




Xframe®

+ ENERGY  
+ DESIGN  
+ VISION

XFRAME – THE SLIM-PROFILE WINDOW WITH A UNIQUE ENERGY BALANCE



A landscape photograph featuring a field of tall, golden-brown grass in the foreground. In the middle ground, there are several large, leafy green trees. The sky is overcast and grey. A large, semi-transparent purple circle is overlaid on the upper right portion of the image, containing white text. The text is centered within the circle and reads: "SLIM-PROFILE WINDOW DESIGN WITH A UNIQUE ENERGY BALANCE AND THE BEST THERMAL INSULATION ON THE MARKET".

SLIM-PROFILE  
WINDOW DESIGN  
WITH A UNIQUE ENERGY  
BALANCE AND THE BEST  
THERMAL INSULATION  
ON THE MARKET





XFRAME

MOVING BOUNDARIES  
TO MAKE THE  
IMPOSSIBLE POSSIBLE

# A BETTER VISION

Today's building energy requirements do not need to result in bulky, small windows with wide, intrusive profiles that restrict the amount of daylight entering a room.

Reduction in carbon emissions and enhanced vision are both possible when using the new Xframe windows.

The slim-line Xframe profiles look elegant and are designed to maximize thermal insulation and energy balance. The Xframe profile system, which is manufactured from a composite material, has a width of 47 mm which makes it the slimmest profile on the market. The width of the Xframe-windows is identical for fixed frames and opening vents (both on outward and inward opening) thereby letting more daylight through.

Xframe can both be used for restoration and new build and is particularly suitable for energy and passive house building.

# ULTRASLIM DESIGN WITH THE BEST THERMAL INSULATION ON THE MARKET



# 01/ DESIGN



## VISIBLE CHARACTERISTICS

Modern architecture is often characterized by lightness, simplicity, and functionality. However, new and more stringent regulations make it difficult to create elements which are compatible with these kinds of desires. With the Xframe windows it is now possible to create extensive identical glass façades with both fixed, inward- and outward going windows. The new homogenous Xframe profiles enable you to create an uninterrupted and aesthetical façade without the bulky appearance seen on more common materials.

The installation work is easy and simple. Xframe is fitted in a similar manner to traditional windows.

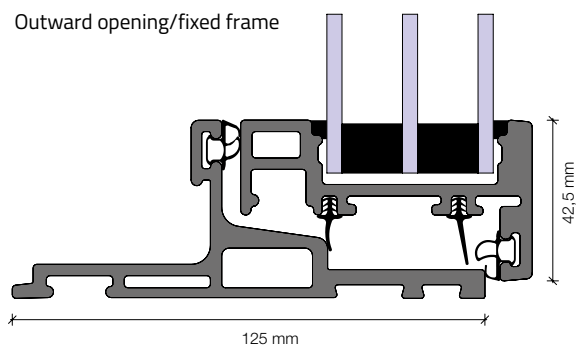


## WINDOWS

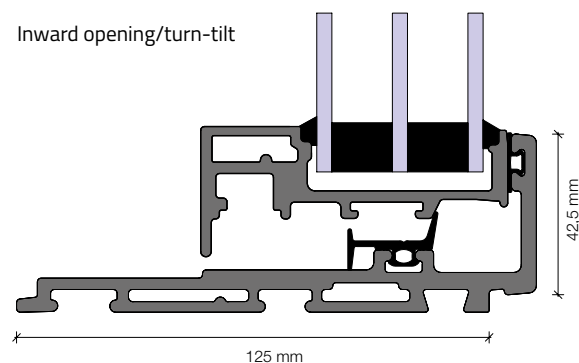
Xframe makes the impossible possible. With the new slim profiles and the extremely high insulation, it is now possible to create buildings which in reality are just as elegant as shown on the architectural drawings.

In modern building design where lightness and transparency are sought after qualities, the Xframe window can help clients and architects to achieve their vision.

