowel spacing of 125mm for the F1 PLUS makes it possible to fasten to a problematic subgrade.
- Integrated clamp-slide provides 40mm of adjusting for the L or T profiles.



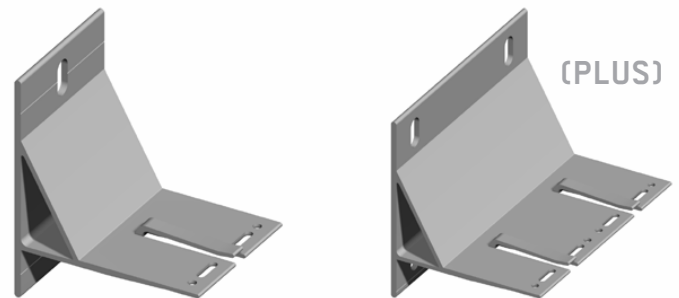
WALL BRACKET	OVERHANG A	DISTANCE TO WALL B
<b>F1.35</b>	35mm / 1.38"	42-80mm / 1.65" - 3.15"
<b>F1.50</b>	50mm / 1.97"	57-95mm / 2.24" - 3.74"
<b>F1.80</b>	80mm / 3.15"	87-125mm / 3.43" - 4.92"
<b>F1.115</b>	115mm / 4.53"	122-160mm / 4.80" - 6.30"
<b>F1.150</b>	150mm / 5.91"	157-195mm / 6.18" - 7.68"
<b>F1.185</b>	185mm / 7.28"	192-230mm / 7.56" - 9.06"
<b>F1.220</b>	220mm / 8.66"	227-265mm / 8.94" - 10.43"
<b>F1.255</b>	255mm / 10.04"	262-300mm / 10.31" - 11.81"

## WALL BRACKET F2

The wall bracket F2 is mainly used for horizontal fixings on beam and column constructions.

### Technical Features / Benefits:

- High bearing capacity due to the design.
- Developed for mounting on beam and column structures.
- Each F2 can be used for a fixed point or a sliding point. The F2 PLUS is mainly used as a fixed point due to the high load suspension and 4 wall mountings.
- Integrated clamp-slide provides 40mm of adjusting for the horizontal profile.



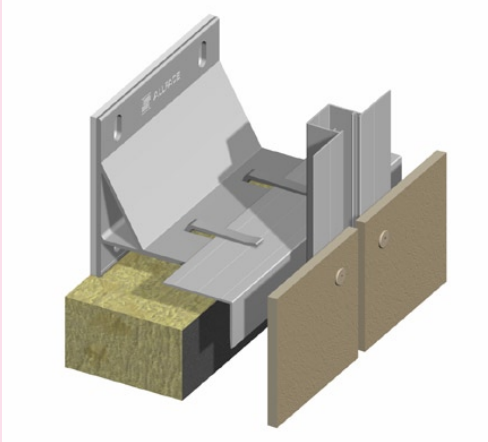
WALL BRACKET	OVERHANG A	DISTANCE TO WALL B
<b>F2.35</b>	35mm / 1.38"	62-100mm / 2.44" - 3.94"
<b>F2.50</b>	50mm / 1.97"	87-125mm / 3.43" - 4.92"
<b>F2.80</b>	80mm / 3.15"	117-155mm / 4.61" - 6.10"
<b>F2.115</b>	115mm / 4.53"	152-190mm / 5.98" - 7.48"
<b>F2.150</b>	150mm / 5.91"	187-225mm / 7.36" - 8.86"
<b>F2.185</b>	185mm / 7.28"	222-260mm / 8.74" - 10.24"
<b>F2.220</b>	220mm / 8.66"	257-295mm / 10.12" - 11.61"
<b>F2.255</b>	255mm / 10.04"	292-330mm / 11.50" - 12.99"
<b>F2.290</b>	290mm / 11.42"	327-365mm / 12.87" - 14.37"

The critical element and basis of a fixing system is the wall bracket. It decides the layout of the façade's substructure.





