



**imi**-beton  
Facade Panel  
original concrete look and feel

Technical  
Documentation

Status Juni 2021

**imi**  
SURFACE DESIGN





Please use this technical documentation for:

- DOKU**
- Planning**
  - Processing**
  - Packaging**
  - Transport**
  - Storage**
  - Installation**
  - Service**

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The **imi**-beton facade panel is a high-quality board material based on basalt rock. The board consists of a highly compressed 8 mm thick rock wool support board and an approx. 1 mm thick mineral **imi**-beton coating.

The product combines the robust properties of stone and the easy workability of wood. Where other board materials reach their limits, **imi**-beton facade panels offer an excellent solution. Easy and fast to process, sustainable and appealing in design.

**imi**-beton facade panels can be used in new construction as well as for renovation projects as:

- As facade cladding.
- Around the roof as gable or eave cladding, fascia board, roof edge or for dormers.
- For other detailed solutions on roofs, entrances and infill boards.

## Variants

The board material is available in two different variants:

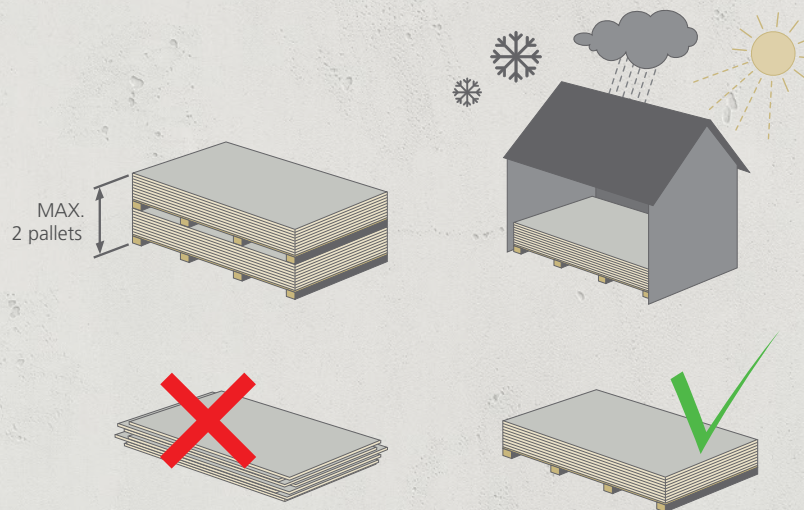
- Durable: **imi**-beton facade panel for use in regular facade and roofline applications.
- Xtreme: **imi**-beton facade panel for use in facade applications when a greater degree of strength is required. For instance to withstand higher wind loadings or impact resistance.





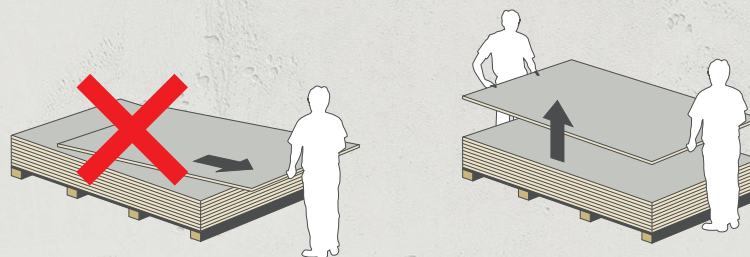
## Storage

- **imi**-beton facade panels are a decorative product. Therefore, always handle the boards with care!
- Store the board material in flat, dry, frost-free and protected conditions.
- Store on flat pallets and place the pallets on a level foundation.
- Make sure that the board material does not have direct contact with the floor.
- Never stack more than two pallets on top of each other!
- During storage the boards are exposed to different conditions than in use due to moisture and night-time cooling. Make sure that the boards are free of moisture and condensation before installation.



## Transport

- Boards must be lifted off the stack and carried upright, not pulled or pushed off the stack.
- Between the boards is a cardboard as a separating layer.
- To protect the surface of the boards, the cardboard should be placed again between the boards, e.g. when restacking.





