



SYSTEM SÄLZER® Series S2es – Aluminium window system

Combinable protection for maximum security requirements

Up to RC6 up to FB7-NS up to EXR3 up to EPR4

tested with explosive charges up to 500 kg



Security Windows

Letting in daylight –
locking out threats



Series S2es aluminium windows – Highest Security against forced entry, bullets and blast

SÄLZER aluminium windows S2es series offer the highest protection levels against forced entry (operable window sash up to RC5 and fixed panes up to RC6), and ballistic attack (up to FB7-NS). The high security windows also offer maximum levels of resistance to explosives as well as protection against the effects of accidental chemical and petrochemical explosions.

Despite the high resistance levels achievable the SÄLZER S2es system has been designed to have slim profiles and allow for expansive glazing. Numerous design configurations have been tested allowing for project specific solutions to be engineered and installed to meet all aesthetic architectural requirements.

Tested and certified security*



› Forced entry resistance

According DIN EN 1627-1630 up to **RC5** operable window sash, up to **RC6** fixed pane.

Glazing according to DIN EN 356 but **P7B, P8B glazing are inadequate in resistance level RC5 and RC6** (please note ⚠ remarks on forced entry resistance).



› Bullet resistance

According DIN EN 1522-1523 up to **FB7-NS**.

Glazing according to DIN EN 1063 up to **BR7-NS**.



› Blast Resistance

According to DIN EN 13123 up to **EXR3** (12 kg | 5,5 m).

Various tests according to customized requirements with different explosive charges such as **100 kg, 250 kg and 500 kg**.

Test example: 100 kg charge (TNT), distance 10 m, reflected pressure **880 kPa** | reflected impulse **1,543 kPa-msec**.

With the use of DIN EN 13124-1 up to **EPR4** (reflected pressure > **200 kPa**).

Sector specific tests e.g. for the petrochemical industry, peak pressure **$P_{max} = 134 \text{ kPa}$** and positive pressure duration **$t_{+total} = 2 \text{ sec}$** .

Glazing according to SÄLZER specification.

Classified:

GSA 2 (Protection Level, „Very High“), ISO B (Hazard-Rating, „No Hazard“).

* Higher security requirements upon request

Aluminium windows of the Series S2es are combinable with all windows and facade systems within SYSTEM SÄLZER®.

Performance at a glance

- › **Variably combinable protection** against forced entry, bullets and explosions up to the highest security classes (see paragraph tested and certified security page 2).
- › **Tested as a complete element** including glazing, hardware and wall connection in various configurations.
- › **The security components are invisibly integrated into the profile.**
Specially designed corrosion resistant reinforcement profiles are inserted into the profile chambers and not added to the external faces of the profile. These inserts together with the profile offer a seamless reinforced area and due to the overlapping construction all resistance classes are catered for.
- › **The profile face widths and depths** are the same irrespective of the selected security combination and security level. This ensures a uniform appearance within a building, even with a graduated security concept.
- › **Infill thickness up to 97 mm (fixed pane) and 102 mm (operable window sash)** with internally flush glazing beads.
- › **No visible fixings to the glazing beads are required**, due to the profile geometry and the stable design (patent).
- › **The glazing is designed to be pressure and impact resistant without the requirement of bonding** into either fixed or moving frames. This ensures natural glazing rebate ventilation, controlled water flow and, if necessary, simple glass replacement.
- › **The window sash is secured with our patented multipoint locking mechanism SAELOX®**. In the closed position the sash and frame locking parts interlock in 2 areas into each other.
- › **All SAELOX® locking parts, on the frame and on the sash, are securely fixed and interact with the window profiles** offering a greater resistance level for both forced entry and blast applications.
- › **Electronic monitoring components** such as magnetic sensors or bolt switch contacts can be invisibly integrated.
- › **Window with turn hardware tested** up to a sash weight of 350 kg and tilt-turn hardware tested up to 200 kg.



Remarks on forced entry resistance

P7B and P8B glazing are inadequate for RC5 and RC6 forced entry protection.

