EXTERIOR COMPACT

FACADE

polyrey®

Polyrey is a French manufacturer that has been producing compact HPL laminates for the past 60 years.

Polyrey FACADE proposes the best of Polyrey's decorative and technical expertise.

Polyrey shows its creativity via a collection of 63 exclusive decors. The balance of our colour selections gives your imagination a free rein. A wide range to give a building its style. The Polyrey FACADE line is based on an innovative surface-coating resin that has increased durability and UV resistance capabilities. In setting up Services Pro, Polyrey favours exchanges and supports its partners in order to promote the successful completion of many ventilated cladding projects, but also balconies, guard-rails, sun-blinds, roof ceiling and soffit boards.

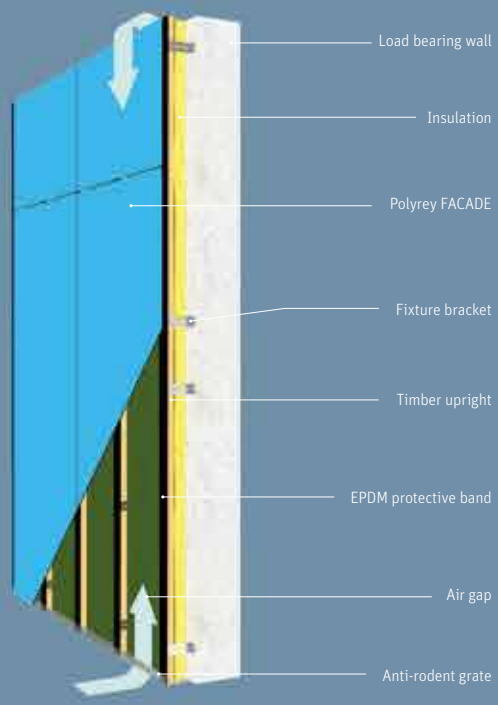
polyrey®

CONTENTS

EXTERIOR THERMAL INSULATION (ITE)

The benefits of ventilated facade

The ventilated facade system creates a product which is both aesthetically pleasing and greatly improves the building's performance. The effectiveness of this system comes from the ventilated spaces created between the Polyrey FACADE and the insulation (or the load bearing wall), as well as the openings at the top and bottom of the cladding.

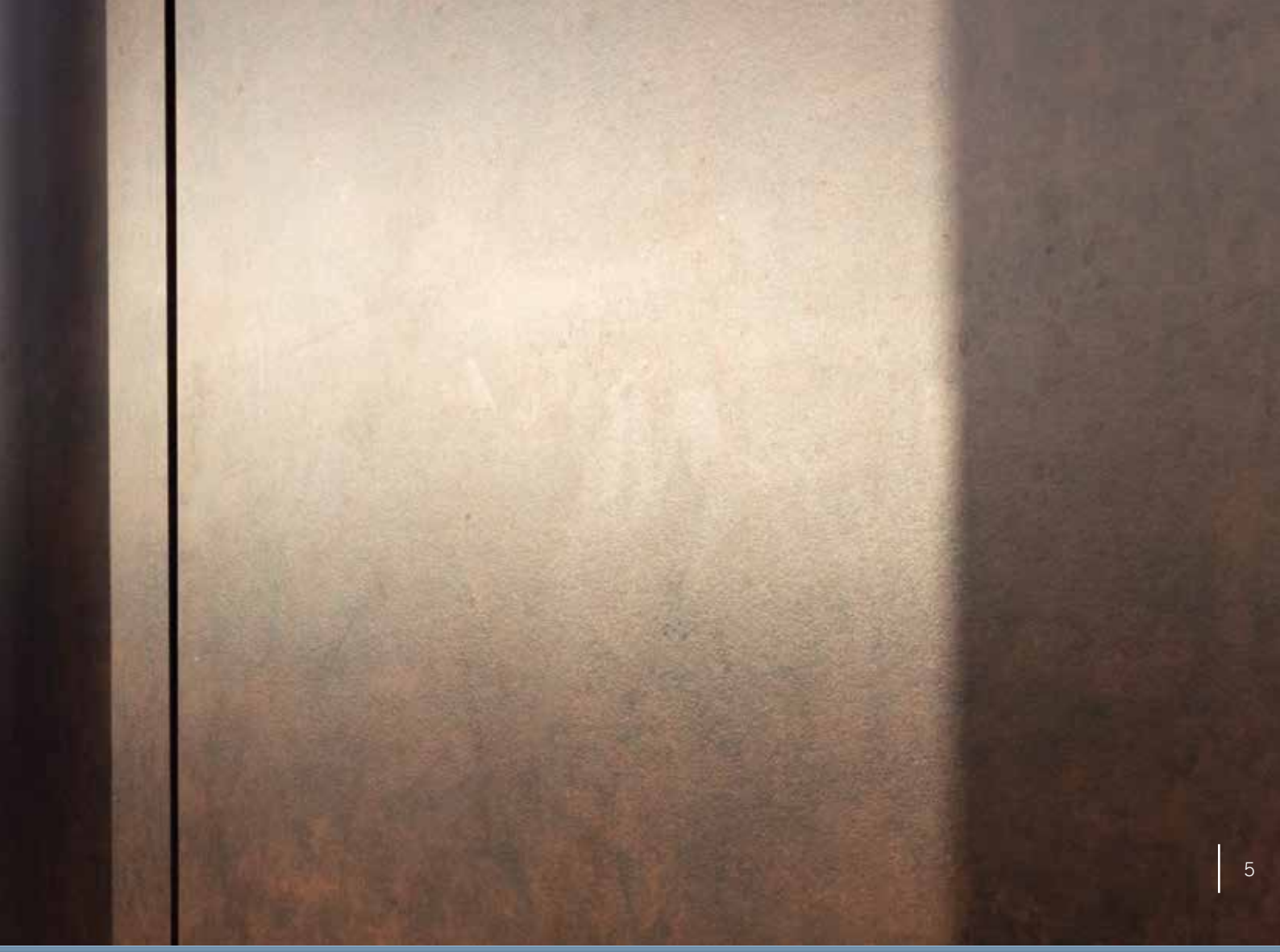


THERMAL PROTECTION

- Great flexibility in the thickness of the insulation used, up to 240 mm thick.
- Insulation is placed against the supporting wall to minimise heat loss.
- The ventilated area acts as a thermal barrier between the Polyrey FACADE Exterior Compact and the insulation, avoiding thermal bridges.

ECONOMIC SOLUTION

- Reduction of heating and air conditioning costs.
- Increased building service life.
- Almost no maintenance costs.
- The building value is enhanced by simply renovating its façade.
- High durability: 10 year guarantee.



ACOUSTIC PROTECTION

- The system, which is composed of several layers, improves the building's acoustic characteristics.
- This improvement is directly linked to the thickness of the insulation used.

HUMIDITY PROTECTION

- The Polyrey FACADE Exterior Compact creates a first barrier preventing rain water from coming into direct contact with the underlying structure.
- The natural ventilation eliminates any water that might have infiltrated or the condensation that can form behind a panel.
- The water vapour released from inside the building is also eliminated by the air gap, avoiding the risk of mould growing in the insulation or the load bearing wall.

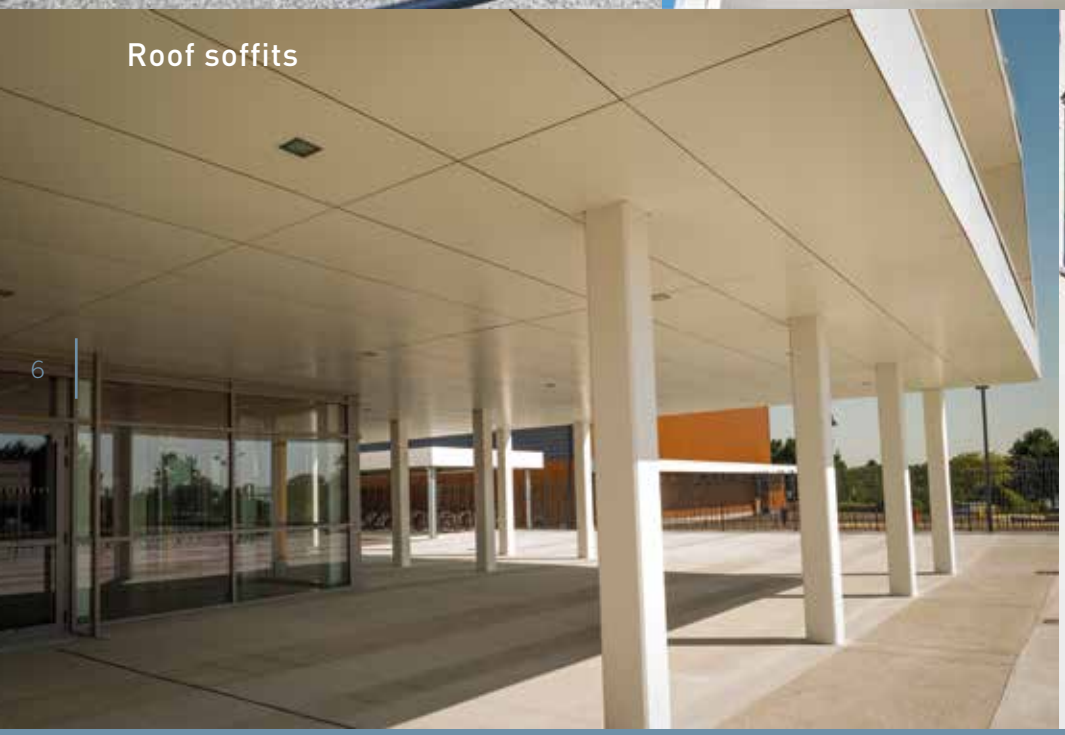
ECOLOGICAL CLADDING

- Reduction of energy consumption and therefore Co2 emissions.
- PEFC Eco-certifi ed compact laminated HPL panels (40% minimum).
- Environmental Product Declaration forms (EPD) and Life Cycle Analysis (LCA) available on line at www.polyrey.com
- A decorative panel that can be included in HQE and LEED eco-construction approaches.


Facade cladding


Balconies


Sun-blinds


Roof soffits


Shutter coatings

ONE MATERIAL, MANY APPLICATIONS

Types of application

Thanks to its UV and weather resistant properties and its self supporting capacity, Polyrey FAÇADE is suitable for a multitude of applications which are not only limited to ventilated façades. Its technical properties coupled with its decorative covering results in a product which is both durable and versatile.

A solution adapted to private and public spaces

Its technical properties and varied decorative range provides a product that is suited to both private and public areas, whether it has a high or low exposure to weather, climatic variations, wind and risks of impact.

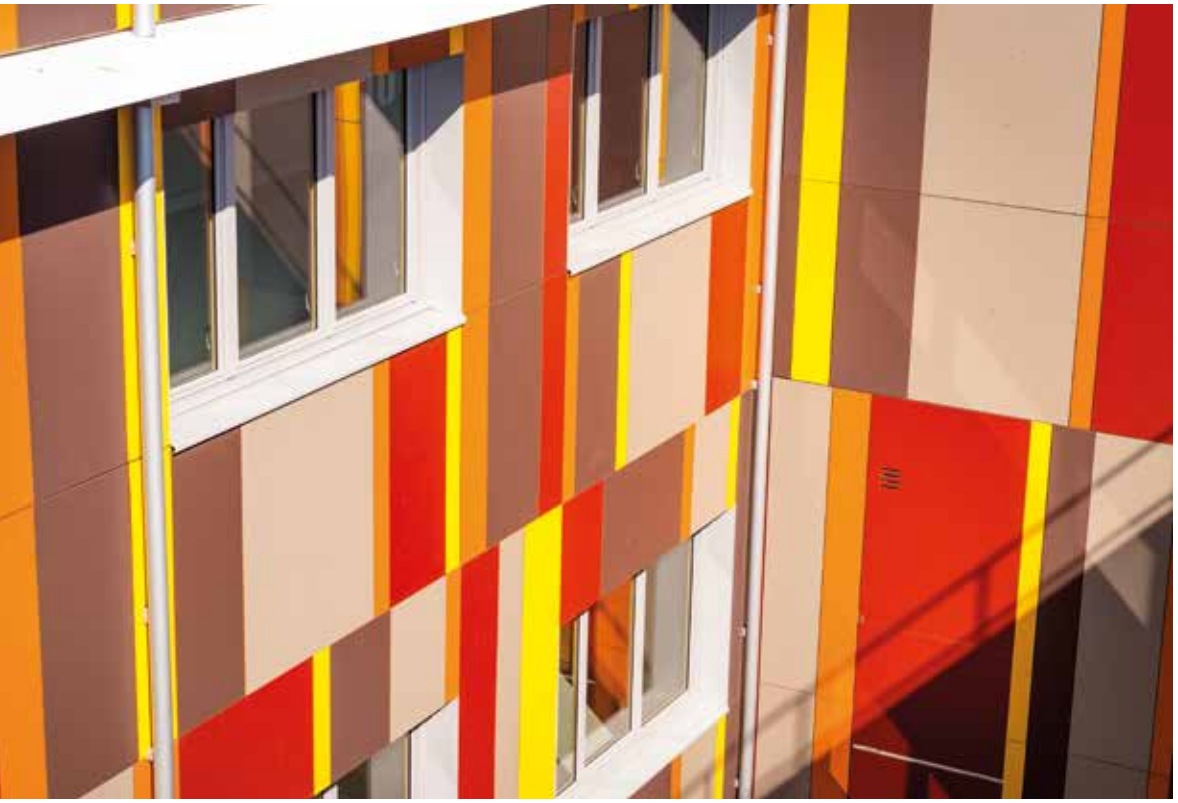
PROJECTS

Some of the best architect and installer projects using Polyrey FACADE exterior compact.

CREATIVE
& VISUAL

This new school in Clisson designed using timber modules took over 13 months to build. This low consumption class building is a real innovation. This building places environmental performances at the core of its design, including water retaining management, the highlighting of the use of outside spaces, or low consumption qualities.
The administration buildings sport a set of striped colours inspired by the town of Clisson, underlining the classroom buildings which are monolithic white blocks on stilts.
A graphic, dynamic and inspired design to encourage educational awakening.

PROJECT: COLLÈGE DE CLISSON
SEGMENT: EDUCATION
ARCHITECT : ROCHETEAU & SAILLARD



102F - Blanc Kaolin
603F - Pollen
701F - Ocre
207F - Gris Minerai
703F - Rouge Tanin

GREY **MATTER**

The renovation of the Aurillac Lycee not only gave an old building a modern appearance, but also improved the building's technical and energy performances. The omnipresence of grey and the sober layout favour the visual unity of this set of buildings. A minimalist composition of which the studied simplicity creates a relaxing environment that contrasts with the dynamics of the location.

PROJECT: LYCÉE E. DUCLAUX - AURILLAC
SEGMENT: EDUCATION
ARCHITECT: ESTIVAL ARCHITECTURE

203F - Gris Comète

SECOND **SKIN**

This building's original design has been given a new lease of life using exterior compact cladding, with its warm and daring copper hues. A decor with character, "Cuivre Vieilli" reveals its full expression using a uniform layout, highlighted by matching pillars. The passage then takes on a new dimension, to welcome sportsmen, sportswomen, and visitors.

PROJECT: TOSSE - SPORTS CENTRE
SEGMENT: SPORT

M04F - Cuivre Vieilli

PURE & **SIMPLE**

Luminous and crystalline, compact Blanc Opalin lightens a monolithic construction, giving a touch of modernity to this laboratory's architecture. There are touches of originality in the graphic shaping of the panels.

PROJECT: LABORATOIRE CENTRE POLYTECHNIQUE - PALAISEAU
SEGMENT: EDUCATION
ARCHITECT : ATELIER MICHEL RÉMON

101F - Blanc Opalin

BETWEEN TRADITION & **MODERNISM**

This refurbishment in Périgueux city centre merges into the city's traditional architecture. Plain colored decors accompany the signage for each block of the building. The Blanc Kaolin used to create this ventilated facade supports the existing architecture without altering it.

PROJECT: HOTEL DU DÉPARTEMENT - PÉRIGUEUX
SEGMENT: ADMINISTRATION
ARCHITECT: ARCHI STUDIO

102F - Blanc Kaolin
304F - Grège
703F - Rouge Tanin

W09F - Pin Fumé

TONIC **NATURE**

The grey pine with shades of brown calms the original and modern building housing the headquarters of this major wine-growing company. The authenticity of the decor translates the natural properties of pine and the depth of the timber grain without being textured.
The cladding and roof make a subtle use of the "Maison Saget" colours in a successful combination of the natural and the modern.

PROJECT: MAISON SAGET LA PERRIÈRE - POUILLY SUR LOIRE
SEGMENT: ADMINISTRATION
ARCHITECT : ARCHI STUDIO

102F - Blanc Kaolin
202F - Gris Béton
301F - Vanille
703F - Rouge Pimenté
705F - Rouge Tanin
205F - Gris Titane

TROPICAL **COOL**

In this residential unit at the centre of Reunion Island, plain decors are used as graphic touches and the combination of timber and compact are a reflection of the island's environment that harmonise the building's facade. Polyrey FACADE compact is not only used as facade cladding but also as roof ceiling and for balconies.

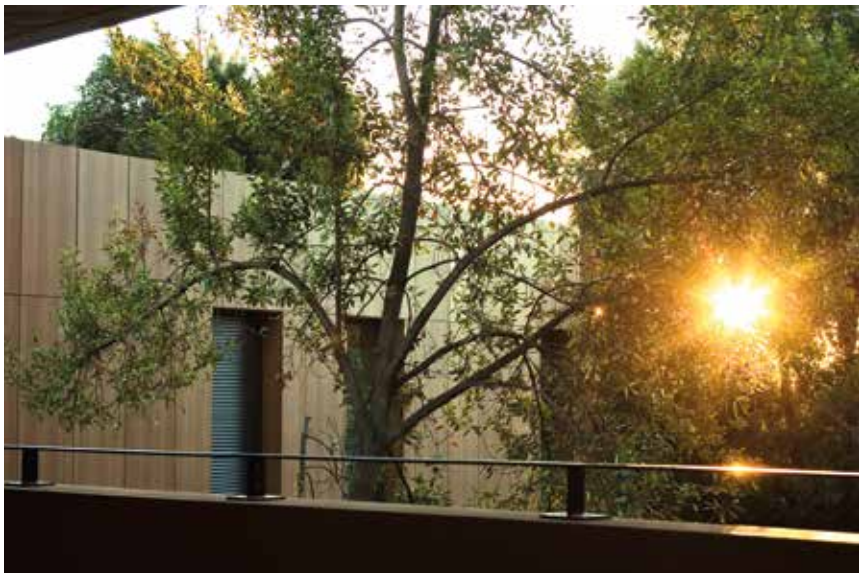
PROJECT: CANOPÉE - STE MARIE DE LA RÉUNION
SEGMENT: RESIDENTIAL UNITS
ARCHITECT : ROSIER & EHRESMANN

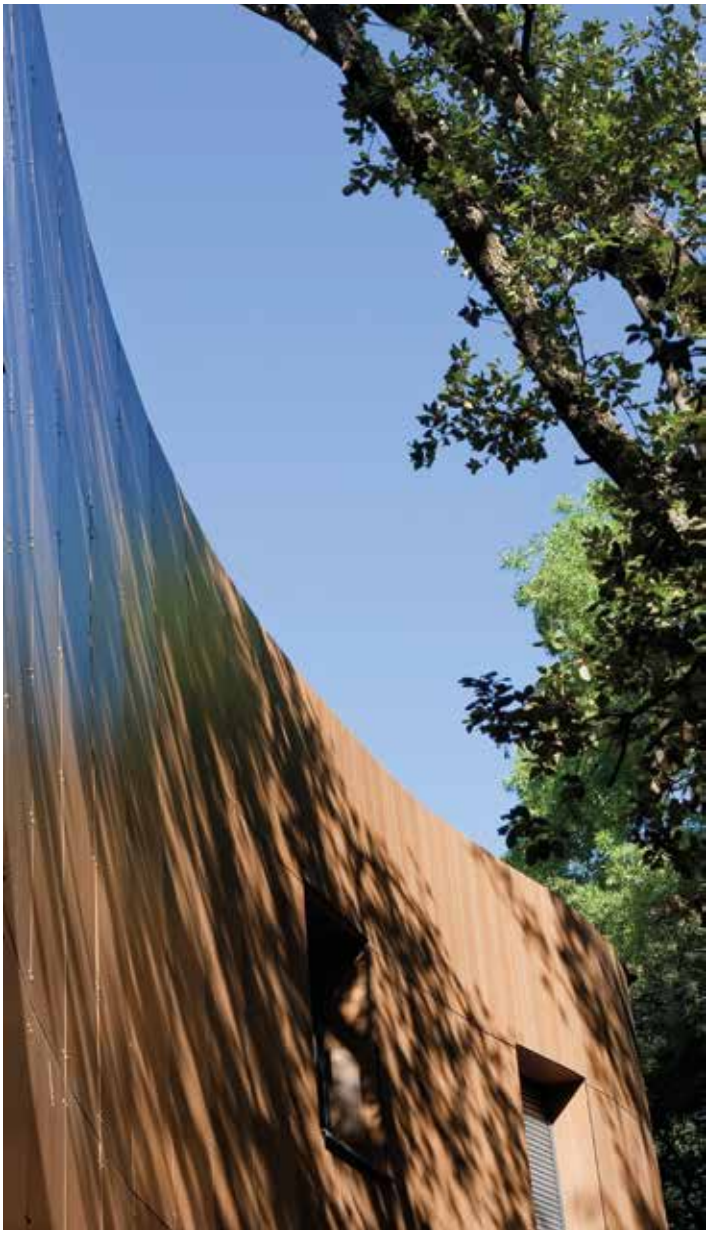
SUBTILE **MATCH**

The softness of the slightly colored grey tones of these residential buildings support a sober and elegant construction highlighted by anthracite roofs and joinery. The exterior compact is discrete, at the service of the architecture.

