Flat roof windows are designed and constructed using the highest quality materials, innovative solutions and with impeccable aesthetics in mind. Excellent thermal performance, an abundance of natural light, ventilation of the room, easy operation of windows and a wide range of accessories make these products ideal and perfect for the comfort of living in rooms under a flat roof.

Flat roof windows are available in three versions:
- type F window with innovative flat glazing unit,
- type G window with special glass section
- type Z window with angled glass section
- type C window with a dome made of durable polycarbonate

The flat roof window frame is constructed using reinforced multi-chamber PVC profiles. The internal surface of the frame is white (RAL 9010).

The material used in the profile features high resistance against acids and has low moisture absorption. As a result, the window can be installed in every room type. Profiles are filled with insulation material, thus additionally improving the energy saving parameters of the product. The specially profiled covering material under the frame drip cap further improves the ultimate finish between the window and the roof covering.

The type F flat roof window is available with a quadruple, passive DU8 glazing unit characterised by a heat transfer coefficient with a rating of $U_w = 0.64 \text{ W/m}^2\text{K}$ as per EN 14351-1 which makes the window suitable for use in energy-efficient and passive buildings. The frame is made of multi-chamber PVC profiles filled with insulation material. The plastic used in the window does not absorb moisture and the window itself is durable and corrosion free. Intended for installation in rooms where elevated humidity levels stay for long time (kitchens, wet rooms & shower rooms etc.).

The special structure of FAKRO flat roof windows provides excellent thermal insulation. The DEC U8 (VSG) window with a passive, quadruple U8 (VSG) glazing unit is characterised by a heat transfer coefficient with a rating of $U = 0.55 \text{ W/m}^2\text{K}$ (EN 1873). This result is for a 120x120cm window with frame, sash and dome.
FLAT ROOF WINDOW CONSTRUCTION

STANDARD GLAZING UNITS

<table>
<thead>
<tr>
<th>GLAZING UNIT</th>
<th>U6</th>
<th>DU6*</th>
<th>DU6 Secure*</th>
<th>DW6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ug (as per EN 673)</td>
<td>0.3 W/m²K</td>
<td>0.3 W/m²K</td>
<td>0.3 W/m²K</td>
<td>0.3 W/m²K</td>
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<tr>
<td>GLAZING STRUCTURE</td>
<td>6H 18-4HT 18-33.2T</td>
<td>6H 18-4HT 18-44.4T</td>
<td>888.44(1xESG, 2xTVG)</td>
<td>16-4HT 18-66.2T</td>
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<tr>
<td>CHAMBERS</td>
<td>DOUBLE CHAMBER</td>
<td>DOUBLE CHAMBER</td>
<td>DOUBLE CHAMBER</td>
<td>DOUBLE CHAMBER</td>
</tr>
<tr>
<td>TOUGHENED OUTER PANE</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>LAMINATED INNER PANE</td>
<td>+ class P2A</td>
<td>+ class P2A</td>
<td>+ class P2A</td>
<td>+ class P2A</td>
</tr>
<tr>
<td>SPACER</td>
<td>WARM TGI</td>
<td>WARM TGI</td>
<td>WARM TGI</td>
<td>WARM TGI</td>
</tr>
<tr>
<td>INERT GAS</td>
<td>ARGON</td>
<td>ARGON</td>
<td>ARGON</td>
<td>ARGON</td>
</tr>
<tr>
<td>SUN RAYS TRANSMISSION (τV)</td>
<td>0.67</td>
<td>0.54</td>
<td>0.54</td>
<td>npd</td>
</tr>
<tr>
<td>SUN ENERGY TRANSMISSION (SOLAR FACTOR G)</td>
<td>0.47</td>
<td>0.43</td>
<td>0.43</td>
<td>0.35</td>
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<tr>
<td>UV RAYS TRANSMISSION (τUV)</td>
<td>0.07</td>
<td>npd</td>
<td>npd</td>
<td>npd</td>
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</tbody>
</table>

