



# DREAMS COME TRUE



Manufacturing roof windows, we have gone through many stages. First of all, we paid extra attention to the selection of excellent raw materials so our roof windows ensure outstanding technical parameters. We designed our products bearing functionality in mind, hence adding an automatic air vent. Finally, we **strengthened** the structure of our windows so that they are safe and offer increased **burglary resistance**.



\*Look for FSC certified products\*.



## PREMIUM WOOD QUALITY

Using specially selected high quality pinewood and using the latest technology in timber lamination techniques, FAKRO roof windows are extremely stable.

To complement this technology all timber components are double vacuum preservative treated and given a 3 coat matt lacquer finish, which requires no further decoration. Externally the timber components are covered with aluminium sections which are covered with a UV and weather resistant coating. All window elements can be painted in any RAL colour according to customer wishes.



## AUTOMATIC **V40P** AIR VENT

This unique automatic air inlet is available as standard on all FTP-V and FPP windows and will improve the climate in your room throughout the year and result in thermal energy savings and a lower carbon footprint. It will also reduce condensation and make them ideal for bathrooms and kitchens. Reduced heating bills is an added benefit.

The V40P air inlet works by providing a continuous, automatic adjustment of the air flow duct size, supplying an optimum amount of air into the room, keeping you cool in summer. During the winter, when significant temperature differences and strong gusts of wind are frequent, the air inflow from outside can be excessive so the V40P air inlet limits the amount of inflowing air – automatically – protecting the room from excessive cooling and therefore reducing heating costs.

Also available in V50P version for special orders.




## GLAZING UNIT

FAKRO windows as standard are equipped with **energy efficient glazing unit U3** with its external glass toughened. Thanks to the glazing unit heat transfer coefficient U value=1.1 W/m<sup>2</sup>K, the heat loss is diminished in winter and room overheating limited in summer. In our product range there are available various types of glazing units. The most popular are:

- security glazing unit L3** with laminated inner pane and outer pane with self-cleaning surface- Activ
- highly energy efficient glazing unit U5** with pane U value=0.5 W/m<sup>2</sup>K



## HANDLE

A handle placed at the bottom window element ensures ease of use regardless of the installation height. The handle structure enables gradual locking providing a micro-opening facility. The locking elements strengthened with metal and metal re-inforcement slat make breaking in with the use of tools extremely difficult.

# ANTI-BURGLARY RE-INFORCEMENT

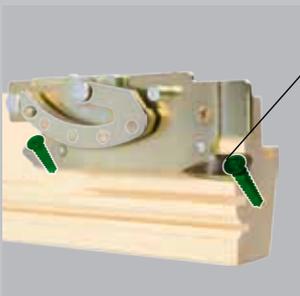
FAKRO roof windows are safe for people working on the roof or living in a loft conversion. Toughened glass and structure re-inforcement provided by the topSafe system ensure that FAKRO roof windows, achieve at least class **III safety** as per **EN 13049** for the whole product including glazing. The FAKRO Company was first to introduce to the market a full range of windows achieving at least 3rd class safety, thus setting a new standard in the roof window sector.



- The main advantages of the topSafe system are:
- patent pending solutions concerning hinge fixing
  - specially strengthened construction of wood and locking elements
  - additional steel profile in the lower part of the sash

Those elements make it possible for FAKRO roof windows manufactured in the topSafe system from October 2008 i.e. FTP-V, FTP-W, FTT, FPP to achieve increased burglary resistance.

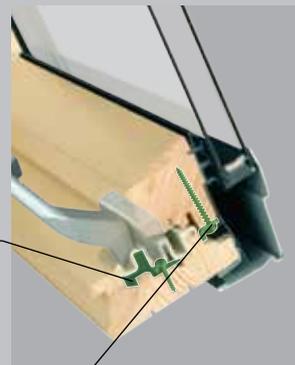
FAKRO roof windows were first to be granted **“The Police Quality Certificate – Live Safely” in Holland in 2002.** FAKRO windows are more resistant to burglary attempts.



The screws are driven into the sash profile at an angle to prevent hinge rupture and forcing of the sash.

Metal element strengthening locking parts.

Metal slat re-inforcing lower sash profile which makes burglary attempts with the use of tools very difficult.



# CHOOSING THE TYPE OF WINDOW



Roof windows perform many important tasks both in modern architecture and in renovation projects. They also enable old, unused loft spaces to be converted into a usable space. Roof windows, besides the traditional function of allowing light into the attic and ensuring the ventilation of a room, should also allow a view of the outside surroundings and visually enlarge the space in the attic.

There are many conditions which decide on the choice of optimum roof window type:

- roof pitch,
- height of window installation,
- wall height,
- height and type of room,
- roof window purpose.

The comparisons presented here will help you to choose the most suitable roof window.

# THE MOST IMPORTANT DIFFERENCES BETWEEN ROOF WINDOWS



## PIVOT WINDOWS

### **FTS-V, FTP-V, FTP-V/C, FTU-V**

Pivot windows are the basic type of roof window. They ensure a flow of fresh air and allow light into the room. These windows open only in a centre pivot method and can be rotated through 180 degrees and this function is used when cleaning the outer pane or operating the awning blind. Centre pivot windows can be equipped with both external and internal accessories. Windows installation range: 15°-90°



## TOP HUNG AND PIVOT WINDOWS

### **FPP-V, FPP-V/C preSelect®**

Top hung and pivot windows allow light and fresh air into the room, ensure unobstructed access to the window and a wide view to the outside through the open window.

They can be opened in two ways:

- the outward opening function from 0 to 35 degrees enables an easy approach to the window and a wide view
- the centre pivot function is used for cleaning and also operating the awning blind.

-Top hung windows can be equipped with external and internal accessories

Windows installation range: 15°-55°

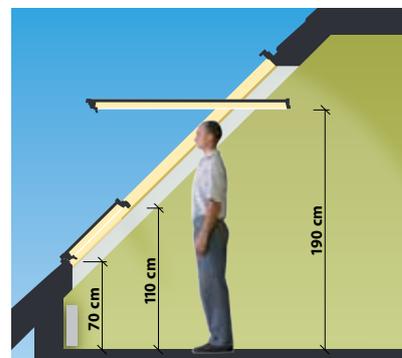


## DUET HIGH PIVOT WINDOWS

### **FDY-V**

Two sashes are placed in one window frame. The upper sash is opened like a pivot window but its axis of rotation is situated above the centre of the window. It is equipped with an automatic air inlet V40P. The lower sash is non-opening with internal pane laminated. This window structure eliminates the need for vertical combinations, hence offering a larger glazing area.

This window is offered in heights up to 250cm. Windows installation range: 25°-65°



## SIDE HUNG ESCAPE WINDOWS

### **FWR, FWR/C, FWL, FWL/C**

This window enables safe and easy access to the roof and also acts as an escape window. It can be opened to 90 degrees. Side hung escape windows can be equipped with internal accessories the same as other roof windows.