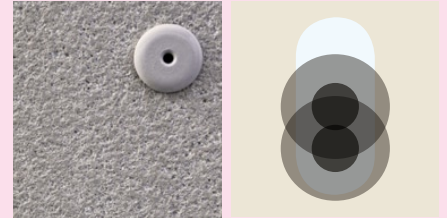
## F2.10 VISIBLE



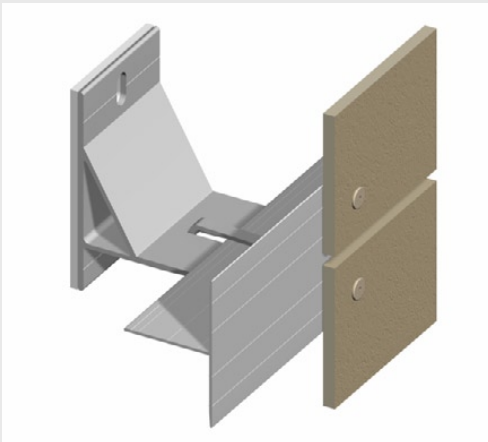
### Attachment methods with rivets

Fixing the cladding with rivets enables fast and permanent installation of facade cladding. The cladding material is attached at flexible and fixed points to absorb thermal expansion and contraction in the materials used.

> FIBER CONCRETE / HPL



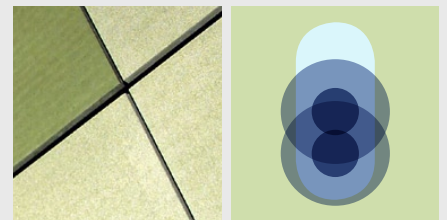
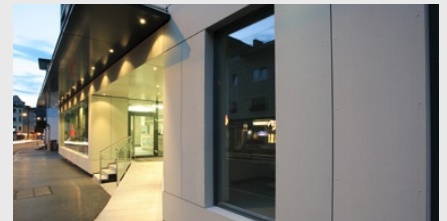
## F2.11 VISIBLE



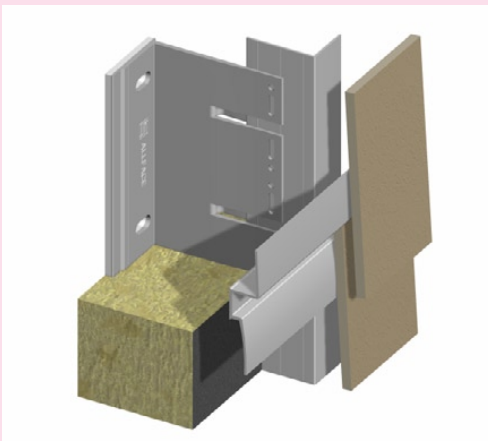
### Attachment methods with rivets

A uniquely designed horizontal T profile approach for fixing the cladding with rivets. The cladding material is attached at flexible and fixed points to absorb thermal expansion and contraction in the materials used.

> FIBER CONCRETE / HPL



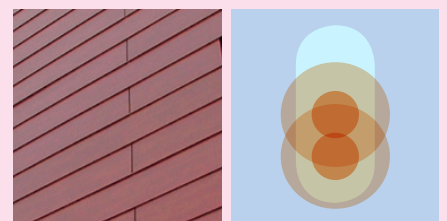
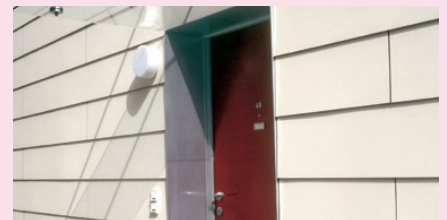
## F1.14 CONCEALED LAP-SIDING



### Concealed Fixing for Lap-Siding Applications

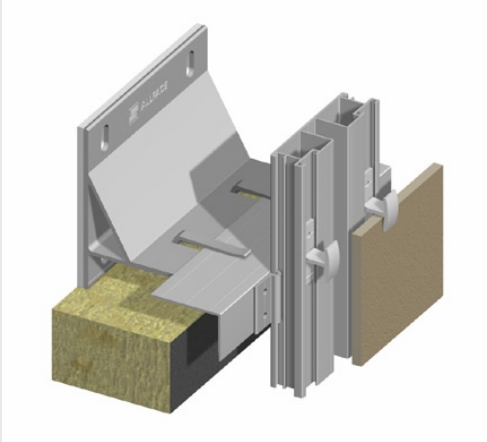
A special solution devised for fixing facade elements in a lap-siding application. Concealed rivets and a special horizontal profile make this system well-suited for both fiber concrete and HPL panel products.