The standard for forced entry resistance requires the comprehensive testing also for glazing in resistant classes RC5 and RC6: "For building products in resistance classes 5 and 6 according to DIN EN 1627:2011, the glass¹ itself as well as the glazing¹ and the infill connection system must be attacked ..." This means that the glazing¹ has to be tested with the same set of tools as the complete element, e.g. jig saw, angle grinder, drill. But P7B and P8B glazing are only tested with axe blows, these glazing would not withstand the attacks with tools used in class RC5 and RC6. Therefore the glazing has to be replaced by highest-quality glazing which can reliably withstand attacks with these tools.

Advantage: SYSTEM SÄLZER® offers an integrated solution in RC5 and RC6. The complete element including the glazing and all components meets these high requirements.

¹This applies to all glazing which are bigger than 400 x 250mm (rectangle), 150 x 660 mm (rectangle), or 400 x 300mm (ellipse), or 350mm Ø (circle).



Building physics according to DIN EN 14351-1

Besides their high security SÄLZER security windows comply with all requirements in building physics according to DIN EN 14351 and are CE marked.



Resistance against wind load

According to DIN EN 12210
Depending on the type of window
up to class C5 (2.000 Pa).



Water tightness

According to DIN EN 12208
Depending on the type of window
up to class E1050 (1,050 Pa).



Air permeability

According to DIN EN 12207
Depending on the type of window
up to level 4 (600 Pa).



Impact resistance

According to DIN EN 13049
Depending on the type of window
up to level 5.



Thermal insulation

According to DIN EN ISO 10077-2
Depending on the type of window
 $U_w = 1.4 - 1.7 \text{ W/m}^2\text{K}$ (double
glazing).

$U_w = 0.8 - 1.5 \text{ W/m}^2\text{K}$ (triple
glazing).



Sound insulation

ISO 140-3
Depending on the type of window
up to R_w 45 dB.



Life cycle test

Level 3: 20.000 cycles
with 350 kg sash weight.

Individual design

The SÄLZER aluminium profile system permits individually designed construction according to client requirements. The planner, architect and building receive their individual security window which also satisfy the most exacting demands in terms of design, comfort and functionality.

Design examples



Transaction window

tested construction with wall connection, corner joints, transaction drawer, intercoms and further equipment.



Variety of tested design variations:

fixed window, available with turn, tilt or tilt-turn window hardware, with top and side lights.

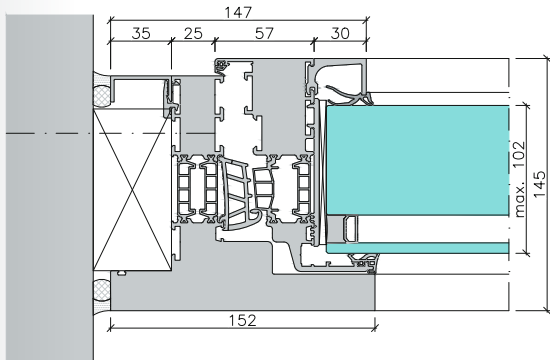


Surface diversity

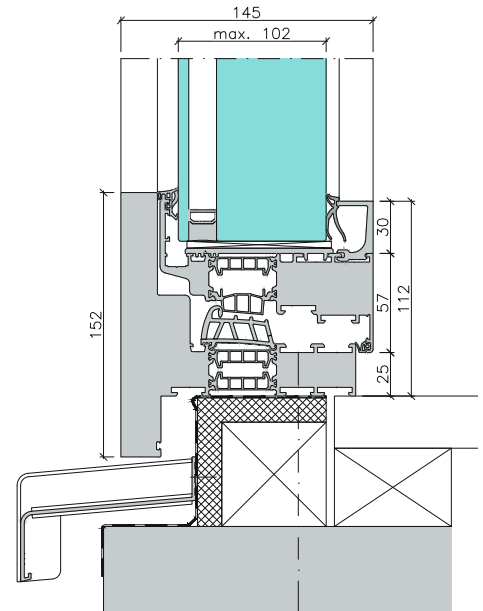
The profile surfaces can be individually adapted inside and outside to the design of the building. Powder-coated, anodised surfaces as well as over clad with timber, stainless steel, stone, bronze and other options.