PROJECT: BERNICA - ST DENIS DE LA RÉUNION
SEGMENT: RESIDENTIAL UNITS
ARCHITECT : L'ATELIER ARCHITECTES

306F - Dune





ESSENCE OF A **PROJECT**

This specialised establishment for the support of people with Autism blends harmoniously into its environment both by its shape and by its decor. The curves of the building are intended to be appeasing to favour a calming relationship with its users.
The "Chêne du Canada" echoes the trees that surround the building on all sides. The clarity of the decor contrasts with the shaded plot on which the building is located, and perfectly reflects the light onto the facade.

PROJECT: SPECIALISED CENTRE - FONT COLOMBE
SEGMENT: HEALTHCARE
ARCHITECT : CABINET ACT ARCHITECTURE

W03F - Chêne Canada

ELOQUENT **RED**

Red is a must for a fire station. An architecture that shows the capacity of exterior compact to combine with other cladding materials such as timber.

PROJECT: FIRE STATION - BRAINE
SEGMENT: FIRE BRIGADE
ARCHITECT : AT. POUGET-DELASALLE

705F - Rouge Pimenté

BLACK & **WHITE**

The use of the compact is ideal for this building composed of geometric blocks. The choice of Blanc Kaolin and Noir d'Encre strongly underlines the structure's volumes.

PROJECT: CABINET NOTARIAL SP LECONTE
SEGMENT: NOTARY PUBLIC

102F - Blanc Kaolin
210F - Noir d'Encre

DESIGN

The facade of a building is the element that will embellish its architecture. Colour is the final touch, an important element in how the space is perceived. To keep one shade ahead, our colour specialists use their expertise to obtain unique creations; delicate, intense or luminous shades.

WHITE TO BLACK

Natural, inspired tones

Cold, warm or coloured, shades of grey have very many possibilities.
Ore, lead and titanium face hushed shades, ash or smoke. In color blocks or shades,
these colors give the facades a timeless look, between modernity and tradition.
Contrasting harmonies give character to the architecture.
Neutral tones will find natural resonanceswith our Scandinavian wood,
concrete or our mineral decors.

101F - Blanc Opalin
102F - Blanc Kaolin
103F - Blanc ivoire
201F - Écume
202F - Gris Béton
203F - Gris Comète
204F - Gris Plomb
205F - Gris Titane
206F - Gris Graphite
207F - Gris Minerai
208F - Gris Fumé
209F - Gris Calcite
210F - Noir d'Encre
301F - Vanille
302F - Sahel
303F - Brun Tourbé
304F - Grège
305F - Sésame
306F - Dune
307F - Gazelle

YELLOW TO RED

Warm & inspiring colors

Racy, bright and powdered, yellow shades, oranges and red cover an essential spectrum to animate and warm buildings.
The choice of the color influences the volume of the architecture and expresses its identity. Used sparingly, these decors animate the facades strict lines highlight architectural elements and compensate the sobriety of the urban universe.
These solar shades bring light and heat, inspired by Southern regions.

308F - Fève Tonka
601F - Jaune Impérial
602F - Jaune Sable
603F - Pollen
701F - Ocre
702F - Sienne
703F - Rouge Tanin
705F - Rouge Pimenté
706F - Rouge Valentin

GREEN TO BLUE

Refreshing, vitalizing shades

In addition to playing a key role in the aesthetics of a building, color ease its integration in its environment. Blue and green emphasize a close dialogue between building and landscape. A wide color choice of pastel, tangy, spring or dimmed awakens creativity. Deep, delicate or intense shades give an either calming or invigorating atmosphere.

401F - Eucalyptus
402F - Vert Malachite
406F - Vert Menthe
407F - Vert Printemps
501F - Bleu Glacial
502F - Bleu Aquarelle
503F - Bleu d'Embruns
506F - Bleu Denim
507F - Bleu Pacifique
508F - Bleu Alizé
509F - Bleu Pastel

WOOD

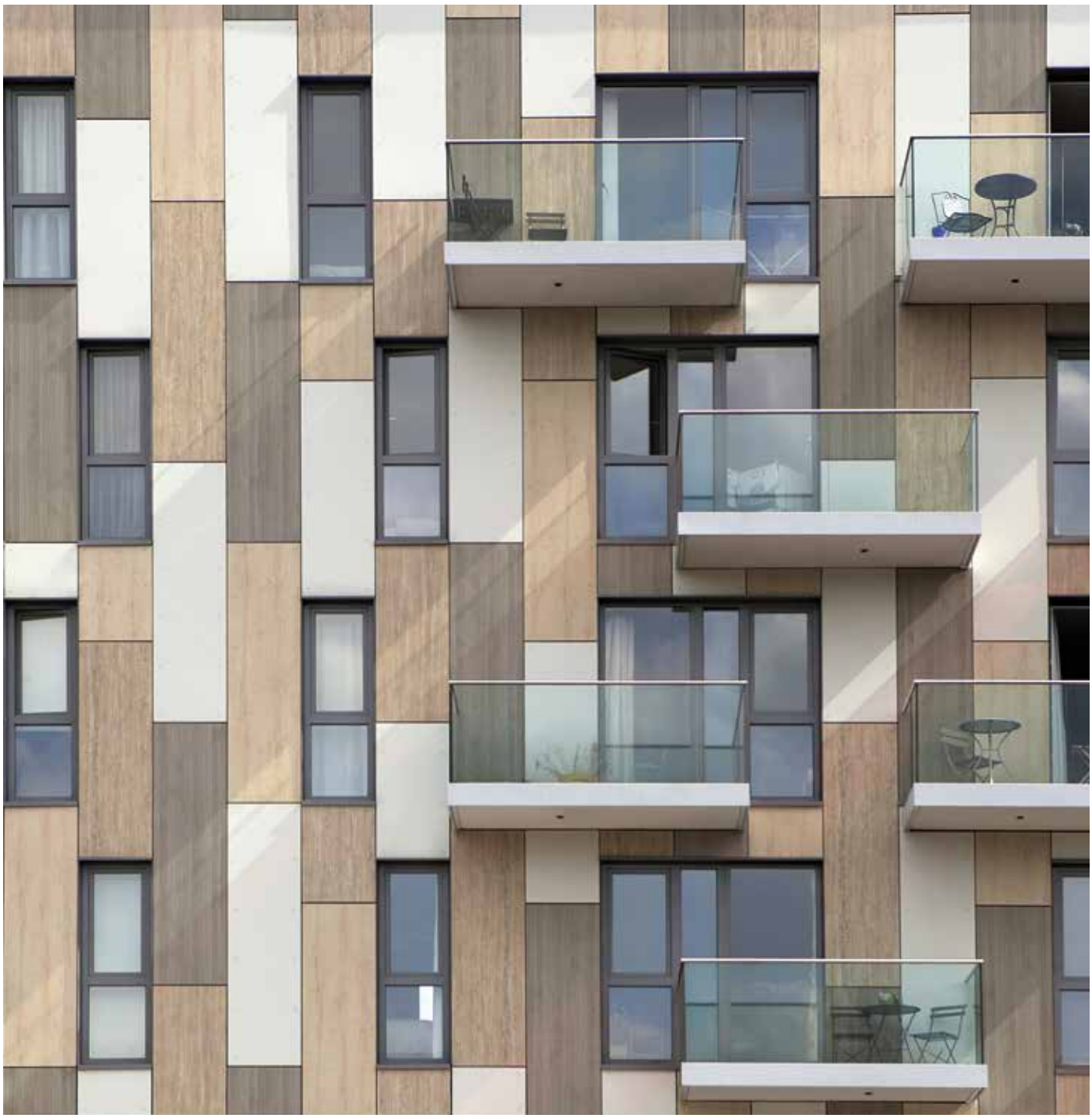
Scandinavian, natural or exotic

Wood is ever present in modern architecture. Its many essences and shades are as well suited to the facades of private homes as to the large surface areas of residential or commercial buildings. In terms of wood, the Scandinavian spirit is increasingly becoming a must amongst architectural exterior styles. Oak, pine or other types of conifer are preferred in beige or greyed shades, either soft or slightly contrasting to reveal the fibres of the wood. Natural shades, both recognised and essential are used in a range of 14 decors in which oak, a popular and ever fashionable specie, has pride of place.

W01F - Chêne Atlantique
W02F - Chêne Provence
W03F - Chêne Canada
W04F - Sapelli
W05F - Chêne Périgord
W06F - Chêne Corsica
W07F - Pin Taïga
W08F - Chêne Sépia
W09F - Pin Fumé
W10F - Chêne Torréfié
W11F - Érable Clair
W12F - Iroko Doré
W13F - Jatoba du Brésil
W14F - Merbau

207F - Gris Minerai
503F - Bleu d'Embruns
W01F - Chêne Atlantique

502F - Bleu Aquarelle
W10F - Chêne Torréfié



306F - Dune
W06F - Chêne Corsica
W07F - Pin Taïga
W08F - Chêne Sépia

MINERALS & METALS

The richness of the material

Permanent, appreciated for their variety and timeless beauty, minerals are an integral part of modern trends.
Stone or metal are often preferred for facades.
An essential objective in the design of our mineral and metal decors was to capture the depth of the materials as accurately as possible to show the authenticity of rock, steel or concrete

M01F - Métal Brossé
M02F - Cobalt
M03F - Acier Corten
M04F - Cuivre Vieilli
M05F - Fonte Noircie
M06F - Pierre Granitée
M07F - Ciment Brut
M08F - Béton Patiné
M09F - Béton Antique

M07F - Ciment Brut

M05F - Fonte Noircie
M06F - Pierre Granitée

M03F - Acier Corten

DECORATIVE RANGE

101F **SI**
Blanc Opalin

201F **SI**
Écume

202F **SI**
Gris Béton

203F **SI**
Gris Comète

204F **SI**
Gris Plomb

102F **SI**
Blanc Kaolin

209F **SI**
Gris Calcite

208F **SI**
Gris Fumé

205F **SI**
Gris Titane

206F **SI**
Gris Graphite

103F **SI**
Blanc Ivoire

306F **SI**
Dune

305F **SI**
Sésame

207F **SI**
Gris Minerai

210F **SI**
Noir d'Encre

301F **SI**
Vanille

302F **SI**
Sahel

307F **SI**
Gazelle

304F **SI**
Grège

303F **SI**
Brun Tourbé

706F **SI**
Rouge Valentin

705F **SI**
Rouge Pimenté

702F **SI**
Sienne

703F **SI**
Rouge Tanin

308F **SI**
Fève Tonka

407F **SI**
Vert Printemps

601F **SI**
Jaune Impérial

602F **SI**
Jaune Sable

603F **SI**
Pollen

701F **SI**
Ocre

406F **SI**
Vert Menthe

401F **SI**
Eucalyptus

503F **SI**
Bleu Denim

402F **SI**
Vert Malachite

507F **SI**
Bleu Pacifique

501F **SI**
Bleu Glacial

502F **SI**
Bleu Aquarelle

509F **SI**
Bleu Pastel

508F **SI**
Bleu Alizé

506F **SI**
Bleu Denim

The printed reproduction of the decors may differ from the actual product. Please, do not hesitate to request a Polyrey FACADE sample in order to make your final choice.

M06F SI
Pierre Granitée

M07F SI
Ciment Brut

M01F SI
Métal Brossé

M03F SI
Acier Corten

M08F SI
Béton Patiné

M02F SI
Cobalt

M04F SI
Cuivre Vieilli

M09F SI
Béton Antique

M05F SI
Fonte Noircie

W11F SI
Érable Clair

W06F SI
Chêne Corsica

W01F SI
Chêne Atlantique

W02F SI
Chêne Provence

W07F SI
Pin Taïga

W12F SI
Iroko Doré

W13F SI
Jatoba du Brésil

W14F SI
Merbau

W03F SI
Chêne Canada

W04F SI
Sapelli

W05F SI
Chêne Périgord

W08F SI
Chêne Sépia

W09F SI
Pin Fumé

W10F SI
Chêne Torréfié

AVAILABILITY TABLE

			THICKNESSES	6 / 8 / 10 mm			
			FORMATS (mm)	3070 x 1240	2600 x 2050	3660 x 1510	4320 x 1660
	CODES	DECORS	NCS CODES	RAL CODES	SATIN		
	101F	Blanc Opalin	S0502-G	9016	●	●	●	●
	102F	Blanc Kaolin	S0502-Y	9010	●	●	●	●
	103F	Blanc Ivoire	S0502-Y	1013	●	●	●	●
	201F	Écume	S0502-G	9002 L	●	●	●	●
	202F	Gris Béton	S1500-N	7035	●	●	●	●
	203F	Gris Comète	S3000-N	7032	●	●	●	●
	204F	Gris Plomb	S5000-N	7042 L	●	●	●	●
	205F	Gris Titane	S6000-N	7015	●	●	●	●
	206F	Gris Graphite	S8000-N	7016	●	●	●	●
	207F	Gris Minerai	S6000-N	7005	●	●	●	●
	208F	Gris Fumé	S2502-Y	7038	●	●	●	●
	209F	Gris Calcite	S1002-Y	9002	●	●	●	●
	210F	Noir d'Encre	S8500-N	9011	●	●	●	●
	301F	Vanille	S1005-Y20R	1015	●	●	●	●
	302F	Sahel	S1010-Y20R	1015D	●	●	●	●
	303F	Brun Tourbé	S7005-Y50R	7006 D	●	●	●	●
	304F	Grège	S4005-Y20R	1016	●	●	●	●
	305F	Sésame	S3010-Y20R	7044 L	●	●	●	●
	306F	Dune	S1005-Y50R	1013 D	●	●	●	●
	307F	Gazelle	S3010 Y30R	1019 L	●	●	●	●
	308F	Fève Tonka	S6010-Y50R	8025 D	●	●	●	●
	401F	Eucalyptus	S2040-G40Y	-	●	●	●	●
	402F	Vert Malachite	S2555-B60G	5021	●	●	●	●
	406F	Vert Menthe	S2070-G60Y	-	●	●	●	●
	407F	Vert printemps	S0560-G60Y	-	●	●	●	●
	501F	Bleu Glacial	S0510-R80B	-	●	●	●	●
	502F	Bleu Aquarelle	S2010-B	-	●	●	●	●
	503F	Bleu Embruns	S2010-B50G	-	●	●	●	●
	506F	Bleu Denim	S3030-R80B	5014	●	●	●	●
	507F	Bleu Pacifique	S3060-B10G	-	●	●	●	●
	508F	Bleu Alizé	S2040-B	5024 L	●	●	●	●
	509F	Bleu Pastel	S1020-B	-	●	●	●	●
	601F	Jaune Impérial	S0550-Y	1016	●	●	●	●
	602F	Jaune Sable	S0530-Y10R	-	●	●	●	●
	603F	Pollen	S1080-Y10R	1013	●	●	●	●
	701F	Ocre	S3060-Y40R	8023 L	●	●	●	●
	702F	Sienne	S3560-Y60R	8004 L	●	●	●	●
	703F	Rouge Tanin	S1500-N	3009 L	●	●	●	●
	705F	Rouge Pimenté	S1080-Y90R	3000L	●	●	●	●
	706F	Rouge Valentin	S0580-Y90R	3020	●	●	●	●

		THICKNESSES	6 / 8 / 10 mm			
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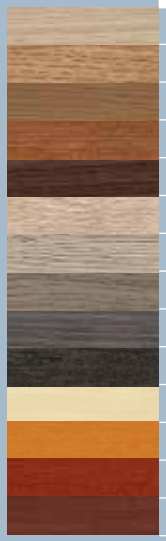
	CODES	DECORS	SATIN			
	W01F	Chêne Atlantique	●	●	●	●
	W02F	Chêne Provence	●	●	●	●
	W03F	Chêne Canada	●	●	●	●
	W04F	Sapelli	●	●	●	●
	W05F	Chêne Périgord	●	●	●	●
	W06F	Chêne Corsica	●	●	●	●
	W07F	Pin Taïga	●	●	●	●
	W08F	Chêne Sépia	●	●	●	●
	W09F	Pin Fumé	●	●	●	●
	W10F	Chêne Torréfié	●	●	●	●
	W11F	Érable clair	●	●	●	●
	W12F	Iroko Doré	●	●	●	●
	W13F	Jatoba du Brésil	●	●	●	●
	W14F	Merbau	●	●	●	●

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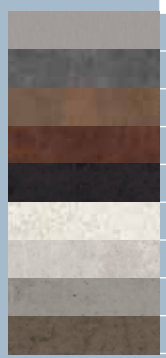
	M01F	Métal Brossé	●	●	●	●
	M02F	Cobalt	●	●	●	●
	M03F	Acier Corten	●	●	●	●
	M04F	Cuivre Vieilli	●	●	●	●
	M05F	Fonte Noircie	●	●	●	●
	M06F	Pierre Granitée	●	●	●	●
	M07F	Ciment Brut	●	●	●	●
	M08F	Béton Patiné	●	●	●	●
	M09F	Béton Antique	●	●	●	●

PRODUCT

Polyrey's teams work to design and develop robust, attractive and innovating products. A daily requirement that contributes to creating faultless facades.

INNOVATION

The Polyrey Research & Development teams have put all of their expertise at the service of unique and patented development.

RESIN GUARD TECHNOLOGY / **RGT**

Each decor has been tested many times in order to define a formula that gives the best durability and UV resistance properties.

The objective was to consider the consistency and stability in the appearance of our products in order to be as close as possible to their uses.

AN INTEGRATED PROCESS

Polyrey mastery is complete and includes the development and production of the resins. In our laboratories, Polyrey's chemistry experts refine the most optimum formulas through multiple testing. Polyrey FACADE manufacturing process is the result of extensive testing to define the methods to ensure the highest product performance.

A REQUIREMENT

Combined with the technology, the most stable papers and pigments increase UV resistance performances.
Each decor has been tested for normalized artificial aging EN 438-2-29 over a period of 3000 hours to ensure a homogeneous and stable appearance over time.
Beyond standards requirements, each decor benefits from ranking ≥ 4 on gray scale, drawn up by an independent laboratory. This level of performance demonstrates the aesthetic stability of Polyrey FACADE.

AGEING TESTS

Polyrey FACADE meets the maximum EDF ageing test level corresponding to severe use simulated in the following tests.

- **Artificial ageing resistance (artificial bad weather)**
  Exposure to the solar spectrum using a Xenon lamp and to water spray cycles for a period of 3000 hours.
- **Resistance to ultra-violet radiation**
  Exposure to UVB with dry heat and condensation cycles for a duration of 1500 hours.
- **Resistance to humidity**
  Polyrey FACADE is kept in water at 65 °C for 48 hours.
- **Resistance to climatic shocks**
  Bend measurement after 4 cycles of 5 days alternating between damp, hot, dry and cold conditions.

EXTERIOR COMPACT FACADE

Polyrey FACADE is a compact high pressure laminate (HPL) for cladding façades, ceiling, balconies, and sun-blinds. It has been designed with a new high quality protection surface that can withstand the most severe climatic conditions.

COMPOSITION

Laminated self-supporting HPL panel (high pressure) using paper (65 %) and thermosettingresin (35 %), with performances compliant with the EN 438 standard.

1/ **RESIN GUARD TECHNOLOGY / RGT**
Decorative panel impregnated with UV resistant resin.

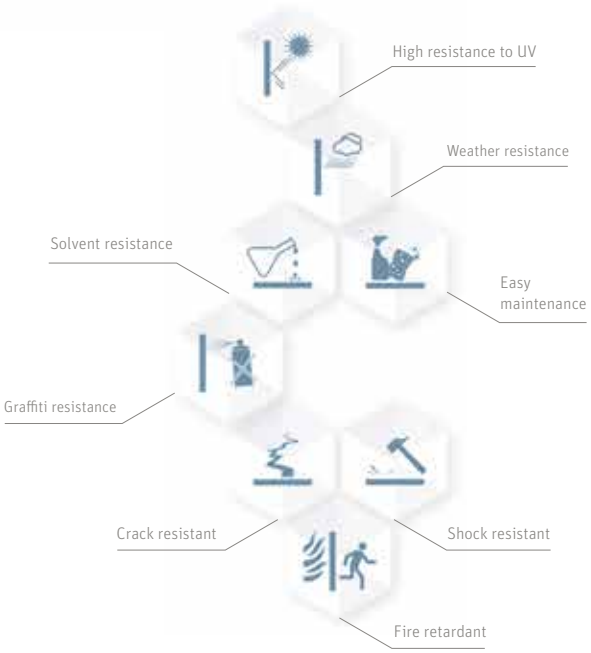
2/ Layers of black kraft paper impregnated with thermosetting resin.