**imi**-beton facade panel base material (high pressure stone wool) is a safe product to work with. Produced from basalt, a natural and sustainable volcanic stone. High pressure stone wool is one of the most extensively researched and tested building materials.

## Sawing

Standard tools can be used for sawing **imi**-beton facade panels or making cut-outs in the boards. In general the boards should be sawn with the decorative side facing upwards. With a handheld circular saw whose base is guided along the top of the board, it is useful to turn the board so that the decorative side faces downwards. However, you must ensure that the surface on which the board is placed is clean and even.

## Tools

- Circular saw, e.g. a fine-toothed Widia saw blade, e.g. 48 teeth and a diameter of 300 mm.
- Jigsaw, e.g. a fine-toothed metal saw blade or a saw blade with tungsten teeth.  
Recommended grit size 50.

## Security guidelines

- Use a dust mask (type P2).
- Use standard safety spectacles to protect your eyes from dust.
- Wear gloves during sawing.
- When sawing in closed rooms, use dust-reducing sawing equipment in combination with an extraction hood in a well-ventilated room.
- When sawing outdoors, position the saw so that the wind blows away any dust and, if possible, use dust-reducing sawing equipment.

## Edge processing

The cut edge must be finished with our **imi** edge covering paint. For special orders, the cut edges can be processed in the production process.



# Cleaning and care

## Bending boards

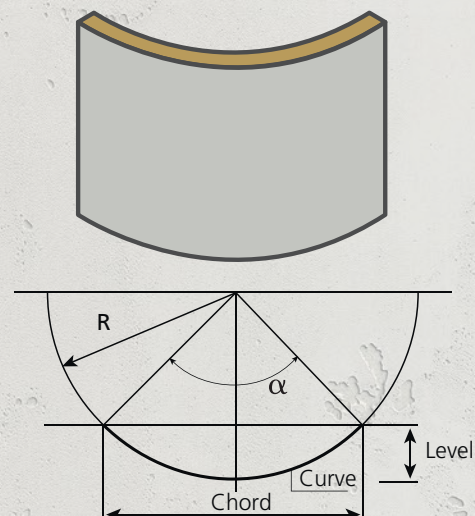
- The surface is impregnated factory-made.
- The facade boards do not require any cleaning.
- The surface is subject to a natural aging process.
- However if cleaning is desired, the surface can be cleaned with water and a soft broom/brush and/or sponge. Abrasives should be avoided.

## Bending and curving boards

The **imi**-beton facade panels can be curved and twisted into almost any desired shape, thus expanding your design scope.

The following values only apply to the Durable 9 mm version. For other variants such as Xtreme, please contact our technical department.

Board length (Curve, mm)	3050
Radius R minimum (mm)	2500
Angle $\alpha$	69,9°
Chord (mm)	2864
Level (mm)	451
Common ground c.t.c. (mm)	400
Fixing distance c.t.c. (mm)*	300



\* Specification of mounting distances in environments with a building height < 10 m and wind load zone 1 or 2. If **imi**-beton facade panels in curved form are to be used on taller buildings or in areas with higher wind loads, please contact our technical department.

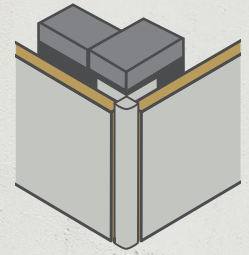


# Corner solutions

## Bonding instructions

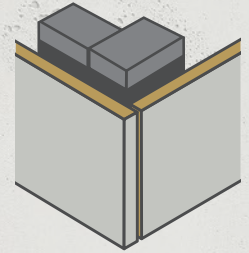
### Corner profiles

A perfect result is achieved with a corner solution using a corner profile. The specialized trade offers corner profiles in many variants.



