KNAUF INSULATION

www.knaufinsulation.com

VENTILATED FACADE APPLICATIONS and DETAILS

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KNAUF INSULATION

AS KNAUF INSULATION, WITH 40 YEARS OF EXPERIENCE IN THE INSULATION INDUSTRY, WE ARE LEADING THE CHANGE IN SMARTER INSULATION SOLUTIONS FOR A BETTER WORLD.

We are one of the fastest growing and most respected names in insulation worldwide. We are committed to helping our customers to meet the increasing demand for energy efficiency and sustainability in buildings.

challenge.

We challenge ourselves, regulators and our industry to develop new concepts and new ways of thinking about insulation ad buildings;

create.

We create innovative solutions that change the way we work and set new standards of quality, performance and sustainability;

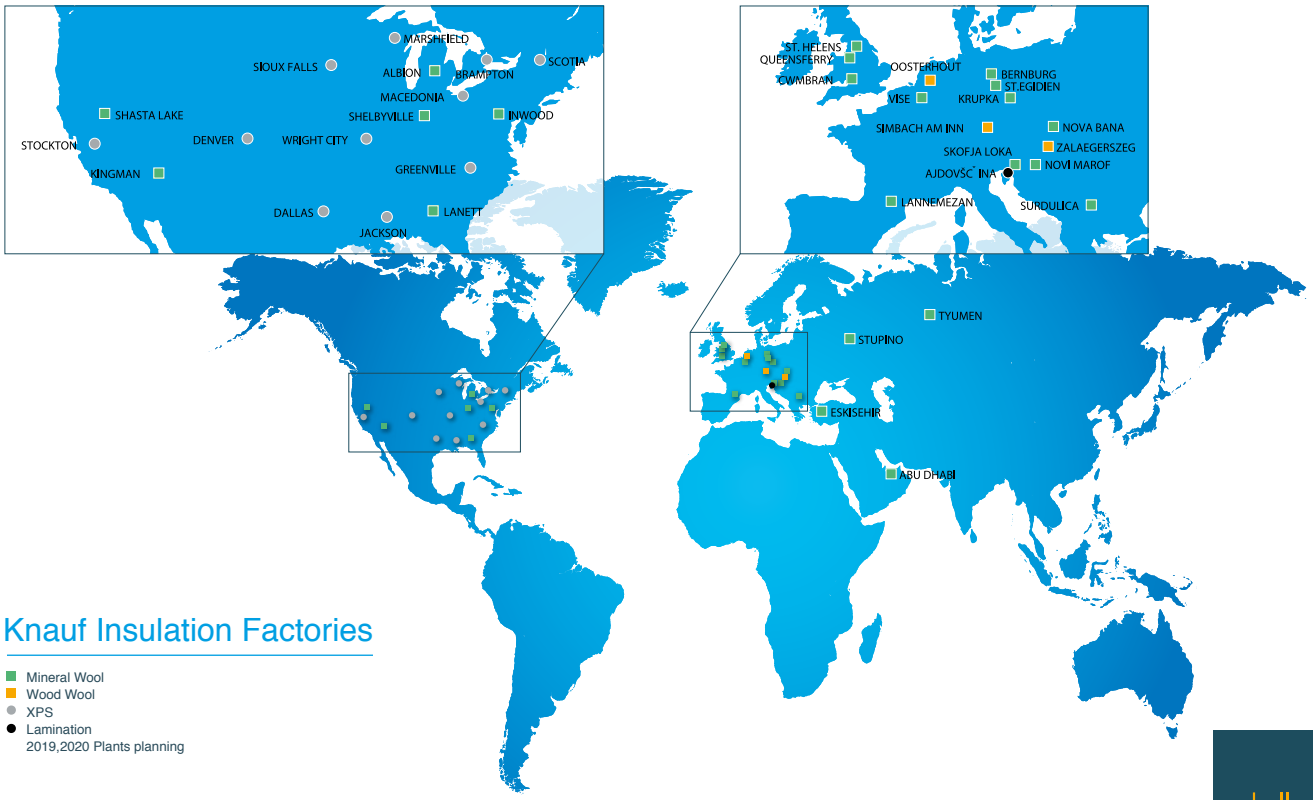
care.

We care about what really matters: our people, our customers, our communities and ultimately, our planet.

KNAUF INSULATION IS ONE OF THE MAIN MATERIAL MANUFACTURERS OF INSULATION AND CONTINUES to GROW.

With 40 years from experience in the world of insulation, we lead the change with solutions more complete for a better world.

Part of the group Knauf, multinational family property, manufacturer of materials and systems complete for the sector of the building.



Knauf Insulation Factories

- Mineral Wool
- Wood Wool
- XPS
- Lamination

2019,2020 Plants planning

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Cladded Walls

Ventilated Facade (Rainscreen cladding system) and Curtain Wall System

Ventilated Facade Systems

There are a wide variety of proprietary rainscreen cladding systems available most of which have the insulation installed on the external face of a masonry wall, this helps to keep internal temperature stable by storing heat in the winter and reducing solar gains in the summer. Rainscreen cladding systems are also lightweight when compared to brick and masonry solutions and they can provide the designer with a wide range of aesthetic options.

Curtain wall systems

Curtain walls usually consist of a proprietary non-structural lightweight frame which in some cases is designed to incorporate glass panels which act as the weatherproof facade and also allow daylight to penetrate into the building. There are several other types of curtain walling including factory built unitized systems which are typically comprised of insulation behind a glass, natural stone or metal facing. Whenever a proprietary rainscreen cladding or curtain wall system is used, the system manufacturer's recommendation should be followed.

Weather protection

Rainscreen cladding systems are designed to keep both the structural frame and the thermal insulation dry, due to the rainscreen cladding itself but also due to the airspace between the cladding and the insulation. Drained and ventilated rainscreen systems work by allowing air to enter at the base of the system and escape at the top of the system, the ventilated cavity allows water penetrating the panel joints to be partly removed by the 'stack effect' and partly removed by running down the rear face of the panels and out of the base of the system. Curtain walls usually consist of a glass facade which is both waterproof and thus weather resistant.

Fire

For external wall constructions that include cavities (such as rainscreen cladding), cavity fire barriers are recommended at the junctions between the wall and every compartment floor or wall or other wall or door assembly that forms a fire-resisting barrier.

Fire barriers

The cavity barrier needs to be as per the system performance requirement and ensure compartmentation is established between the façade skin and the primary substrate.

Product

Façade Slab is a glass mineral wool slab containing a water repellent additive, specially developed for rainscreen cladding applications. Its manufacture has a very low impact on the environment.

Typical construction

Rainscreen cladding systems comprise outer cladding panels that are bolted to a supporting framework of rails, which are supported by brackets fixed through a thermal break pad back to the building frame. A layer of insulation is fixed independently against the building substructure using proprietary insulation fasteners. Façade Slab is recommended for this application, as it is lightweight but rigid enough to resist the compression forces generated when installing the insulation slabs on the masonry substrate.

Installation

Façade Slab is positioned between the support brackets for the rainscreen cladding system and across the whole area to be insulated. Cut the slabs with a sharp knife to fit around the brackets so there are no gaps in the insulation. To minimize thermal bridging, the brackets should be of sufficient depth to allow the panel support rails to be located clear of the face of the insulation. The insulation should be close butted and fixed independently against the building substructure using proprietary insulation fasteners in accordance with the design specification. Once the insulation is firmly in place, the application of the cladding can proceed. Ensure that a ventilated cavity remains between the insulation and the external cladding. The dimensions of the ventilated cavity should not exceed the limits in the Building Regulations.