Windows installation range: 15°-55°



## L-SHAPED COMBINATION WINDOW

### **BDL, BVL, BXL**

The L-shaped combination windows are installed where the roof meets a vertical wall. These windows serve to extend the roof window into the wall. This results in the amount of light entering the room and the field of view being greatly increased. The L-shaped combination windows can be combined with roof windows of any type. The new line of L-shaped combination windows is characterised by a new frame and sash structure, innovative hardware and newly designed handle.

Installation in combination with roof windows: 15°-55°

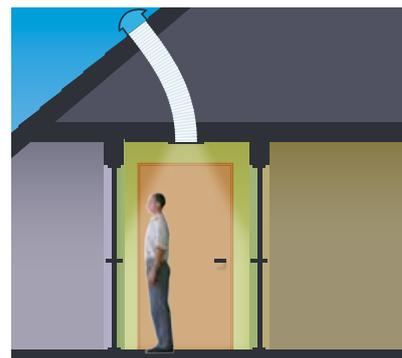


## LIGHT TUNNELS

### **SLT, SRT**

The light tunnel is a completely new product in Fakro's range whose main role is to supply the interior with the proper amount of natural light. The application of such skylights makes it possible to illuminate all rooms in the building, even those which cannot be fitted with roof windows or vertical windows. Dimly lit interiors such as bathrooms, dressing rooms, corridors, staircases or basements can be particularly uncomfortable to use. Thanks to the light tunnel the natural light gets into the building enhancing the users' comfort and enabling electricity saving.

Light tunnel installation range: 15°-60°



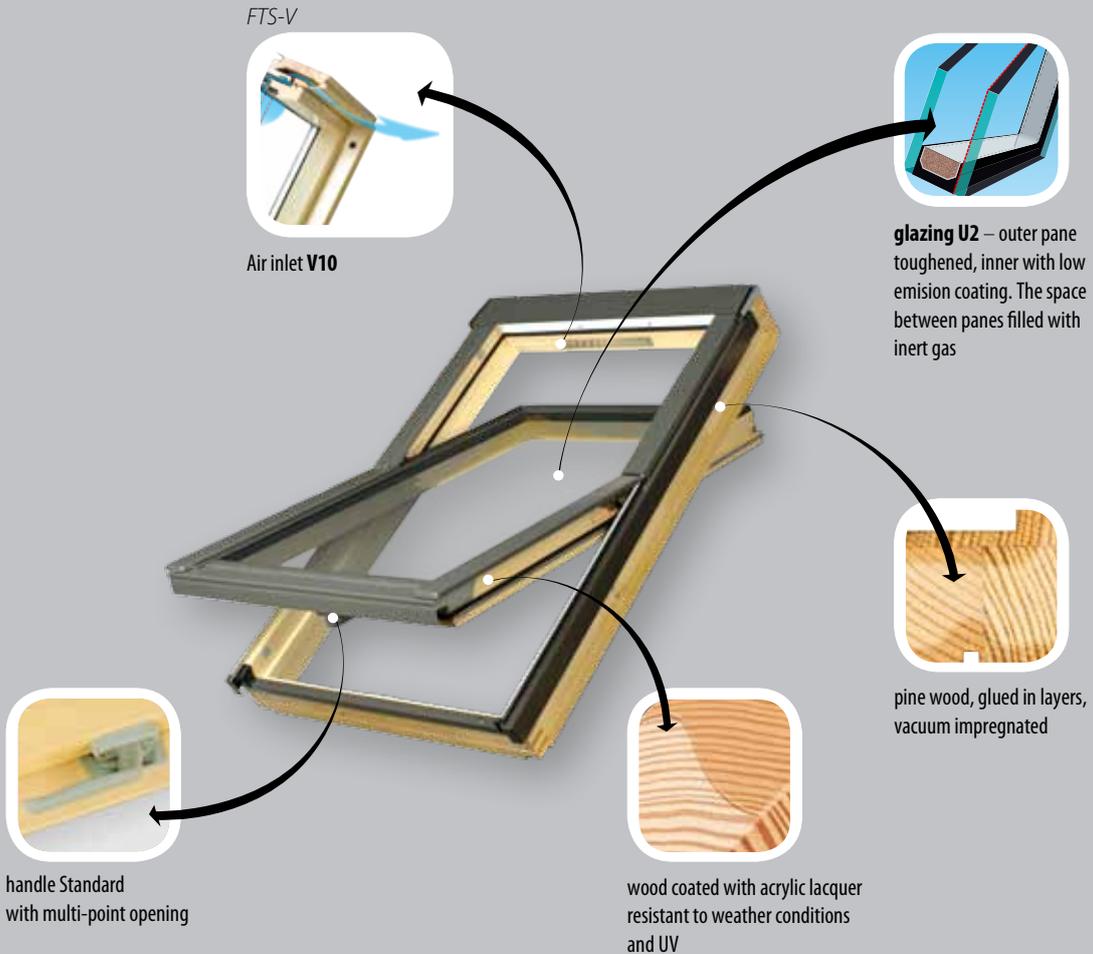
# STANDARD CENTRE PIVOT WINDOW

## FTS-V U2

WOODEN WINDOW  
WITH AIR-INLET  
**V10**



- A popular window design with hinges positioned in the middle of its height.
- An easy operation by the use of handle positioned on the lower part of the sash and secured open in two positions.
- FTS-V equipped with air inlet V10.
- An easy and safe cleaning of outer pane and awning blind installation-thanks to the bolt enabling blocade of the sash rotated through 180 degrees.



- installation range 15-90°
- possibility of installing electrical control
- wide range of accessories

DIMENSIONS: 55x78 55x98 66x98 66x118 78x98 78x118 78x140 94x118 94x140 114x118 114x140 134x98 78x160

WINDOW SYMBOL: 01 02 03 04 05 06 07 08 09 10 11 12 13



**TECHNICAL SPECIFICATION:**

window U-value:  
pane U-value:  
air-inlet:  
air-inlet air flow:

**FTS-V U2**

1.4 W/m<sup>2</sup>K  
1.1 W/m<sup>2</sup>K  
V10  
up 9 m<sup>3</sup>/h

roof window with hinges  
positioned in the middle  
of the height



WOODEN WINDOW  
WITH AIR INLET  
V40P



# PIVOT WINDOWS

**FTP-V U3**  
**FTP-V L3**  
**FTP-V U5**

- A very well equipped centre pivot window version with hinges positioned in the middle of the window height.
- Easy operation by the use of handle positioned on the lower part of the sash and secured open in two positions.
- Equipped with an automatic air-inlet V40P providing the optimum amount of air into the room. V40P air-inlet ensures a healthy microclimate in the attic and saves energy
- Easy and safe cleaning of outer pane and awning blind installation-thanks to the bolt enabling blocade of the sash rotated through 180 degrees.
- Available with various types of glazing units.

FTP-V U3



FTP-V L3



FTP-V U5



Automatic air-inlet V40P



handle Elegant with  
micro-ventilation



**energy efficient U3**  
- outer pane toughened and inner with low emission coating connected by TGI spacer. The space between panes filled with inert gas



**security glazing L3**  
- glazing unit with outer pane toughened and easy maintenance, inner pane laminated. The space between the panes filled with inert gas. Warm TGI spacer.