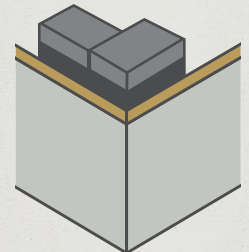
### Edge cover paint

Treating the sides with the appropriate opaque paint is another option.



### Mitered

A challenge for the specialist is a corner solution where the board edges are mitered.



## Bonding to aluminium or wooden substructure

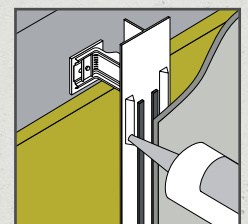
For a non-visible fixing, the manufacturer of the carrier board has developed a fire-safe, EU-certified adhesive system called Tack-S in cooperation with Bostik. The system meets the strict fire protection requirements so that the European building material class of B-s2, d0 (flame retardant) is achieved on:

- Wooden substructures with ROCKPANEL strips or on
- Aluminium substructures

When bonding the **imi-beton facade panels**, follow Bostik's processing instructions. If you want to use a different adhesive system, check whether the selected system meets the requirements for the application in combination with **imi-beton facade panels**.

Installation with other adhesive systems is the responsibility, technical approval and warranty of the manufacturer of the adhesive system concerned.

**Note:** The quality of the adhesive connection depends, among other things, on the weather conditions during installation. For further information on application, please contact the manufacturer of the adhesive system.



Adhesive installation



This chapter deals with the fastening guidelines and the maximum distances between fastening points for **imi-beton facade panels** on wooden or aluminium substructures.

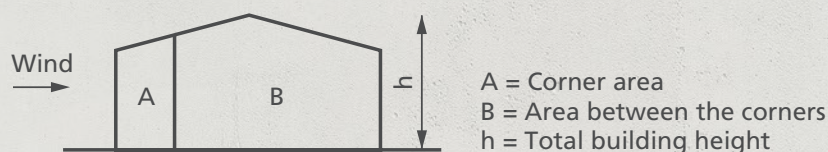
The table lists the maximum distances between fastening points for a vertical wooden or aluminium substructure according to the European technical assessment ETA-18/0448 and ETA 18/0449. When used in a specific project, individual calculations may have to be made.

Maximum distances between fastening points according to ETA (facade board)		
	<b>imi-beton facade panel 9 mm (8 mm carrier board + 1 mm coating)</b>	
Fastening type	Maximum span (b)	Max. distance between fixings (a)
Torx screw according to specification	600	600
Rivet	600	600
Adhesive system	The maximum span between the adhesive beads at <b>imi-beton facade panel 9 mm</b> is 600 mm (a)	

## Determination the fixing distances

When determining the mounting distances, the following must be taken into account in particular:

- Wind load
  - Determination by means of wind zone
  - Determination by means of building height
- Boards type and thickness used
- Selected fastener
- Static removal of the load, for example 1-field or 2-field spans.





# Fixing distances

The tables (pages 10 and 11) show examples of the most frequently occurring situations. For the correct interpretation of the tables, the wind zones in Germany according to DIN EN 1991-1-4/NA:2010-12 are shown in the following graphic.





## Calculation examples: Tables with Fixing distances

Maximum spacing: **imi**-beton facade panel 9 mm on wood or aluminium substructure

<b>Germany</b> - Inland - Building height <10 m - Ratio building height / width $\leq 1$ - Wooden substructure c24/s10 - Substructure made of aluminium according to ETA - $a_{R1} \geq 15 \text{ mm}$ - $a_{R2} \geq 50 \text{ mm}$			
Wind zone 1	b	a intermediate profile	a marginal profile
Torx screw according to specification	600 mm	540 mm	600 mm
	500 mm	600 mm	600 mm
Blind rivets on aluminium	600 mm	600 mm	600 mm
	500 mm	600 mm	600 mm
Wind zone 2	b	a intermediate profile	a marginal profile
Torx screw according to specification	600 mm	415 mm	600 mm
	500 mm	495 mm	600 mm
	400 mm	600 mm	600 mm
Blind rivets on aluminium	600 mm	510 mm	600 mm
	500 mm	600 mm	600 mm
	400 mm	600 mm	600 mm