Thermal performance

Mineral Plus FCB 35 has a thermal conductivity of 0.035 W/mK.
Mineral Plus FCB Extra 033 has a thermal conductivity of 0.033 W/mK.
Mineral Plus FCB Pro 032 has a thermal conductivity of 0.032 W/mK.
The U-value of a proprietary rainscreen cladding system is dependent on the degree of thermal bridging in the system. Typically 50mm of Façade Slab will achieve a U-value of 0.57 W/m2K or better, but Knauf Insulation advise consulting proprietary rainscreen cladding manufacturers for U-values appropriate for their system.

U Value Calculations

Rainscreen cladding systems can be very complex constructions due to the fact that they are made up of a variety of steel or aluminium components which are fastened together by various means. It therefore, is no surprise that the heat flow paths through rainscreen cladding systems are also complex and cannot be accurately quantified by the normal calculation methods used to establish the U-value of a construction element. Therefore, if the U-value for a rainscreen cladding system is calculated without employing numerical modelling, the U-value should be calculated without taking the rainscreen brackets consideration and then increased by 0.30W/m2K.

ADVANTAGES of VENTILATED FACADE

ELIMINATE THERMAL BRIDGES

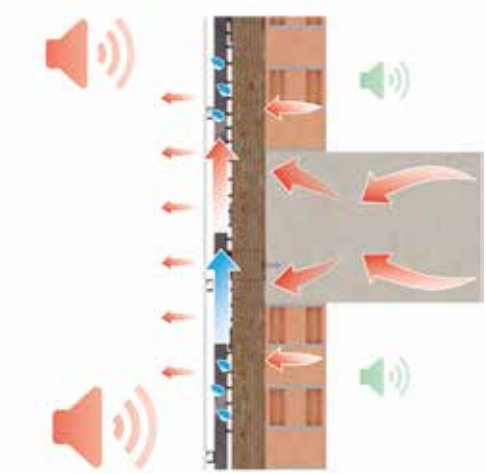
Mineral Wool with its flexible structure , is easily applied to surface without voids. It adapts to surface that is applied to.

AVOID CONDENSATION

The air flow of the ventilated chamber eliminates the possible moisture that may exist thus avoiding the risk of condensations.

MAXIMUM ACOUSTIC PERFORMANCE

The ventilated facade allows to attenuate the sound wave from external noise thanks to the high degree of acoustic absorption of mineral wool.



This type of facade is characterized by the existence of a ventilated air chamber, between the insulation and the finishing pieces, resulting from the placement of a metal substructure attached to the outer wall, which serves as a base to support the finishing pieces that act as the second skin of the building.

The ventilated chamber works by chimney effect, when create an upward direct current by convection of air heated by the solar radiation that falls on the finishing material.

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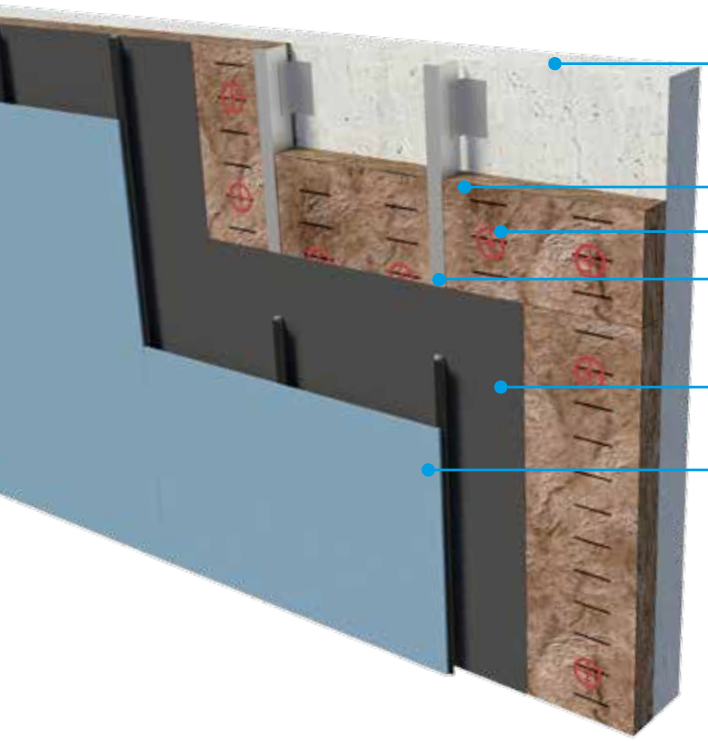
TYPICAL VENTILATED FACADE



It consists of a support wall, usually brick, concrete blocks or panels, on which metal brackets are fixed, which will serve for support of the bearing structure of the material facade cladding and finishing.

The insulation is mechanically fixed on the surface outside the support wall. The design of the brackets of the bearing structure will enable the formation of the chamber of ventilated air and leave the fabric, vertical profiles and horizontal of the supporting structure, separated from the insulation.

On this supporting structure, the light plates of facade finish, which can be ceramic, stone natural, metallic, resin, glass, etc.

1. Load Bearing Wall
2. Mineral Wool
3. Air chamber
4. Mechanical fixings for ventilated façade
5. Façade finish

RAINPROOF SYSTEM
VENTILATED FACADE SYSTEM

ADVANTAGES

• Protection of insulation and different layers of installation of the facade.

• Avoid the “wind washing” effect (thermal efficiency of the insulation).

• Protection against wind insulation during its installation phase.

• Highly recommended for areas with high levels of rainfall.

• Advisable in environments with high hygrometry.

• It allows freedom of design of the façade.

• Complies with fire regulations for ventilated facade.

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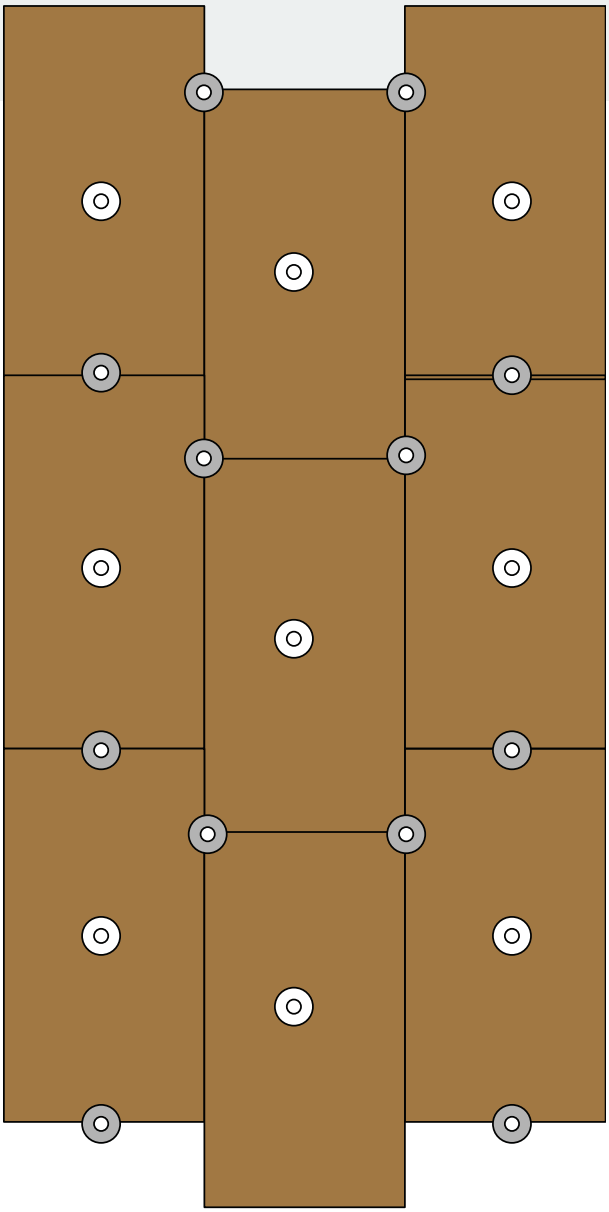
SPECIFICATION

JOINTS BETWEEN SLABS SHOULD BE STAGGERED BY 100-150MM

Joints between slabs should be staggered by 100-150mm and coincidental joints should be avoided.