Outward opening/fixed frame



Inward opening/turn-tilt



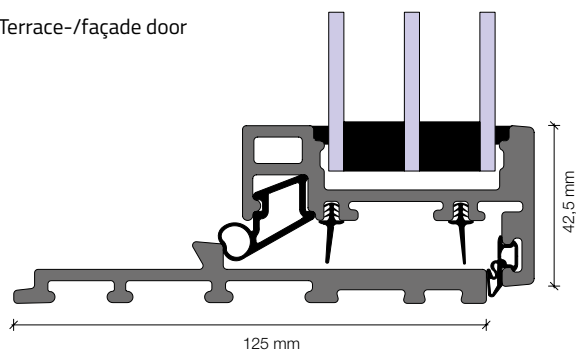


## DOORS

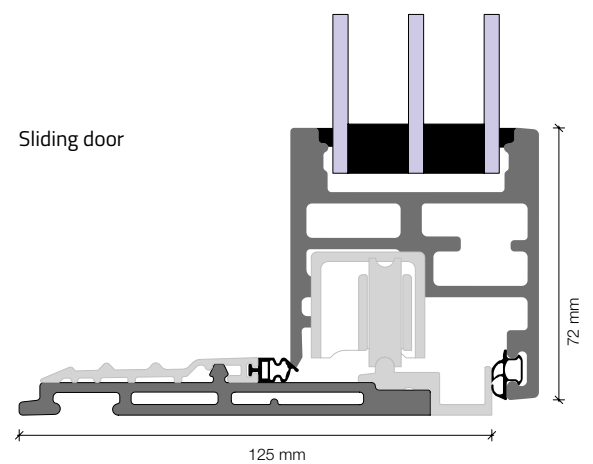
Both doors and windows have identical profile sightlines, width, and energy performance which enable the architect great freedom at the design stage, making it easier to design the glazed sections. At this stage it is not necessary to decide if sections should be fixed or opening units.

Xframe windows are low maintenance and are stronger than timber windows or timber/aluminium combinations.

Terrace-/façade door

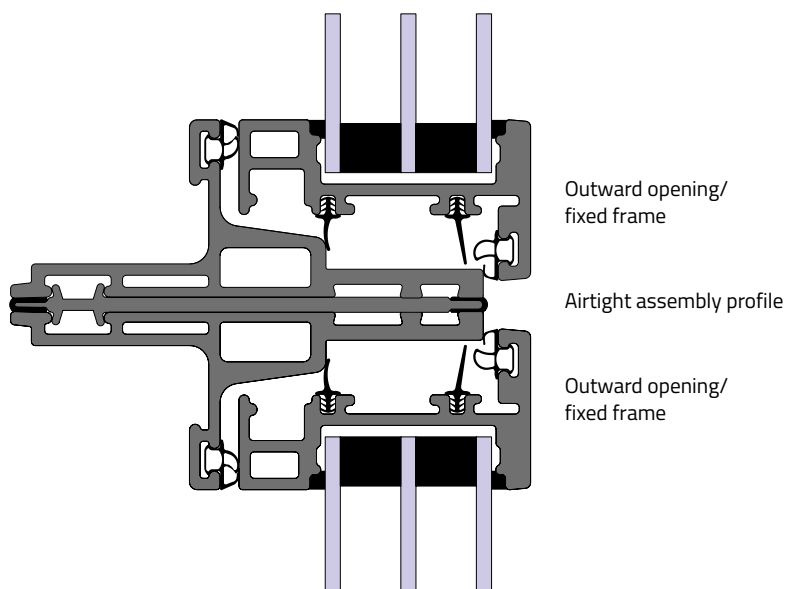
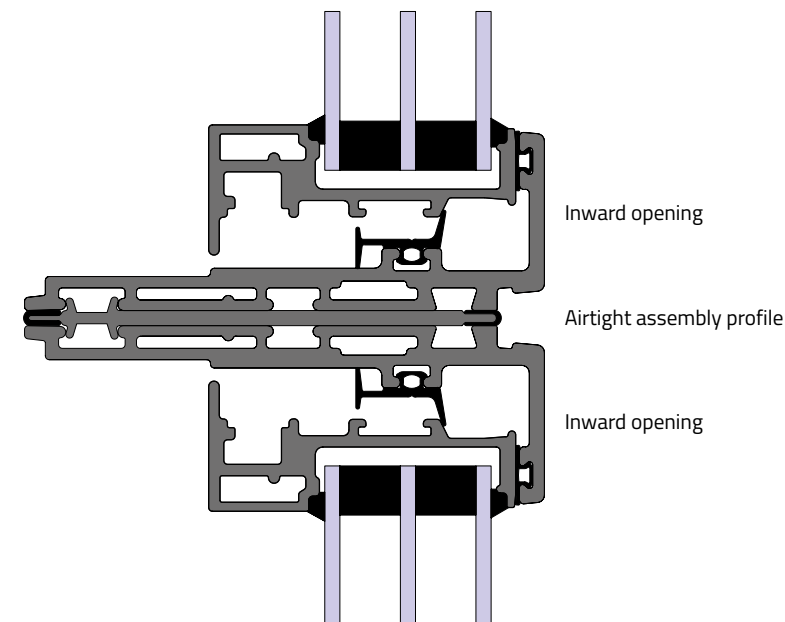
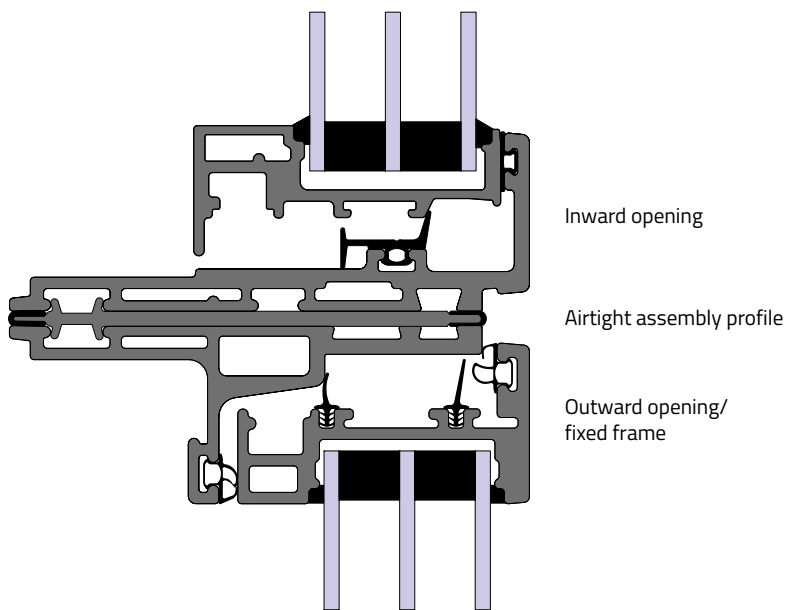