<b>Germany</b> - Inland - Building height <10 m - Ratio building height / width $\leq 1$ - Wooden substructure c24/s10 - Substructure made of aluminium according to ETA - $a_{R1} \geq 15 \text{ mm}$ - $a_{R2} \geq 50 \text{ mm}$			
Wind zone 1	b	a	
Torx screw according to specification	600 mm	500 mm	
	500 mm	500 mm	
Blind rivets on aluminium	600 mm	500 mm	
	500 mm	500 mm	
Wind zone 2	b	a	
Torx screw according to specification	600 mm	370 mm	
	500 mm	455 mm	
	400 mm	455 mm	
Blind rivets on aluminium	600 mm	455 mm	
	500 mm	455 mm	
	400 mm	455 mm	



# Fixing distances

## Drilling / borehole diameter

<b>Germany</b> - Inland - Building height <10 m - Ratio building height / width $\leq 1$ - Wooden substructure c24/s10 - Substructure made of aluminium according to ETA - $a_{R1} \geq 15$ mm - $a_{R2} \geq 50$ mm			
<b>Wind zone 1</b>	b	a	a
Torx screw according to specification	600 mm	-	-
	500 mm	600 mm	500 mm
Blind rivets on aluminium	600 mm	-	-
	500 mm	600 mm	500 mm
<b>Wind zone 2</b>	b	a	a
Torx screw according to specification	600 mm	-	-
	500 mm	-	-
	400 mm	600 mm	455 mm
Blind rivets on aluminium	600 mm	-	-
	500 mm	-	-
	400 mm	600 mm	455 mm

Specification of screws and blind rivets according to ETA.

For optical reasons, we recommend adjusting the fixing distance of the edge profile to the distance of the intermediate profile.

## Drilling / borehole diameter

A HSS steel drill is recommended for drilling the screw holes.

For fixing according to ETA, please note the following table:

borehole diameter (mm)		
	<b>imi</b> -beton facade panel 9 mm (8 mm carrier board + 1 mm coating)	
	Fixing material	
	Screws	Rivets
fixed points	3,2	5,2
moving points	6,0	8,0

## Application as ceiling or roof overhang

When using **imi**-beton facade panels horizontally, e.g. for ceilings or roof overhangs, the dead load of the **imi**-beton facade panels must be taken into account when calculating the total load. As a rule of thumb, it is sufficient to multiply the fixing distances by a factor of 0,75.



## Fixing

The fastening systems are also part of a certification system. The calculated values were determined using the fasteners specified in the European approval. It is therefore important to meet these specifications.

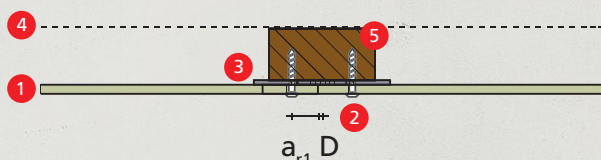
Specifications of fasteners indicated in the detailed drawings as “Torx screw according to specification” and “Blind rivets according to specification”:

Torx screw according to specification	Blind rivet according to specification
Torx screw Stainless steel, Material No. 1.4401 or 1.4578	Aluminium rivets with flat head ø 14mm of typ AP14-50180-S material EN-AW-5019 according EN 755-2 material no. of blind rivet 1.4541 (according EN 10088)

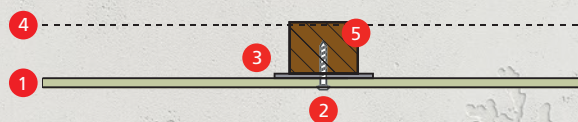
The fixings suitable for the **imi-beton facade panel** correspond to those used for the Rock-panel boards. These fixings are listed in the ETA certificate.