To avoid coincidental joints.



Between ventilated façade profiles CE and EN 13162 certificated, fire class A1 type, hydrophobic Mineral Wool is used. Mineral Wool performs qualities below:

-Thermal conductivity coefficient is $\lambda \leq 0.035$ W/m.K
-Mineral Wool obtains Eurofins Indoor Air Comfort Gold Certificate.
-Mineral Wool does not contain phenol or formaldehyde. Natural raw materials replace the chemicals used in traditional binders.
-Mineral Wool is certificated with CE, proving A1 fire class material.

INSTALLATION

Mineral Wool Insulation Board size is 600x1200 mm. Mineral Wool Insulation Boards are placed adjacent to each other and located between vertical profiles which are installed before insulation material. Mineral Wool Insulation Boards are fixed into load bearing wall with the help of anchors. 5 anchors are used for each board. Size of Anchor should be chosen according to insulation material thickness and type of loading bearing wall. With the help of drill, first anchors gaps are provided. Then anchors are fixed, up to head of anchor. In order to have full performance of insulation material, pillowing effect should be avoided. Pillowing effect is generated by over squeezing of insulation by insulation fixing/holder. Anchors should not squeeze the insulation material.

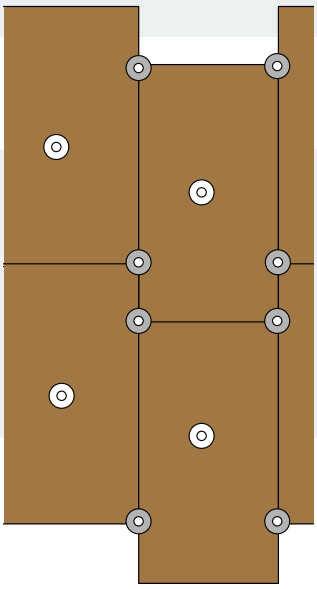
INSTALLATION

DOUBLE-FACED
IT DOESN'T MATTER WHICH WAY ROUND IT IS INSTALLED

Installed with either face in intimate contact with the substrate without affecting any thermal properties.

SLABS TO BE IN CONTACT WITH EACH OTHER

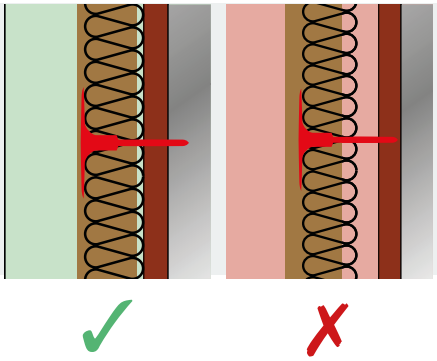
Installed such that they are tightly butted together at joints and joints staggered by 100-150mm.



To avoid coincidental joints and maintain acoustic performance.

INTIMATE CONTACT WITH SUBSTRATE

Earthwool RainScreen Slab should be in intimate contact with the building substrate. The nature of the insulation material lends itself to accommodate any irregularities in the surface of the substrate.



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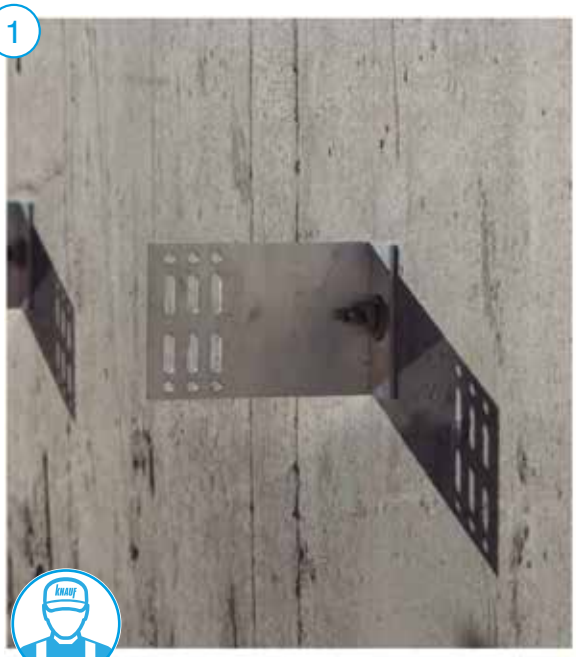


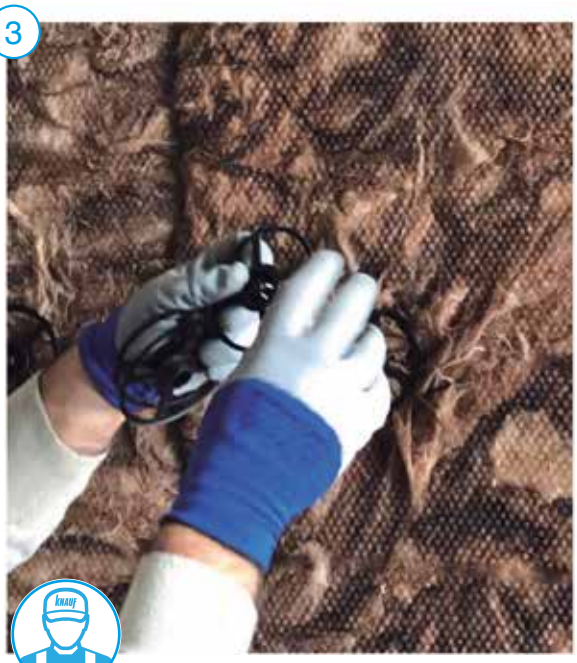
Positioning of the brackets

Installation advice: The length of the brackets has to be greater than the thickness of the insulation to to be able to fix the amount after generating the ventilated façade.

2

Placing and fixing the thermal insulation to the wall of support. Mineral wool must be placed accordingly.

3



Installation advice: Recommended placement of anchor is min 5 anchors per m^2. The length of the anchors must be at least 3 cm longer than the thickness of the insulation to ensure its support.

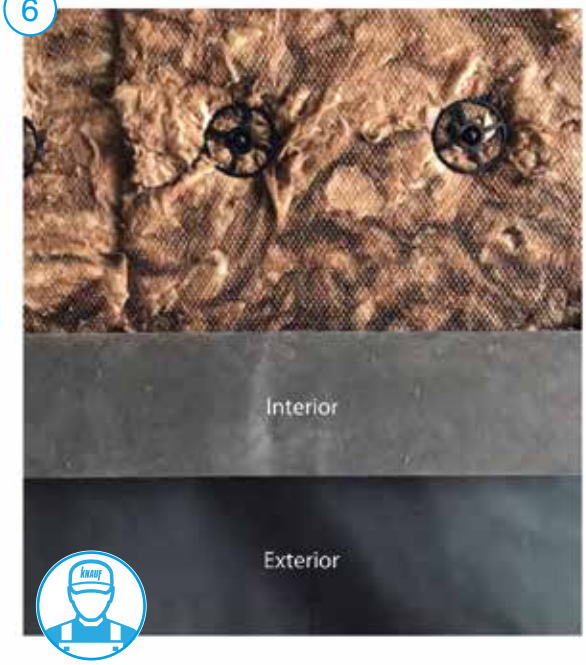
4

Installation tip: The diameter of the head of the anchor must have a minimum of 8 cm to ensure a correct fixation.