Sliding door





SPECIAL DEVELOPED  
MINIMAL ASSEMBLIES  
LEND THE FAÇADE  
A SLIM APPEARANCE



## ASSEMBLY OPTIONS

The Xframe window has a unique assembly system which makes it just as easy to assemble windows as snapping together Lego bricks. The windows are easily clicked onto the assembly list which can be up to 3 meter high. The assembly has been fixed with a gasket to ensure total weather tightness.

The assembly system is suitable for fixed and inward/outward opening windows. Accordingly, it is easy to install totally weather tight glass façades and continuous façades with a random selection of doors, windows and fixed glass units, to suit the requirements of a project.

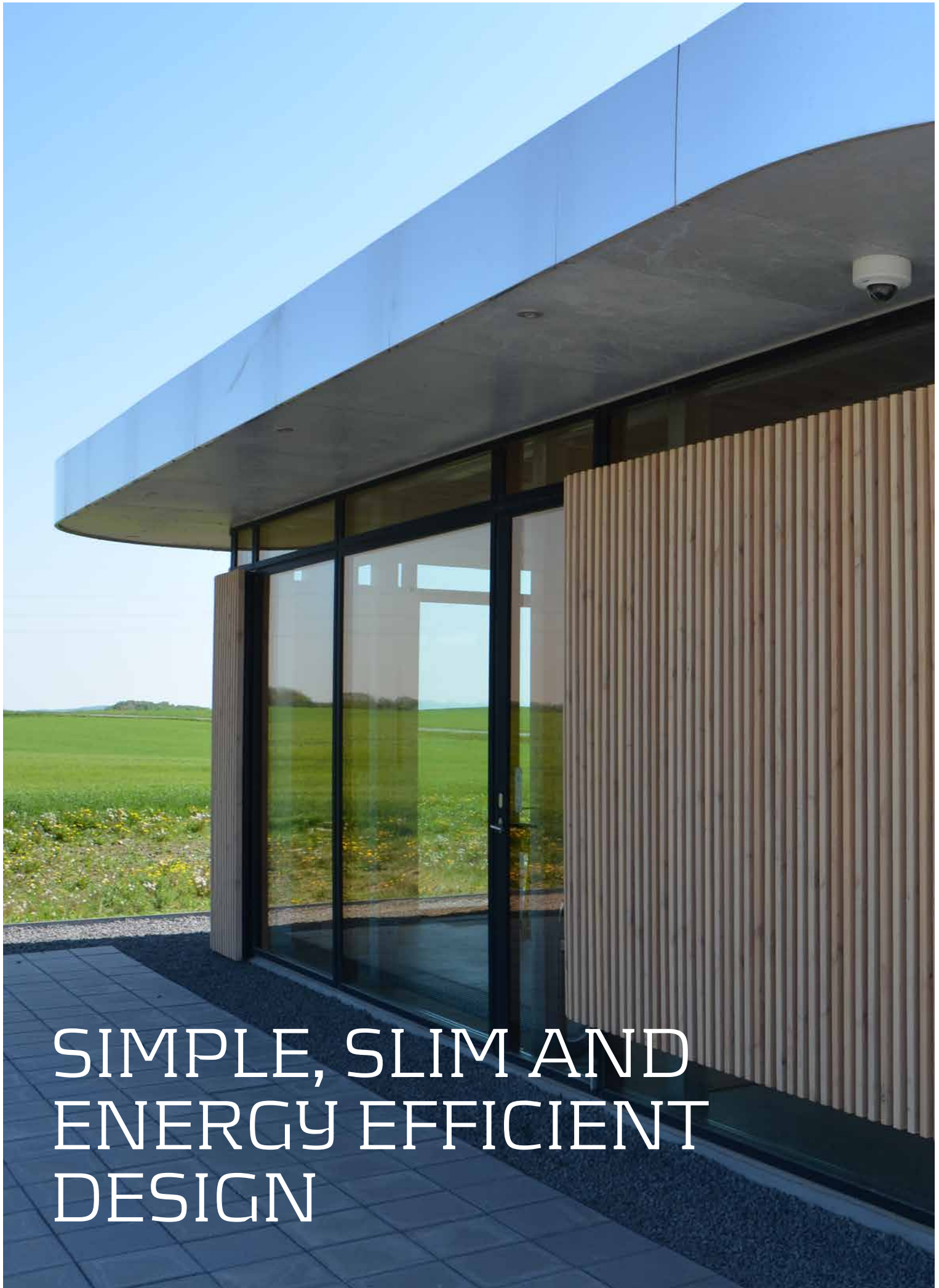
The Xframe windows are available in any RAL colour and with all types of glazing. A standard Xframe window is delivered with energy glass. The shown energy calculations are all based on Xframe windows with energy glazing.