**highly energy efficient U5**  
- two chamber glazing with three toughened panes connected with two TGI spacers. The border panes equipped with low emission layer. Both chambers between the panes are filled with krypton. Warm TGI spacer. Available in windows: FTP-V U5, FTU U5 Thermo



the highest quality pinewood,  
glued in layers, vacuum  
impregnated



wood coated with two coats of  
ecological acrylic lacquer, resistant to  
weather conditions and UV



enhanced anti-burglary  
resistance



installation range 15-90°.



possibility of installing  
electrical control



wide range of accessories

DIMENSIONS: 55x78 55x98 66x98 66x118 78x98 78x118 78x140 94x118 94x140 114x118 114x140 134x98 78x160

WINDOW SYMBOL:

01	02	03	04	05	06	07	08	09	10	11	12	13
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**TECHNICAL SPECIFICATION: FTP-V U3**

window U-value: 1.4 W/m<sup>2</sup>K  
 pane U-value: 1.1 W/m<sup>2</sup>K  
 air-inlet: V40P  
 air-inlet air flow: up 52 m<sup>3</sup>/h

**FTP-V L3**

1.4 W/m<sup>2</sup>K  
 1.1 W/m<sup>2</sup>K  
 V40P  
 up 52 m<sup>3</sup>/h

**FTP-V U5**

0.97 W/m<sup>2</sup>K  
 0.5 W/m<sup>2</sup>K  
 V40P  
 up 52 m<sup>3</sup>/h

roof window with hinges positioned in the middle of its height



WOODEN WINDOW,  
COATED WITH  
POLYURETHANE VARNISH  
EQUIPPED  
WITH AIR-INLET  
**V40P**



## CENTRE PIVOT WINDOW

**FTU-V U3**

- Well equipped centre pivot window version with hinges positioned in the middle of the window height. Wooden window with increased resistance to moisture, with three coats of polyurethane varnish - creates a durable and perfectly smooth white layer. Designed for rooms with periodically increased humidity levels (kitchens, bathrooms). In laundries, drying rooms or bathing salons with high humidity levels maintained for a longer period, we recommend the use of aluminum-plastic windows.
- Easy operation by the use of handle positioned on the lower part of the sash. Handle equipped with two stage micro-ventilation.
- V40P automatic air-inlet provides an optimum amount of air into the room, ensures a healthy microclimate in the attic and saves energy.
- Easy cleaning of outer pane and easy awning blind installation - thanks to the bolt blocking the sash when rotated through 180 degrees.



Automatic air-inlet  
**V40P**



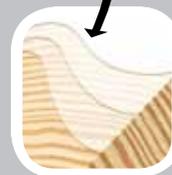
**energy efficient U3**  
– outer pane toughened and inner with low emission coating connected by TGI spacer. The space between panes filled with inert gas



handle Elegant with  
micro-ventilation



the highest quality pinewood,  
glued in layers, vacuum  
impregnated.



wood coated with three coats  
of polyurethane varnish to create  
a durable and perfectly smooth  
**white layer** of the frame's surface



enhanced anti-burglary  
resistance



installation range 15-90°.



possibility of installing  
electrical control



wide range of accessories

DIMENSIONS: 55x78 55x98 66x98 66x118 78x98 78x118 78x140 94x118 94x140 114x118 114x140 134x98 78x160

WINDOW SYMBOL:

01

02

03

04

05

06

07

08

09

10

11

12

13



**TECHNICAL SPECIFICATION: FTU-V U3**

window U-value:	1.4 W/m <sup>2</sup> K
pane U-value:	1.1 W/m <sup>2</sup> K
air-inlet:	V40P
air-inlet air flow:	up 52 m <sup>3</sup> /h

roof window with hinges positioned in the middle of its height



# ↓ Electro

## CENTRE PIVOT WINDOW

- Window with factory equipped remotely controlled devices (control unit, motor and transformer) which are opening and closing the window as well as accessories by the use of remote control. Equipped with a rain sensor, which automatically activates sash opening function during the rain. It has connectors on frame to allow easy fitting of electrical accessories and can be easily connected to 230V mains.
- It has an automatic air-inlet V40P providing an optimum amount of air into the room. V40P air-inlet ensures a healthy microclimate in the attic.
- The 90 degrees handle turn disconnects the sash from motor.
- Easy cleaning of outer pane and easy awning blind installation- thanks to the bolt blocking the sash rotated through 180 degrees.

WOODEN WINDOW  
WITH AIR-INLET **V40P**  
ELECTICALLY  
CONTROLLED

**FTP-V U3**  
**FTU-V U3**

WOODEN WINDOW  
WITH AIR-INLET **V40P**  
ELECTICALLY  
CONTROLLED COATED  
WITH POLYURETHANE  
VARNISH

FTP-V

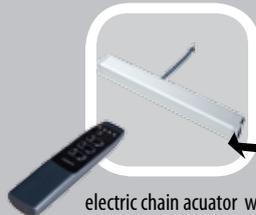
FTU-V



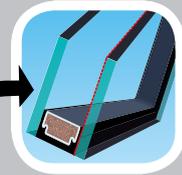
Automatic air-inlet  
**V40P**



rain sensor



electric chain acuator with control unit  
activated by the remote control



**energy efficient U3**  
– outer pane toughened and  
inner with low emission coating  
connected by TGI spacer.  
The space between panes filled  
with inert gas

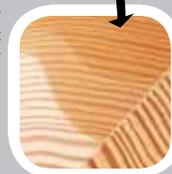


the highest quality pinewood,  
glued in layers, vacuum  
impregnated.



FTU-V

wood coated with three coats  
of polyurethane varnish to create  
a durable and perfectly smooth  
**white layer** of the frame's surface



FTP-V

wood coated with two coats of  
ecological acrylic lacquer, resistant  
to weather conditions and UV