5

The waterproof membrane is placed. It is cut by the height of the bracket and temporarily fixed with a locking element. Later it will be held.

6

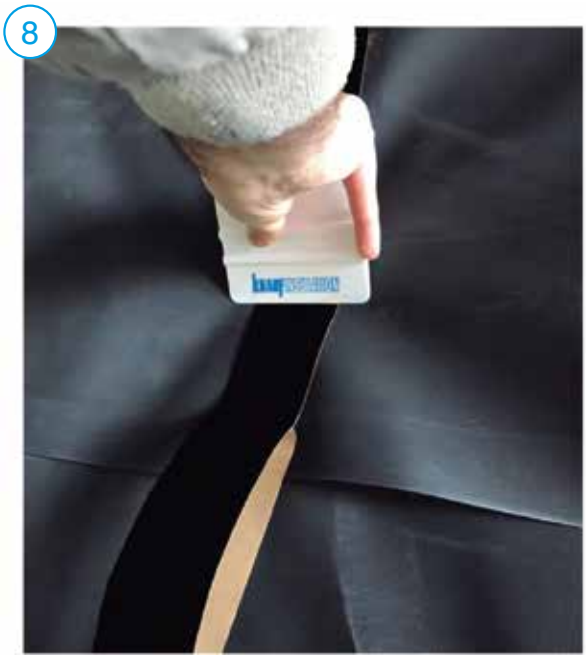


Installation Tip: External face of the membrane has a darker color due to the material composition. Exterior face is the face with protection to UV rays. The inner face is lighter color, in contact with the wool.

7

Overlap the membranes 50 cm vertically and 20 cm horizontally according to water flow direction.

8



Tape the vertical overlaps and optionally, horizontal overlaps too. Use a tape recommended by the manufacturer.

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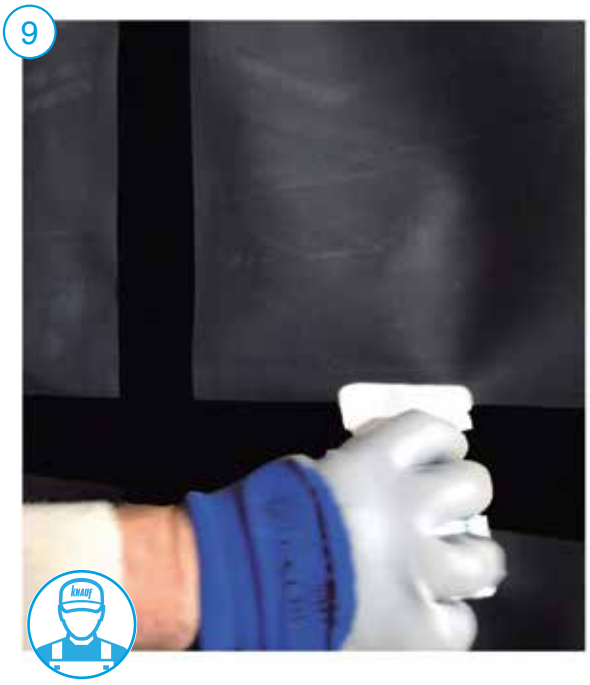


Installation advice: To improve the tightness the membrane, it should be flattened.

10

To guarantee the water tightness of the facade, you have to tape the brackets .

11

Check that the bracket is taped by its four sides.

MINERAL PLUS FCB and INSTALLATION ACCESSORIES

COMPONENTS

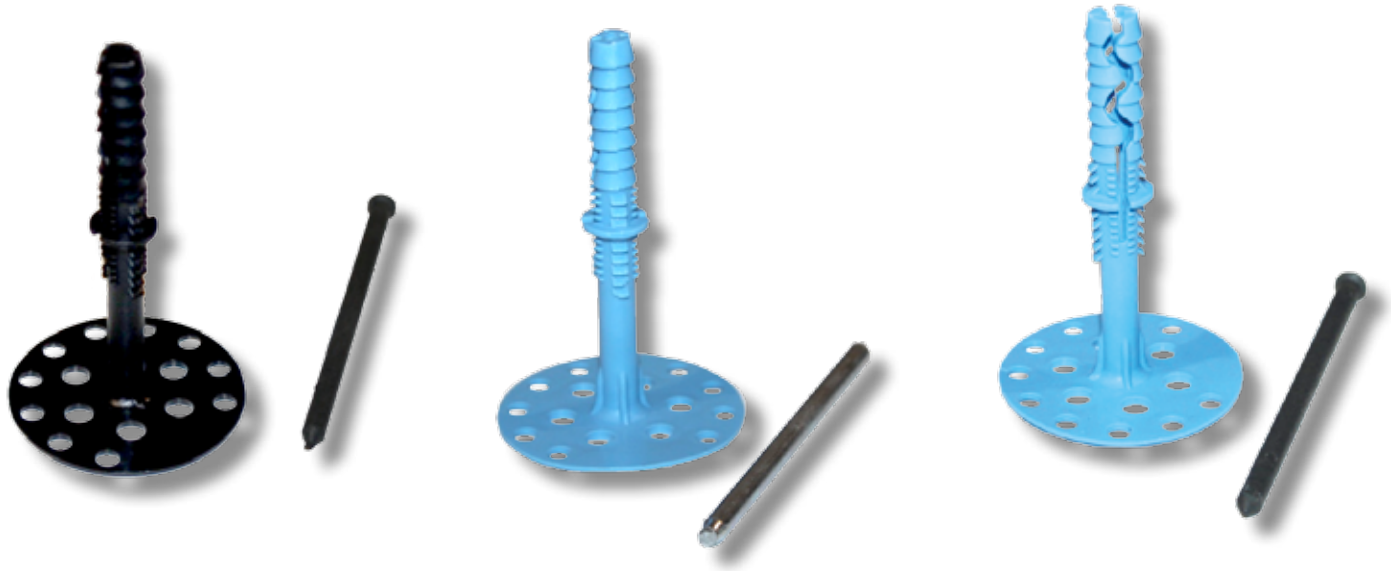
Mineral Wool

- λ= 0.032, 0.033 and 0.035 w/mK
- Water-repellent
- A1 (unfaced)
- The Highest fire reaction rank

Waterproof Membrane

- Water resistance
- UV resistant membrane
- Reaction to fire B s1 d0
- Water vapor breathable
- Black colored

New Anchor with Stopper for Ventilated Façade



Special anchor with Stopper: Does not sequeeze the insulation material.