## Facade

### 1a. Mechanical fixing and joint tapes



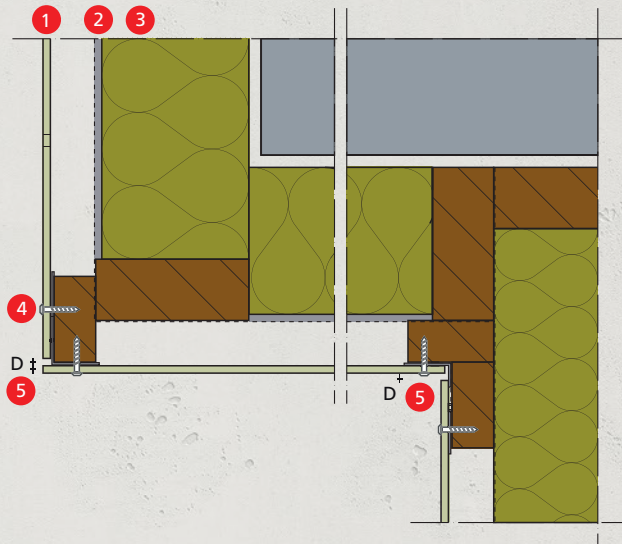
- 1 **imi-beton facade panel 9 mm**
- 2 Torx screw according to specification
- 3 EPDM foam gasket
- 4 Breathable membrane
- 5 Battens 28 x 70 mm
- D Assembly joint
- $a_{r1}$  15 mm minimum edge distance



- 1 **imi-beton facade panel 9 mm**
- 2 Torx screw according to specification
- 3 EPDM foam gasket
- 4 Breathable membrane
- 5 Battens 28 x 45 mm

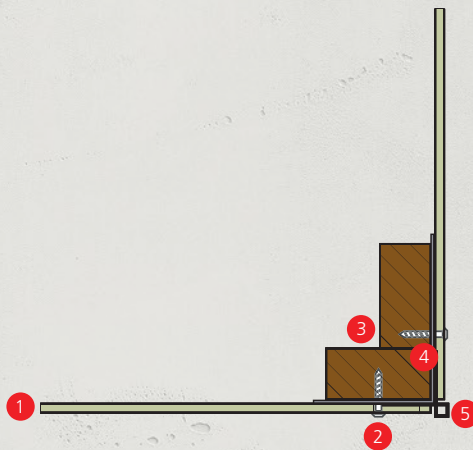


## 1b. Mechanically fixed to timber supports, internal and external corner



- 1 **imi-beton facade panel 9 mm**
- 2 Breathable membrane
- 3 Insulation (for example ROCKWOOL)
- 4 Torx screw according to specification
- 5 EPDM foam gasket
- D Assembly joint

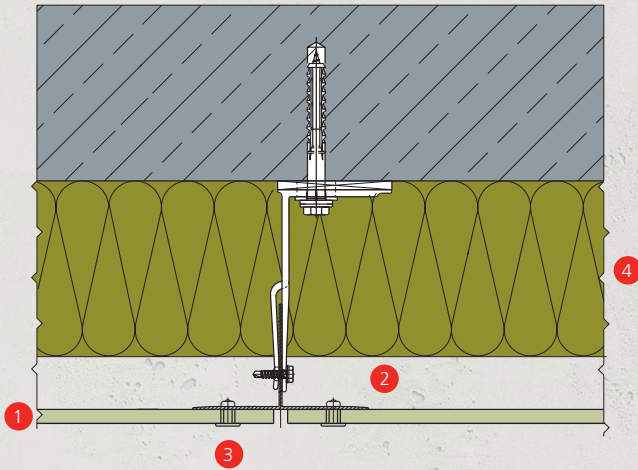
## 1c. Mechanically fixed to timber supports, with external corner profile