## WHY ARCHITECTS CHOOSE XFRAME

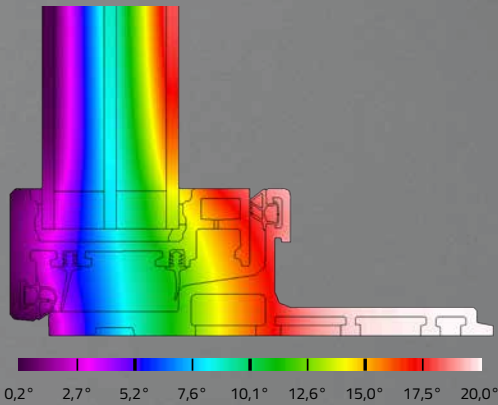
Architect Jens Rodevad from the Architecture Firm Seier + Sølvsten in Aarhus, Denmark, is enthusiastic over the opportunities that the new Xframe window has given him. 'It is one of the few windows which already meet the requirements of BR 2020', he says and continues, 'The

slim design is really suitable for Danish architecture. Both the interior and the exterior finish is beautiful and, if required, you even have the opportunity to supplement with an interior wooden frame - it is simply what you call good design.'



SIMPLE, SLIM AND  
ENERGY EFFICIENT  
DESIGN

# 02/ ENERGY



Xframe's lowest indoor temperature is more than 15°C at an outdoor temperature of 0°C and an indoor temperature of 20°C. For comparison the official requirement according to the building regulations for 2010 is only 9.3°C.

## XFRAME IS WORTH ITS VALUE

We have compared Xframe values with a standard insulated cavity wall, a high-insulated cavity wall for passive houses, and a window product certified by Passivhaus Institut in Germany. All values show the same – Xframe has the best energy balance.

Building Element	U-value (W/m <sup>2</sup> K)	E <sub>ref</sub> (kWh/m <sup>2</sup> )	E <sub>ref</sub> northward (kWh/m <sup>2</sup> )	E <sub>ref</sub> southward (kWh/m <sup>2</sup> )	E <sub>ref</sub> west/eastward (kWh/m <sup>2</sup> )
Insulated cavity wall (190 mm insulation)	0.18	-16	-16	-16	-16
Insulated cavity wall (passive house)	0.1	-9	-9	-9	-9
German window for passive house	0.77	12.1	-26.2	109.9	26.9
Xframe (triple glazing)	0.79	30.4	-17.3	152.3	48.9

The Window Trade prescribes a positive E<sub>ref</sub> for a classification of an A rated window (EnergyPlus window). Xframe is only manufactured as A-rated windows!

## XFRAME WITH GREEN ENERGY

Xframe has the best energy balance because it is generating more energy during the year than it is losing.

In residential properties it is the intention to encourage the free solar heating into the building and keep it there. Xframe is setting new standards for modern windows with an indoor temperature of more than 15°C, where the outdoor and indoor temperatures are 0°C and 20°C, respectively – much better than the 9,3°C which have been set down in the building regulations. As there is neither indoor condensation

nor cold air fall, it is possible to install windows right to the floor without any need for radiators.

Calculated on European standard window sizes, Xframe has the best energy balance on the market. Due to the slim profiles, it allows a lot of solar light to enter the building and it keeps the heat indoors with its insulating composite material.

Xframe is only manufactured as energy efficient windows (rate A).