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MINERAL PLUS FCB PRODUCTS

Technical Properties	Unit	Value	Standart
Thermal Conductivity Coefficient	W/m.K	0.032,0.033,0.035	EN 13162
Reaction to Fire Class	-	A1	EN 13501-1
Water Vapor Diffusion Resistance	-	1	EN 12086
Short-term Water Absorption Value	Kg/m^2	≤ 1	EN 1609
Long-term Water Absorption Value	Kg/m^2	≤ 3	EN 12087
Compressive Strength (at 10% deformation)	kPa	Not Needed	EN 29053
Certificate	-	CE	
Package	-	PE film	

	λ_D (W/mK)	Thickness (mm)	R (m^2k/W)
Mineral Plus FCB 035 unfaced,ecose veiled,alufaced	0,035	30-50-60-80-100 mm	0.85-1.40-1.70-2.30-2.85
Mineral Plus FCB Extra 033 unfaced,ecose veiled,alufaced	0,033	30-50-60-80-100 mm	0.90-1.50-1.80-2.40-3.05
Mineral Plus FCB Pro 032 unfaced,ecose veiled,alufaced	0,032	30-50-60-80-100-125 mm	0.95-1.55-1.90-2.5-3.15-4

ACCESSORIES

	Mineral Wool Thickness (mm)	Nail Length (mm)
VF ANCHOR	40-50-60-80-100	100-100-120-120-160
VF ECO ANCHOR	40-50-60-80-100	100-100-120-120-160
VF PRO ANCHOR	40-50-60-80-100	100-100-120-120-160

WATERPROOF SYSTEM

Product characteristics	MEMBRANE	EN 13859
Unit weight of the product(m^2)	Aprox. 270 g/m^2 (-+10)	EN 1849-2
Reaction to fire	B-s1-d0	EN 13501-1
Impermeability after aging	W1	EN 13859-1
UV Resistance	available	-
Temperature Tolerance	btw (-) 30 and(+) 80	-

VENTILATED FACADE SOLUTIONS

FCB PRO 032 +VF MEMBRANE

Membrane

- λ= 0,032 W/mK
- Reaction to fire:A1
- VF Membrane Fire Reaction: B s1 d0
- Water Repellent
- Total Protection like an envelope

FCB PRO 032 BGT

BGT

- λ=0,0 32 W/mK
- Reaction to fire:A1
- Water Repellent
- Total Protection like an envelope
- Blackveil

FCB 035 MEMBRANE

Membrane

- λ=0,035W/mK
- Reaction to fire:A1
- Water Repellent
- Total Protection like an envelope
- Membrane

FCB 035 BGT

BGT

- λ=0,035W/mK
- Reaction to fire:A1
- Water Repellent
- Total Protection like an envelope
- BlackVeil

FCB EXTRA 033 BGT

BGT

- λ=0,033W/mK
- Reaction to fire:A1
- Water Repellent
- Total Protection like an envelope
- BlackVeil

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MineralPlus FCB Pro 032
Ventilated Facade Insulation Slab

PRO

PRODUCT INFO

MineralPlus FCB Pro 032, has developed for providing maximum performance on Ventilated façade insulation applications. It has high thermal and sound insulation performance and ranked as A1 on reaction to fire classification according to EN 13501-1. It offers high rigidity and durability on façade applications which enables protecting its insulation performance during long years. MineralPlus FCB Pro 032 has minimum dusting behaviour and easy application with its flexible structure; which provides saving labor cost and time during application. It does not contain harmful chemicals in its binder content, like phenol and formaldehyde. It has the minimum VOC ratio. MineralPlus is the first and only insulation slab in Turkey, which has 'Eurofins Indoor Air Comfort Gold' certification and helps to the keeping ambient air more clean and healthy.

MAIN PROPERTIES

Thermal Conductivity Coefficient:
λ_D=0,032 W/m.K

Reaction to Fire Class:
A1

Provides high sound insulation performance
Tested in authorized laboratories.

PRODUCT PROPERTIES

- Low thermal conductivity coefficient, resistant to heat transmission.
  λ_D=0,032 W/m.K
- Absorbs air-borne sounds.
- Reaction to fire class; A1
- Does not itch thanks to its minimum dusting advantage.
- Flexible, easy to use, saves time and labor.
- Provides lower inventory cost thanks to compressed packages.
- Mineral Plus FCB Pro 032 can be produced with different facing if demanded.

Thickness (mm)	Width (mm)	Length (mm)	Thermal Conductivity Coefficient λ_D (W/mK)	Thermal Resistance R (m^2k/W)
40	600	1200	0,032	1,25
50	600	1200	0,032	1,55
60	600	1200	0,032	1,90
80	600	1200	0,032	2,50
100	600	1200	0,032	3,15

Technical Properties	Unit	Value
Thermal Conductivity Coefficient	W/m.K	0,032
Reaction to Fire Class	-	A1
Water Vapor Diffusion Resistance	-	1
Short-term Water Absorption Value	Kg/m^2	≤ 1
Long-term Water Absorption Value	Kg/m^2	≤ 3
Compressive Strength (at 10% deformation)	kPa	Not Needed
Certificate	-	CE
Package	-	PE film

MineralPlus FCB Extra 033
Ventilated Facade Insulation Slab

EXTRA

PRODUCT INFO

MineralPlus FCB Extra 033, has developed for providing superior performance on Ventilated façade insulation applications. It offers high thermal and sound insulation performance and ranked as A1 on reaction to fire classification according to EN 13501-1. It has minimum dusting behaviour and easy application with its flexible structure; which enables saving labor cost and time during application. It does not contain harmful chemicals in its binder content, like phenol and formaldehyde. It has the minimum VOC ratio. MineralPlus is the first and only insulation slab in Turkey, which has 'Eurofins Indoor Air Comfort Gold' certification and helps to the keeping air clean and healthy.

MAIN PROPERTIES

Thermal Conductivity Coefficient:
λ_D=0,033 W/m.K

Reaction to Fire Class:
A1

Provides high sound insulation performance
Tested in authorized laboratories.

PRODUCT PROPERTIES

- Low thermal conductivity coefficient, resistant to heat transmission.
  λ_D=0,033 W/m.K
- Absorbs air-borne sounds.
- Reaction to fire class; A1
- Does not itch thanks to its minimum dusting advantage.
- Flexible, easy to use, saves time and labor.
- Provides lower inventory cost thanks to compressed packages.
- Mineral Plus FCB Extra 033 can be produced with different facing if demanded.

Thickness (mm)	Width (mm)	Length (mm)	Thermal Conductivity Coefficient λ_D (W/mK)	Thermal Resistance R (m²k/W)
40	600	1200	0,033	1,20
50	600	1200	0,033	1,50
60	600	1200	0,033	1,80
80	600	1200	0,033	2,40
100	600	1200	0,033	3,05

*For special thickness contact with sales team.

Technical Properties	Unit	Value
Thermal Conductivity Coefficient	W/m.K	0,033
Reaction to Fire Class	-	A1
Water Vapor Diffusion Resistance	-	1
Short-term Water Absorption Value	Kg/m²	≤ 1
Long-term Water Absorption Value	Kg/m²	≤ 3
Compressive Strength (at 10% deformation)	kPa	Not Needed
Certificate	-	CE
Package	-	PE film

INDOOR AIR COMFORT eurofins GOLD CERTIFIED PRODUCT

with ECOSE TECHNOLOGY

RAL GÜTEZEICHEN Erzeugnisse aus MINERALWOLLE

TSE

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MineralPlus FCB 035
Ventilated Facade Insulation Slab

PRODUCT INFO

MineralPlus FCB 035 is a mineral wool based, flexible insulation slab with minimum dusting and easy application properties. MineralPlus FCB 035 offers high level of thermal and sound insulation, as well as providing A1 reaction to fire class. MineralPlus is the only insulation slab in Turkish Market to provide Turkey's first and only "Eurofins Indoor Air Comfort Gold Certificate" and always ensures clean indoor air. MineralPlus' binder context does not contain phenol, formaldehyde and similar types of components. With its flexible nature, MineralPlus enables easier applications and saves labor and time on insulation applications.