PEFC 10-34-97

.GUARANTEE. 10 YEARS

PROPERTIES

- 3 thicknesses : 6 / 8 / 10 mm
- 4 formats :
  - 3070 × 1240 mm
  - 3660 × 1510 mm
  - 2600 × 2050 mm
  - 4320 × 1660 mm
- 2 decorative sides
- Fire retardant
- Water repellent
- PEFC™ Eco certified
- 10 year guarantee
- EN 438 certified



PERFORMANCES

- Weathering resistance (3000 hours) ≥ 4 on the grey scale.
- European fire class, B-s1, d0 (M1).
- Shock resistant, class Q4 for 8 and 10 mm thicknesses for spacing between fixing points on vertical Subframes ≤ 750 mm, and ≤ 650 mm for the 6 mm thickness.
- Certified by 2 CSTB technical approvals for installation on timber or metal subframe with a visible fixing for 3 thicknesses (6, 8 and 10 mm).
- Installation in earthquake zones certified by the CSTB.
- Rot-proof, no edge treatments when cut.
- Requires no specific maintenance.

QB

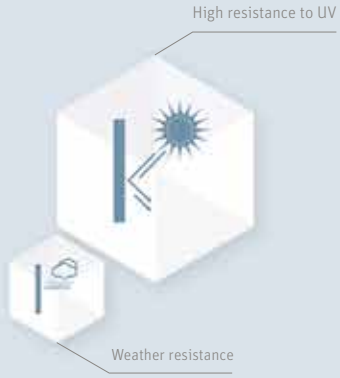
TECHNICAL PERFORMANCES

Thanks to components developed specifically for outdoor use, Polyrey FACADE has unequalled weather resistance and durability performances, making it an essential material for ventilated facades.

RELIABILITY & DURABILITY

Increased UV resistance

Exterior compact FACADE resists to UV radiation and provides excellent preservation of its color over time. It is resistant to aging in outdoor conditions, severe weather, climate shocks. Our panels are tested and validated for the most severe level of EN 438-2-29 over a period of 3000 hours. Each decor benefits from a ranking ≥ 4 on grey scale guaranteeing aesthetic stability.



Water repellent and rot-proof

Its high resistance to water, water vapour, mould, rot, freezing and heat, makes Polyrey FACADE a water resistant and rot proof material, thus guaranteeing its optimum stability in outdoor environments subjected to significant variations in humidity and temperature.

Shock resistant, a financial guarantee

The high impact of Polyrey FACADE allows savings on the cost of the frame, compared to other facade products requiring lower horizontal fixing distances.
The CSTB technical approvals guarantee technical performances of Polyrey FACADE for installations on wood subframe and metal subframe with a fixing distance of 750mm maximum 8 and 10 mm thick panels and 650 mm max for 6 mm panels.
Thanks to its 2 decorative sides, Polyrey FACADE eliminates the risk of damaged panels.

Fire resistance, priority to safety

Polyrey FACADE range is fire retardant without any extra cost. A quality and demanding approach in line with safety and Polyrey values.

MAINTENANCE

Polyrey FACADE exterior compact provides unequalled comfort. Polyrey's simple maintenance instructions will easily restore dusty and dirty panels to their original lustre and appearance

SIMPLY STRONG

Dirt resistant

The perfectly sealed Polyrey FACADE surface limits the adherence of dirt. Some zones such as building ground floors may be more exposed and therefore require minor maintenance.

Resistance to solvents

Even if their frequent use is not recommended, the surface is not sensitive to solvents and household cleaning products. Thanks to its new resin surface, Polyrey FACADE has a perfectly sealed and hermetic surface preventing it from having any traces of dirt after cleaning

Graffiti Resistance

In easy access areas such as building entrance or hallway, facades can often be damaged. Thanks to the new patented technology, the surface of the exterior compact FACADE is sealed and stain resistant.
Paints, graffitis, glue and marker pen markings can completely be removed with specific chemicals (solvent based or not) according to the type of damage.

OUR CLEANING ADVICE

Routine maintenance

Soiled surfaces can be cleaned using warm water, optionally adding a low foam non-abrasive household cleaner (washing up liquid type, Degraiss'net®). Rinse the surfaces with clear water until all foreign particles have been removed. Apply the product using a soft sponge or a damp lint-free cloth. Vileda® Microclean cloths moistened with nothing but water can also be used.
Never rub the surface when dry.

In-depth cleaning

For heavier soiling, Polyrey FACADE can also be cleaned with:

- Antigraffiti cleaner agent
- White spirit®
- Acetone
- Essence F5%
- Ordinary household cleaners.

Another option is to use high-pressure cleaner set to a pressure of 50 to 100 bars and a temperature of 50 to 60 °C.

NOT TO DO :

- Do not clean the surface when dry.
- Do not use abrasive sponges or cloths.
- Do not use mechanical systems such as rotating brushes or sweepers which, even when used with large amounts of water, can still damage the surface of the panelling.

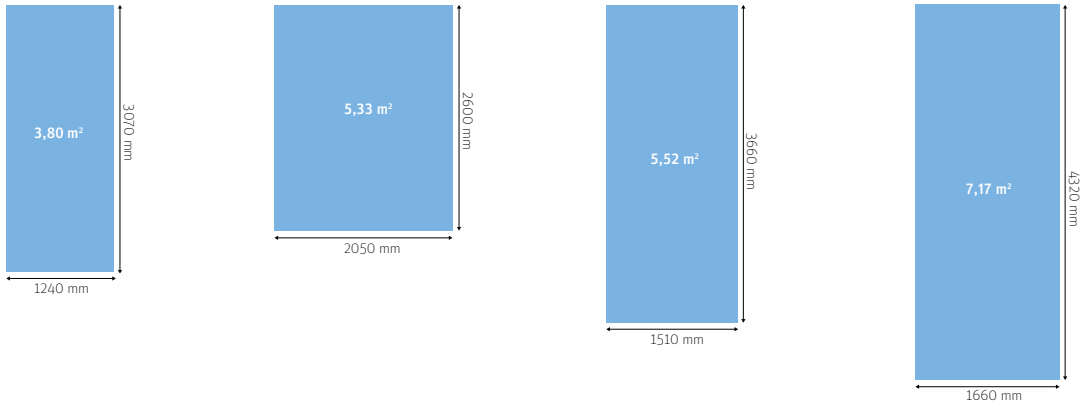
It is advisable to test any other products before use. Polyrey cannot be held liable for damage that may be caused to the surface of Polyrey FACADE compacts in the event of failure to observe the recommendations listed above.

FORMATS

Polyrey FACADE is suitable for ventilated façades and comes in 4 sizes to optimize the pattern layout, three thicknesses and decors specifically selected for this application.

FORMATS

Formats for the most varied architectural projects.



- Each decor is available in formats: 3070 × 1240 mm / 3660 × 1510 mm / 2600 × 2050 mm / 4320 × 1660 mm in Satin.
- Polyrey FACADE panels are available in 3 thicknesses adapted to each type of application.

Formats	3070 x 1240 mm	2600 x 2050 mm	3660 x 1510 mm	4320 x 1660 mm
Thicknesses	6 mm / 8 mm / 10 mm			
Decors	63 decors (decor on 2 sides)			
Finish	Satin			
Fire class	B-s1, d0 (M1)			
Standards	EN 438-6 et 7 (EDF : Severe use)			

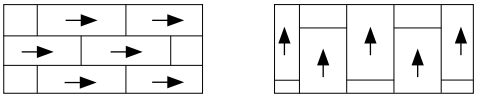
OPTIMISATION

Products and services.

- Polyrey FACADE design office provides essential support in optimizing the most complex layouts with the minimum wastage rates. Contact our FACADE design department: facade.france@polyrey.com
- FACADE exterior compacts have optimum stability properties to allow the largest panels to be used in complete safety. Panel dilation is not in excess of 0.2% in length and 0.4% in width.
- The 4 panel formats are to be taken into consideration to meet the varying facade configurations and make it possible to optimize wastage and therefore control installed costs.

Aesthetic recommendation

For Wood & Mineral decors, Polyrey recommends that the modules be installed in the same direction for a single project (transverse or longitudinal).



For your projects, consult our technical service : Tel. : +33 (0)5 53 73 56 74 - email : facade.france@polyrey.com

ENVIRONMENT

Attentive to its ecological footprint, Polyrey has set up a life cycle analysis (LCA) to assess the impact on energy, water, greenhouse effect gases and waste throughout the life cycle of its Polyrey FACADE exterior compact.

polyGreen

AN ECO BUILDING SOLUTION

Ventilated facades for better resource management

The air gap favours hygrometric comfort and increases building durability. The buildings benefiting from this insulation system are healthier and will have an increased service life.
The ventilated facade system allows increased flexibility in the possible thickness of insulation, up to 240 mm thick, to regulate the required thermal performances and comply with RT 2012. The position of the insulation against the load-bearing wall minimizes heat loss.

The buildings that use the system are better insulated and have significantly reduced energy consumptions and CO2 emissions. Requiring little maintenance, compact limits consumption of water, cleaning products and solvents, also limiting the release of cleaning related plastic waste. The high durability of the compact facade panels allows very long term renovation or individual replacement of damaged panels, also limiting waste processing.

A solution in line with European eco-building approaches

Polyrey proposes an exterior compact panel for projects aiming for an HQE (Haute Qualité Environnementale) label that provides a solution to improve the comfort and health of building users and limits its impact on the environment. It can therefore contribute to the "Integrated choice of products, systems and building techniques (target 2)" and "Hygrometric comfort (target 8)" targets.

Polyrey FACADE exterior compact is an eco-certified material in line with the high environmental quality building assessment system created by the US Green Building Council, making it possible to obtain LEED credits (Leadership in Energy and Environmental Design).

SUSTAINABLE RESOURCE MANAGEMENT

Life cycle analysis

Life cycle analysis is a method governed by the Subframe of international standards (ISO 14040 and ISO 14044) and carried out by an approved external contractor. The objective is to quantify the environmental impact of each phase in the life cycle and draw up the figures in a written assessment. This data is carried over to the Environmental Product Declaration Form (Environmental Product Declaration) in compliance with standard NF P01-010 available online at: www.polyrey.com.

All Polyrey FACADE panels are PEFC eco-certified*.

Polyrey FACADE, an exterior compact HPL panel, is an eco-certified material since it is composed of 65% paper, a renewable resource, from wood originating from sustainably managed forests. Since 2003 Polyrey has a control chain that guarantees monitoring and transparency of all manufacturing processes.

PEFC - PAN EUROPEAN FOREST CERTIFICATION

PEFC 40 % mini

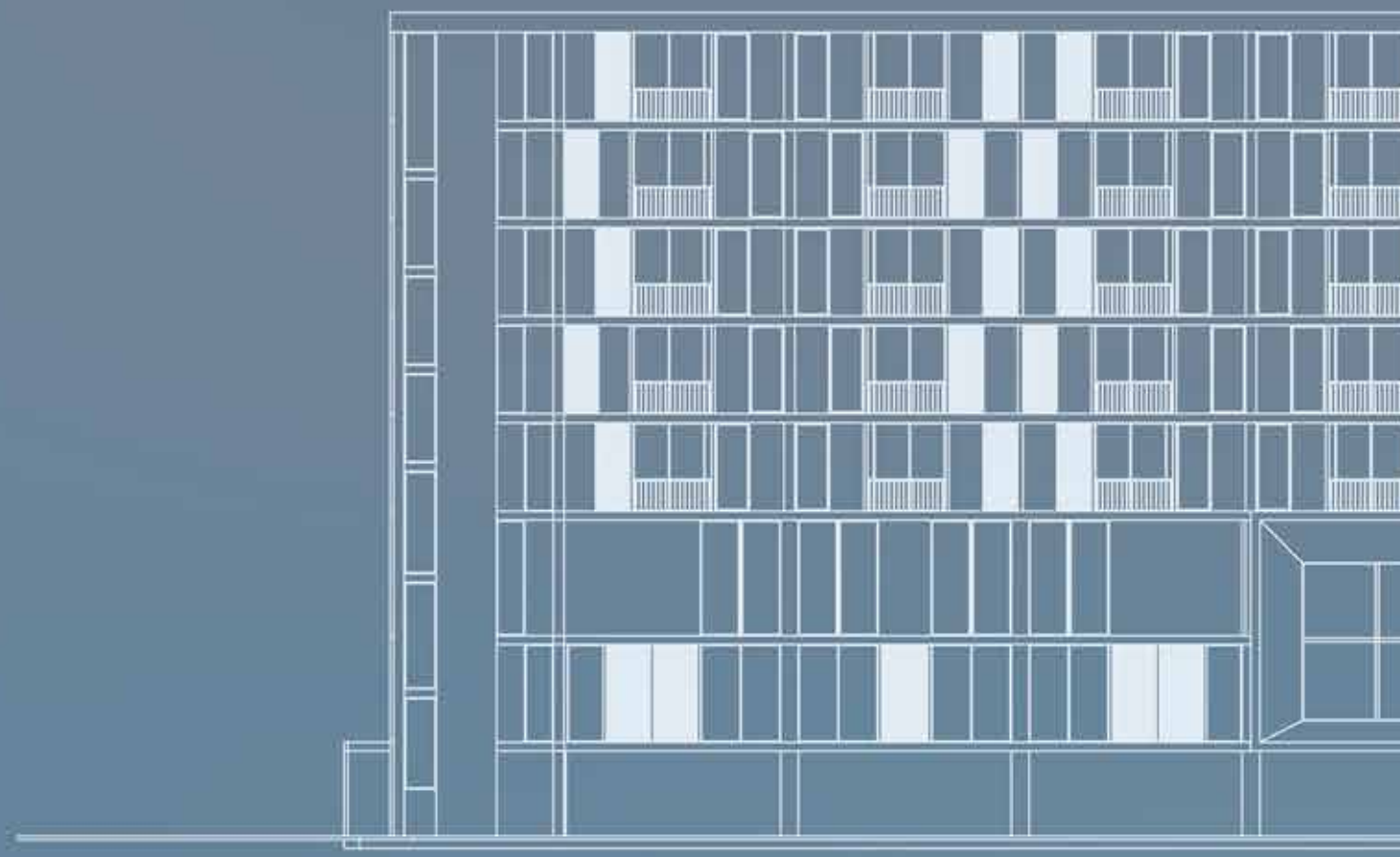
TECHNICAL DATA

Polyrey FACADE is guaranteed compliant with the requirements of the EN 438 standard. View its full technical specifications.

	Quality		Fire-retardant
	Decors / Finish		All decors / SATIN
	Thickness		6, 8, 10 mm
	Standardised type		EDF - Conformed EN 438-6
Specification	**Standard**	**Unit**	
Physical and size properties			
Density	ISO 1183-1	g/cm³	≥ 1,35
Thickness tolerance	EN 438-2-5	mm	6 mm : ± 0,40 / 8 -10 mm : ± 0,50
Tolerance on length and width	EN 438-2-6	mm	0 / + 10
Tolerance on edge straightness	EN 438-2-7	mm/m	≤ 1,5
Tolerance on right angles	EN 438-2-8	mm/m	≤ 1,5
Tolerance on flatness	EN 438-2-9	mm/m	6 - 8 mm : ≤ 0,40 / 10 mm : ≤ 0,50
Size stability at high temperatures (70 °C and 40 °C with 90-95 % humidity) • Longitudinal direction • Transverse direction	EN 438-2-17	%	 ≤ 0,20 ≤ 0,40
Mechanical properties			
Bending modulus	ISO 178	MPa	≥ 9000
Bending strength	ISO 178	MPa	≥ 80
Tensile strength	ISO 527-2	MPa	≥ 60
Resistance to the impact of a large diameter ball bearing (324 g and 42,8 mm) • Diamètre d'empreinte • Hauteur	EN 438-2-21	 mm mm	 ≤ 10 ≥ 1800
Surface properties / Ageing resistance			
Surface defects • Occasional • Linear	EN 438-2-4	mm²/m²	 ≤ 2 ≤ 20
Ultraviolet light resistance (1 500 h) : • Contraste • Appearance	EN 438-2-28	 Grey scale Class (from 1 to 5)	 ≥ 4 ≥ 4
Artificial weathering resistance (3 000 h) : • Contraste • Appearance	EN 438-2-29	 Grey scale Class (from 1 to 5)	 ≥ 4 ≥ 4
Resistance in a wet environment (48 h at 65°C) : • Increase in weight • Appearance	EN 438-2-15	 % Class (from 1 to 5)	 ≤ 8 ≥ 4
Resistance to climatic shocks: • Appearance • Bending resistance index Ds • Bending modulus Dm	EN 438-2-19	 Class (from 1 to 5)	 ≥ 4 ≥ 0,95 ≥ 0,95
Fire Behaviour			
Euroclass	EN 13501-1	Class	B-s1, d0
Higher calorific power	EN ISO 1716	MJ/Kg	18 - 20
Thermal conductivity	EN 1524	W/mK	0,3
Health and environmental properties			
Formaldehyde emissions	EN 717-1/2	Class	E1
PEFC		% mini	40

EDF : Compact for fire-retardant exterior use

Classe : **1** = Surface deterioration. **2** = Significant alteration of appearance. **3** = Moderate alteration. **4** = Minor alteration visible at certain angles. **5** = No alteration.



SERVICES

Our teams of experts will accompany you from the start to the finish of your projects providing high performance services suited to your needs.

SERVICES PRO

Services Pro, sharing expertise for successful projects.

Thanks to its set-up of complete and exclusive professional services, Polyrey makes it possible for architects and installers to save precious time, guaranteeing that they fulfill key steps in the best conditions. Included in this service are layout studies made for each project by our experts, in order to offer the lowest wastage rates; the perfect optimization of materials.

PROJECT DESIGN

A true online design studio

The Polyrey FACADE line includes 63 decors available in 3 thicknesses and 4 panel formats. Our Design Studio allows you to view our products online and in situation.
We are committed to making your choices and projects easier!
www.polyrey.com

Simplified design using BIM objects

Polyrey makes BIM (Building Information Model) models available: a new solution for architects and decision makers to model a building in 3D including all material properties. This new tool makes it possible to analyse energy needs, to simplify structural calculations, anticipate building related risks, to comply more easily to budgetary or regulatory requirements, while viewing your project in 3D.

Find download links on www.polyrey.com website. The models can be used with Revit, ArchiCAD, Sketchup software and in IFC format.

FREE SAMPLES

Project assistance to help you make your choice

The Project Assistance department processes your requests and delivers the product samples you need, free of charge and within 24 hours. Your decor samples will be shipped out on the same day for all requests made before 3 pm. Request your free samples from our Project Assistance department.

Request your free samples from our Project Assistance department.
Tel.: +33 (0) 5 53 73 56 88
email: polyrey.export@polyrey.com
Or on our web site: www.polyrey.com.

PRODUCT TRAINING

Full and adapted training

Our Polyrey FACADE professionals provide architects, installing contractors and distributor clients, specific exterior compact training, covering from the product line to installation.

Expertise and advice

Our studies, conducted in close collaboration with the architects in charge of projects, will lead to a format optimization sheet being made available containing the following data :

- the total surface area of panels to order
- the total surface area of cut panels
- the wastage rate
- the quantity survey for the frame and an estimate of the number of brackets
- the cutting length and number of drill holes

Essential and determining elements to guarantee correct installation!*

** N.B. All the data is valid and usable on condition that the customer checks the conformity of the final building measurements with the initial drawings.*

FACADE STUDIES

A professional cladding and optimization service

Our design office analyses the optimization of the FACADE compact panels for each customer project. Our sales department puts architects in touch with our specialists. They will conduct their study using the working drawings and the architect's recommendations.

Drop off your files: **facade.export@polyrey.com**

Saving time and money

Our professionals make their recommendations by proposing one or more layouts using the most suitable panel formats to obtain the lowest wastage. The wastage rate is reduced, generating a significant reduction in the cost of the order. The use of our design office is a service provided free of charge.

A feasibility study

As we are aware of the stakes involved, we are committed to studying the feasibility of projects within a reduced time frame, taking into account exposure to wind and earthquake zones in order to recommend suitable Subframe spacing (Eurocode compliant).