- 1 **imi-beton facade panel 9 mm**
- 2 Torx screw according to specification
- 3 Battens 28 x 70 mm
- 4 EPDM foam gasket
- 5 Corner profile



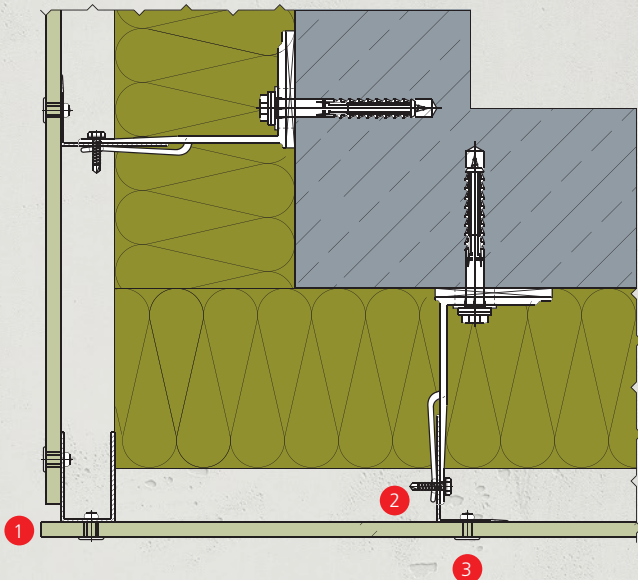
## 2a. Aluminium substructure, board joint



- 1 **imi-beton facade panel 9 mm**
- 2 Air cavity
- 3 Blind rivet according to specification
- 4 Insulation (for example ROCKWOOL)

Important: For aluminium constructions in an open facade we recommend a cavity depth of 40-100 mm.

## 2b. Aluminium substructure, outer corner detail

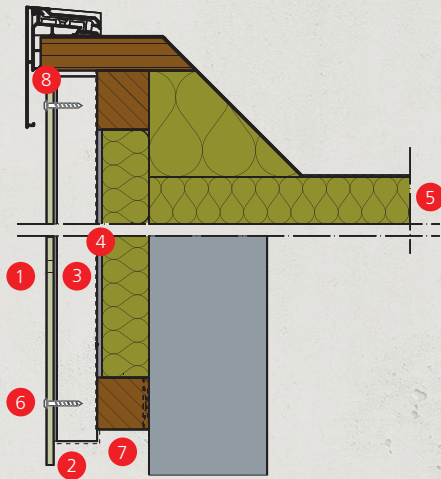


- 1 **imi-beton facade panel 9 mm**
- 2 Air cavity
- 3 Rivet according to specification
- 4 Insulation (for example ROCKWOOL)



## Around the roof

### 3a. Mechanical fixing, parapet end

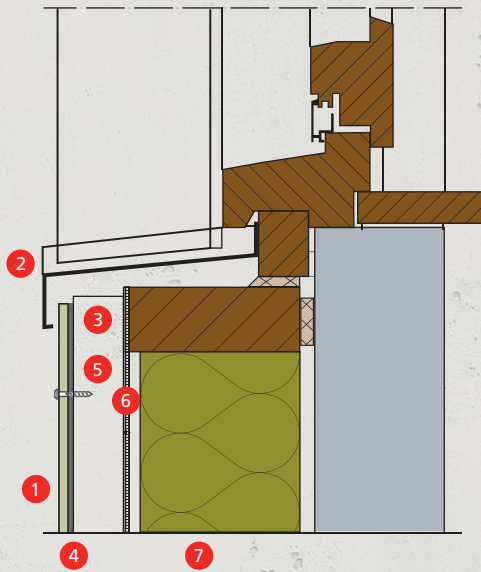


- 1 **imi-beton facade panel 9 mm**
- 2 **Gasket**
- 3 **Battens**
- 4 **Breathable membrane**
- 5 **Insulation (for example ROCKWOOL)**
- 6 **Torx screw according to specification**
- 7 **Ventilation profile**
- 8 **Ventilation**