Thickness (mm)	Width (mm)	Length (mm)	Thermal Conductivity Coefficient λ_D (W/mK)	Thermal Resistance R (m^2k/W)
30	600	1200	0,035	0,85
40	600	1200	0,035	1,15
50	600	1200	0,035	1,45
60	600	1200	0,035	1,70
80	600	1200	0,035	2,30
100	600	1200	0,035	2,90
125*	600	1200	0,035	3,50
150*	600	1200	0,035	4,30

*For special thickness contact with sales team.

Technical Properties	Unit	Value
Thermal Conductivity Coefficient	W/m.K	0,035
Reaction to Fire Class	-	A1
Water Vapor Diffusion Resistance	-	1
Short-term Water Absorption Value	Kg/m^2	≤ 1
Long-term Water Absorption Value	Kg/m^2	≤ 3
Compressive Strength (at 10% deformation)	kPa	Not Needed
Certificate	-	CE
Package	-	PE film

MAIN PROPERTIES

Thermal Conductivity Coefficient:
λ_D=0,035 W/m.K

Reaction to Fire Class:
A1

Provides high sound insulation performance
Tested in authorized laboratories.

PRODUCT PROPERTIES

- Low thermal conductivity coefficient, resistant to heat transmission.
  λ_D=0,035 W/m.K
- Absorbs air-borne sounds
- Reaction to fire class; A1
- Minimum itchiness and minimum dust.
- Does not itch thanks to its minimum dusting advantage
- Flexible, easy to use, saves time and labor.
- Mineral Plus FCB 035 can be produced with different facing if demanded.

VF Eco Anchor
Ventilated Facade Insulation Slab

Plastic Nail

ADVANTAGES

- Thanks to the VF Eco anchor innovative stopper technology; it provides application safety distance. Thus, no thickness loss, no thermal performance loss.
- Least application effort since it is applied easily.
- Quick and easy impact installation; time saving.
- Excellent holding to the load bearing wall system. Strengthens the whole ventilated façade.

VF Eco Anchor is developed for ventilated façade system. VF Eco Anchor has innovative stopper technology. This technology provides application safety distance. Thus, no Mineral Wool thickness loss; no thermal performance loss. It is easy applicable to load bearing wall system. Stopper technology helps keeping the safety distance.

Technical Specifications					
Mineral Wool Thickness (mm)	40	50	60	80	100
Penetration Depth (mm)	60	50	60	80	60
Anchorage Length (mm	100	100	120	120	160
Nail Length (mm)	100	100	120	120	160
Head Diameter (mm)	60	60	60	60	60
Body Diameter (mm)	10±2 mm	10±2 mm	10±2 mm	10±2 mm	10±2 mm
Anchor Head Diameter (mm)	60±5 mm	60±5 mm	60±5 mm	60±5 mm	60±5 mm
Application	5 pieces per 1 m²				

Tensile Test	
Nail Type	Plastic
Breaking Force	60 Kgf

Adhesion Test	
Nail Type	Plastic
Breaking Force	60-70-80 kgf
Average	70kgf

Shear Test	
Nail Type	Plastic
Breaking Force	180-175-180 kgf
Average	178,3kgf

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VF Anchor
Ventilated Facade Insulation Slab

Plastic Nail

VF Anchor is developed for ventilated façade system. VF anchor has innovative stopper technology. This technology provides application safety distance. Thus, no Mineral Wool thickness loss; no thermal performance loss. It is easy applicable to load bearing wall system. Stopper technology helps keeping the safety distance.

ADVANTAGES

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- Excellent holding to the load bearing wall system. Strengthens the whole ventilated façade.

Technical Specifications					
Mineral Wool Thickness (mm)	40	50	60	80	100
Penetration Depth (mm)	60	50	60	80	60
Anchorage Length (mm	100	100	120	120	160
Nail Length (mm)	100	100	120	120	160
Head Diameter (mm)	60	60	60	60	60
Body Diameter (mm)	10±2 mm	10±2 mm	10±2 mm	10±2 mm	10±2 mm
Anchor Head Diameter (mm)	60±5 mm	60±5 mm	60±5 mm	60±5 mm	60±5 mm
Application	6 pieces per 1 m²				

Tensile Test	
Nail Type	Plastic
Breaking Force	60 Kgf

Adhesion Test	
Nail Type	Plastic
Breaking Force	60-70-80 kgf
Average	70kgf

Shear Test	
Nail Type	Plastic
Breaking Force	180-175-180 kgf
Average	178,3kgf

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VF Pro Anchor
Ventilated Facade Insulation Slab

Steel Nail

ADVANTAGES

- Thanks to the VF Pro Anchor innovative stopper technology; it provides application safety distance. Thus, no thickness loss, no thermal performance loss.
- Least application effort since it is applied easily.
- Quick and easy impact installation; time saving.
- Excellent holding to the load bearing wall system. Strengthens the whole ventilated façade.

VF Pro Anchor is developed for ventilated façade system. VF Pro Anchor has innovative stopper technology. This technology provides application safety distance. Thus, no Mineral Wool thickness loss; no thermal performance loss. It is easy applicable to load bearing wall system. Stopper technology helps keeping the safety distance.

Technical Specifications					
Mineral Wool Thickness (mm)	40	50	60	80	100
Penetration Depth (mm)	60	50	60	80	60
Anchorage Length (mm	100	100	120	120	160
Nail Length (mm)	100	100	120	120	160
Head Diameter (mm)	60	60	60	60	60
Body Diameter (mm)	10±2 mm	10±2 mm	10±2 mm	10±2 mm	10±2 mm
Anchor Head Diameter (mm)	60±5 mm	60±5 mm	60±5 mm	60±5 mm	60±5 mm
Application	5 pieces per 1 m²				

Tensile Test	
Nail Type	Steel
Breaking Force	120-130-120 kgf
Average	123,3 kgf

Adhesion Test	
Nail Type	Steel
Breaking Force	60-70-80 kgf
Average	70kgf

Shear Test	
Nail Type	Steel
Breaking Force	725-760-740 kgf
Average	741,6 kgf

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ANCHOR APPLICATION
Ventilated Facade Insulation Slab

APPLICATION

Comparing to other traditional anchors, **VF Pro Anchor** is easy to apply with only hammer and drill.

PACKAGING

PIECES/BOX	BOXES/ PALLET
500	40

STEP 1

DRILL TYPE: for the hallow brick/aac façade, 100 mm drill bit is recommended.
For concrete 110 mm drill bit is recommended.
After applying the Mineral Plus FCB, drilling is done.

STEP 2

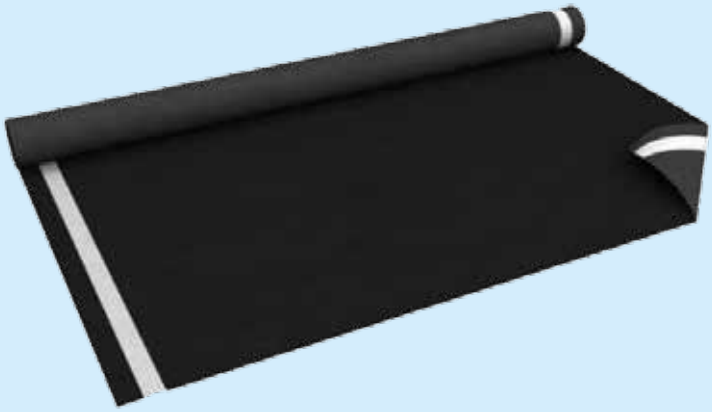
The right thickness of Anchor is chosen.
Anchor is placed into hole.
Nail is hammered into the facade system.