TECHNICAL SUPPORT

Reactive and available support

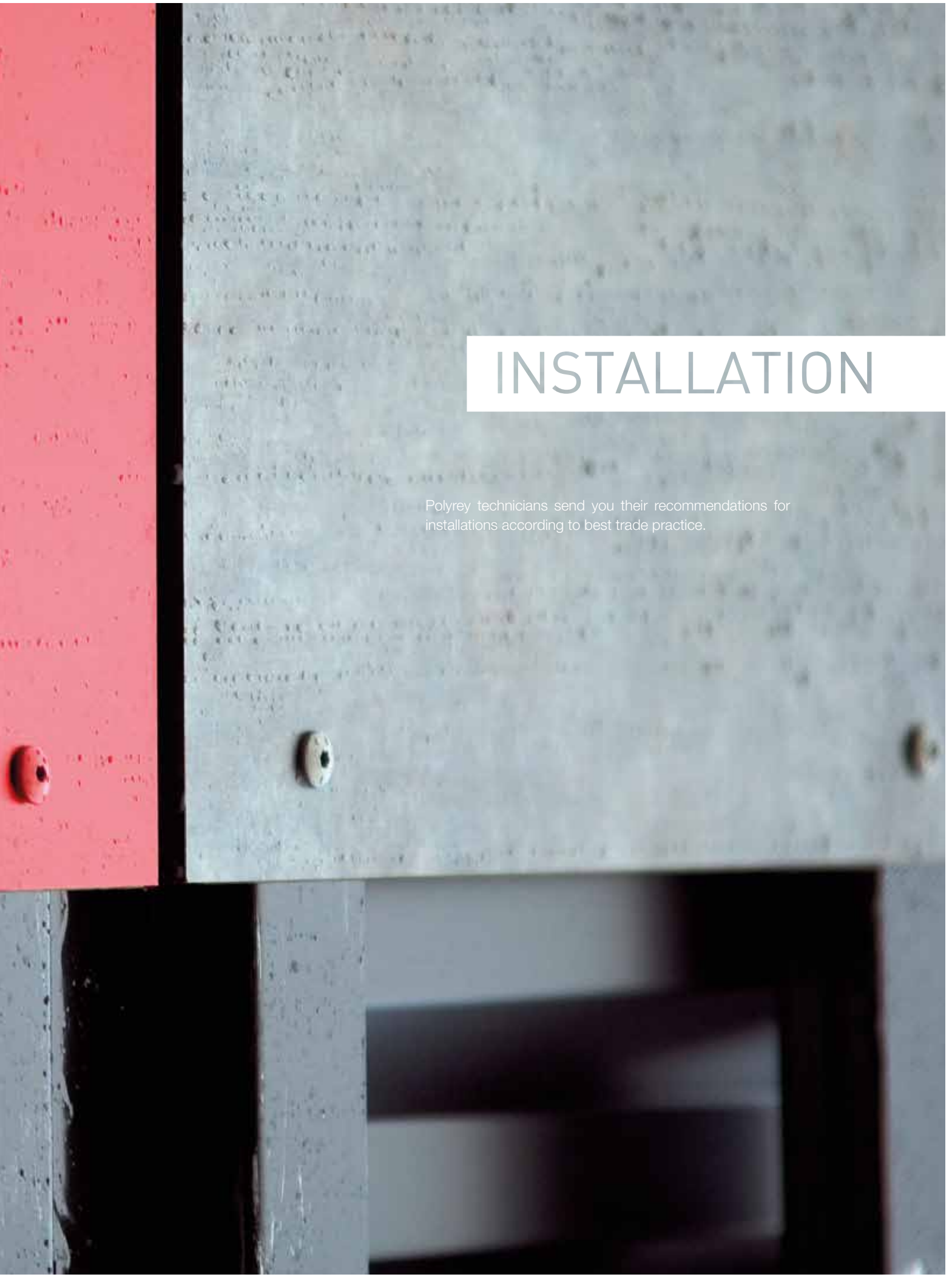
A hotline is available to answer your most technical questions as quickly as possible. Throughout your project, our teams are available to help you make your ideas a reality, guaranteeing correct recommendations and best practices. Our installation experts travel to your work sites to assist you with the installation. A professional support capable of giving the best advice.

Contact our technical department for more information or for any special requests not covered by this document :
Tél. : +33 (0) 5 53 73 56 74
Email : facade.export@polyrey.com
Documentation and technical approvals available on :
www.polyrey.com

SITE KICK-OFF

Kick-off your work sites with an expert

Kicking off a work site is a key step in a successful project. Our installation experts are available to support during installation to guarantee that the work gets off to a good start.



INSTALLATION

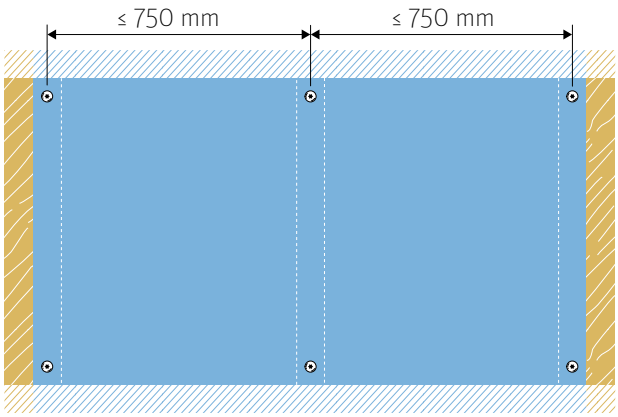
Polyrey technicians send you their recommendations for installations according to best trade practice.

I. GENERAL INFORMATION

FIXING DISTANCE BETWEEN VERTICAL UPRIGHTS

CSTB technical opinions guarantee Polyrey FACADE technical performances (wind resistant, impact resistance, etc.) for installation on timber or metal Framworks with fixture spacing between the vertical uprights of 750 mm max. for 8 and 10 mm thick panels, and 650 mm max. for 6 mm panels.

For projects where the selected layout allows wide anchor spacing, the cost of the structure can be reduced compared to the cost of installing other facade products that require smaller anchor spacing between uprights.



FIRE BEHAVIOUR

Polyrey FACADE is fire retardent.

Combustible weight	
6 mm	168 MJ/m²
8 mm	227 MJ/m²
10 mm	282 MJ/m²

Fire resistance level	Euroclass classification (EN 13501-1)
Fireproof - EDF	B-s1, d0 (M1)

It is the installer's or project designer's responsibility to comply with applicable regulations for the country or geographical area in which the project is located.

M08F - Béton Patiné
Scale 1/2

II. HANDLING & MACHINING

HANDLING

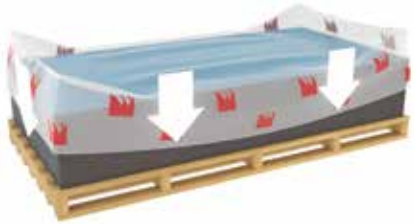
The panels should be handled with care to guarantee the flawless quality of the decorative surface. Despite the high strength of these panels and their protective film, it is recommended to proceed as follows:

- When unloading the pallets, use a minimum 2.5 metric ton fork lift with 1.5 m long forks.
- When handling, lift the panels one by one to avoid scratching the finished surface.
- Do not slide the decorative surfaces over each other. When moving the panels manually, it is recommended that the larger sizes be carried by two people. If a mechanized movement system is used, a suction gantry can be used

Make sure that the panel faces are clean and free from abrasive particles.

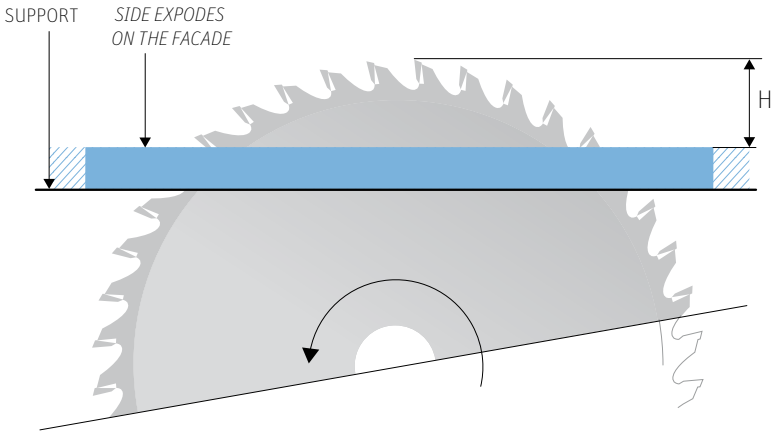
PALLET LOADING AND STORAGE CONDITIONS

- Keep the panels in closed packaging (protective cover).
- Use flat and stable pallets of a size at least equal to the panel size to avoid any slipping and overhang.
- The spacing between battens must be at least 600 mm.
- Store the panels in closed premises, away from humidity and heat to avoid permanent buckling (10 to 30 °C and 40 to 60 % RH)
- When storing horizontally on pallets, place a sufficiently sized protective sheet between the pallet and the panel and on the top panel.
- Extended flat storage of the panels prevents the appearance of buckling.
- Never stock panels with a protective film for more than 6 months.
- Outdoor storage is not recommended. Nevertheless, if such was the case, it is imperative to keep the protective cover or to add a cover over the filmed panels.



CUTTING

- The machining of Polyrey FACADE requires carbide tools (when cutting small quantities) or diamond tools (for the continuous cutting of large quantities).
- To machine Polyrey FACADE exterior compact, the following machines can be used :
  - circular saw, manual trimmer, or flat or vertical industrial saw,
  - drill,
  - digital command machine (CNC).
- It is recommended to remove the protective film covering the panels on both sides after machining or even just before installation if possible.
- If the protective film has to be removed during machining, remove it from both sides of the panel.



H = 1/10* D + 1/2 E
H = Cut depth
D = Blade diameter
E = Panel thickness

Recommended machines:

Manual circular saw

Carbide or diamond blade.
Polyrey recommends placing the panel so that the blade starts cutting the compact on the face that will be visible on the façade. In order to avoid chipping the opposite side it is recommended to use a backing panel.

Industrial saw

Large diameter carbide or diamond blade (e.g.: 200 mm) fitted with an incisor to optimize cutting quality on both sides. Adjust the blade exit angle to preserve both decorative faces. By lifting the blade the cutting quality on the top face will be improved. Firmly fix the panels to avoid vibrations. Prefer alternating flat and trapezoid toothed blades or angled alternating toothed blades. In all cases adapt the progress of the saw to the required cutting quality and the panel thickness.

Digital command machine (CNC)

- Carbide or diamond treated bit.
- Recommended rotation speed between 18,000 and 24,000 rpm.
- Allows a chip free cut on both faces without using a backing panel.

Type of saw	Disc diameter (mm)	Number of teeth	Saw speed in RPM	Blade depth (mm)	Forward speed (m/min)
Manual	160	48	4000 trs/min	16	4 m/min
Manual	180	48	4000 trs/min	18	4 m/min
Industrial	200	72	9000 trs/min	20	6 m/min
Industrial	280	72	9000 trs/min	28	6 m/min
Industrial	300	72	9000 trs/min	30	6 m/min
Industrial	330	72	9000 trs/min	33	6 m/min
Industrial	350	72	9000 trs/min	35	6 m/min
Industrial	360	72	9000 trs/min	36	6 m/min
Industrial	380	72	9000 trs/min	38	6 m/min
Industrial	400	72	9000 trs/min	40	6 m/min
Industrial	420	72	9000 trs/min	42	6 m/min
Industrial	450	72	9000 trs/min	45	6 m/min

alternating flat and trapezoid teeth

alternating angle teeth

It is the installer's or project designer's responsibility to comply with applicable regulations for the country or geographical area in which the project is located.

DRILLING

Prefer the use of carbide or diamond treated drill bits. If there is a small number of holes to be drilled (< 200), an HSS type (iron) drill bit can be used.

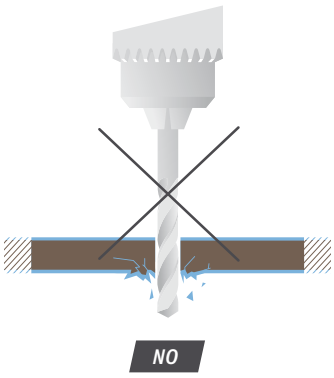
Recommended machines:

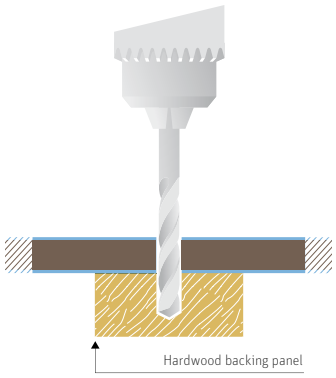
Manual drilling

Make sure the rotation speed is at the maximum to avoid chipping and heating. Advance the drill smoothly. It is recommended to work on a backing panel that can be drilled (e.g. dense chip board or MDF).

Digital command drilling (CNC)

Rotation speed between 18000 and 24000 rpm. The panel must be firmly held down to avoid any vibration.

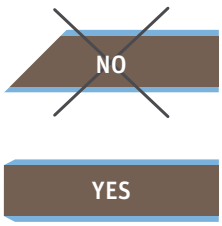




FINISHING THE EDGES

The edges do not require any special treatment but they can be machined for a special finish.

- The edge of the compact can be used by calibration, chamfering or beveling.
- It is essential to grind down sharp edges to avoid cuts when installing and after installation is complete.



Contact our technical department
for more information or
for any special requests
not covered by this document.

Tél. : +33 (0) 5 53 73 56 74
Email : facade.export@polyrey.com

Documentation and technical approvals
available on www.polyrey.com

BENDING

Polyrey FACADE compact panels can be bent to a curve radius of 1500 mm for the 6mm version and 4000 mm for the 8 mm version.

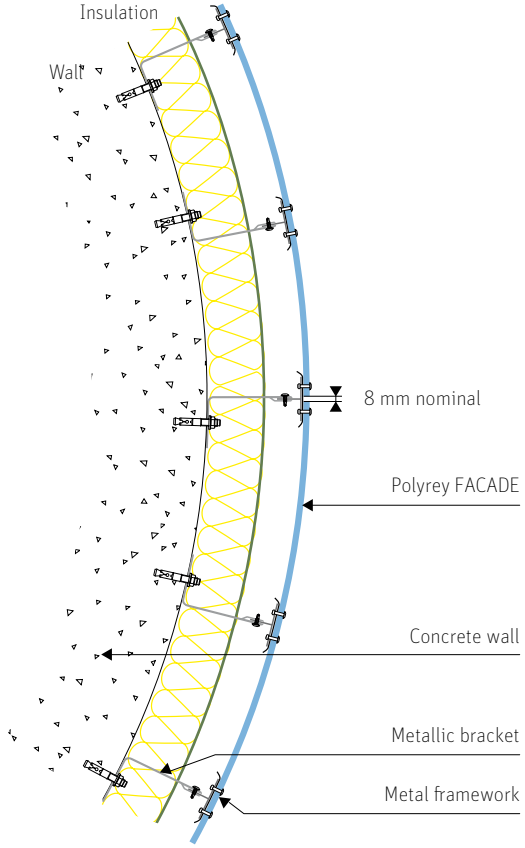
They are installed using screws or rivets onto a primary vertical framework, or onto a previously bent secondary horizontal framework.

Fixing spacing must obey the recommendations described previously in the installation for metal frame and installation for timber frame parts, and installed depending on exposure to wind and earthquake zones.

The distance between framework elements must be reduced by 50% (bending direction) and the spacing between fixings must be reduced by 25% (direction contrary to bending).

The sizing of the primary vertical and secondary horizontal Framworks must be justified by means of a calculation note.

Panel widths must not be less than 1/2 x height.
minimum width: 1000mm
minimum height: 120mm



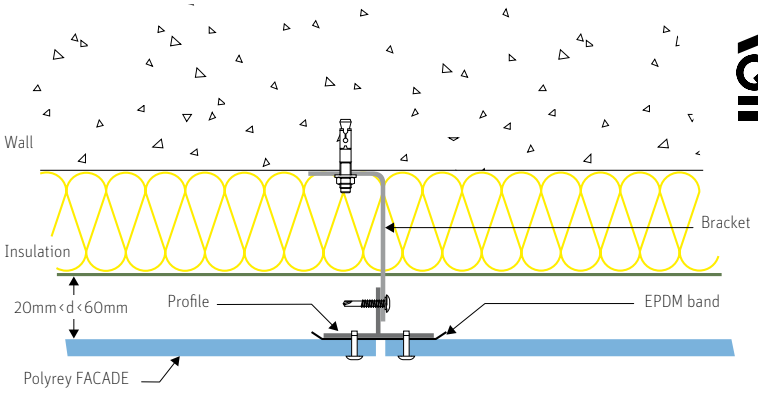
Panel thickness	6 mm	8 mm
Maximum curve radius in mm	≥ 1500 mm	≥ 4000 mm

III.
INSTALLATION ON **METAL FRAMEWORK**

BASIC RULES

Polyrey FACADE panels can be used for ventilated facades, as exterior wall cladding, with or without insulation. The assembly of Polyrey FACADE panels using visible fixings on a metal Framwork with rivets or self-tapping screws must comply with the instructions in the applicable technical approval and CSTB technical brochure 3194.

- The panels are directly screwed or riveted onto vertically laid out metal profiles. These profiles are fixed to the supporting structure using aluminium, galvanized steel or A2* grade stainless steel brackets.
- A gap of minimum 20 mm between the insulation or the structure shell and the POLYREY FACADE exterior compact panel must be left to create an air gap, which is essential to how a ventilated facade operates. Top and bottom ventilation must be provided. Its surface area depends on the building height (to be determined using the technical notices).
- The metal framework must be covered over its full height with an EPDM type protective strip, 20 mm wider than the rafter it is protecting.



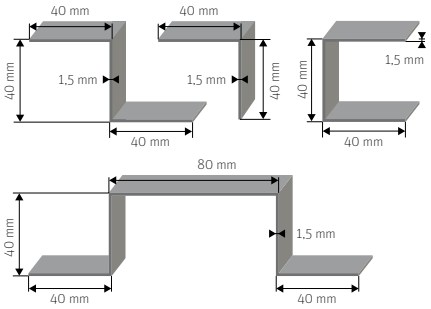
** A4 for coastal areas or densely urbanized areas.*

FRAMEWORK COMPOSITION

Profiles

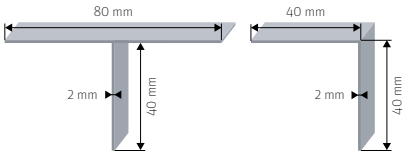
Galvanized steel framework

Vertical profiles manufactured from folded galvanized steel 15 or 20/10th mm thick, at least Z350* grade according to P34-310, using omega shaped sections and L, U or Z shaped corner parts. The Omega profile is used for vertical panel joints. The supporting width must be at least 30 mm for each sheet. The Z and U profiles are used for panel fixture or intermediate panel support. The supporting width is at least 30 mm. The L profile is used for corners and vertical edges. Their maximum length is 6 meters.



Aluminium framework

Vertical profiles manufactured using extruded AGS 6060 or 6063 aluminium alloy compliant with NF EN 573, with a minimum thickness of 20/10th mm, based on T or L-shaped sections. The thickness of the aluminium alloy profiles is 2 mm for installation using rivets and 2.5 mm for installation using self tapping screws. For the T profile at the junction of 2 panels, the total supporting width must be at least 80 mm. For the L profile used for intermediate panel fixture and for handling special zones (corners, vertical edges, etc.), the supporting surface must be at least 30 mm. Their maximum length is 6 meters.



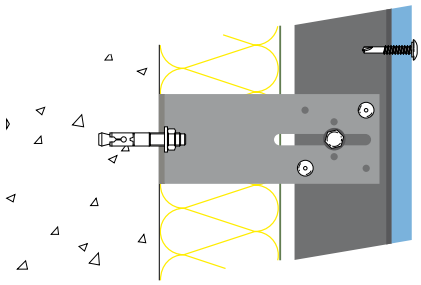
Fixture bracket

- Either A2* grade austenitic stainless steel 20/10th mm thick.
- Or 6 060 T5 aluminium with or without a clip, 3 mm thick compliant with NF A 50-411 and A 50-710.
- Or made by folding at least Z350 grade galvanized steel sheet metal compliant with P 34-310. - Of a maximum length of 250 mm.

Fixture to the supporting structure

Fixtures to the load-bearing structure must be chosen based on the wind exposure conditions and the rated pull-out strength on the support in question. For solid standard aggregate concrete or masonry supports, the ultimate limit state strength of the anchors will be that indicated in the ATE or the Technical Opinion in the event of chemical sealing to masonry.

- Concrete wall: Metal anchor for heavy-duty fixture in minimum A2* grade stainless steel.
- Masonry: Polyamide type multi-material cross through anchor.



**A4 for coastal or highly urbanized zones*

It is the installer's or project designer's responsibility to comply with applicable regulations for the country or geographical area in which the project is located.

Fixture of the profiles to the brackets

The framework is fixed using rivets or self tapping screws in compliance with CSTB Specification 3194 and its amendment 3586-V2. The characteristics of the fixings must take into account the thickness of the framework for the assembly capacity.

