Eco System® 50 is a well-insulated system for windows and doors, that combines aesthetic design and energy efficiency with a moderate price. The system’s HI+ variant achieves Uf values down to 1.6 W/m²K. The Uf of a frame/vent section with 86 mm visible width is 2.3 W/m²K.

The system’s limited built-in depth allows its application in many constructions, even with reduced wall thicknesses. Design wise, ES 50 offers, next to the functional design frames, special block profiles resembling wooden frames. The use of invisible fittings results in an even more elegant look, since hinges are no longer in sight.

In addition, ES 50 can comply with burglar resistance class 2, offering a safe and secure solution both for residential constructions and utility buildings.
## TECHNICAL CHARACTERISTICS

<table>
<thead>
<tr>
<th>Description</th>
<th>Frame Width</th>
<th>Vent Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min. visible width inward opening window</td>
<td>48 mm</td>
<td>30 mm</td>
</tr>
<tr>
<td>Min. visible width outward opening window</td>
<td>21 mm</td>
<td>87 mm</td>
</tr>
<tr>
<td>Min. visible width inward opening flush door</td>
<td>67 mm</td>
<td>74 mm</td>
</tr>
<tr>
<td>Min. visible width outward opening flush door</td>
<td>42 mm</td>
<td>99 mm</td>
</tr>
<tr>
<td>Min. visible width T-profile</td>
<td>70 mm</td>
<td></td>
</tr>
<tr>
<td>Overall system depth window</td>
<td>50 mm</td>
<td>59 mm</td>
</tr>
<tr>
<td>Overall system depth flush door</td>
<td>50 mm</td>
<td>50 mm</td>
</tr>
<tr>
<td>Rebate height</td>
<td>22 mm</td>
<td></td>
</tr>
<tr>
<td>Glass thickness</td>
<td>up to 32 mm</td>
<td></td>
</tr>
<tr>
<td>Glazing method</td>
<td>dry glazing with EPDM or neutral silicones</td>
<td></td>
</tr>
<tr>
<td>Thermal insulation</td>
<td>omega-shaped fiberglass reinforced polyamide strips</td>
<td></td>
</tr>
<tr>
<td>High Insulation Plus variant (HI+)</td>
<td>Available</td>
<td></td>
</tr>
</tbody>
</table>

## PERFORMANCES

### ENERGY
- Thermal Insulation (1)
  - EN 10077-2
  - Uf-value down to 1.6 W/m²K depending on the frame/vent combination and the glass thickness

### COMFORT
- Acoustic performance (2)
  - EN ISO 140-3; EN ISO 717-1
  - Rw (C; Ctr) = 35 (-1; -4) dB / 39 (-1; -3) dB, depending on glazing type
- Air tightness, max. test pressure (3)
  - EN 1026; EN 12207
  - 1 (150 Pa)  2 (300 Pa)  3 (600 Pa)  4 (600 Pa)
- Water tightness (4)
  - EN 1027; EN 12208
  - 1A (0 Pa)  2A (50 Pa)  3A (100 Pa)  4A (150 Pa)  5A (200 Pa)  6A (250 Pa)  7A (300 Pa)  8A (450 Pa)  9A (600 Pa)  E (750 Pa)
- Wind load resistance, max. test pressure (5)
  - EN 12211; EN 12210
  - 1 (400 Pa)  2 (800 Pa)  3 (1200 Pa)  4 (1600 Pa)  5 (2000 Pa)  Exxx (> 2000 Pa)
- Wind load resistance to frame deflection (5)
  - EN 12211; EN 12210
  - A (≤1/150)  B (≤1/200)  C (≤1/300)

### SAFETY
- Burglar resistance (6)
  - ENV 1627 - ENV 1630
  - RC 1  RC 2 (windows & doors)  RC 3

This table shows classes and values of performances, which can be achieved for specific configurations and opening types.

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(1) The Uf-value measures the heat flow. The lower the Uf-value, the better the thermal insulation of the frame.
(2) The sound reduction index (Rw) measures the capacity of the sound reduction performance of the frame.
(3) The air tightness test measures the volume of air that would pass through a closed window at a certain air pressure.
(4) The water tightness testing involves applying a uniform water spray at increasing air pressure until water penetrates the window.
(5) The wind load resistance is a measure of the profile’s structural strength and is tested by applying increasing levels of air pressure to simulate the wind force. There are up to five levels of wind resistance (1 to 5) and three deflection classes (A, B, C). The higher the number, the better the performance.
(6) The burglar resistance is tested by static and dynamic loads, as well as by simulated attempts to break in using specified tools.