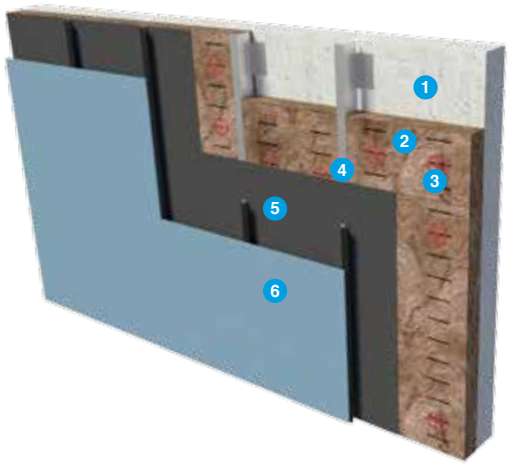
STEP 3

Thanks to the Anchor innovative stopper technology; it provides application safety distance. Thus, no thickness loss, no thermal performance loss.

Homeseal LDS 0.02 UV FixPlus

Vapour permeable and waterproof foil with UV protection and integrated adhesive tape





1. Load Bearing Wall
2. Mineral Wool Insulation Board
3. Anchor
4. Vertical Ventilated Façade Profiles
5. Vapor Barrier Layer (Homeseal LDS 0.02 UV FixPlus)
6. Cladding material

Homeseal LDS 0.02 UV FixPlus is a two-layer UV resistant foil consisting of polyacryl film and non-woven, polyester fabric. Special design of Homeseal LDS 0.02 UV FixPlus foil provides exceptional vapour permeability and excellent protection against rainwater and wind.

Technical Properties

Standard	TS EN 13859-1
Surface weight (EN 1849-2)	210 g/m² (+-20)
Reaction to fire (EN 13501-1)	B
Waterproof properties after artificial ageing (EN 13859-1)	W1
Vapour properties ,Sd value (EN ISO 12572)	0.04 m(+-0.02)
Tensile strength before artifical ageing (EN 12311-2)	300 (L)/200(T) N/50 mm
Tensile strength after artifical ageing (EN 12311-2)	290(L)/200(T)N/50 mm
Resistance to tearing(EN 12310-2)	120(L)/120(T)/N
Flexibility at low temperature (EN 1109)	-40 °C
Resistance to UV radiation	UV resitant
Temperature resistance	-40 °C +100 °C
Thickness	0.38 mm(+-0.02)
Roll width	1.5 m
Roll length	50 m
m² in a roll	75 m²
	L: by length
	T: by width

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Homeseal LDS 0.02 UV FixPlus

Application

Used in ventilated façade systems whose final covering has open contact surfaces, of maximum width/height 3cm. It is placed over thermal insulation (on the colder side of thermal insulation), from the bottom up, with overlap min. 10 cm wide.

Instructions for use

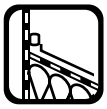
Pay attention to the relevant guidelines for installation and information contained in the icons.

Resistance to aging

Proper installation, using suitable materials, guarantees the durability of the entire system.

Instructions for installation

Contact surfaces between two foils should be sealed 100% with univeral adhesive tape; VF tape.



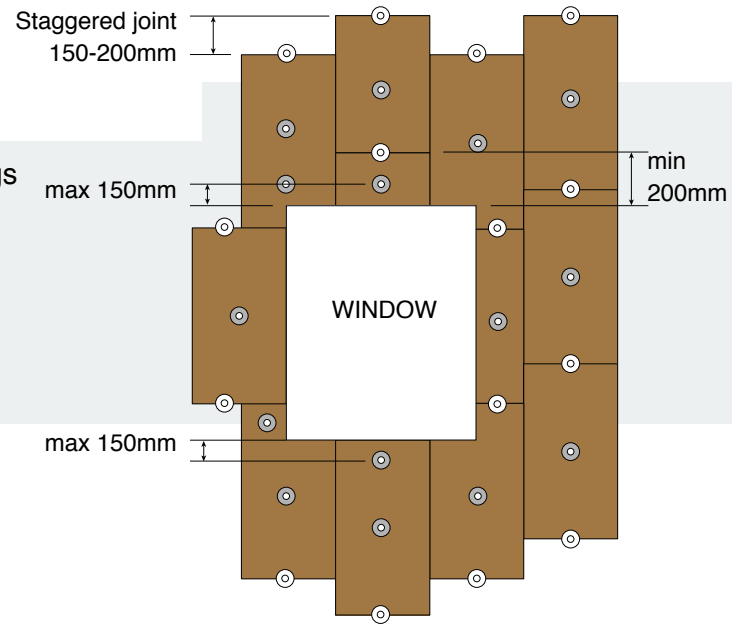
All contact surfaces between foils and other structural elements should be sealed with universal adhesive tape and double-sided adhesive tape, VF tape.

All openings on the foil should be sealed 100% with universal adhesive tape, VF tape.

DETAILS

WINDOW DETAILS

Cut to fit around window details and additional fixings used at the slab edges.
Each slab should contain at least one metal fixing.



FIXING: Metal Polypropylene

INSTALLATION AROUND BRACKET PENETRATIONS

Product should be offered up to penetration applying sufficient pressure to allow a small indent to be made in the product. Indent should be made on the face that will come into contact with the substrate when the product is installed.

Cut a slot in the product with a serrated saw or large bladed knife. Install product over the bracket taking care not to damage the external face of the slab. Ensure that the product is in intimate contact with neighbouring slabs. Secure slab to wall substrate with mechanical fixings in accordance with the design specification.

Ensures a tight fitment of slabs around penetrations, ensuring maximum thermal efficiency.

FIRE BARRIERS

Cavity barriers should be installed to meet the requirements of Approved Document B - England and Wales, Handbook Section 2 - Scotland and Technical Booklet E - Northern Ireland.

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MAINTENANCE

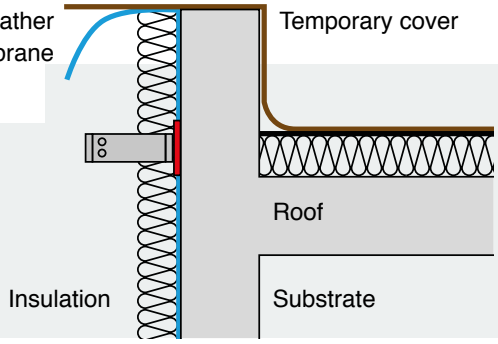
ROLLING FRONT - BEST PRACTICE

Wherever possible Mineral Plus FCB Series should be covered up with the cladding as work proceeds, on the basis of an advancing front.

✓ **Cladding installed to cover rainscreen to reduce weathering**

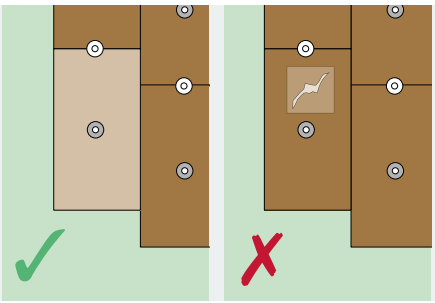
PARAPET / ROOF LEVEL PROTECTION DURING INSTALLATION

The top edge of the slabs should be covered and any run off water directed away from running down the face of the slabs.