THE BEST ENERGY  
BALANCE TO WISH FOR  
IN YOUR HOME



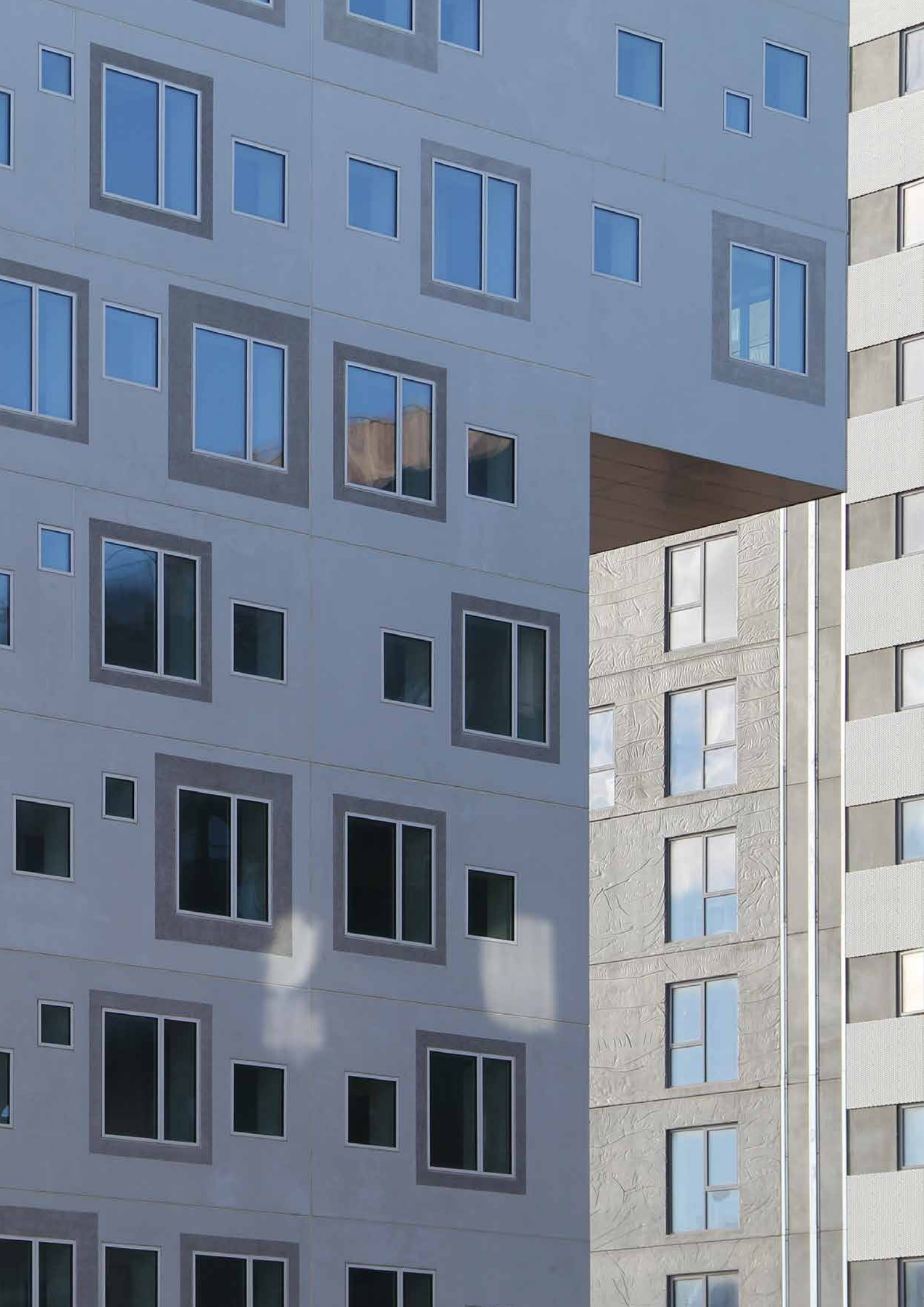
XFRAME  
IS A-RATED  
WINDOWS THAT  
GENERATE ENERGY







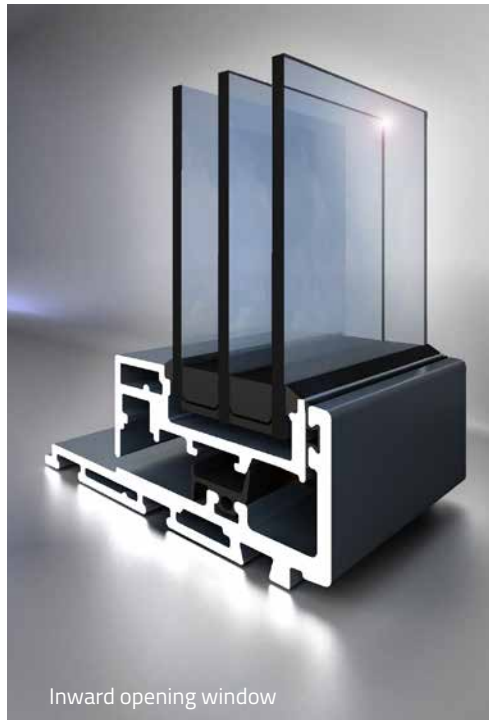
XFRAME  
IS GREEN ENERGY  
IN MODERN FRAMES