> FIBER CONCRETE / HPL



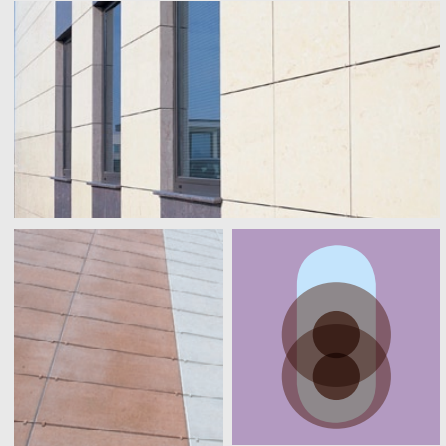
## F2.20 VISIBLE

> CERAMIC / STONE



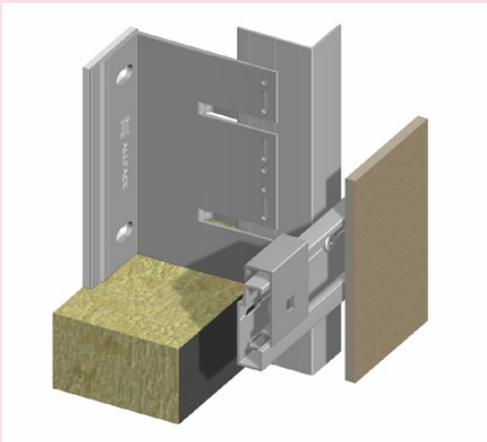
### Attachment methods with anchoring clips

Fixing facade elements with anchoring clips is especially suited for ceramic and terracotta facade elements. The anchoring clips are available in aluminum and stainless steel and can be made to match the color of the facade elements.



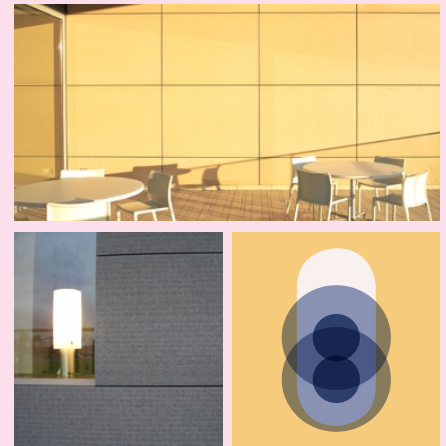
## F1.40 CONCEALED

> CERAMIC / STONE  
> FIBER CONCRETE / HPL

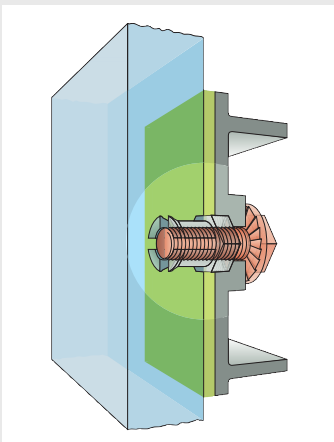


### Attachment methods for undercut anchors

Facade cladding can also be attached mechanically and can be concealed using undercut anchors. The backs of the cladding elements are provided with cleats that have special bolts inserted into the undercut hole and fixed by tightening the screws. Each cladding element must be fastened with at least four individual anchors.



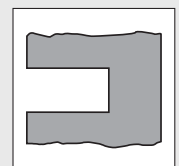
## UNDERCUT ANCHOR



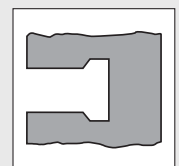
**DRILLING** > A cylindrical hole is drilled and then conically undercut in one step with only one tool. The drilling time is less than 10 seconds. Panels of any size or weight are given an undercut of precise and uniformly symmetrical shape.

**UNDERCUTTING** > A 7mm diameter hole is first drilled. A 9mm diameter undercut area is drilled.

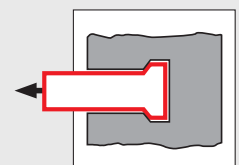
**FITTING** > To prepare for installation, an undercut anchor is inserted into the hole and tightened to a positive fit using a screw. An anchor can be install in a quick, simple and safe manner with normal tools.



DRILLING



UNDERCUT



FITTING



Shim-less 2-D Adjustability



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