Galvanized steel framework

- Self-tapping screw
  - In A2* grade stainless steel
  - Screw body Ø : 5.5 mm min.
  - Length : 22 mm min.
  - Head Ø : 12 mm min.
  - EPDM Strip
- Rivets
  - Copper-zinc alloy body and A2* grade stainless steel mandrel
  - Rivet body Ø: 4.8 mm min.
  - Length to be defined depending on the system thickness.
  - Head Ø: 16 mm

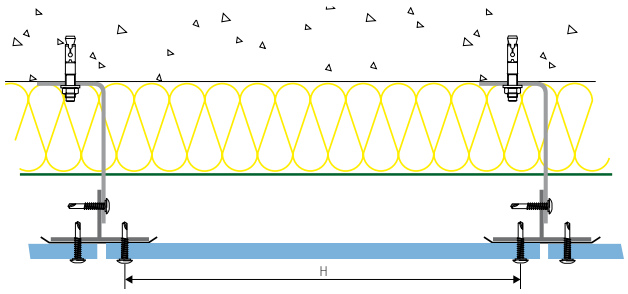
Aluminium framework

- Rivets
  - With copper-zinc alloy body and A2* grade stainless steel mandrel
  - Rivet body Ø : 4,8 mm min.
  - Head Ø: 16 mm

**A4 for coastal areas or densely urbanized areas.*

Profile layout

The profiles will be set out vertically with a maximum fixing spacing between vertical uprights of 750 mm for the 8 and 10 mm thick versions, and 650 mm for the 6 mm version. This spacing may vary depending on the building exposure as defined by Euro Code 1 rules and the thickness of the panels. Refer to the following rules to determine the rafter spacing depending on exposure to wind.



INSTALLING AND FIXING THE PANELS

Panel fixture screws and rivets

Rivets

Material: Aluminium alloy and minimum A2* grade stainless steel stem
Body diameter: 4.8 mm minimum
Flange length: 16 mm minimum
Head diameter: 16 mm
Characteristic Pk pull-out value:
- steel support (th=1.5 mm): 2370 N (1)
- aluminium support (th=2 mm): 1770 N (1)
Head lacquered to the panel colours.
Other rivets of the same kind and with characteristics at least equal can be used.

Self-tapping screws

Material: Minimum A2* grade stainless steel
Body diameter: 5.5 mm minimum
Length: 28 mm / 30 mm
Head diameter: 12 mm / 16 mm
Characteristic Pk pull-out value:
- steel support (th=1.5 mm): 3690 N(2)
- aluminium support (th=2.5 mm): 4170 N(2)
Head lacquered to the panel colours.
Other screws of the same kind and with characteristics at least equal can be used.

Your usual supplier (SFS & Etanco) will have the fasteners in the colours matching the Polyrey FACADE line available.

**A4 for coastal areas or densely urbanized areas. (1) according to the NF P 30-310 -(2) standard according to the NF P 30-314 standard*

Fixed and sliding points

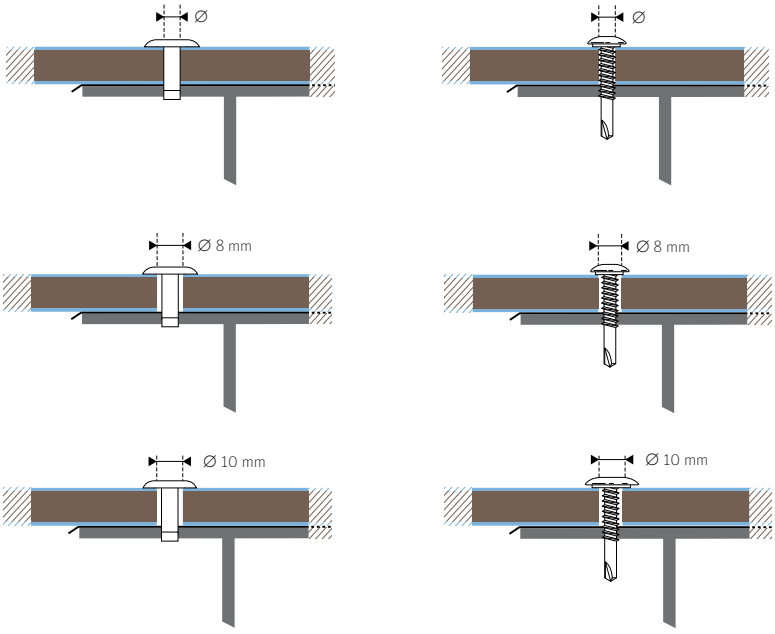
As the panels can be subject to size variations of up to 0.2% per linear meter longitudinally and 0.4% per linear meter transversally, panel fixings must take this into account to be able to maintain panel performance if these size variations occur.

Fixed point

Used to block the panel once it is in position and allow for uniform movements in terms of size variation thanks to its location at the centre of the panel. The drilling diameter must be equivalent to the screw or rivet body diameter.
One fixed point per panel.

Sliding points

Sliding points are used to hold the panel while allowing it to move. The drilling diameter must be 8 mm for a rivet with a body diameter of 4.5mm, or for a self-tapping screw with a 5.5mm diameter body. The drilling diameter must be 10 mm when the panel size exceeds 3070mm in length and 1510mm in width.
It is imperative that the screw or rivet head covers the drill holew The minimum screw and rivet head diameter is 12mm for 8mm drill holes and 16mm for 10mm drill holes.



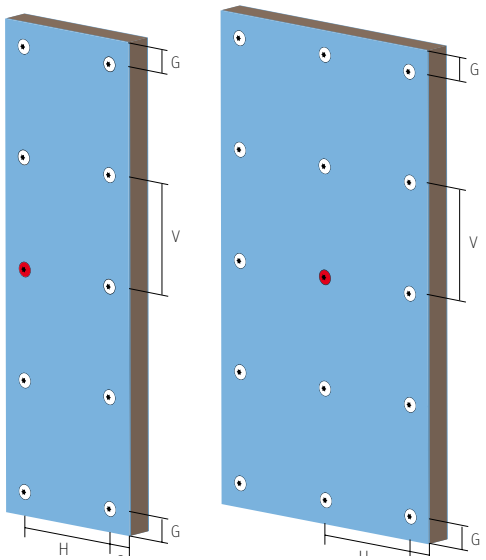
Layout and spacing of fixing points

As a rule, we recommend a drill guard of between 20mm and 10 times the panel thickness.
The layout of the fixing spacing along the support uprights will be determined depending on the required back pressure resistance.

H = horizontal fixing spacing between vertical uprights
G = distance between fixings and panel edges:
20 to 10 x panel thickness
V = fixing spacing along vertical uprights

Fixed point

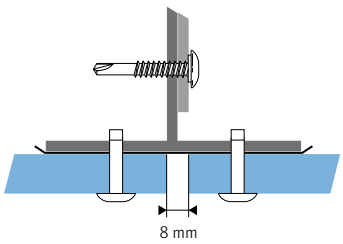
Sliding points



Treating joints and corners

Joints

Due to size variations, and to guarantee maximum water tightness, the panels must be placed leaving minimum 8 mm open vertical and horizontal joints.



Contact our technical department
for more information or
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not covered by this document.

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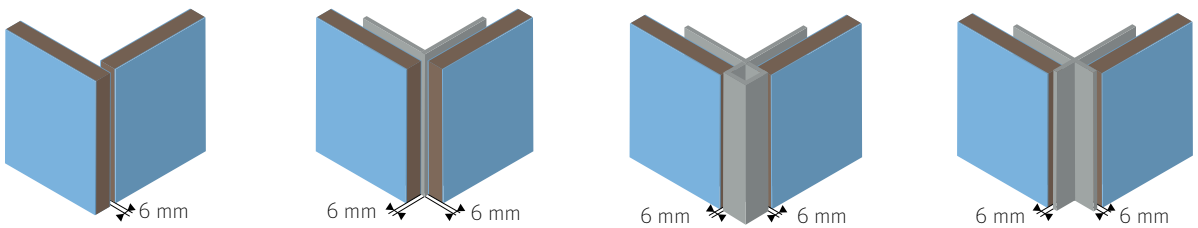
Documentation and technical approvals
available on www.polyrey.com

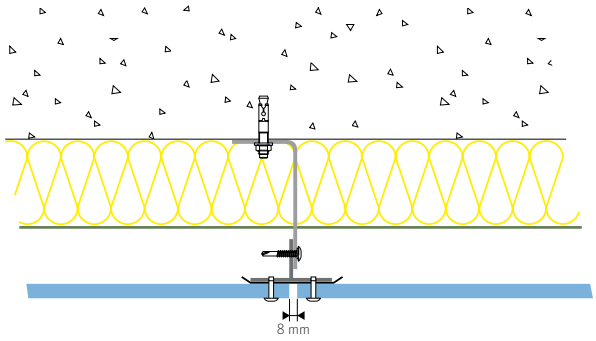
Corners

Corner joints must also take into account possible panel expansion. Corners can be treated with or without a metal profile, bother for inner and outer corners.

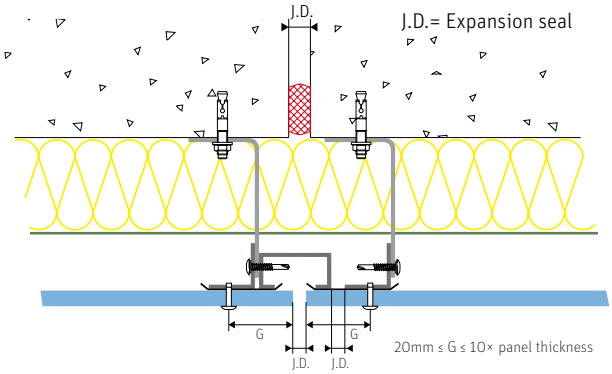


It is the installer's or project designer's responsibility to comply with applicable regulations for the country or geographical area in which the project is located.

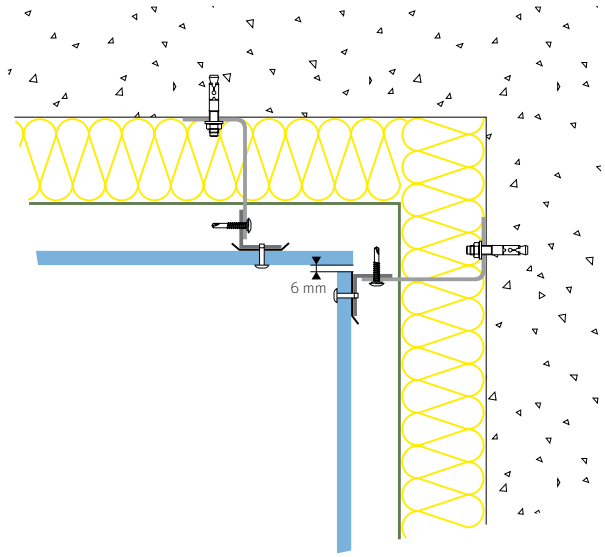
DETAIL DRAWINGS



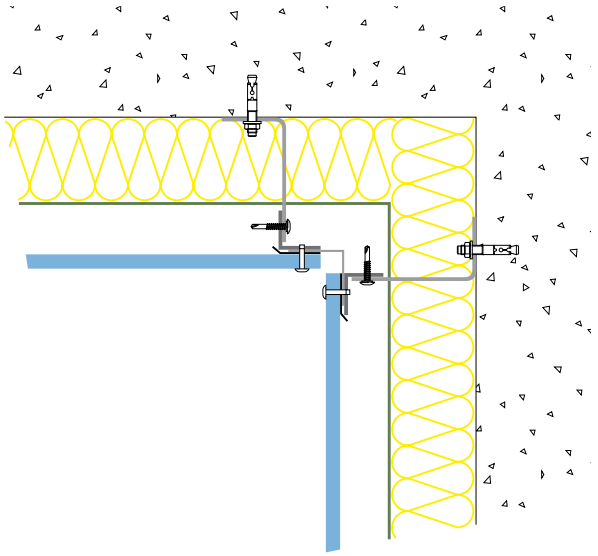
Hollow seals



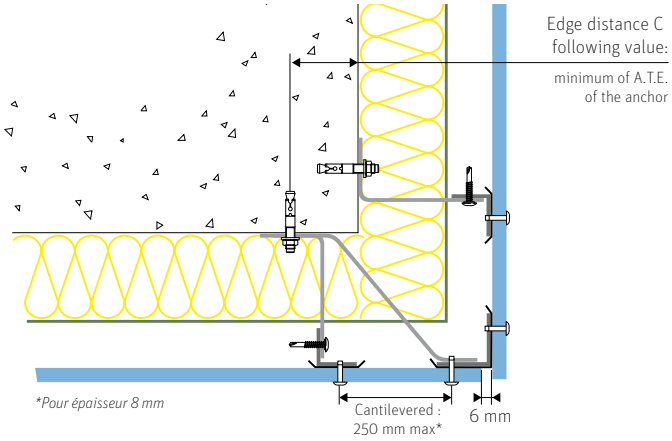
Expansion seal



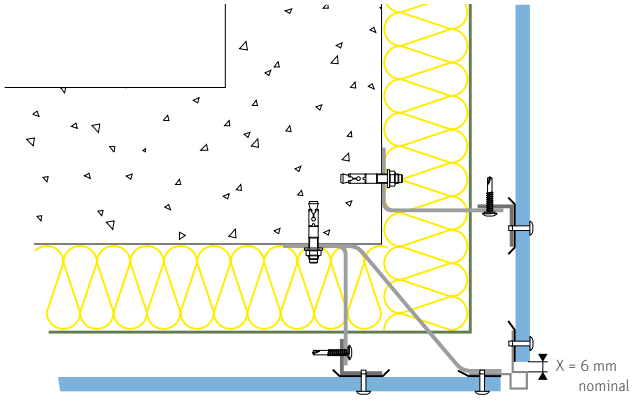
Inner angle



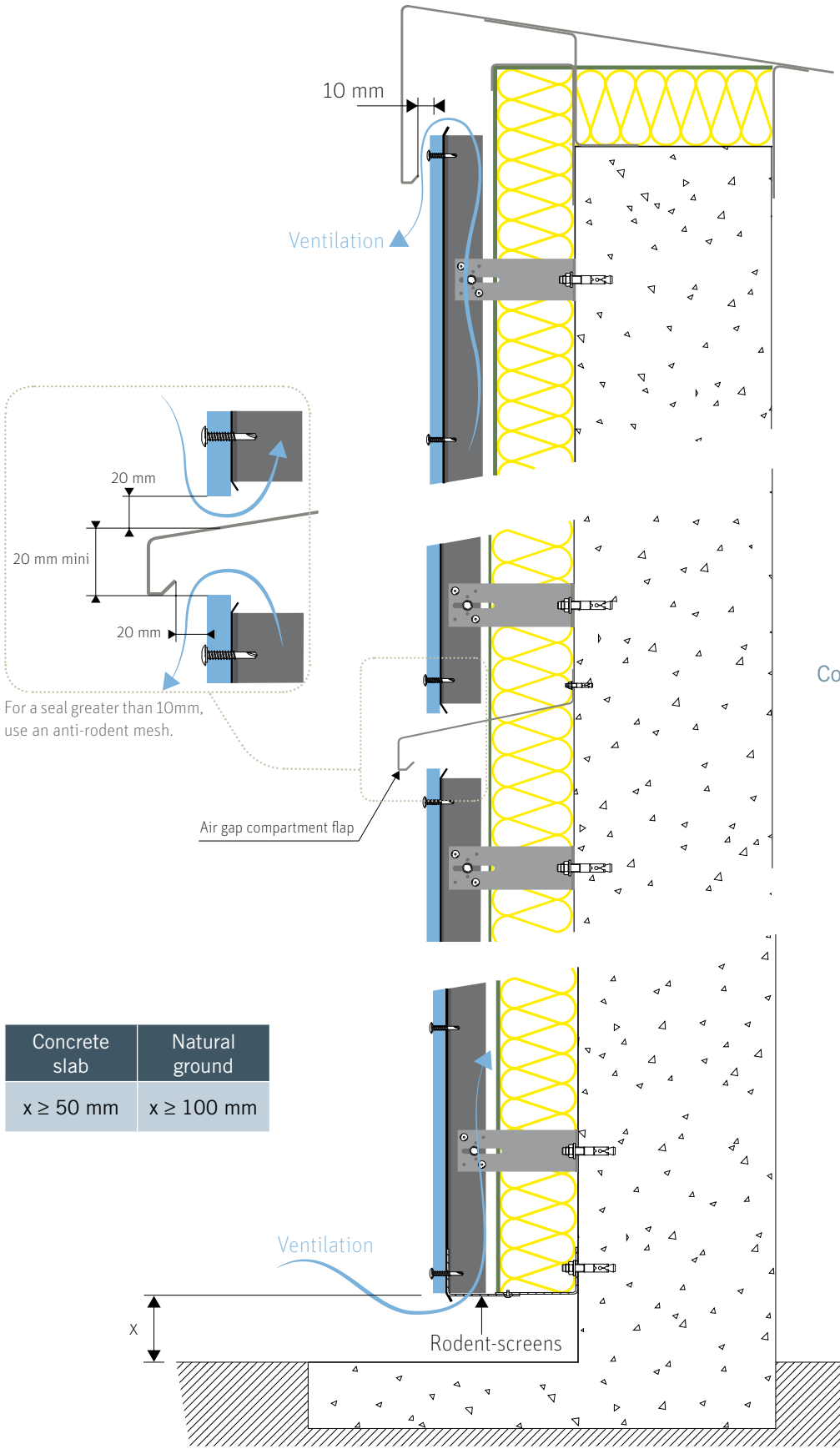
Inner angle



Outer angle



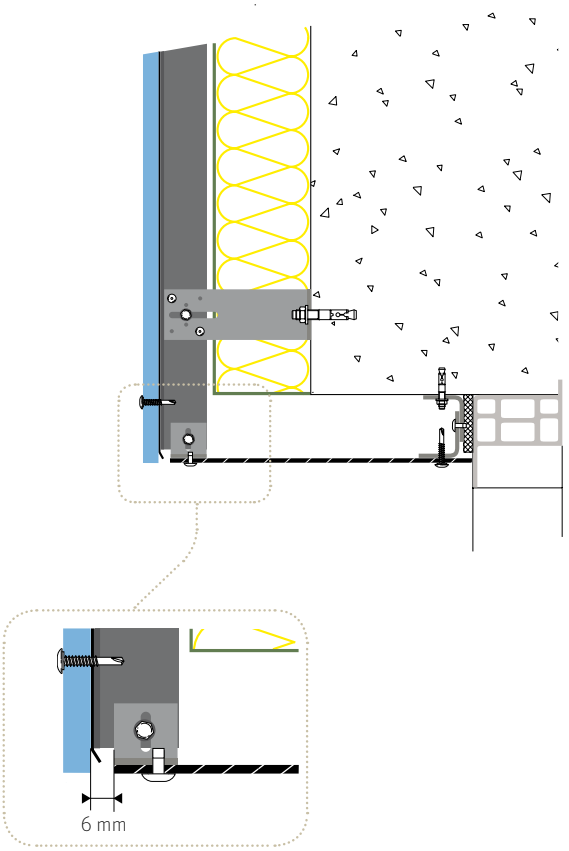
Outer angle



Concrete slab	Natural ground
x ≥ 50 mm	x ≥ 100 mm

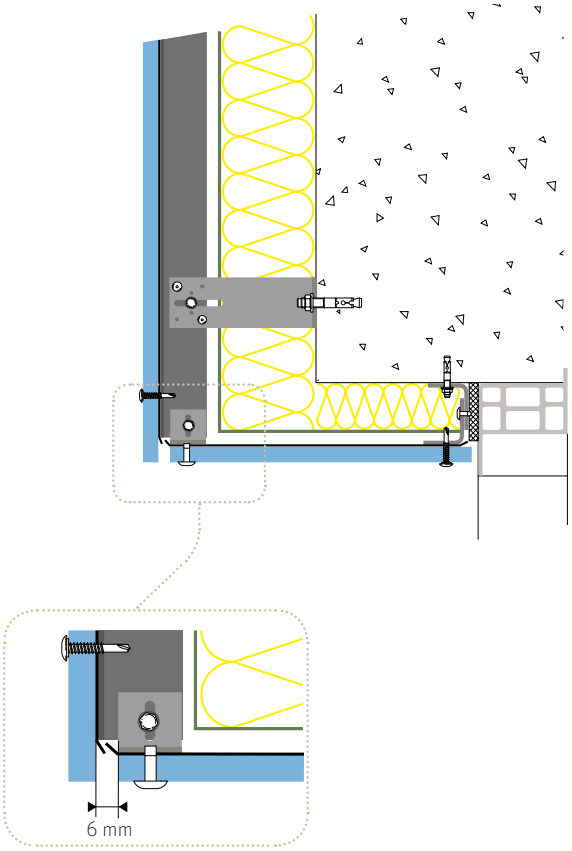
Connection to a window lintel

With drilled aluminium plate without insulation

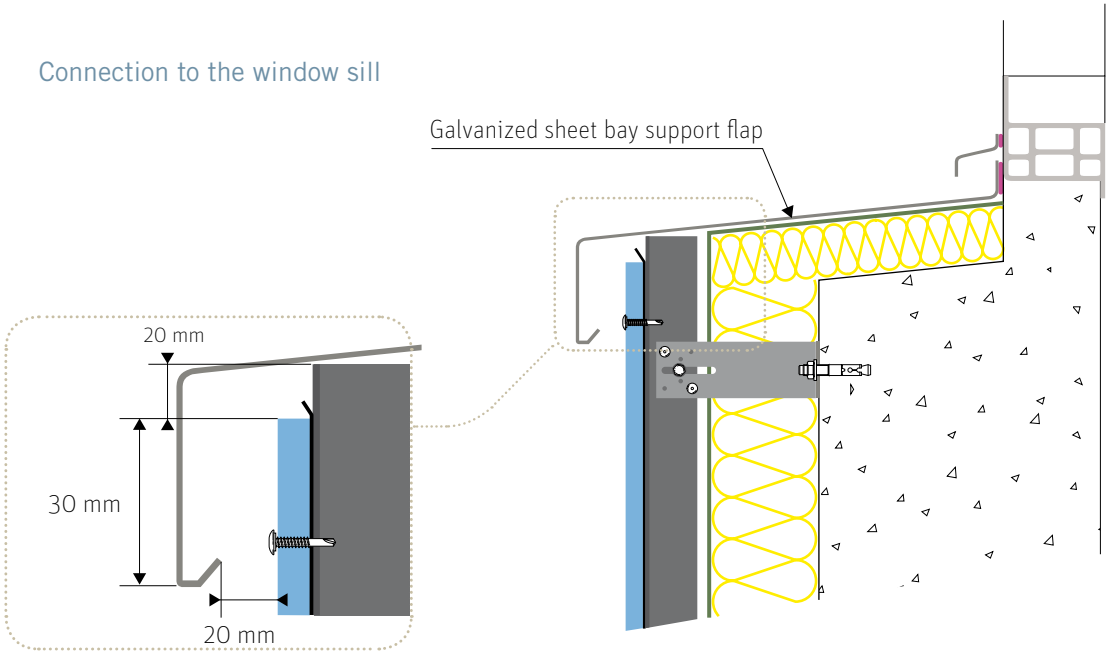


Connection to a window lintel

With POLYREY FACADE and insulation



Connection to the window sill



W07F - Pin Taïga
Scale 1/2

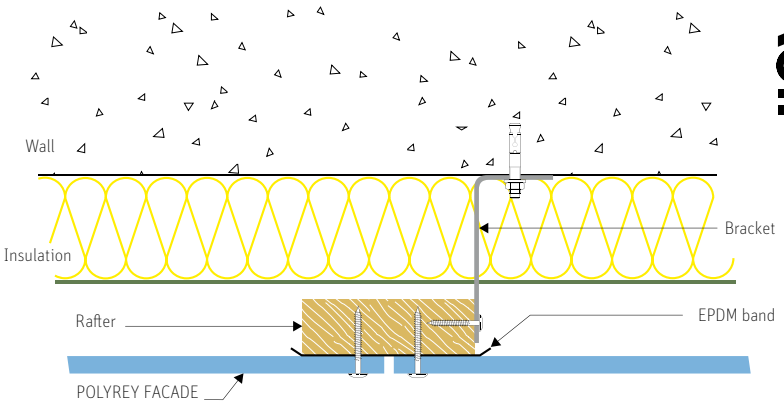
IV. INSTALLATION ON **WOOD FRAMEWORK**

BASIC RULES

Polyrey FACADE panels can be used on ventilated façades as cladding with or without ventilation.