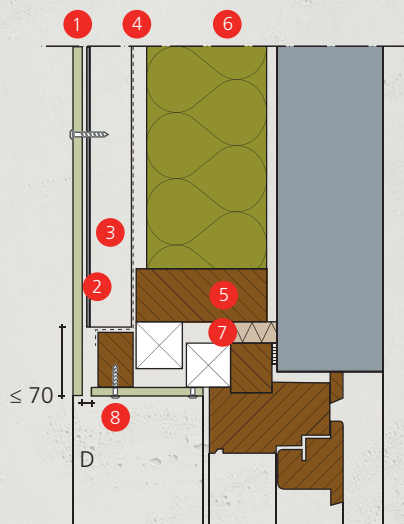
## Around the window

### 4a. Mechanical fixing, window parapet



- 1 **imi-beton facade panel 9 mm**
- 2 Aluminium window-sill
- 3 Ventilation
- 4 EPDM foam gasket
- 5 Battens
- 6 Breathable membrane
- 7 Insulation (for example ROCKWOOL)

### 4b. Mechanical fixing, window lintel

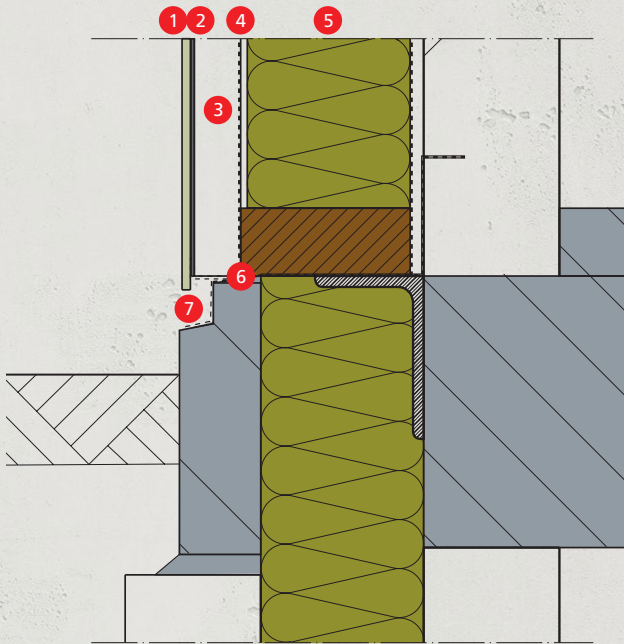


- 1 **imi-beton facade panel 9 mm**
- 2 EPDM foam gasket
- 3 Battens
- 4 Breathable membrane
- 5 Framework
- 6 Insulation (for example ROCKWOOL)
- 7 PU foam
- 8 Torx screw according to specification
- D Assembly joint



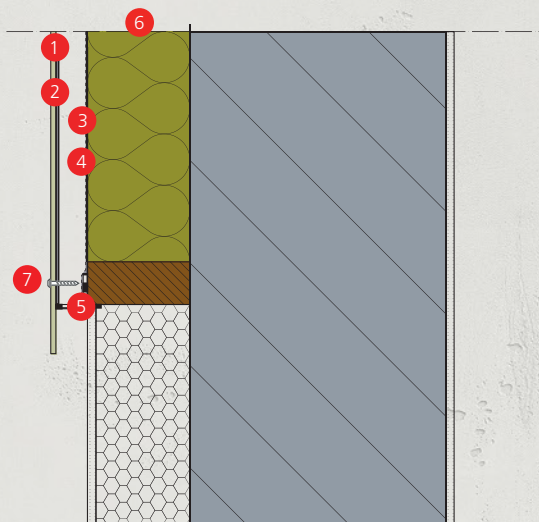
## Connection at ground level

4c. Mechanical fixing, plinth end



- 1 **imi-beton facade panel 9 mm**
- 2 EPDM foam gasket
- 3 Battens/ventilation
- 4 Breathable membrane
- 5 Insulation (for example ROCKWOOL)
- 6 Lead flashing / cavity tray
- 7 Access for ventilation