enhanced anti-burglary  
resistance



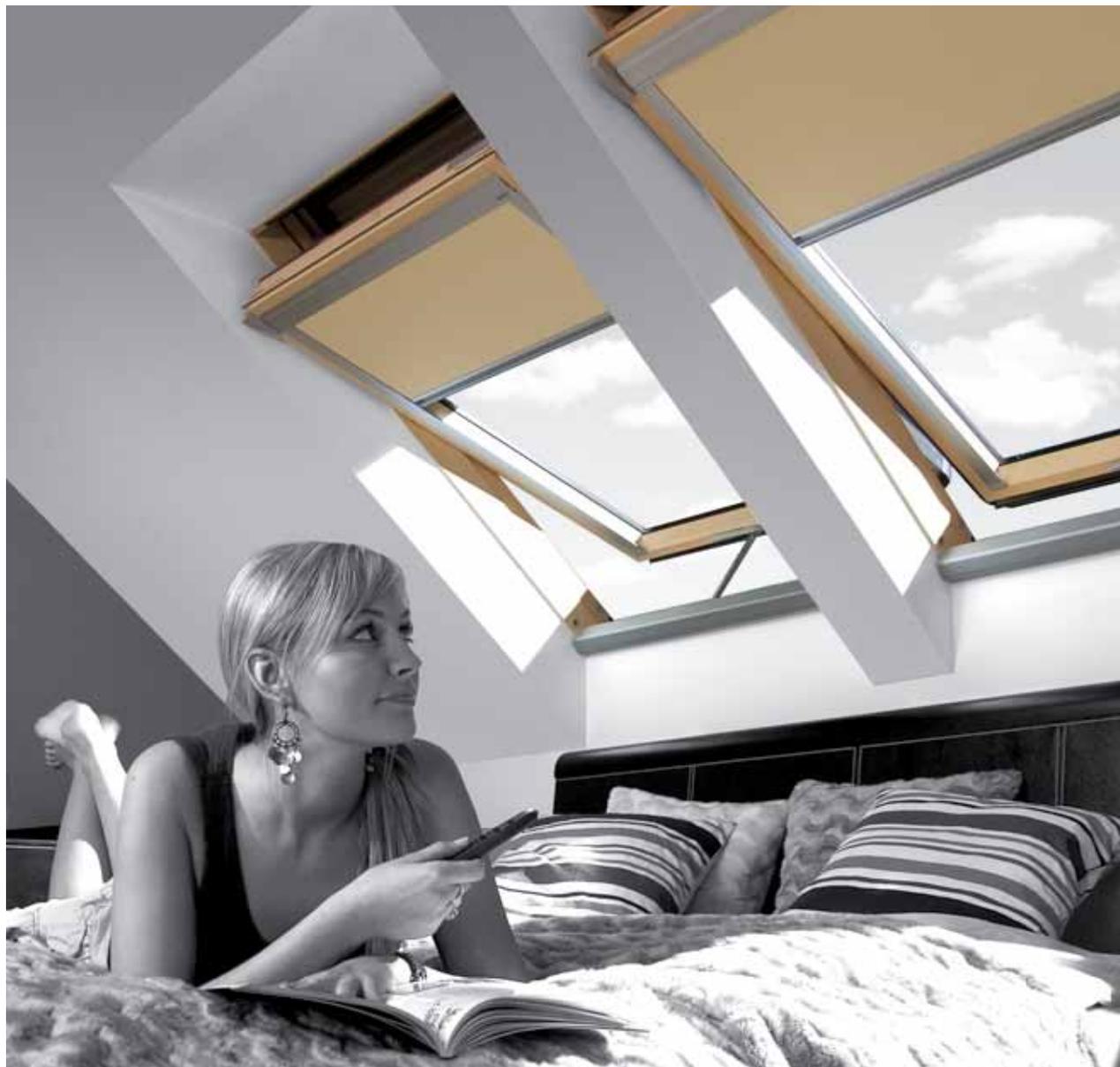
installation range 15-90°.



wide range of accessories

DIMENSIONS: 66x98 66x118 78x98 78x118 78x140 94x118 94x140 114x118 114x140 134x98 78x160

WINDOW SYMBOL: 03 04 05 06 07 08 09 10 11 12 13



**TECHNICAL SPECIFICATION: FTP-V U3 Electro FTU-V U3 Electro**

window U-value:	1.4 W/m <sup>2</sup> K	1.4 W/m <sup>2</sup> K
pane U-value:	1.1 W/m <sup>2</sup> K	1.1 W/m <sup>2</sup> K
air-inlet:	V40P	V40P
air-inlet air flow:	up 52 m <sup>3</sup> /h	up 52 m <sup>3</sup> /h

roof window with hinges positioned in the middle of the window height





# PIVOT WINDOW

ALUMINIUM-PVC  
WINDOW

**PTP U3**  
**PTP-V U3**

ALUMINIUM-  
PLASTIC WINDOW  
WITH AIR-INLET

**V35**

- Centre pivot window with hinges positioned in the middle of the window height. Aluminium-plastic window made of white PVC profiles, designed for rooms with periodically increased humidity levels (kitchens, bathrooms) as well as laundries, drying rooms or bathing salons with high humidity levels maintained for a longer period. Window available in golden oak finish, as well.
- Easy operation by the use of handle positioned on the lower part of the sash. Handle equipped with two stage micro-ventilation.
- Window PTP equipped with efficient air-inlet V35.
- Easy cleaning of outer pane and easy awning blind installation-thanks to the bolt blocking the sash when rotated through 180 degrees.

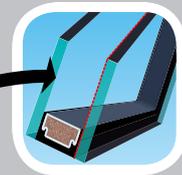
PTP



PTP-V



air-inlet V35



**energy efficient U3**  
– outer pane toughened and inner with low emission coating connected by TGI spacer. The space between panes filled with inert gas



multi-chamber PVC **white** profiles, strengthened from inside with steel profiles. The plastic does not absorb any moisture. Window is durable and corrosion resistant.



enhanced anti-burglary resistance



installation range 15-90°.



possibility of installing electrical control



wide range of accessories



white handle Elegant with micro-ventilation



handle Elegant with micro-ventilation in PVC golden oak finish window

DIMENSIONS: 55x78 55x98 66x98 66x118 78x98 78x118 78x140 94x118 94x140 114x118 114x140

WINDOW SYMBOL:

01	02	03	04	05	06	07	08	09	10	11
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**TECHNICAL SPECIFICATION: PTP U3**

window U-value: 1.4 W/m<sup>2</sup>K  
 pane U-value: 1.1 W/m<sup>2</sup>K  
 air-inlet: —  
 air-inlet air flow: —

**PTP-V U3**

1.4 W/m<sup>2</sup>K  
 1.1 W/m<sup>2</sup>K  
 V35  
 up 43 m<sup>3</sup>/h

roof window with hinges positioned in the middle of the window height



WOODEN WINDOW  
WITH AIR-INLET  
**V40P**

↓ **proSky**

# HIGH PIVOT WINDOW

- The window opens in pivot function, but the rotation axis is placed above the center of its height, so even a tall person can approach the edge of the open window. The lower part of the sash gives an impression of outward opening and the top constitutes an additional illumination.
- It is the only window on the market when installed in roofs with pitches 39° - 43° satisfies the requirements of DIN 5034-1\* standard, according to which the bottom window edge has to be situated 95 cm above the floor level and the top minimum 220cm.
- Sash when rotated from 0° to 45° is supported by an innovative auxiliary mechanism, which allows you to leave the open sash in any position.
- Window operated by the use of handle positioned on the lower part of the sash. Handle equipped with two stage micro-ventilation.
- Equipped with an automatic ventilator V40P provides the optimum amount of air into the room. V40P automatic air-inlet ensures a healthy micro-climate in the attic and saves energy.
- Rotated sash is blocked by the bolt for cleaning at an angle of 160°.

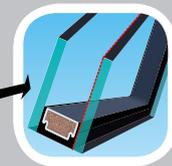
\* norm applied to German market only.