P2 | P4

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</tbody>
</table>

HIGHLY ENERGY-EFFICIENT

PASSIVE

ANTI-BURGLARY

* reflective outer pane

6H - toughened glass
18 - spacer
4HT - toughened glass
with low-emission layer
18 - spacer
33.2T - laminated glass
with low-emission layer

6H - toughened glass
18 - spacer
4HT - toughened glass
with low-emission layer
18 - spacer
4HT - toughened glass
with low-emission layer
12 - spacer
33.2T - laminated glass
with low-emission layer

6H - toughened glass
18 - spacer
4HT - toughened glass
with low-emission layer
18 - spacer
4HT - toughened glass
with low-emission layer
12 - spacer
33.2T - laminated glass
with low-emission layer

4H - toughened glass
14 - spacer
33.2T - laminated glass
with low-emission layer

4H - toughened glass
14 - spacer
33.2T - laminated glass
with low-emission layer

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### FLAT ROOF PRODUCTS

#### WINDOWS

- **Type C window**
  - Suitable for pitches from 0-15°.
  - Designed with a special glass section which consists of a toughened glass pane featuring a thickness of 8mm.
  - Window is factory equipped with a special glass section which consists of a toughened glass pane featuring a thickness of 8mm.
  - The frame constructed of multi-chamber PVC profile filled with insulation material.
  - Equipped with P2 glazing unit. Suitable for pitches from 0-15°.

- **Type D window**
  - Suitable for pitches from 2-15°.
  - The glass section has a slope on the outer surface allowing water to be drained even when the window is closed.
  - The sash is connected to a system which allows for operation by means of included ZSD control rod.
  - Sash tilts 15cm.

- **Type E window**
  - Suitable for pitches from 0-15°.
  - The frame constructed of multi-chamber PVC profile filled with insulation material.
  - The window can be manually opened to 80°.
  - Easy and convenient operation thanks to gas springs.

- **Type F window**
  - Suitable for pitches from 2-15°.
  - The frame constructed of multi-chamber PVC profile filled with insulation material.
  - The window can be manually opened to 80°.
  - Easy and convenient operation thanks to gas springs.

#### SMOKES VENTILATION WINDOWS

- **Type DXC window**
  - Suitable for pitches from 0-15°.
  - The window can be manually opened to 80°.
  - Easy and convenient operation thanks to gas springs.

#### LIGHT TUNNELING SYSTEMS

- **Light tunnel with rigid light transmitting tube** made of 0.5mm polycarbonate.
  - Tube length 12cm using a special SRM extension kit.
  - The tube can be extended up to 12cm using a special SRM extension kit.
  - The light tunnel consists of installation frame, specially profiled aluminium structure (one element is inserted into another one).

- **Light tunnel with lightweight flexible light transmitting tube** made of 0.61m. The tube can be extended up to 1.1m using a special SRM extension kit.

#### ACCESS LIGHTS

- **Type DRL access light**
  - Suitable for pitches from 0-15°.
  - The window can be manually opened to 80°.
  - Easy and convenient operation thanks to gas springs.

#### LIGHT TUNNELING SYSTEMS

- **Type DXC window**
  - Suitable for pitches from 0-15°.
  - The window can be manually opened to 80°.
  - Easy and convenient operation thanks to gas springs.

#### GENERAL INFORMATION

- **Insulation**:
  - ≤ 2,0 W/m²K
  - ≤ 1,9 W/m²K
  - ≤ 1,8 W/m²K
  - ≤ 1,7 W/m²K

- **Dome** made of durable polycarbonate.

- **Light tunnel** with flexible light transmitting tube made of metal, aluminium and polycarbonate.

### WITH FLEXIBLE LIGHT TRANSMITTING TUBE

- **Light tunnel** with lightweight flexible light transmitting tube made of 0.61m. The tube can be extended up to 1.1m using a special SRM extension kit.