4d. Mechanical fixing, plinth end



- 1 **imi-beton facade panel 9 mm**
- 2 EPDM foam gasket
- 3 Battens / ventilation
- 4 Breathable membrane
- 5 Access for ventilation
- 6 Insulation (for example ROCKWOOL)
- 7 Torx screw according to specification

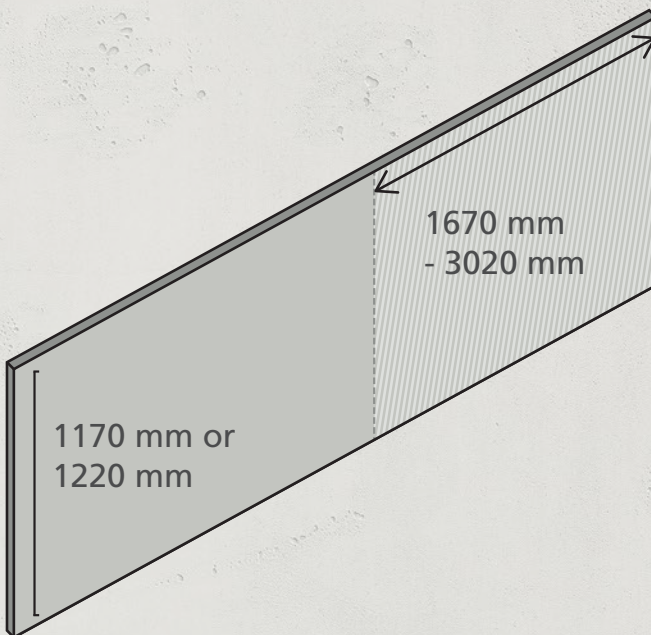


## Formats

2.470 x 1.170 mm and 3.020 x 1.170 mm  
optionally also available in width 1.220 mm\*

## Special dimensions\*\*

You can also have your boards manufactured to your specifications. The length can vary depending on the requirements of your project. Thanks to the innovative manufacturing process, our boards are now also available in any length between 1.670 mm and 3.020 mm and in width 1.220 mm. We will be happy to advise you on the possibilities.



- \* Optional width of 1.220 mm: from 100 m<sup>2</sup>, longer delivery times.
- \*\* Special dimensions in length: from 300 m<sup>2</sup>, longer delivery times and extra charge.

Please contact us for the exact conditions.

Weight	
imi-beton facade panel Durable 9 mm	10,1 ± 1,2 kg/m <sup>2</sup>
imi-beton facade panel Xtreme 9 mm	11,3 ± 0,8 kg/m <sup>2</sup>



## ETA and CE marking

The **imi**-beton facade panels have been assessed and approved on the basis of a specially developed guideline for innovative products, EAD. Based on this directive, **imi**-beton facade panels have received a European Technical Assessment (ETA).

The **imi**-beton facade panels have a declaration of performance and received an European CE marking on the basis of this ETA, and therefore fulfill the European requirements for building materials throughout Europe.

## ETA

- ETA-18/0449: "**imi**-beton facade panels Durable"
- ETA-18/0448: "**imi**-beton facade panels Xtreme"

## Fire classification

Fire behaviour according to European standard Euroclass B-s2, d0 (Durable / Xtreme)  
EN 13501-1

## More Informations

To learn more about our products and find answers to your questions, visit our website at [www.imi-beton.com](http://www.imi-beton.com)

## Samples

**Are you looking for even more inspiration?**

We are happy to support you in your creative work:

Please call us at +49 (0) 2557 9377-40 or send us an e-mail to [info@imi-beton.com](mailto:info@imi-beton.com)

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www. **imi**-beton.com

## Decors



smooth formwork grey  
120



vintage standard 224



vintage anthracite 226



sandstone 1053



rust smooth 329

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