The assembly of Polyrey FACADE panels using visible fixture on a timber framework with screws must comply with the instructions in the applicable technical approval and with leaflet 3316 of the "Centre Scientifique et Technique du Bâtiment" (CSTB).

- The panels are directly screwed onto vertically laid out rafters. These rafters are fixed to the supporting structure using galvanized steel brackets.
- A space of at least 20 mm must be left between the insulation or building shell and the Polyrey FACADE panel in order to create the air flow essential to the operation of the ventilated façade.
- The battens must be covered over their entire height using an EPDM type protective band which is 20 mm wider than the batten it is protecting.



FRAMEWORK COMPOSITION

Rafters

The secondary framework will be composed of rafters or battens with a natural durability or awarded use class 2 according to standard NF EN 335*, mechanical strength corresponding to at least class C18 according to standard NF EN 338 and delivered to the site with a moisture content of no more than 18% by weight.

Rafter cross section:

- 45 x 45 mm minimum for intermediate rafters
- 45 x 90 mm minimum at the junction between two panels

Fixing brackets

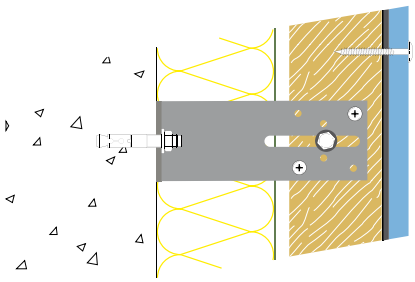
The fixing brackets for the rafters to the supporting wall (poured concrete or masonry) must be at least Z275 grade galvanized steel* of a thickness of 20/10th mm and a maximum length of 260 mm, in compliance with CSTB document 3316-V2.

** Galvanized steel process Z 350 thickness 20/10 ths for coastal areas*

Fixture to the supporting structure

Fixture to the load-bearing structure must be chosen based on the wind exposure conditions and the rated holding strength on the support in question.
For solid standard aggregate concrete or masonry supports, the ultimate limit state strength of the anchors will be that indicated in the ATE or the Technical Opinion in the event of chemical sealing to masonry.

- Concrete walls :
  Metal ∅ 8-12 mm anchor (please refer to the technical sheet) for heavy duty, minimum A2 grade stainless steel.
  Stainless steel A4 grade metal anchor in zone 5
- Masonry :
  Polyamide type multi-material cross-thru anchor..



Rafters fixed to brackets

The frameworks will be fixed using 1 tie-rod and 2 locking screws in compliance with CSTB brochure 3316.

- Tie rod
  - In corrosion resistant galvanised steel
  - body ∅: 7 mm
  - Length : 50 mm
  - EPDM Strips
- Locking screws
  -In corrosion resistant A2* stainless steel or bichromate zinc plated steel
  - body ∅ : 4 ou 5 mm

** A4 for coastal areas or densely urbanized areas.*

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Contact our technical department
for more information or
for any special requests
not covered by this document.

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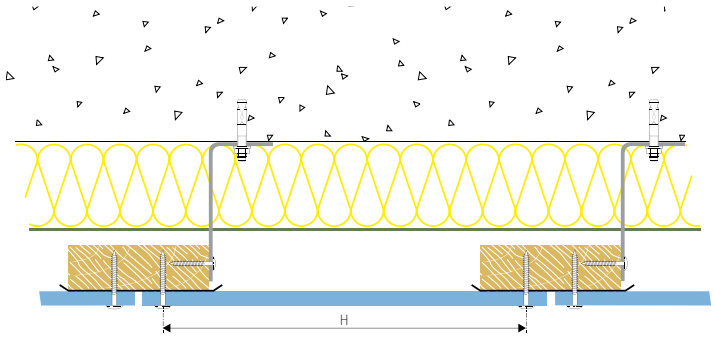
Email : facade.export@polyrey.com

Documentation and technical approvals
available on www.polyrey.com

Batten layout

The battens are laid out vertically with a maximum fixture spacing between the vertical uprights of 750 mm for 8 and 10 mm thicknesses, and 650 mm for 6 mm thicknesses. This spacing may vary depending on the exposure of the building as defined by the N.V. 65 rules, and on the panel thickness.
Refer to the following pages to determine the spacing of the uprights depending on the wind exposure zone.



INSTALLING AND FIXING THE PANELS

Panel fixing screws

- Material: A2* minimum grade stainless steel
- Body diameter: 4.8 mm
- Length: 38 mm
- Head diameter: 12 mm / 16 mm
- Characteristic Pk pull-out value: 2430 N(1)
- Head domed and lacquered to the panel colours.

** A4 for coastal areas or densely urbanized areas.*

Longer screws (60mm) can be used to replace panels Screws of the same type and characteristics can be used to replace panels screws of the same type and characteristics that are at least equal can be used. Countersunk head screws should never be used.

Your usual supplier (SFS & Etanco) will have the fasteners in the colours matching the Polyrey FACADE line available.

Fixed and sliding points

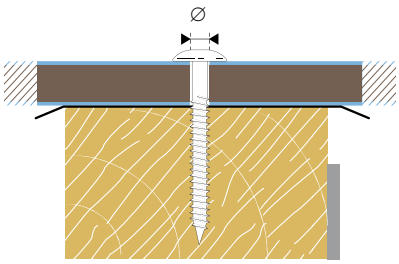
As the panels can be subject to size variation from 0.2 % per linear meter in the longitudinal direction to 0.4 % per linear meter in the transverse direction, the panel fixture must take this data into consideration in order to maintain performances in the event of size variations.

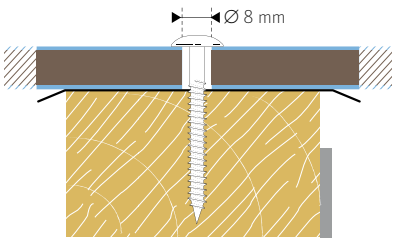
Fixed point

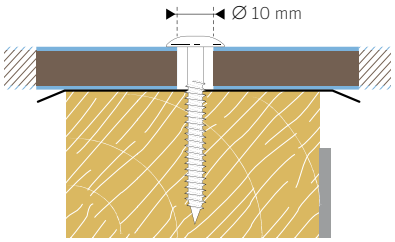
It is used to block the panel once it has been placed and makes it possible to evenly spread size variation related movements thanks to its location in the middle of the panel. The drilling diameter must be equivalent to the screw body diameter.
One fixed point per panel.

Sliding points

Sliding points are used to hold the panel while allowing it to move. The drilling diameter must be 8 mm for a rivet with a body diameter of 4.5mm, or for a self-tapping screw with a 5.5mm diameter body. The drilling diameter must be 10 mm when the panel size is in exceeding 3070mm on length and 1510mm on width.
The screw or rivet head must imperatively cover the drilling hole. The minimum screw and rivet head diameter is 12mm for 8mm drill holes and 16mm for 10mm drill holes.







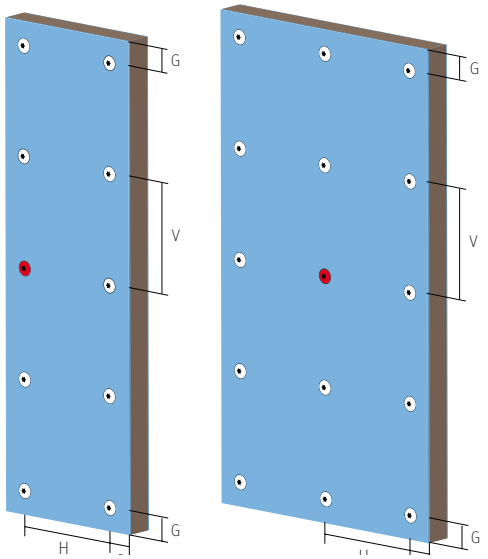
Layout and spacing of fixture points

Generally, a minimum 20 mm drill guard relative to the vertical and horizontal edges is recommended. The layout of the spacing between fixtures along the supporting uprights is to be determined depending on the required resistance to depression.

H = horizontal fixing spacing between vertical uprights
G = distance between fixings and panel edges:
20 to 10 x panel thickness
V = fixing spacing along vertical uprights

Fixed point

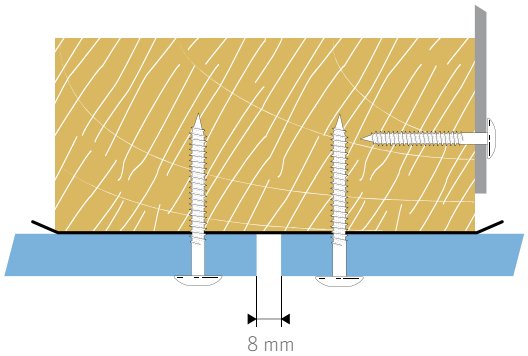
Sliding points



Treating joints and corners

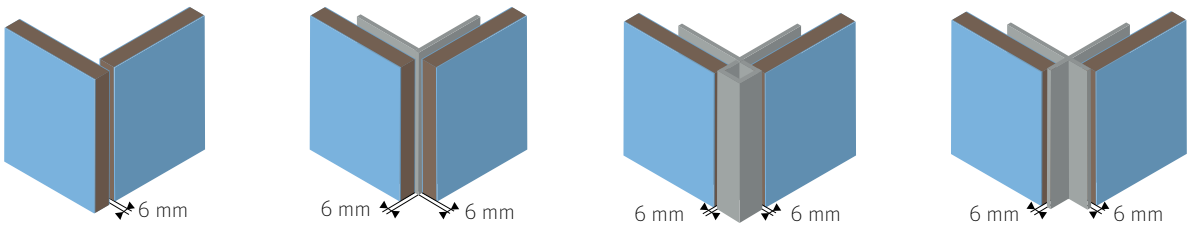
Joints

Due to size variations, and to guarantee maximum water tightness, the panels must be placed leaving minimum 6 mm and maximum 10 mm open vertical and horizontal joints.



Corners

Corner joints must also take into account possible panel expansion. Corners can be treated with or without a metal profile, bother for inner and outer corners.



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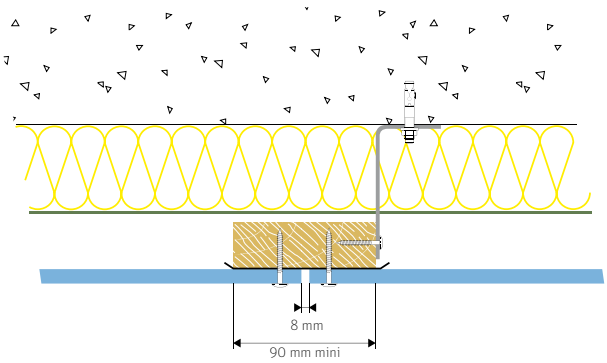
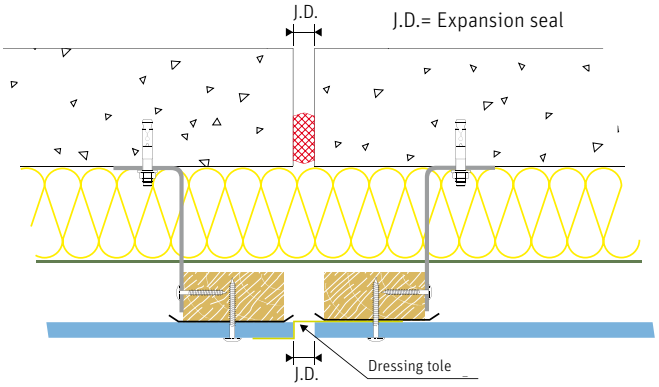
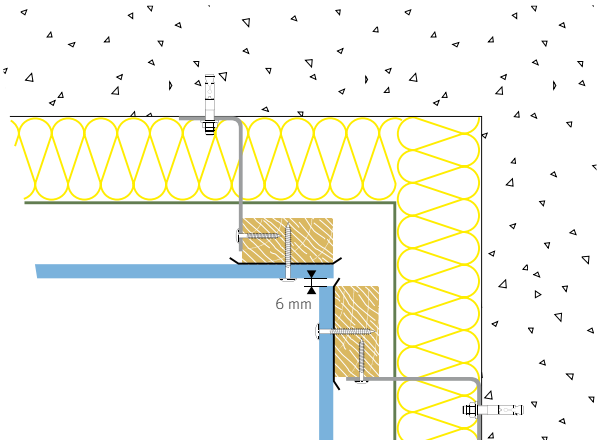
DETAIL DRAWINGS