CONSTRUCTION REPAIRS

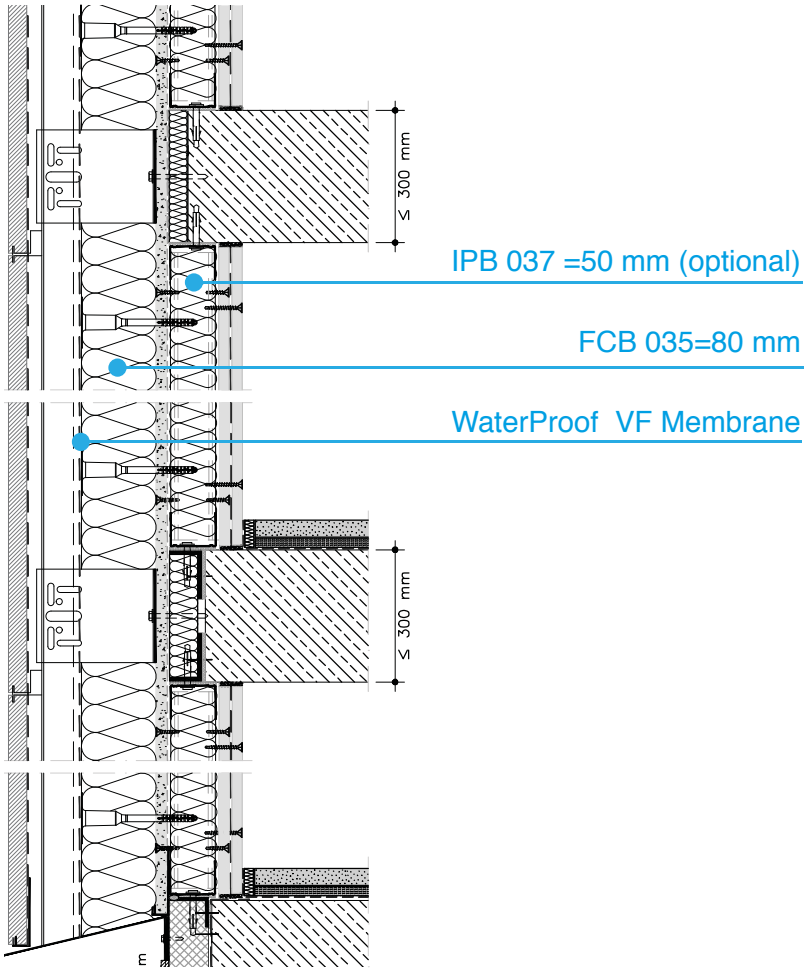
In the event of small repairs being needed on site, Knauf Insulation recommends the replacement of full slabs wherever possible before installing the RainScreen panels.



✓ **Full slab replacement after damage**

✗ **Small patched repair**

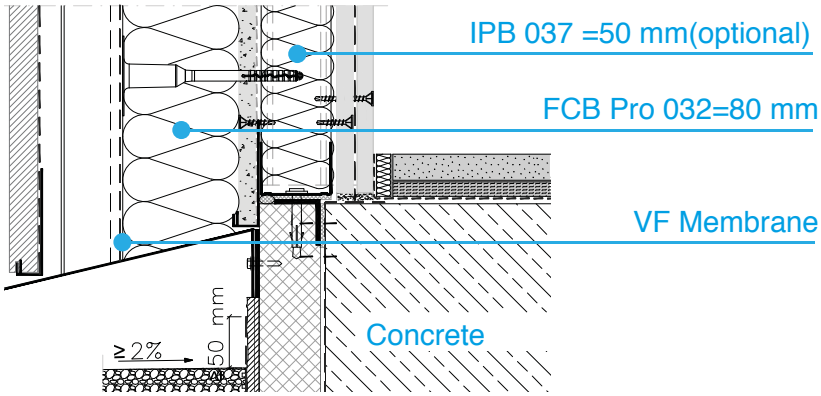
VERTICAL SECTION



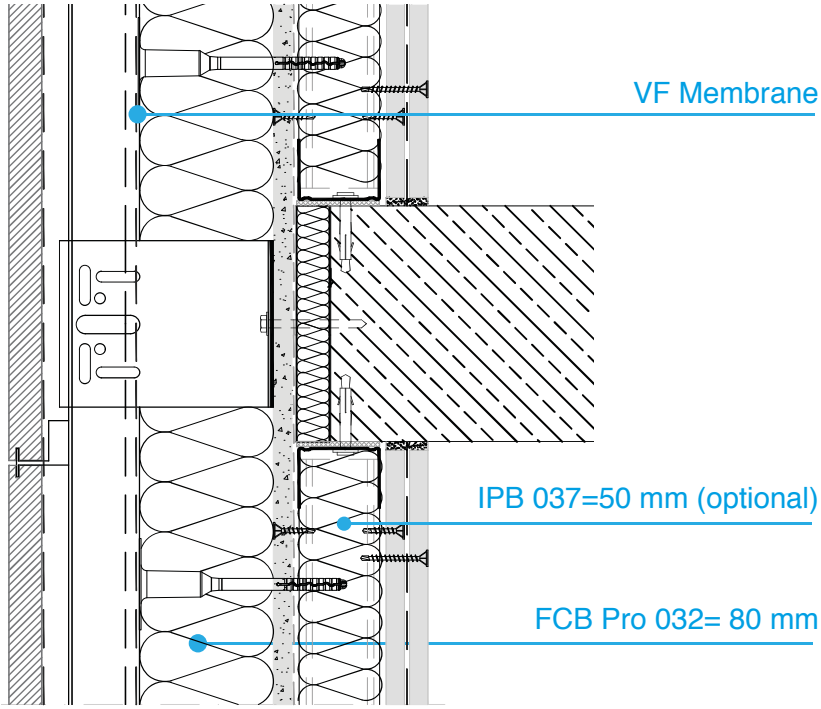
The insulation continuity all over the surface of the facade is very important specially in front of forged elements like brackets, cantilevers, etc.

In these critical points of facade insulation must not be interrupted so any bridge thermal bridge can be avoided through elements with the help of continuous insulation.

VENTILATED FACADE DETAILS



Thermal bridge is created because of the separation between both insulation lines: the wall and the floor slab . To avoid possible bridge condensations thermal insulation has to be continuous between the facade insulation and the of the floor.



The thermal bridge is created when the insulation does not go throughout façade therefore to avoid and / or reduce bridge condensations thermal insulation must be continuous throughout the facade surface.

MINERAL PLUS PRODUCTS REFERENCES

BUSINESS İSTANBUL

İSTANBUL

SVR GRUP

30.000 m²

ANATOLİUM İKEA KARTAL

İSTANBUL

MAYA-YILSAN

20.000 m²

GEBZE EMLAK KONUT

İSTANBUL

EMLAK GYO

50.000 m²

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KNAUF INSULATION

BİLİŞİM VADİSİ

KOCAELİ

HALDIZ İNŞAAT

50.000 m²

CADDE 54

İSTANBUL

YU GROUP GAYRİMENKUL YATIRIM

40.000 m²

THY TURKISH TECHNİC-Istanbul Airport

İSTANBUL

IZOPOLİ LAMBDA

30.000 m²

MINERAL PLUS PRODUCTS REFERENCES

LİVİNG İZMİR

İSTANBUL

CENGİZ İNŞAAT

30.000 m²

OYAK RESIDENCE

ANKARA

OYAK İNŞAAT

10.000 m²

ELİTE CONSEPT

İSTANBUL

ŞUA İNŞAAT

20.000 m²

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KNAUF INSULATION

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