Example of horizontal/vertical section

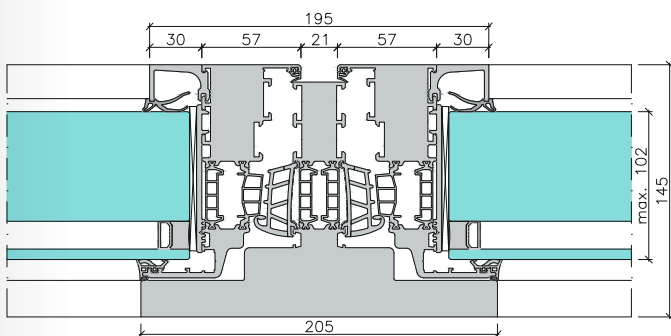
Inward opening window



› **Horizontal section A - A**
(Wall connection)



› **Vertikal section C - C**
(Parapet)



› **Horizontal section B - B**
(Mullion)



Profil depth, profile face width and infill thickness

› **Profile depth**

Window frame, mullion, transom	135 mm
Window sash	122.5 mm

› **Infill thickness**

Sash	102 mm
Fixed window	97 mm

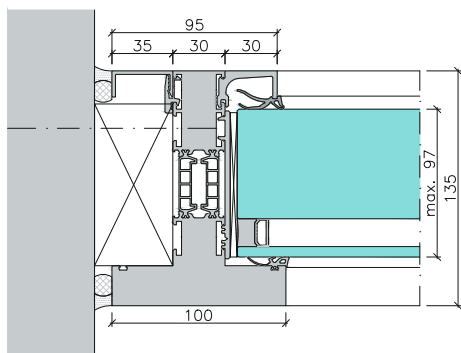
› **Profile face width**

Window frame, below	100 mm
Window frame, above and lateral	65 mm
Mullion	100 mm
Transom	100 mm
Window sash (block system)	70 mm
French door (block system)	70 mm

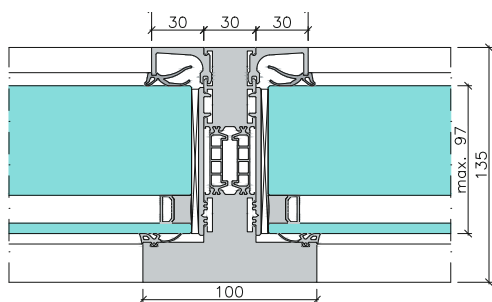


Example of horizontal / vertical section

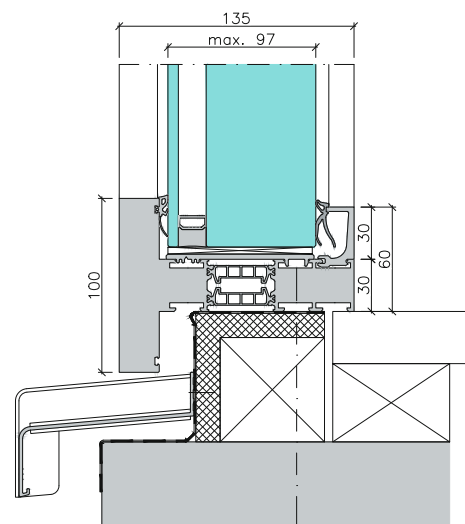
Fixed window



› **Horizontal section A - A**
(Wall connection)



› **Horizontal section B - B**
(Mullion)



› **Vertikal section C - C**
(Parapet)

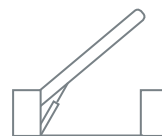
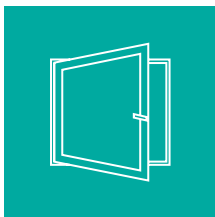
SYSTEM SÄLZER® – Systemized security



For more than 50 years, SÄLZER GmbH, based in Marburg, has specialized in innovative high-security solutions, which have been sold and distributed worldwide to more than 90 countries. Our team of over 130 specialists design and produce high-security windows, doors, facades, and guard houses to meet the unique functional and aesthetic needs of our customers. Multi-certified and comprehensively tested, the SÄLZER System assures combined protection against forced entry, break out, bullets, explosion, fire, and smoke. Each security solution is individually developed to the highest security and resistance classes to meet the respective protection requirements. Public, industrial, and residential building owners worldwide benefit from a wide range of networkable and combinable products of all security levels.

In 2018, SÄLZER became “Part of Schüco”. Based in Bielefeld, the Schüco Group develops and sells system solutions for windows, doors and facades.

For more information, visit: www.saelzer-security.com and www.schueco.com



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