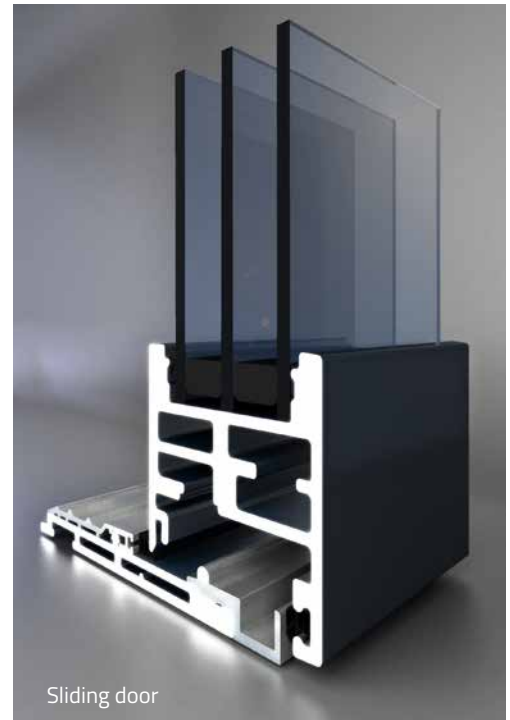
# 03/ MATERIALS



Outward opening window /  
window with fixed frame



Inward opening window



Sliding door

## COMPOSITE

Xframe has been designed in a composite material with a very low heat transmission and high strength to keep the heat in the building. The narrow profiles allow maximum daylight to enter the room through the windows.

Both the vent and the frame profiles have been fabricated from a composite material GRP (Glass Reinforced Polyester). The position of the gaskets ensures that the thermal performance will never be reduced when ironmongery such as handles and hinges are installed.

# MATERIALS WITH ASTONISHING QUALITIES



## GLASS

In residential buildings it is the intention to let the free daylight into the building and keep it there. With an indoor temperature of more than 15°C for triple glass windows, Xframe is setting new standards for modern windows. As there is neither indoor condensation nor cold air fall, it is possible to install the windows right to the floor without any need for radiators.

Xframe is supplied with super low triple E-triple glazing. EnergyPlus glazing supplied for A- rated windows.

We also supply other types of glazing i.e. with noise reduction and burglar-proof glass and windows with solar shading etc.

# 04/ OPTIONS AND ACCESSORIES

## OPENING OPTIONS

Fixed or opening - outward or inward opening - everything is possible.

Our unique profile system has all options and also makes it possible to combine fixed / outward going / inward going windows and doors without visible design difference.

Our new sliding door is the latest development of our exciting products. It is manufactured in composite / GRP material and with a narrow frame of only 72 mm. A

bottom section of only 15 mm makes this sliding door exceptional and beyond comparison with other products on the market.

It is now possible to get a sliding door which also complies with the legal requirements of level access to your home.

It is of course also possible to combine our sliding door with other Xframe elements by using our assembly options - making it possible to let it be an element in a large façade.

## IRONMONGERY

All our profiles have Euronot for fittings, standard fitting system and turn / tilt handles which ensure that all current ironmongery from established suppliers can be fitted.

We are only using ironmongery from established companies which will ensure

that, if required, our clients will be able to obtain spare parts for the elements in the future.

Please contact our sales department for further information about special ironmongery options.