**FYP-V U3**

**NEW**



automatic air-inlet  
**V40P**



**energy efficient U3**

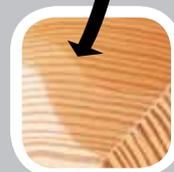
– outer pane toughened and inner with low emission coating connected by TGI spacer. The space between panes filled with inert gas



handle **Elegant**  
with micro-ventilation



the highest quality pinewood, glued in layers, vacuum impregnated.



wood coated with two coats of ecological acrylic lacquer, resistant to weather conditions and UV



enhanced anti-burglary resistance



installation range: 20 – 65°.



possibility of installing electrical control



wide range of accessories

DIMENSIONS: 78x140 78x160 78x180 94x140 94x160 94x180

WINDOW SYMBOL:

**07**

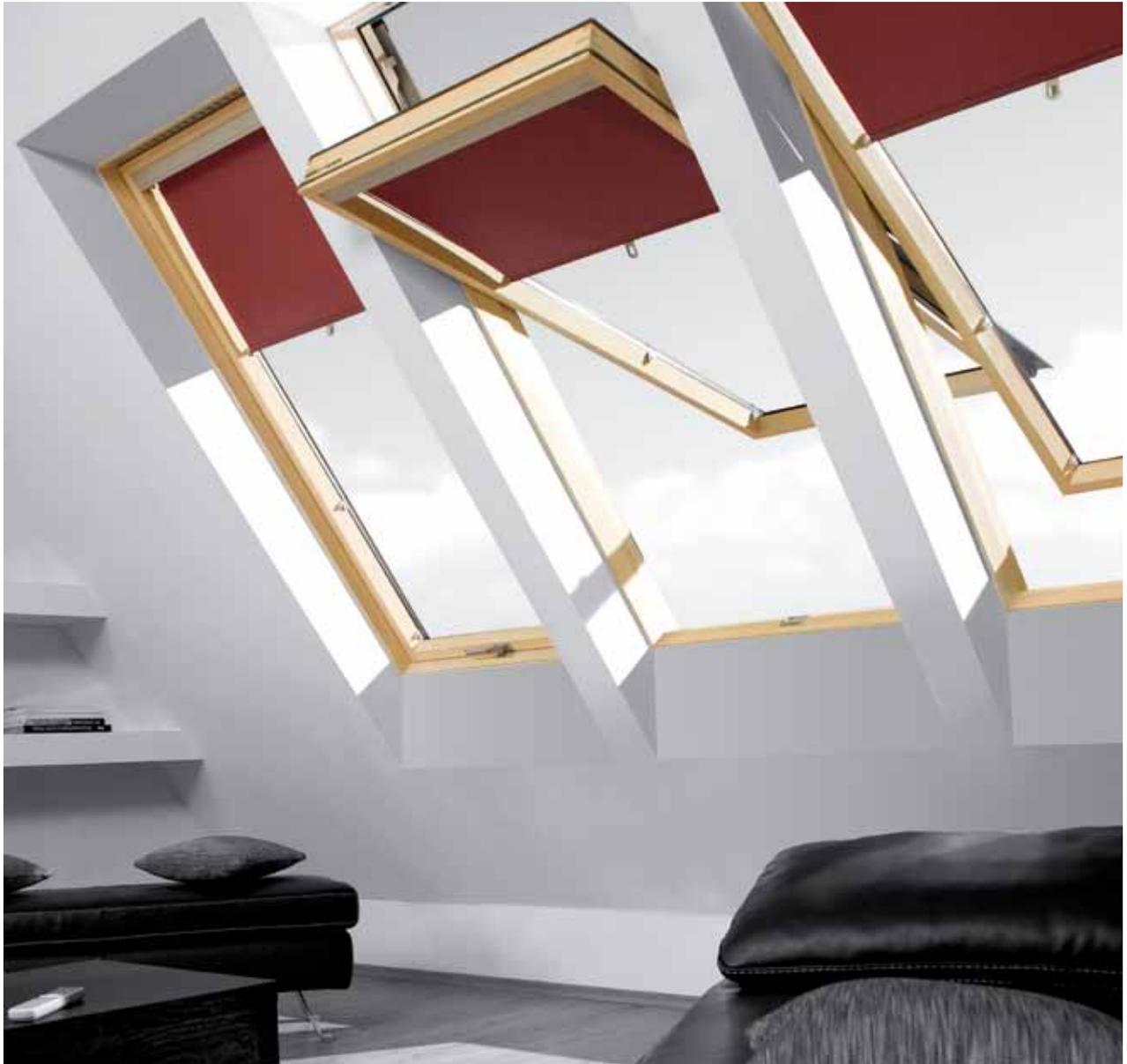
**13**

**40**

**09**

**80**

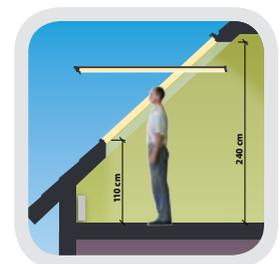
**41**



**TECHNICAL SPECIFICATION: FYP-V U3**

window U-value:	1.4 W/m <sup>2</sup> K
pane U-value:	1.1 W/m <sup>2</sup> K
air-inlet:	V40P
air-inlet air flow:	up 52 m <sup>3</sup> /h

roof window with hinges positioned above the center of its height



WOODEN WINDOW  
WITH AIR-INLET  
V40P



# ↓ Duet proSky

## DUET HIGH PIVOT WINDOW

- Two sashes are placed in one window. The upper sash is opened like a pivot window but its axis of rotation is situated above the centre of the window, so even tall person can approach the edge of the open window. The lower sash is non-opening with external pane laminated (safe).
- It is the only window on the market when installed in roofs with pitches 30-43° satisfies the requirements of DIN 5034-1\* standard, according to which the bottom window edge has to be situated 95cm above the floor level and the top minimum 220cm. This window structure eliminates the need for vertical combinations, hence offering larger glazing area.
- Window FDY-V eliminates the need for vertical combinations, hence offering larger glazing area.
- Window operated by the use of handle positioned on the lower part of the sash. Handle equipped with two stage micro-ventilation.
- Equipped with an automatic ventilator V40P provides the optimum amount of air into the room. V40P automatic air-inlet ensures a healthy micro-climate in the attic and saves energy
- Rotated sash is blocked by the bolt for cleaning at an angle of 160°.

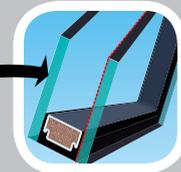
\* norm applied to German market only

FDY-V U3

NEW



automatic air-inlet V40P



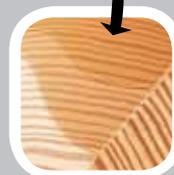
**energy efficient U3**  
– outer pane toughened and inner with low emission coating connected by TGI spacer. The space between panes filled with inert gas



handle Elegant with micro-ventilation



the highest quality pinewood, glued in layers, vacuum impregnated.



wood coated with two coats of ecological acrylic lacquer, resistant to weather conditions and UV



**security glazing L3** - glazing unit with outer pane toughened and self cleanig glass Activ, inner pane laminated. The space between the panes filled with inert gas. Warm TGI spacer.



enhanced anti-burglary resistance



installation range: 25 – 65°.



possibility of installing electrical control



wide range of accessories

DIMENSIONS [cm]: 78x186 78x206 94x186 94x206

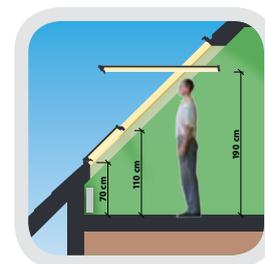
CA	CB	DA	DB



**TECHNICAL SPECIFICATION: FDY-V U3**

window U-value:	1.4 W/m <sup>2</sup> K
pane U-value:	1.1 W/m <sup>2</sup> K
air-inlet:	V40P
air-inlet air flow::	up 52 m <sup>3</sup> /h

Two sash roof window with hinges positioned above the center of its height. Bottom window fixed.