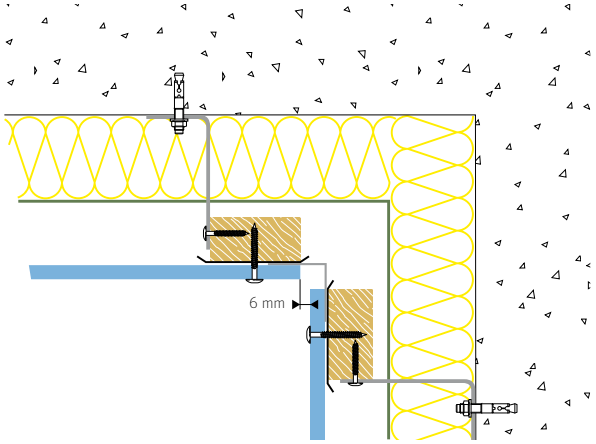
Hollow seals



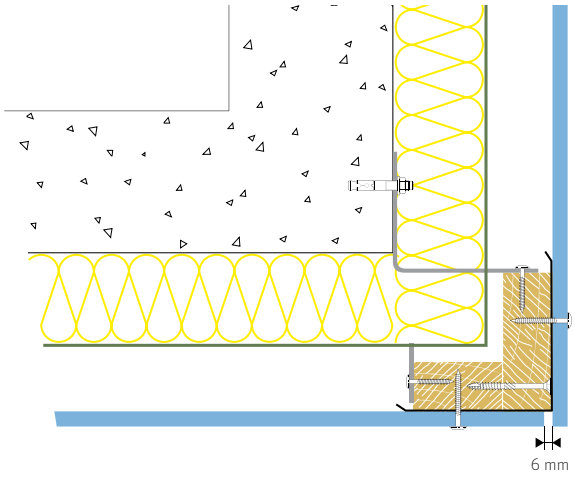
Expansion seal



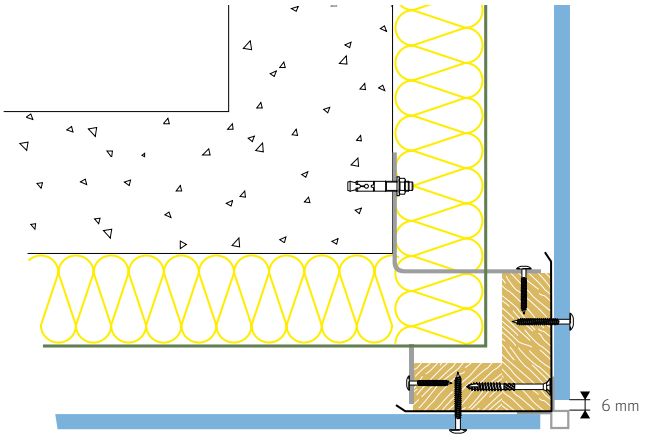
Inner angle



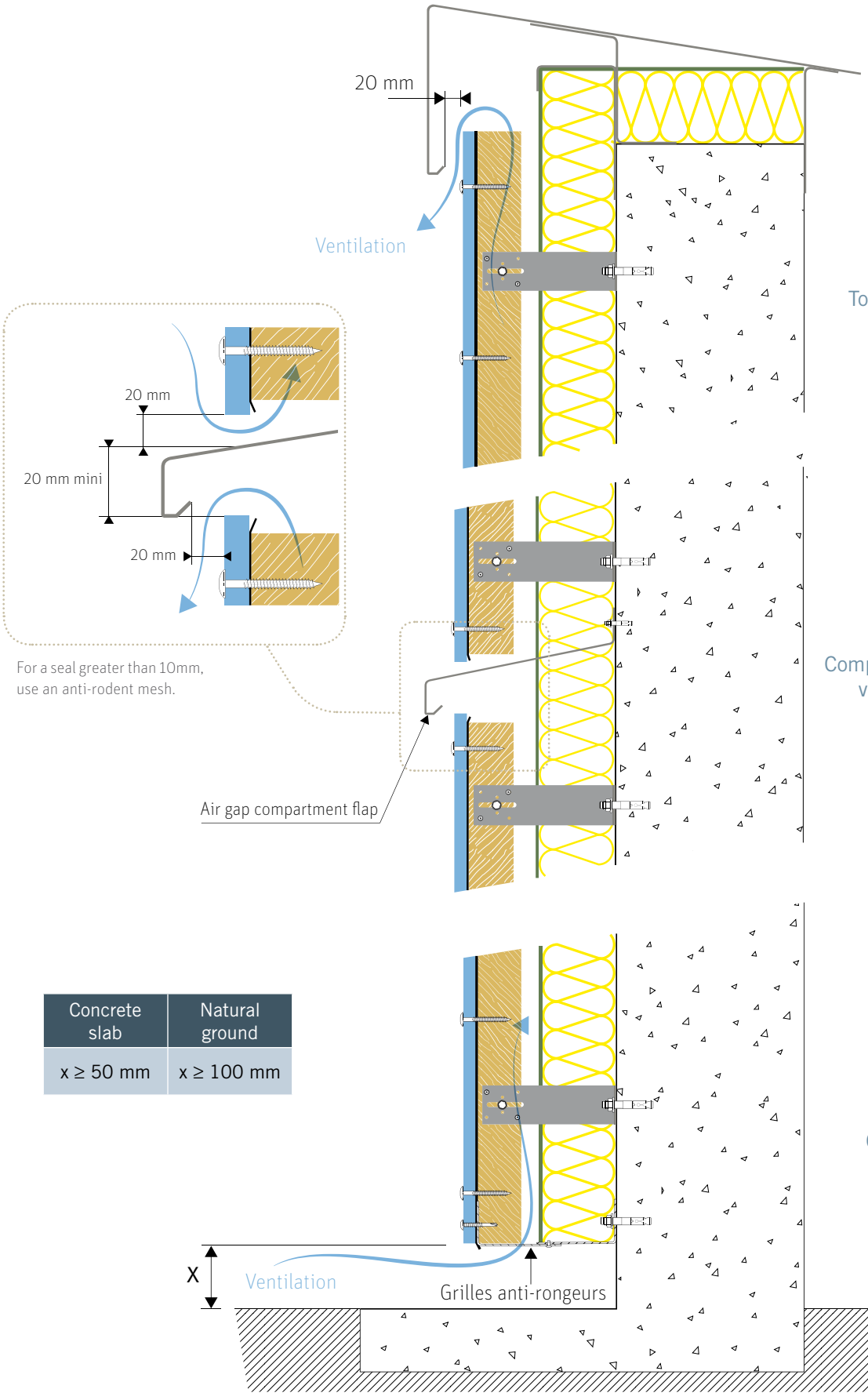
Inner angle

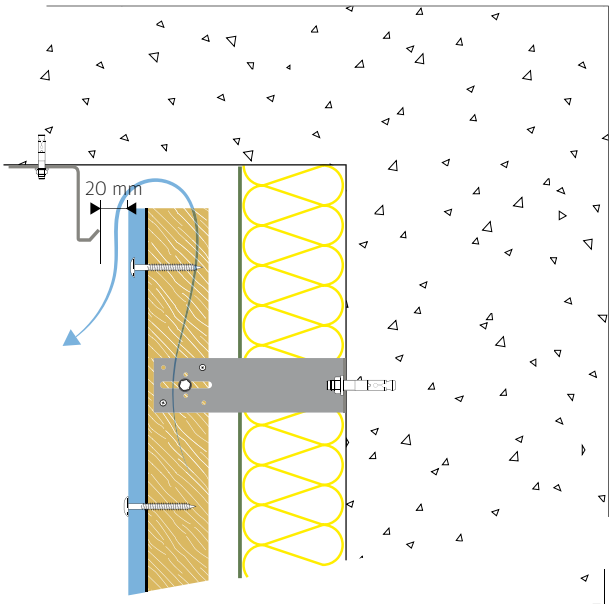


Outer angle

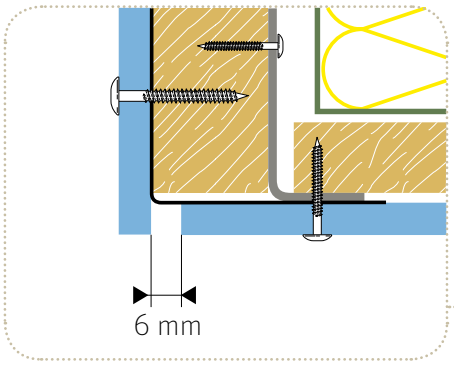


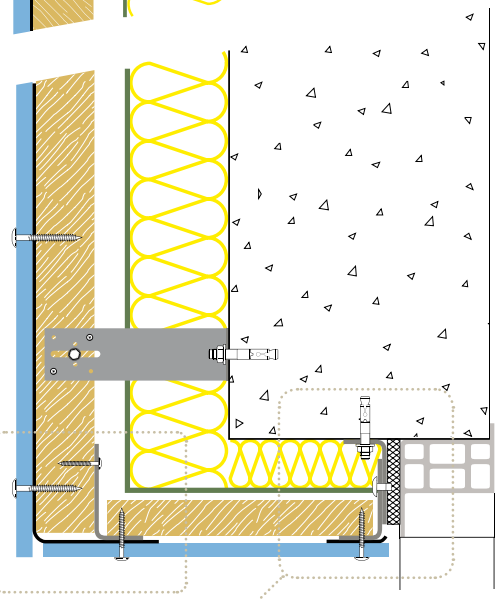
Outer angle


20 mm
Ventilation
Top cladding stop
20 mm
20 mm mini
20 mm
For a seal greater than 10mm, use an anti-rodent mesh.
Air gap compartment flap
Compartments for ventilation
Concrete slab
Natural ground
x ≥ 50 mm
x ≥ 100 mm
X
Ventilation
Grilles anti-rongeurs
Cladding foot

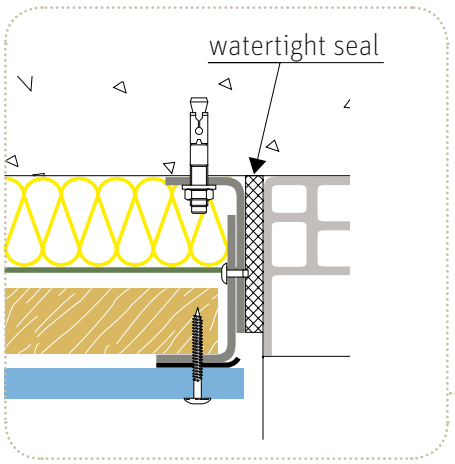


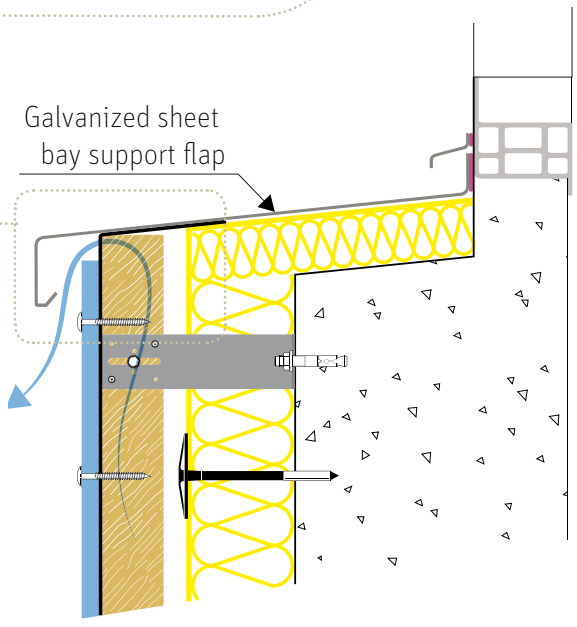
Stop under parapet



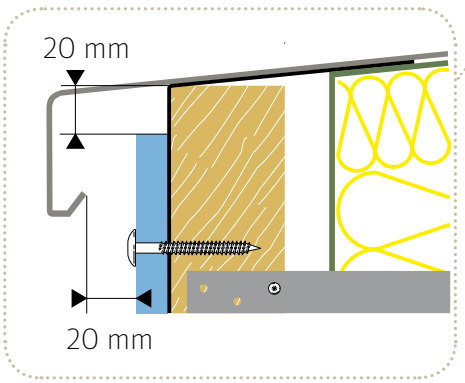


Connection to a window lintel





Connection to the window sill



W06F - Chêne Corsica
Scale 1/2

V.

INSTALLATION ON **WOOD FRAME BUILDINGS**

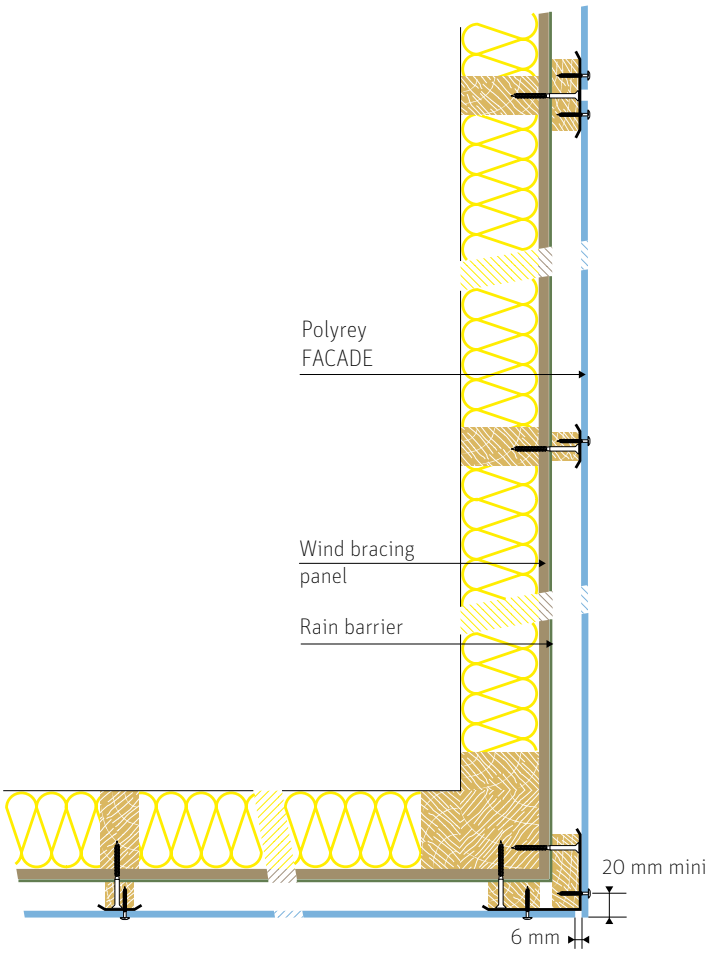
BASIC RULES

The external wall will be composed of panels compliant with DTU 31.2.

POLYREY FACADES exterior compact panels are fixed with 6 x 38 mm stainless steel screws with 12 mm wide heads depending on the panel size (see panel fixing screws section of the applicable technical notice) onto a framwork of timber rafters with a space between the uprights of 600 mm maximum, erected level with the house framwork.
At the edges, the panels have a minimum 80 mm footing, and in a standard section a minimum 45 mm footing. The frameworks and FACADE exterior compact panels are split at each floor.

A continuous and ventilated air gap at least 20 mm and at the most 60mm thick is thus formed between the wall panel and the external cladding. Top and bottom ventilation must be provided. Its surface area depends on the building height (to be determined using the technical notices). A rain-shield that conforms to DTU 31.2 must be installed on the bracing panels of the timber-frame house.
It will be held in place by vertical pieces of timber fixed to the vertical posts of the timber-frame house. The fixing of the pieces of timber to the posts of the timber-frame house must be checked (taking into account the distances between them).

The rain-shield must never be installed between exterior compact panels. The compact FACADE panels must be laid out to leave 8 mm wide vertical and horizontal joints.



ONE AND TWO FLOORS BUILDINGS

Horizontal joints can remain open if their width does not exceed 10 mm.
For open horizontal joints, the posts will be protected by a strip sticking out by at least 10 mm either side along the whole length, laid out on the front face of all of the rafters if they are not at least class 3 for biological risks according to standard NF EN 335-2. Refer to the instructions in § 8.5 of the applicable technical notice. The rain-shield is cut every 6 m and combined with a flap to allow run-off water to flow to the exterior.

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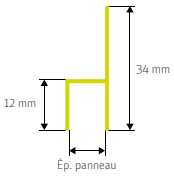
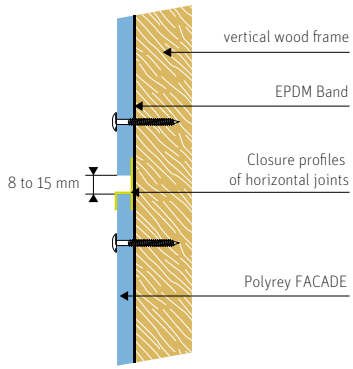
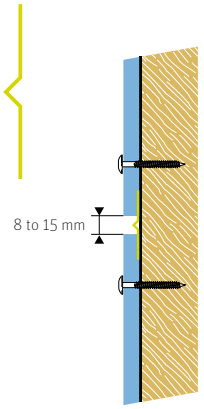
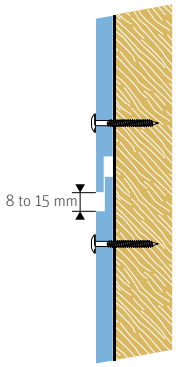
THREE AND FOUR FLOORS BUILDINGS

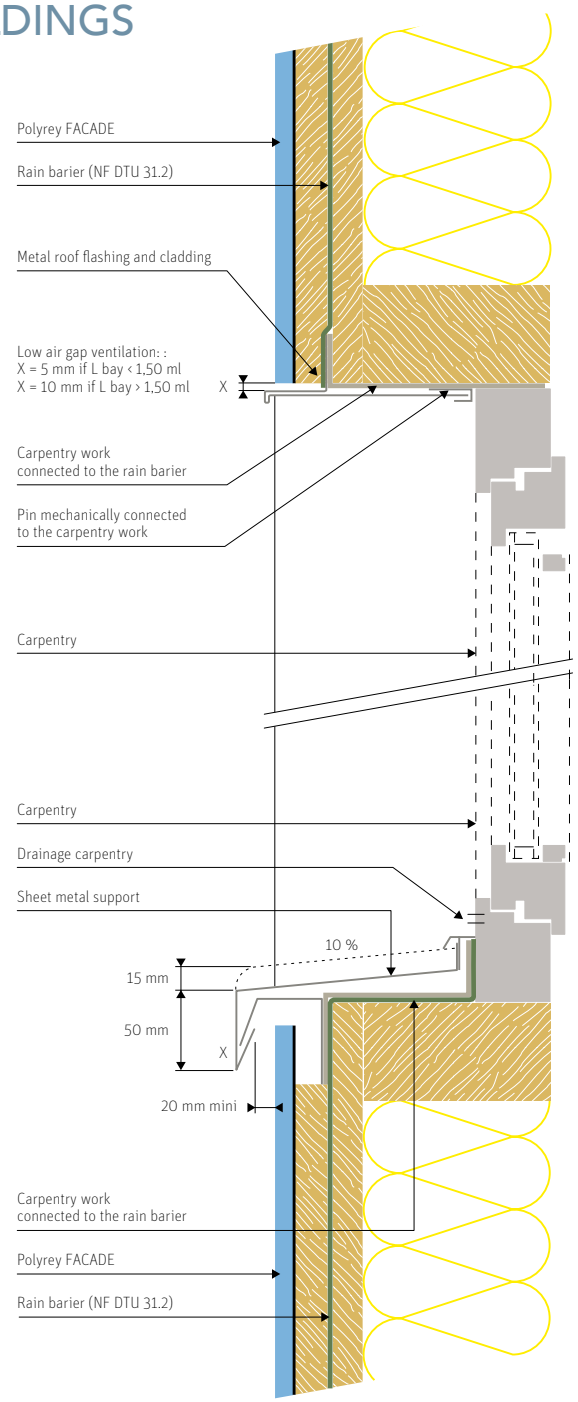
Horizontal joints can remain open if their width does not exceed 10 mm.
For open horizontal joints, the posts will be protected by a strip protruding out by at least 10 mm either side along the whole length, laid out on the front face of all of the rafters if they are not at least class 3 for biological risks according to standard NF EN 335-2. Refer to the instructions in § 8.5 of the applicable technical notice.
The rain-shield is cut every 6 m and combined with a flap to allow run-off water to flow to the exterior.











NOTA : Plan caulking applicable with industrial preframe forming a wide frame

VI.
GUARD RAILS & BALCONIES

BASIC RULES

According to standard NF P 01.012, the exterior compact must not provide guard rail protection functions by itself. A residual protection composed of at least an upper, middle and lower rail must be added.

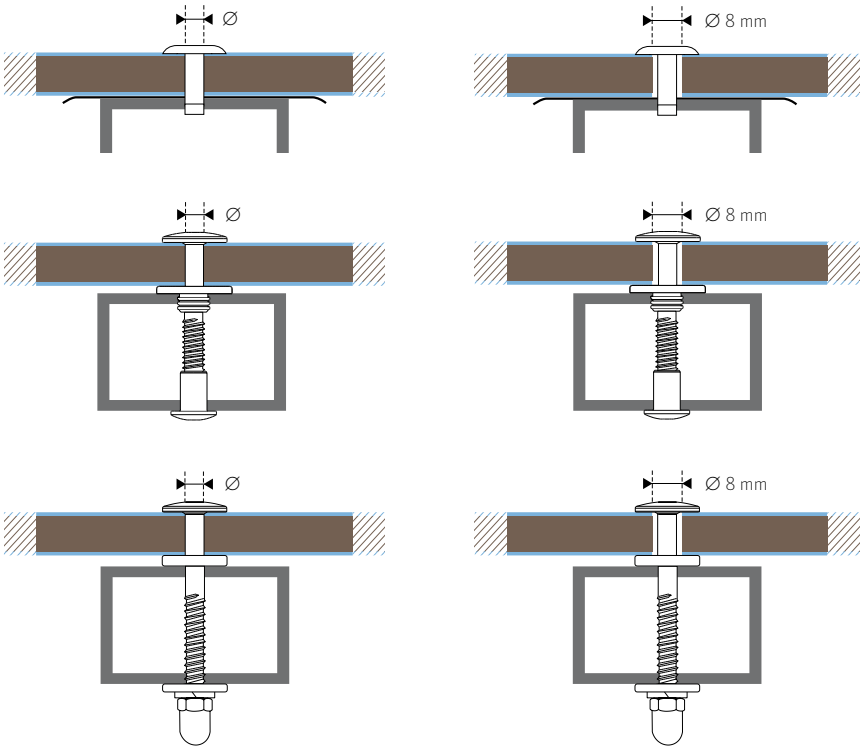
Fixed and sliding points

Fixed point

It is used to block the panel once it has been placed and makes it possible to evenly spread size variation related movements thanks to its location in the middle of the panel. The drilling diameter must be equivalent to the screw or rivet diameter.
One fixed point per panel.

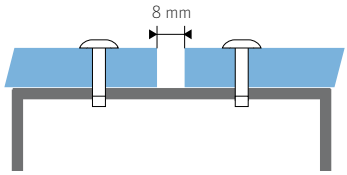
Sliding points

Sliding points are used to fix the panel while leaving the possibility for movement.
The drilling diameter must be about 3 mm greater than the rivet or screw diameter, i.e. an 8 mm minimum diameter for rivets and self tapping screws.
It is imperative that the screw or rivet head covers the drill hole.



Open joints

In order to absorb any eventual size variations, a hollow 8 mm joint must be left where two panels meet.



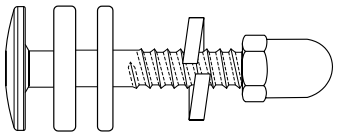
Panel thickness

For guard rails and balconies, Polyrey recommends the use of 8 mm thick Polyrey FACADE exterior compact panels.

PANEL FIXTURE SCREWS AND RIVETS

Please refer to Chapter III. Installation on metal frames / Page 76.

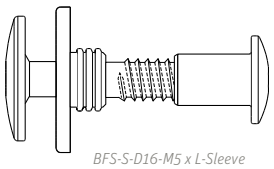
Special fixings



BFS-S-D16-M5 x L–Nut

Material: A2 galvanised stainless steel
- ∅16 mm powdercoated cylindric head
- Polyamide dividing washer
- ∅M5 metric body
- A2 stainless steel washer
- Spring stainless steel washer
- M5 capnut + speedcaps (anti-unscrew dry glue)

Pulling characteristical value :
- Steel substrate : 9750 N
- Aluminium substrate : 7210 N



BFS-S-D16-M5 x L-Sleeve

Material : A2 galvanised stainless steel
- ∅16 mm powdercoated cylindric head
- Polyamide dividing washer
- ∅M5 metric body
- Stainless steel thread socket for M5 + speedcaps (anti-unscrew dry glue)
- Socket head = ∅14mm / body = ∅8mm

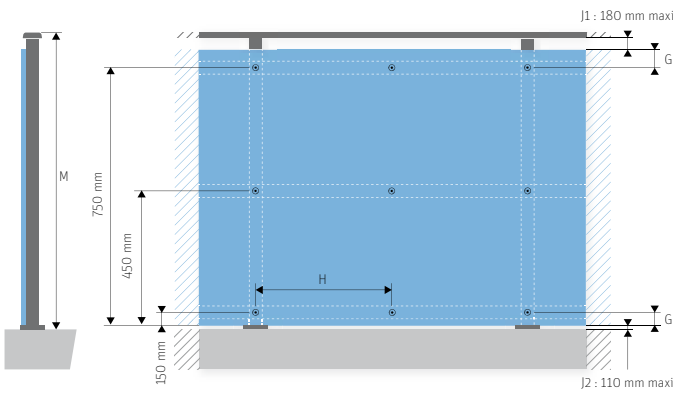
Pulling characteristical value :
- Steel substrate : 9340 N
- Aluminium substrate : 7780 N

GUARD-RAILS, INSTALLATION USING SCREWS OR RIVETS

Fixture spans and spacing

French decree n° 47.1592 of 23 August 1947 (art.13) defines guard-rail structures as follows:
- Handrail (M) = 1000 mm
- Upper rail = 750 mm
- Intermediate rail = 450 mm
- Skirting = 150 mm

Drill guard G:
- For 6 mm panels :
20 mm ≤ G ≤ 20 × panel thickness
- For 8 mm panels : 20 mm ≤ G ≤ 160 mm
- For 10 mm panels : 20 mm ≤ G ≤ 200 mm



Fixing using rivets and screws

Th.	Fixture spacing	
6 mm	H	≤ 600 mm
8 mm	H	≤ 750 mm
10 mm	H	≤ 750 mm

For all other configurations, systematically plan for a strength test to prove the strength of the composed system (panel, structures, anchors and fixings).
The tests must be carried out according to the NF P 01.013 “Guard rail test” standard and the NF P 08.301 “Shock resistance test” standard.