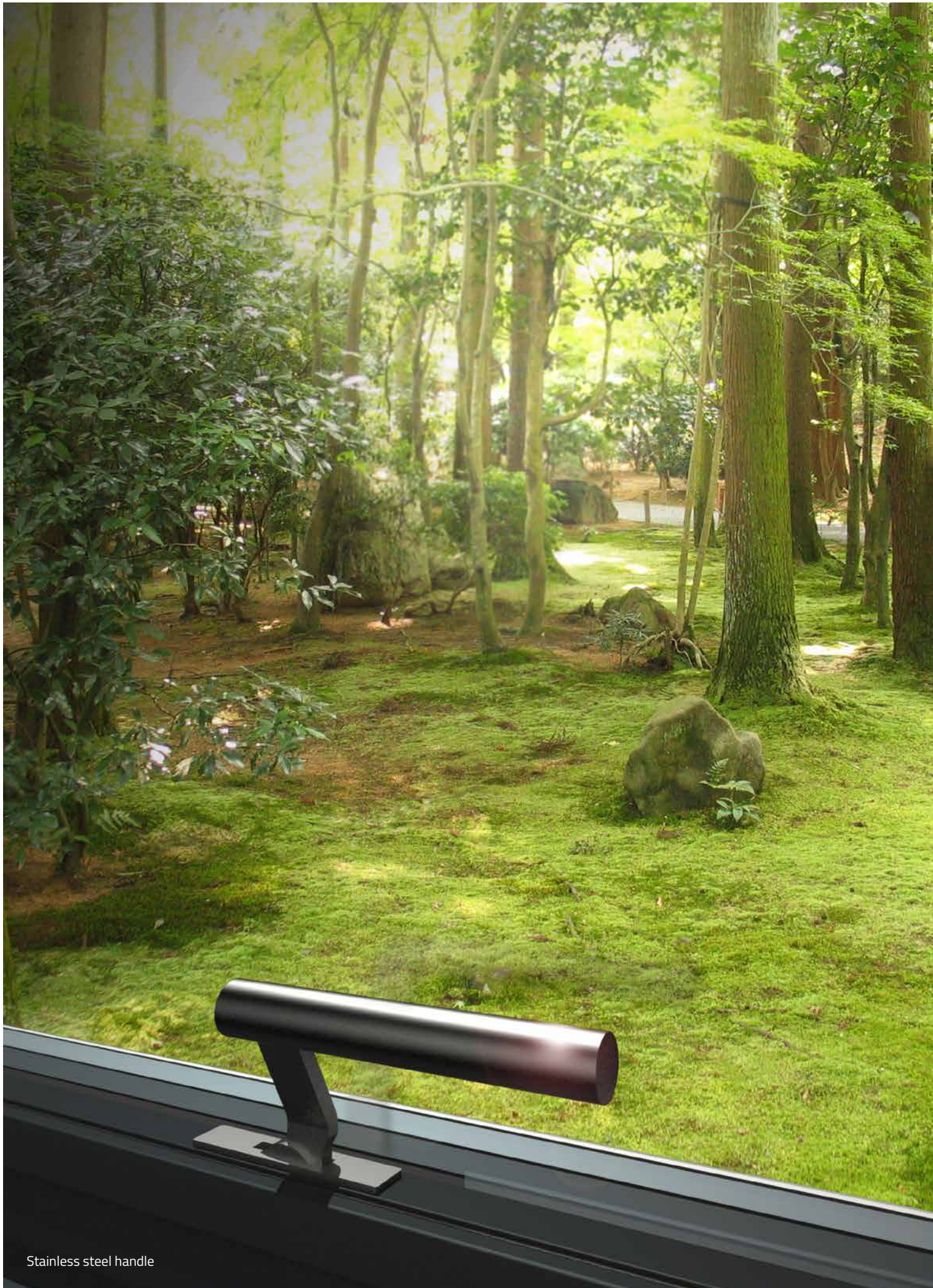
## ACCESSORY PROGRAMME

Xframe has a wide range of standard solutions and we are also offering options of various accessories.

Our unique profile system enables fitting of a comprehensive range of ironmongery, glazing, panels etc.

Our web site - [www.protecwindows.com](http://www.protecwindows.com) - will give you inspiration for many different solutions.

Contact our sales department and together we will find a solution which is suitable for your project and your requirements.



Stainless steel handle



## ABOUT XFRAME

Xframe is based on minimalist Scandinavian architecture and fulfils all the requirements of the modern users as to energy, design and vision.

When choosing Xframe as a partner, you will be able to get assistance during the building process. We will be there for you with advice and guidance right from the first basic project idea, and throughout the whole design process in cooperation with the architects and engineers. Together we will ensure that everything in connection with design, energy, noise reduction, security and function is optimized.

We are working closely together with the builder concerning delivery- and packing plans, ensuring that deliveries are made in the right sequence and at the right time. We are also offering free start-up help with the installation work – to ensure a faultless installation in the building.

When the building work has finished, we will also be there for you. If, contrary to expectations, something is not as it should be, our service department will be ready to assist, ensuring that you as a customer will get a faultless product.

We can also offer different types of service packs with lubrication, cleaning and adjustment to ensure an optimum maintenance of the elements.

## OPENING OPTIONS

Outward/inward opening and with fixed frame.  
Doors are supplied with standard lock casing.