WOODEN WINDOW  
WITH AIR-INLET  
**V40P**



# TOP HUNG AND PIVOT WINDOWS

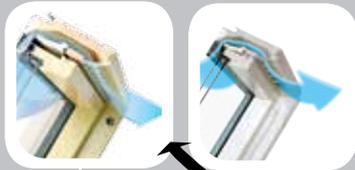
- Two independent opening mechanisms of the sash: outward and pivot opening. The outward opening function enables the sash to be opened in any position from 0 to 35 degrees, pivot function enables the sash to be rotated through 180 degrees. The outward opening function enables an easy approach to the window and providing a wide view to the outside. An innovative hardware system guarantees full sash stability in both opening functions. Opening method can be switched using the **preSelect** sliding switch positioned in the middle of the frame, accessible when the window is open.
- Easy operation by the use of handle positioned on the lower part of the sash. Handle equipped with two stage micro-ventilation.
- Window FPP-V and FPU-V are equipped with an automatic ventilator V40P provides the optimum amount of air into the room. V40P automatic air-inlet ensures a healthy micro-climate in the attic and saves energy.
- Easy cleaning of the outer pane and easy awning blind installation -thanks to the bolt blocking the sash rotated through 180 degrees.

**FPP-V U3**  
**FPU-V U3**

WOOD WINDOW  
COATED WITH  
POLYURETHANE  
VARNISH EQUIPPED  
WITH AIR-INLET **V40P**

FPP-V

FPU-V



automatic air-inlet  
**V40P**



**energy efficient U3** – outer pane toughened and inner with low emission coating connected by TGI spacer. The space between panes filled with inert gas



FPP-V



FPU-V



handle Elegant with  
micro-ventilation



**preSelect** sliding switch



the highest quality  
pinewood, glued in layers,  
vacuum impregnated

FPU-V



wood coated with three coats  
of polyurethane varnish to  
create a durable and perfectly  
smooth white layer of the  
frame's surface

FPP-V



-wood coated with  
two coats of ecological  
acrylic lacquer, resistant  
to weather conditions  
and UV



enhanced anti-burglary  
resistance



installation range 15-55°.



possibility of installing  
electrical control



wide range of accessories

DIMENSIONS:

55x98 66x98 66x118 78x98 78x118 78x140 94x118 94x140 114x118 114x140 134x98 78x160

WINDOW SYMBOL:

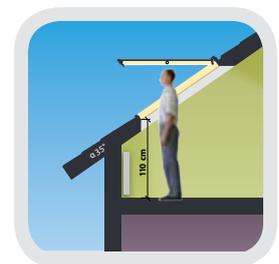
02 03 04 05 06 07 08 09 10 11 12 13



**TECHNICAL SPECIFICATION: FPP-V U3 preSelect® FPU-V U3 preSelect®**

window U-value:	1.4 W/m <sup>2</sup> K	1.4 W/m <sup>2</sup> K
pane U-value:	1.1 W/m <sup>2</sup> K	1.1 W/m <sup>2</sup> K
air-inlet:	V40P	V40P
air-inlet air flow:	up 52 m <sup>3</sup> /h	up 52 m <sup>3</sup> /h

roof window with innovative operating mechanism enabling opening the sash in outward and centre pivot function



# TOP HUNG AND PIVOT WINDOWS

## PPP-V U3

ALUMINIUM-  
PLASTIC WINDOW  
WITH AIR-INLET  
V35



- Two independent opening mechanisms of the sash: outward and pivot opening. The outward opening function enables the sash to be opened in any position from 0 to 35 degrees, pivot function enables the sash to be rotated through 180 degrees. The outward opening function enables an easy approach to the window and providing a wide view to the outside. An innovative hardware system guarantees full sash stability in both opening functions. Opening method can be switched using the **preSelect** sliding switch positioned in the middle of the frame, accessible when the window is open.
- Aluminium-plastic window made of white PVC profiles, designed for rooms with periodically increased humidity levels (kitchens, bathrooms) as well as laundries, drying rooms or bathing salons with high humidity levels maintained for a longer period. Window available in golden oak finish, as well.
- Easy operation by the use of handle positioned on the lower part of the sash. Handle equipped with two stage micro-ventilation.
- Window PPP-V equipped with efficient air-inlet V35.
- Easy cleaning of outer pane and easy awning blind installation-thanks to the bolt blocking the sash when rotated through 180 degrees.



air-inlet  
V35

**energy efficient U3**— outer pane toughened and inner with low emission coating connected by TGI spacer. The space between panes filled with inert gas



preSelect sliding switch



enhanced anti-burglary  
resistance



Installation range 15-55°.



possibility of installing  
electrical control



wide range of accessories



handle Elegant with  
micro-ventilation



handle Elegant with micro-  
ventilation in PVC golden  
oak finish window



multi-chamber PVC **white** profiles, strengthened from inside with steel profiles. The plastic does not absorb any moisture. Window is durable and corrosion resistant.

DIMENSIONS: 55x98 66x98 66x118 78x98 78x118 78x140 94x118 94x140

WINDOW SYMBOL:

02 03 04 05 06 07 08 09



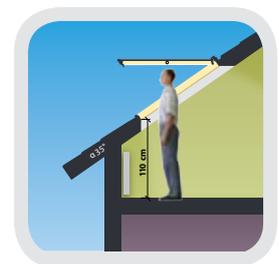
**TECHNICAL SPECIFICATION:**

window U-value:  
pane U-value:  
air-inlet:  
air-inlet air flow:

**PPP-V preSelect®**

1.4 W/m<sup>2</sup>K  
1.1 W/m<sup>2</sup>K  
V35  
up 43 m<sup>3</sup>/h

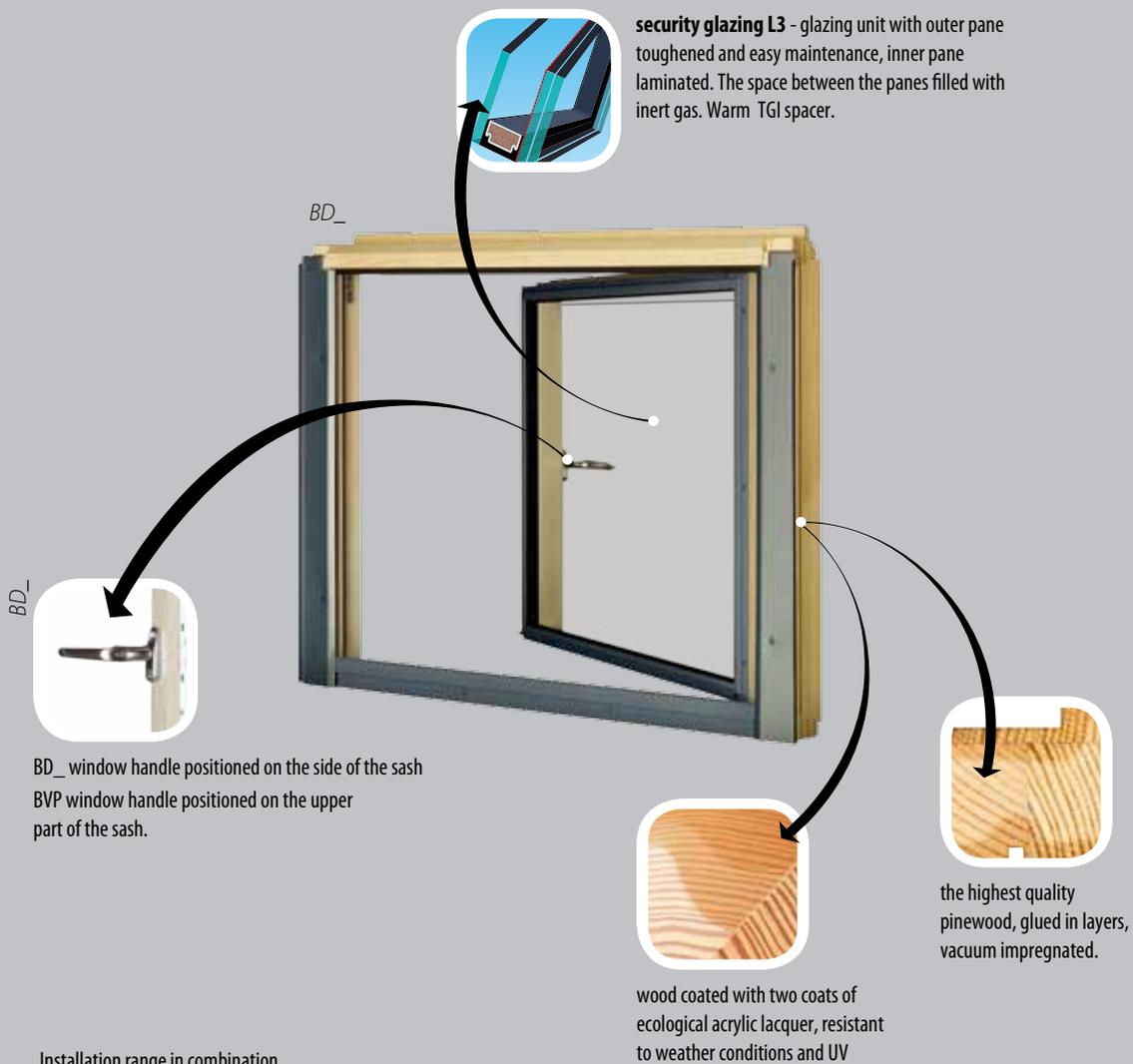
roof window with innovative operating mechanism enabling opening the sash in outward and centre pivot function



# L- SHAPE COMBINATION WINDOW

**BDL L3**  
**BDR L3**  
**BVP L3**  
**BXP L3**

- Window meant to be installed where the roof meets a vertical wall and combined with roof windows of any type.
- Window with innovative hardware.
- Window BD\_ is equipped with tilt and turn opening system. Opened by tilting up to a max. 12cm and by turning up to 90°. Both opening methods are performed with the use of one handle positioned on the side of the sash. The window comes with the lock as a standard enabling window locking. It can be opened to the right -BDL-R or to the left -BDL-L.
- Window BVP is opened by tilting up to max. 12cm. The handle equipped with key is positioned on the upper part of the sash.
- BXP is non-opening L-shaped combination window.



Installation range in combination with roof window is 15-55°

wide range of accessories

DIMENSIONS: 78x60 94x60 114x60 78x75 78x95 78x115 78x137 94x75 94x95 94x115 114x75 114x95 114x115

WINDOW SYMBOL: 33 34 35 81 82 83 84 85 86 87 89 90 91



TECHNICAL SPECIFICATION:	BD_L3	BVP L3	BXP L3
window U-value:	1.4 W/m <sup>2</sup> K	1.4 W/m <sup>2</sup> K	1.4 W/m <sup>2</sup> K
pane U-value:	1.1 W/m <sup>2</sup> K	1.1 W/m <sup>2</sup> K	1.1 W/m <sup>2</sup> K

I-shaped window with innovative hardware enabling a tilt and turn opening



# FLASHINGS



Flashings are essential for the correct installation of roof windows. Precisely designed flashing details ensure a durable and neat fit with the roofing material used. The purpose of flashing is to ensure good drainage away from the window and to provide protection from the elements. Flashing should be used with all types of FAKRO windows, the centre-pivot, the top hung as well as windows for combinations. Thanks to the uniform design of profiles different types of windows can be placed together.

Fakro offers a range of flashing solutions made of aluminum sheet as standard and permanently protected with polyester varnish. The standard colour is brown RAL 7022, which matches well with most roofing finishes.

Roof windows can be installed in the roof structure at three different levels: N (3cm), V (0cm) and J (-3cm). Flashings are categorised accordingly. The last letter of the flashing type code indicates the depth at which the roof window can be fitted.

## Schedule of standard flashings according to types of the roofing material and level of installation

		N (+3 cm)	V (0)	J (-3 cm)
<b>L</b>	Flat roof coverings (up to 5 mm thickness) such as: slate, asphalt, roofing felt, bitumen	—	<b>ELV</b>	<b>ELJ</b>
<b>Z</b>	Profiled roof coverings (up to 45 mm profile depth) such as: roof tiles, profiled metal sheeting	<b>EZN</b>	<b>EZV</b>	<b>EZJ</b>
<b>H</b>	High profile roof coverings (up to 90 mm thickness) such as: roof tiles, profiled metal sheeting	<b>EHN</b>	—	—

 — The most popular flashings

# STANDARD FLASHINGS



## FLASHINGS FOR SLATE ROOF COVERINGS **ELV, ELJ**

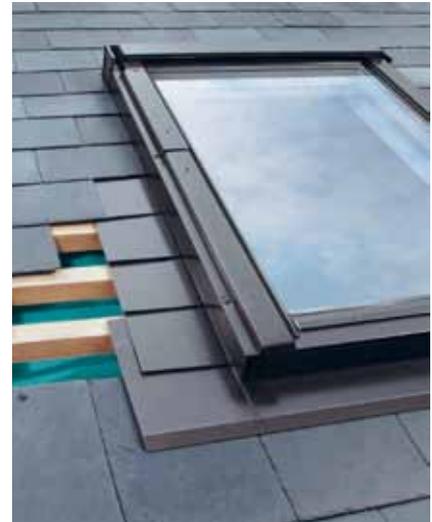
EL flashing is ideal for a flush fit of a window with some flat tiled or slated roofs **up to 10 (2x5 mm)** thickness. It is applied as standard to individual windows in the slope of the roof. A series of window units may also be combined:

- for V depth in vertical, horizontal and block groups
- for J depth horizontal combination only.

This flashing is available in two different types allowing windows to be installed at two different depths in the roof construction V (0) and J (-3cm). The standard installation of windows with the application of flashing EL is V-version ELV.

