



# **Outward opening Windows and Doors**

**Resistance against forced entry, ballistic attacks  
and explosions**

- » Projected top hung window**
- » Top hung window**
- » Side hung window and door**



# Outward opening windows and doors: efficient ventilation and space saving

In order to provide an alternative window design offering high security for the owner and architect, SÄLZER has developed outward opening windows and doors based on the proven aluminum series S6 energy Saving.

The windows were tested according to international standards for forced entry, ballistic and explosion resistance. The variations can be combined with all products in the SYSTEM® SÄLZER.

## Variations

- Projected top hung window
- Top hung window
- Side hung window/door
- Single and double sashes

## Use

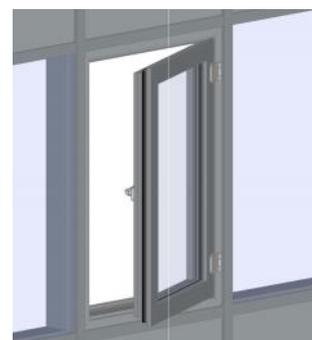
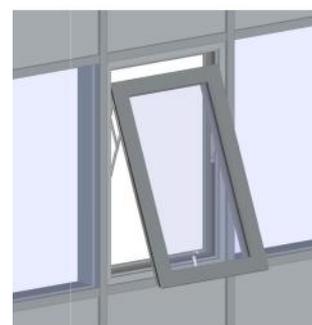
- In punched openings
- As ribbon windows
- In mullion-transom constructions
- As window-door, e.g. as terrace door

## Space and ventilation benefits

- Efficient ventilation and space savings: no opening element is in the room.
- Can be used for daily ventilation, night-time cooling as well as smoke protection.
- In particular, the projected top-hung window\* offers an efficient ventilation due to the large opening width up to 1,000 mm (opening angle up to 45°). In comparison, a bottom hung tilt window\* can only be opened up to 170 mm (up to 14°). Already opened with an opening angle of 14° the opening width of the projected top-hung window is 600% greater compared with windows opened in tilted position.
- The projected top hung window bear also the comparison with an inward opening side hung window\*: the projected top hung sash achieved the same opening width if the opening angle is only 30°.

## Further technical benefits

- Elegant design with concealed fittings.
- Flush sash and frame profiles.
- Drives concealed or countertop.
- Opening: manual or electric.
- Concealed projected top hung scissors can be continuously locked in any desired angle.
- Glass thicknesses up to **75 mm**, glazing bead flush.
- Suitable for large-sized window dimension, size depending on the security level.
- Complies with the requirements of all standards, e.g. water tightness, thermal insulation, resistance against wind load.



The use of these 3 variations are ideal if no space is in the interior to open the window inwards in turn position. The window sill must not be cleared in order to ventilate the room.

\* The compared window variations have all the same size: 1,230 x 1,480 mm

# Tested for safety: RC3, FB4-NS, blast resistant up to 8,8bar



### Tested and combined levels of security:

Left photo: projected top hung window after a blast test with a charge of 100 kg TNT [distance 15m. Test result: GSA 2, no splinters. The right photo shows the projected top hung window, after the ballistics test, level FB4-NS. In addition, the tested system offers forced entry protection up to class RC3.

Security tests		
<b>Forced Entry</b>	According to EN 1627-1630	Up to RC3*, RC4 test is planned
<b>Ballistic</b>	According to EN 1522-1523	Up to FB4-NS*
<b>Explosion</b>	<b>Different charges and distances:</b> 100 kg 15 m, 500 kg 29 m. Reflected pressure: up to 8.8 bar*, GSA 2 <b>Different pressure durations and pressure:</b> Pressure duration up to 2,000 msec, up to 1.34 bar* reflected pressure. High protection against pressure waves with long duration.	



CE Marking

Performance characteristics according to DIN EN 14351	
<b>Resistance against wind load</b>	According to EN 12210: level C5 Projected top hung window   top hung window   side hung window/door
<b>Water tightness</b>	According EN 12208: Side hung window/door   top hung window: level E900 Projected top hung window: level 9A
<b>Air permeability</b>	According to EN 12207: level 4 Projected top hung window   top hung window   side hung window/door
<b>Thermal insulation</b>	$U_W = 1,4$ up to $1,8 \text{ W/m}^2\text{K}$ Values vary depending on the element size and glazing

Profiles   glazing   wing weights	
<b>Profile depth</b>	Frame + wing: 110 mm
<b>Glazing</b>	Glass thickness up to 75mm, glazing bead flush.
<b>Glazing bead</b>	There is <b>no visible screwing</b> of the glazing bead required due to the stable design. <b>Also no glueing necessary (natural glazing rebate ventilation and water circuit)</b> . Glazing beads are anchored pressure and impact resistant in the slot of the profiles.
<b>Wing weights</b>	Up to 180 kg, higher weights on request.

\* higher or other security requirements upon request.

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# SYSTEM SÄLZER®

## Combined Protection

For more than 40 years SÄLZER has led the industry in the development and technology of forced entry, bullet, fire and blast resistant building components. Each of our products is subject to a strict internal and external quality management. Please ask for additional brochures about our further products: windows, facades, doors, gates, guard houses, partition walls, access control, barriers, bollards, accessory components etc.



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