### FIXED FRAME

Frame width	400 - 2500 mm
Frame height	400 - 3000 mm
Max. weight	250 kg



### TURN/TILT WINDOW (inward opening)

Frame width	530 - 1400 mm
Frame height	500 - 2600 mm
Max. weight	100 kg



### SIDE HUNG WINDOW (outward opening)

Frame width	455 - 1100 mm
Frame height	500 - 2500 mm
Max. weight	125 kg



### SIDE-GUIDED WINDOW (outward opening)

Frame width	400 - 770 mm
Frame height	500 - 1600 mm
Max. weight	40 kg



### TOP-GUIDED WINDOW (outward opening)

Frame width	400 - 2000 mm
Frame height	400 - 1500 mm
Max. weight	100 kg



### FAÇADE-/TERRACE DOOR (outward opening)

Frame width	600 - 1150 mm
Frame height	1700 - 2500 mm
Max. weight	125 kg



### DOOR WITH DOOR PLATE (outward opening)

Frame width	600 - 1150 mm
Frame height	1900 - 2600 mm
Max. weight	125 kg



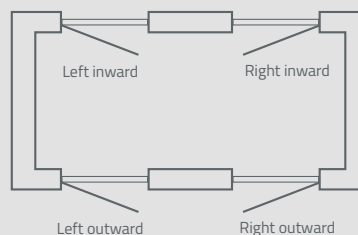
### SLIDING DOOR

Frame width	1500 - 3300 mm
Frame height	1725 - 2500 mm
Max. weight, opening section	250 kg

## OPENING DIRECTIONS

It is important to inform us the right opening directions for windows and doors.

- Windows and doors can be opened from either the right or the left, outward or inward.
- It is the same for double doors – if both are opening sections, it must be informed which section should be opened first.



On determination of swing direction, the element is always seen from the hinge side.

## MATERIAL

Glass-reinforced Polyester – GRP.

GRP is an advanced construction material which is a fantastic alternative to traditional materials such as aluminium, steel, upvc and timber.

GRP has a number of advantages:

- High thermal insulation
- High strength and flexibility
- Corrosion- and weather resistant
- Low weight combined with high strength
- Minimum maintenance and a long lifespan
- Eco-friendly
- Energy saving production process
- 100% recyclable

## GLAZING

Xframe is as standard delivered with triple glazing where the U-value of the glazing is 0.6 W/m<sup>2</sup>K and the G-value is 0.50.

The U-value informs the user of how well insulated the windows are and how it performs to keep the heat in the house. The G-value advises how much solar heat can penetrate through the window into the house.

Combined, the U- and the G-values tell you how good the energy balance is in any window. And this is exactly what the Eref value tries to unite in one composite value which illustrates how large the energy contribution is through the window.

Xframe can be supplied with different glass combinations according to requirements.

## WARM EDGE

Xframe windows is as standard delivered with warm edge which secures the highest possible temperature on the internal surface.

## COLOURS

Xframe is available in all RAL colors. It is also available in a number of effect- and granite colours.

Pls. note that there might be an additional price for effect- and granite colours and a few RAL colours.

## HANDLES

Xframe's special designed stainless steel handles are standard on all outward opening windows and terrace doors.



## ACCESSORY PROGRAMME

We have an extensive accessory programme. We are usually saying that everything is possible,

Within our glass programme we can mention the following:

- Energy
- Solar shading
- Noise reduction
- Person security
- Burglar Security
- Decoration
- Façade glazing
- Screen printing / sandblasted
- Insulated glazing

Other accessories:

- Integrated cables
- Handles
- Electric lock
- Kicking plates
- Magnet switches
- Safety device
- Electric window opener

Besides the above-mentioned accessories, other solutions are available. Please contact our sales department for further advice and guidance.

## TESTS

Xframe has been tested in accordance with relevant European Codes of Practice for windows and doors and comply with the strictest quality requirements:

- EN 14351 – 1 (2006)
- EN 1026 (2000)
- EN 1027 (2000)
- EN 12211 (2000)

All products have been CE marked and DVC labelled (Dansk Vindues Certificering who is the certifying authority for windows in Denmark).

## WARRANTY

Xframe comes with a 10 years warranty in accordance with relevant warranty declaration.

## FURTHER INFORMATION

Visit us on our home page – where you will find:

- Profile drawings DWG / PDF / Revit
- Brochure request
- Installation Manual
- Maintenance guidance
- Warranty declaration
- Terms of sale and delivery
- News archive
- Photo gallery
- Contact

As we are always manufacturing our units to meet requirements, we do not have any standard price lists. However, our sales assistants will readily provide you a quote that suits your wishes and needs.



XFRAME  
HAS BEEN CERTIFIED  
TO MEET ALL STANDARDS  
OF QUALITY



Xframe®

PRO TEC VINDUER A/S

Nybovej 34

7500 Holstebro

T: +45 9741 3077

F: +45 9741 3060

[protec@protecvinduer.com](mailto:protec@protecvinduer.com)

[www.protecwindows.com](http://www.protecwindows.com)