### LIGHT TUNNELING SYSTEMS

- **Light tunnel with rigid light transmitting tube** made of 0.5mm polycarbonate.

### ACCESS LIGHTS

- **Type DRL access light**
  - Suitable for pitches from 0-15°.
  - The window can be manually opened to 80°.
  - Easy and convenient operation thanks to gas springs.

### GENERAL INFORMATION

- **Insulation**:
  - ≤ 2,0 W/m²K
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# ACCESSORIES FOR FLAT ROOF WINDOWS

<table>
<thead>
<tr>
<th>INTERNAL ACCESSORIES</th>
<th>EXTERNAL ACCESSORIES</th>
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<tbody>
<tr>
<td><strong>BLACKOUT BLINDS</strong></td>
<td><strong>PLEATED BLIND</strong></td>
</tr>
<tr>
<td><strong>ARF/D, ARF/D Z-Wave</strong></td>
<td><strong>APF/D</strong></td>
</tr>
<tr>
<td><strong>AMZ/F Solar</strong></td>
<td><strong>AMZ/C Z-Wave</strong></td>
</tr>
<tr>
<td><strong>AMZ/Z Solar</strong></td>
<td><strong>AMZ/Z Z-Wave</strong></td>
</tr>
</tbody>
</table>

**Application:**
- Type F flat roof windows.
- Type C flat roof windows.
- Type G flat roof windows.

**Features:**
- Variable reduction of incoming light.
- Lockable in any position thanks to the side guides.
- Protection from overheating inside.
- Reduced heat loss during winter.
- Resistant to moisture.

**Control mode:**
- ARF/D: manual operation (ZSD control rod).
- ARF/D Z-Wave: operated by remote control or wall switch; powered from the mains. If the ARF/D Z-Wave blind is mounted onto DM, DX windows, power supply and control unit must be purchased separately.

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**Application:**
- Type F flat roof windows.
- Type C flat roof windows.
- Type G flat roof windows.

**Features:**
- Protection against intense sunlight.
- Enhanced interior design.
- Darkening of the interior on sunny days.
- Partial protection against heat gain.
- Lockable in any position.
- Fabric with a honeycomb structure and an internal aluminium coating provides blackout and good thermal performance.
- Aluminium guides are available in two colour versions: lacquered white and anodised silver.
- Provision of complete privacy when closed.

**Control mode:**
- APF/D: manual operation (ZSD or ZST control rod).

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**Application:**
- Type F flat roof windows.

**Features:**
- Protection of the room against excessive heat gain.
- Ingress of natural light and view to the outside.
- Protection against UV radiation.
- Protection against light reflection on computer and TV screen.
- When rolled up, it does not limit the glazing surface.
- AMZ/Z awning blind installed under angled glass section of D_Z windows
- AMZ/C Z-Wave awning blind installed under the light tunnel’s dome
- Comfortable and automatic operation (intelligent system controls the awning blind depending on the insolation level).
- High insolation level triggers the blind to unroll automatically.
- Blind rolls up automatically in cloudy weather.

**Control mode:**
- AMZ/Z Solar: powered by solar battery pack. The awning blind can be operated in one of three control modes:
  - Automatic (automatically unrolls and rolls up depending on the insolation level).
  - Semi-automatic (automatically unrolls, it is rolled up using a remote control).
  - Operated by means of included remote control.

**Control versions:**
- AMZ/Z Z-Wave: Operated by means of a wall switch or remote control in wireless Z-Wave system. Powered by 15V mains supply. When installing AMZ/Z/Wave awning blinds in DMZ and DXZ windows, power supply and control unit must be purchased separately.
- AMZ/Z Solar: powered by solar battery pack. The awning blind can be operated in one of three control modes:
  - Automatic (automatically unrolls and rolls up depending on the insolation level).
  - Semi-automatic (automatically unrolls, it is rolled up using a remote control).
  - Operated by means of included remote control.