### Constituents of the Flashing:

This flashing is made up of lower, upper and side elements, the dimensions of which are dependent on the window height. The side elements of the flashing are laid alternately with the roof covering. The lower element has a plastic mat glued to the underside thus allowing the flashing to adhere to the roof covering for neat fit. A weep flap allows condensation to drain away from the window.



## FLASHING FOR TILED COVERINGS **EZN, EZV, EZJ**

EZ flashing is ideal for fitting windows with profiled roof coverings such as roof tiles and metal sheeting. It is a universal flashing which can be applied not only to corrugated coverings but also to all roof coverings with a profile depth of **up to 45mm**. It is applied to individual windows in the slope of the roof.

It may also be used as flashing for windows used in combinations or groups.

This flashing permits windows to be installed at three different levels in the construction of the roof: N(+3cm), V (0 cm), J (-3 cm). The standard level for installing windows using EZ flashing is V – version EZV.

### Constituents of the flashing:

The flashing is made up of four basic elements. The lower element is finished with an elastic apron which has a plastic mat glued to the underside thus allowing the flashing to adhere to the roof covering for a neat fit.

It has a weep flap which allows condensation to drain away from the window.

It also incorporates side-sealing channels to provide protection against wind-blown dust, leaves, rain and snow.

## FLASHING FOR HIGH-PROFILED COVERINGS **EHN**

EH flashing is suitable for roof coverings with a profile depth of **up to 90 mm**, such as roof tiles and high profile metal sheeting. It can be applied to roof coverings with a profile depth of up to 90 mm and is applied to individual windows in the slope of the roof. It may also be used as flashing for windows used in combination or groups. Just one flashing is available, allowing installation of windows at a level N– flashing EHN.

### Constituents of the flashing:

The flashing is made up of four basic elements, the dimensions of which are dependent on the window height. A long and wide elastic apron finishing is the lower element, which allows easy connection with high profiled roof coverings. The lower element has a plastic mat glued to the underside thus allowing the flashing to adhere to the roof covering for a neat fit.

It is equipped with a weep flap to allow condensation to drain away from the window, as well as side sealing channels to protect against wind blown dust, leaves, rain and snow.



# FLASHING COMBINATIONS

Flashing systems are ready made flashing combinatins for joining windows in groups: horizontally, vertically and in a block. The distance between windows joined horizontally and vertically is normally 10cm. There are seven modules in the Fakro combination system, to cater for any layout you may require.

## Examples of combinations



# SPECIAL FLASHINGS

In FAKRO product range, there are also available flashings for less popular roof coverings:

- Flashing EG for plain tiles and shingles -up to 24-32mm (2x12mm) thickness
- Flashing EE for flat sheet roofs

To FAKRO product range we have introduced a new flashing with additional insulation which enables window insulating above the level of battens. It has an elastic insulating material glued to the inside of the flashing, which tightly adheres to the window frame constituting insulating frame. The flashing thermally insulates the window, substantially enhancing U value around 15%.



Next group of flashings are flashings of special use. Flashing E\_A is used for changing window installation angle, whereas to install windows on flat or very low-pitched roofs (lower than 15°) enables the flat roof system (EFW). In FAKRO product range there are also available flashings for L shaped combination windows, for mansard combination and for joining windows on at the ridge.

More information concerning FAKRO flashings available at: [www.fakro.com](http://www.fakro.com)

# ACCESSORIES TO WINDOWS



Roof window accessories combine functionality and attractive looks. They control the amount of light, reduce excessive heat flow and save energy in winter. The wide range of types, patterns and colours of accessories ensures harmony with the decor of any interior and offers the possibility of creating all kinds of atmosphere in the loft. Among accessories providing protection from overheating are: awning blinds, external roller shutters operated manually and roller shutters operated electrically.

For more information please look at



# INSTALLATION ACCESSORIES AND ROOF MEMBRANES

FAKRO installation accessories guarantee the proper connection between the roof window and the roof construction. Using the underfelt collar with thermo-insulation and air-tight collar ensures the complete protection of a fitted roof window.

XDP thermo-insulating set is used for easy and tight window insulation in the roof slope. The set consists of air-permeable underfelt collar and thermo-insulating set of sheep wool. Specially impregnated sheep wool in the form of cubes and wool tress with proper density and elasticity ensure optimal window insulation.



Air-tight flashing should be secured internally to form a barrier against warm and humid air as any moisture on the surface of the insulation greatly reduces its thermal insulation properties. For this reason, to avoid any air gaps, the roof window opening has an XDS airtight flashing. This ensures a flush fit between roof window and sheeting. The sheeting is pushed into a groove specifically made in the window's frame. The air tight flashing is made of polythene.

# LOFT LADDERS



The FAKRO company is also loft ladders manufacturer. Loft ladders are made of wood and metal. They are folding and scissors ladders, available also in fire-resistant versions. When not used, ladders are 'hidden' in the ceiling, freeing space inside the room. The design and materials used guarantee easy, comfortable and safe access to the loft. The quick fixing system enables the loft ladder to be easily installed by two people, and easy ladder height adjustment.



For more information please look at

# ELECTRONIC CONTROLS

Fakro offers modern electronic control systems to operate roof windows installed above head height and out of easy reach. Control systems and their parts for control of roof windows and window accessories can be selected to suit particular client requirements. Control systems fitted with motors can operate by remote control or a wall switch. They will also operate rain, wind or smoke sensors. Windows can be also equipped with external electric roller blinds and internal blinds.



# LIGHT TUNNELS



In order to supply interior with natural light where there are no opportunities to install roof or vertical windows, an effective solution can be a Light Tunnel. Thanks to the light tunnel, the natural light gets into the building illuminating its interior. Dimly lit interiors without access to the natural light can become light and comfortable to use.

There are two types of light tunnels available: SRT with rigid light transmitting tub and SLT with flexible light transmitting tube. Flashings enable to install the light tunnels in nearly every roof covering and even in flat roofs.



For more information please look at



# SOLAR COLLECTORS

Solar collector is a perfect alternative for expensive sources of energy. With help of collectors, a free of charge sun's energy is transformed into heat energy used in household.



**SKW solar panels** can be combined with FAKRO roof windows in any configuration. Tight connection with the roof is guaranteed by standard roof window flashings.

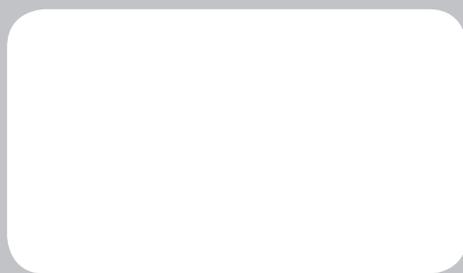
The solar panel casing made of aluminium profiles ensures strong and durable construction. A toughened prismatic pane provides high light transmittance reaching 91%. The solar panel is fixed onto rafters by means of an innovative system of installation brackets which can be moved during installation to adjust them to any rafter spacing.

**SKC solar panels** - thanks to the application of special flashings for integrating with the roof slope, the SKC solar panels can be combined with one another retaining a 3 mm distance between individual panels. A uniform surface achieved in this way goes well with the roofing. The SKC solar panels can be installed only in horizontal combinations: panel – panel.



For more information please look at





**FAKRO®**

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