GUARD-RAIL, CLAMP FIXTURE FOR GLASS

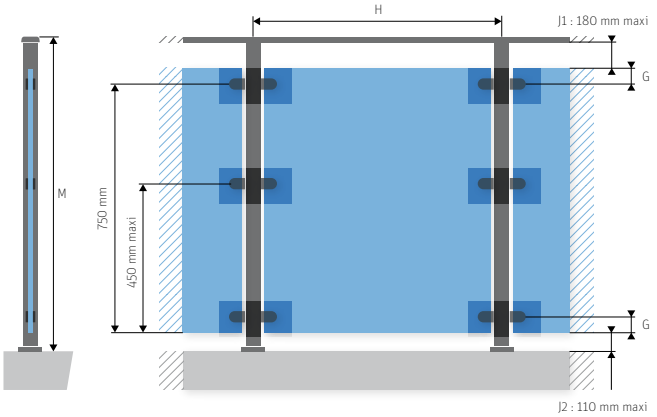
Fixture spans and spacing

- Hand rail (M) = 1000 mm
- Upper rail = 750 mm max.
- Intermediate rail = 450 mm max.

Drill guard G:

- For 8 mm panels: 20 mm ≤ Th ≤ 160 mm
- For 10 mm panels: 20 mm ≤ Th ≤ 200 mm

At Least 3 fixture points will be required per side. A safety pin must be used for each panel.



Fixing

Th.	Fixing spacing	
8 mm	H	650 mm
10 mm	H	750 mm

For any other configuration, plan to run resistance tests to ensure the whole system resistance (panel/ structure/anchorage/fixings).
Tests must be done according to the NF P01.013 "railing tests" and NF P08.301 "Impact resistance tests" requirements requirements.

PERFORATED GUARD-RAIL

Fixture spans and spacing

- Handrail (M) = 1000 mm
- Upper rail = 750 mm max.
- Intermediate rail = 450 mm max.

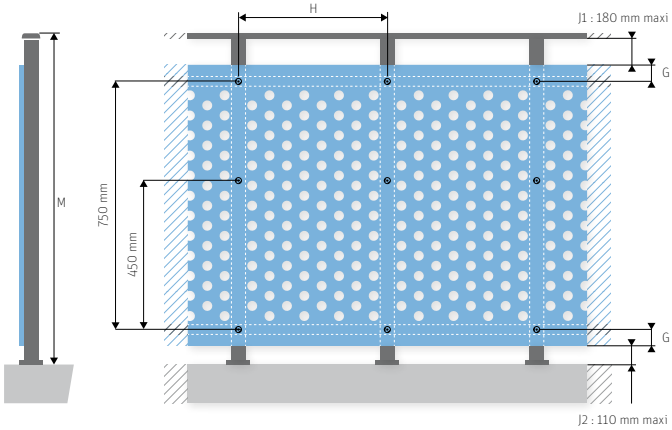
Drill guard G:
For 10 mm panels: 20 mm ≤ Th ≤ 200 mm

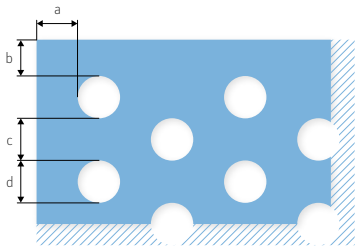
Key :
a = Distance to the vertical edge
a = Distance to the horizontal edge
c = Drill hole size
d = Distance between 2 drill holes

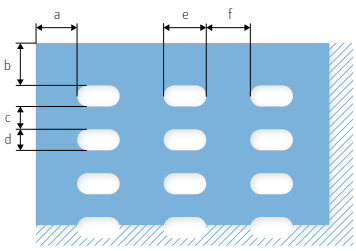
The holes must be made according the the following rule : a / b/ c ≥ d.
The installation must take applicable safety standards and regulations into account.

Drill holes : Spacing must be defined in rows using a square grid.
Warning : Please take applicable safety standards and regulations into account.

Standard hole diameter:
25mm, 30mm, 40mm, 49mm







Rivet fixing

Th.	Fixing spacing	
10 mm	H	≤ 375 mm

For any other configuration, plan to run resistance tests to ensure the whole system resistance (panel/ structure/anchorage/fixings).
Tests must be done according to the NF P01.013 "railing tests" and NF P08.301 "Impact resistance tests" requirements requirements.

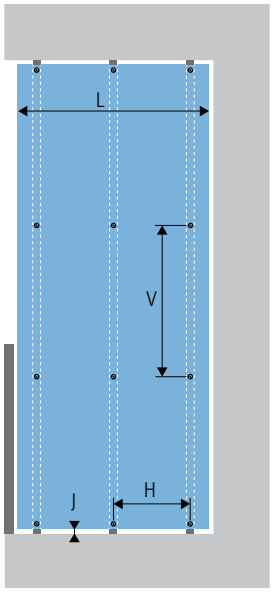
BALCONY DIVIDERS

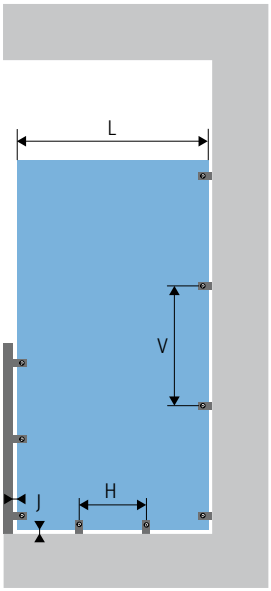
Fixture spans and spacing

Plan for at least 3 fixing points per side.
If the panels are to be fixed using U type metal profiles, leave a 6 to 10 mm space between the bottom of the profile and the panel. Furthermore, the width of the panel must not exceed 1500 mm.

L ≤ 1500 mm
J = 8 mm

Th.	Fixing spacing	
8 mm	H	< 750 mm
	V	< 800 mm
10 mm	H	< 750 mm
	V	< 900 mm





Only for 10 mm thick panels

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VII. SUN-**BLINDS**

BASIC RULES

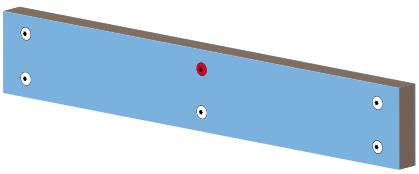
Fixed and sliding points

Fixed point

It is used to block the panel once it has been placed and makes it possible to evenly spread size variation related movements thanks to its location in the middle of the panel. The drilling diameter must be equivalent to the screw or rivet diameter. One fixed point per panel.

Sliding points

Sliding points are used to fix the panel while leaving the possibility for movement.
The drilling diameter must be about 3 mm greater than the rivet or screw body, i.e. an 8 mm minimum diameter for rivets and self tapping screws. It is imperative the screw or rivet head covers the drill hole.
Plan for at least 3 fixing points along the panels.



Fixed point

Sliding points

Framework

Polyrey recommends the fixture of sun-shade slats on a framwork, making sure the two sides are ventilated (do not place the full surface area of a slat on a profile).

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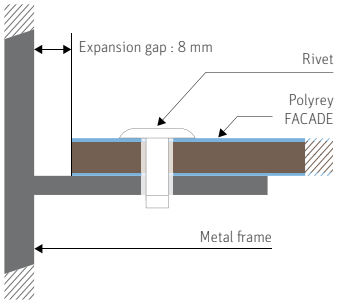
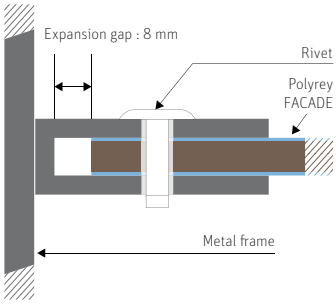
Open joints

In order to absorb possible panel size variations, a 8 mm joint must be left between the panel junctions. If the slat support is embedded, a gap of 8 mm must be left between the bottom of the metal frame and the bottom of the slat. Cantilever connection is prohibited.





FIXINGS

Panel fixture screws and rivets

Rivets

Material: Aluminium alloy and minimum A2* grade stainless steel stem
Body diameter: 4.8 mm minimum / Shoulder length: 16 mm minimum / Head diameter: 16 mm
Characteristic Pk pull-out value:
- steel support (th=1.5 mm): 2370 N (1)
- aluminium support (th=2 mm): 1770 N (1)

Head lacquered to the panel colours.
Other rivets of the same kind and with characteristics at least equal can be used.

** A4 for coastal areas or densely urbanized areas.*

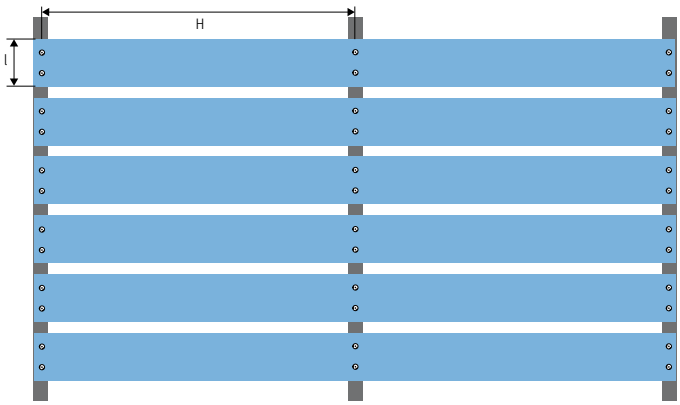
Your usual supplier (SFS & Etanco) will have the fasteners in the colours matching the Polyrey FACADE line available.

FIXING SPANS AND SPACING

The spacing between fixing points is independent of the length and height of the slats, the number of support points and exposure to wind. The slats can be fixed to a frame or to stiffeners placed on the back of the panel. If the stiffeners are embedded in the panel, the panels can be drilled to allow water infiltrations to drain off. Depending on the project configuration, don't hesitate to contact the Polyrey technical department.

Th.	Width	Fixing spacing
8 mm	120 mm ≤ l ≤ 200 mm	H ≤ 750 mm
10 mm		H ≤ 900 mm

For spans greater than those indicated in the table opposite, it is imperative the slats be fixed onto a metal structure (stiffening frame).



VIII.
ROOF CEILING **UNDERSIDES**

BASIC RULES

Fixed and sliding points

Fixed point

It is used to block the panel once it has been placed and makes it possible to evenly spread size variation related movements thanks to its location in the middle of the panel. The drilling diameter must be equivalent to the screw or rivet diameter.
One fixed point per panel.

Sliding points

Sliding points are used to fix the panel while leaving the possibility for movement.
Fixture to a wood frame using screws: The drilling diameter must be about 3 mm greater than the screw diameter. For a 4.8 mm diameter screw, the sliding point will have a diameter of 8 mm.
Fixture to a metal frame using self tapping screws or rivets: The drilling diameter must be about 3 mm greater than the rivet or screw diameter, i.e. a minimum diameter of 8 mm for self tapping screws and rivets. The screw or rivet head must imperatively cover the drill hole.

Framework

The panels must be fixed to a metal framework but never directly to the support, so that the two sides of the panel are correctly ventilated.

Open joints

In order to absorb possible panel size variations, a 8 mm joint must be left between the panel junctions.

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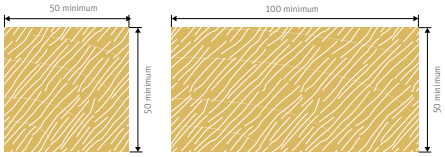
FIXTURES

Installation on wood framework :

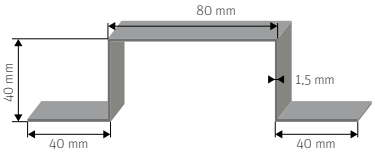
Rafter cross section :

- 50x50 mm minimum for intermediate rafters
- 50x100 mm minimum at the junction between two panels



Installation on metal framework :

Only Omega profils should be used for roof ceiling application.



Fixture to the supporting structure :

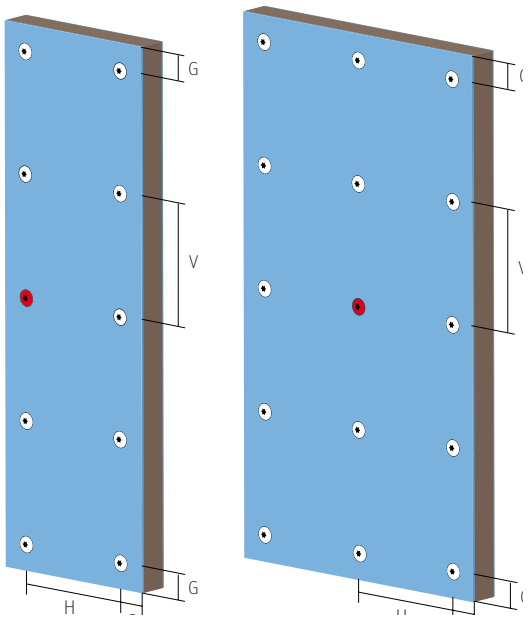
The brackets must be fixed every 400mm and double face to face.

For the generalities of installation, refer to Chapters Installation on wood framework (p.74) and Installation on Metal framework (p. 82).

FIXING SPANS AND SPACING

The screw or rivet fixing spacing will be determined according to wind exposure conditions. The information relative to this wind exposure can be found in Euro code 1 chapters VI and VII. If local regulations do not require proof calculations, Polyrey recommends the use of the spacing given below.

	Installation on 2 supports (mm)		Installation on 3 or more supports (mm)	
Th. (mm)	Horizontal spacing [H] (mm)	Vertical spacing [V] (mm)	Horizontal spacing [H] (mm)	Vertical spacing [V] (mm)
6	≤350	≤350	400	≤450
8	400	≤450	400	≤550



H = horizontal fixing spacing between vertical uprights
G = distance between fixings and panel edges:
20 to 10 x panel thickness
V = fixing spacing along vertical uprights

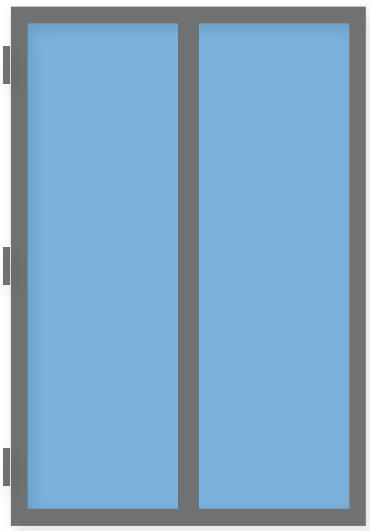
Fixed point

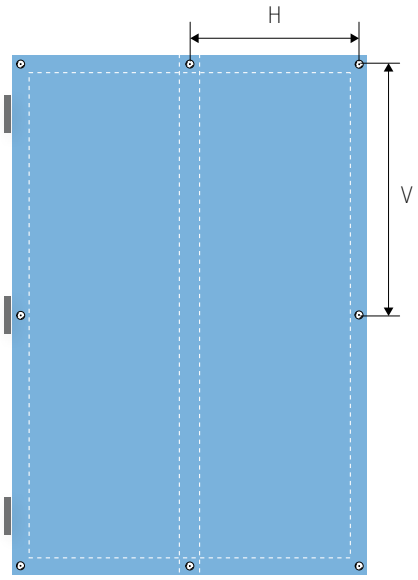
Sliding points

IX. SHUTTER COVERS

BASIC RULES

Polyrey FACADE can provide shutter dressing functions in the 8 mm or 10 mm thickness versions Used as full or perforated panels, they have high durability and require little maintenance.





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RIVETED INSTALLATION

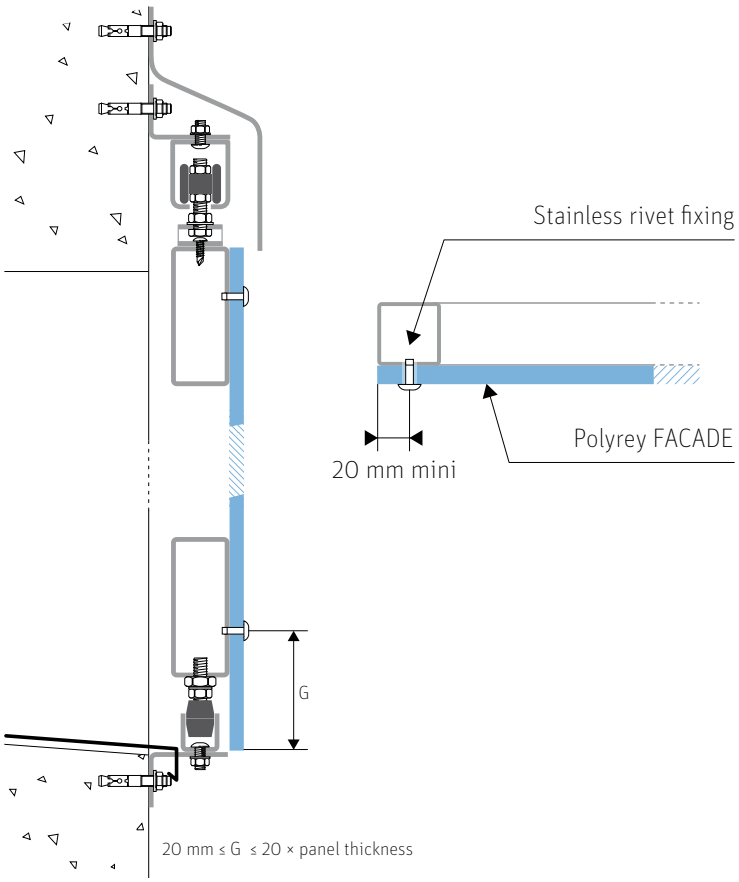
On timber or metal frame structures

The structure and assembly system used must be sufficient to hold compact panels and be sufficient to withstand the weather and earthquake conditions in the geographic zone in question

The framework can be replaced by stiffeners fixed to the back of the panels with water drainage also provided. Similarly to cladding fixing, the fixing of the panel to the structure must allow for 1 fixing point and several 8 or 10 mm sliding points depending on the panel size. Depending on the exposure zones, panel assembly can be carried out using A2 or A4 grade stainless steel rivets, self-tapping screws or pins.

The fixing distance from the panel edges is at least 20mm and must not exceed 20 times the panel thickness. Holes to be drilled in panels must not weaken the panel strength.

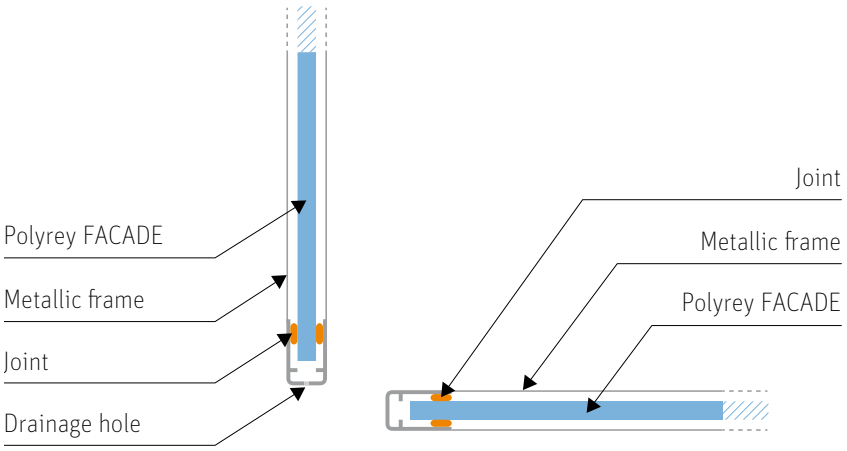
Fixing density must be in line with panel drill holes; for all special panel drilling and machining, contact the Polyrey technical department.



EMBEDDED FITTING

On metal structures

The rails on which the compact panels are fitted must have a minimum gap of 4 mm on either side of the panel. A sealing joint must hold the panels together. An 8 mm expansion gap must be provided on the top profile.
The bottom profile must have drill holes to drain infiltrated water. The panels must be supported over at least 20 mm on all four sides.



Panel thickness	H	V
8 mm	≤ 600 mm	≤ 600 mm
10 mm	≤ 600 mm	≤ 600 mm

H = horizontal fixing spacing between vertical uprights
V = fixing spacing along vertical uprights

These recommendations are valid for a wind load less than or equal to 600Pa. For higher pressure, please refer to the "wind exposure and spacing" page. Fixing distance must be reduced by 25% compared to facade cladding recommendations.

WARRANTY

- Exterior compact FACADE quality is compliant and certified for cladding application by the CSTB (Scientific Centre of Building Technology) and matches the EN 438-6/7 standard requirements.
- Accelerated ageing tests ran according to EN ISO 4892-2/3 standards with an exposure of 1500h to UV radiation and 3000h of weather conditions (severe use) ensure a 10 years durability of FACADE laminate panels.
- 10 years aesthetic and performance guaranteed
  - Homogeneous and uniform decorative surface throughout its life*
  - Panel dimension stability in variable hygrothermic conditions
  - Consistant mechanical resistance and fire properties

Polyrey ensures the quality of the exterior compact FACADE panels in the extent that they are used according to the Technical guideline specifications and according to the applicable construction standards and technical instructions.
Polyrey guarantees the product provided all the requirements and recommendations have adhered to and observed. Polyrey will not be held responsible for bad machining, non observance of recommendatoins or bad fitting.
Faulty panels manufacture must be notified within the warranty period.

**According to EN 438-6 standard requirements.*

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FACADE

EXTERIOR COMPACT

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