

sedak secuprotect® – bulletproof laminated glass

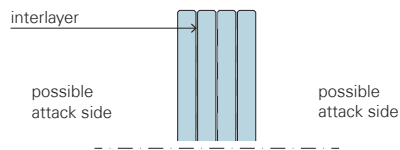
Bulletproof laminated glass – sedak secuprotect®

As bullet-resistant glass with a monolithic construction, sedak secuprotect® provides protection from both sides. The safety glass is certified for the highest bullet-resistance class BR7 NS, according to DIN EN 1063, and even achieves STANAG Level 3 - thus also protects against incendiary.

glass thicknesses for sedak secuprotect®

- BR7 NS: 195 kg/sqm, thickness 80 mm
- STANAG Level 3: 200 kg/sqm, thickness 82 mm

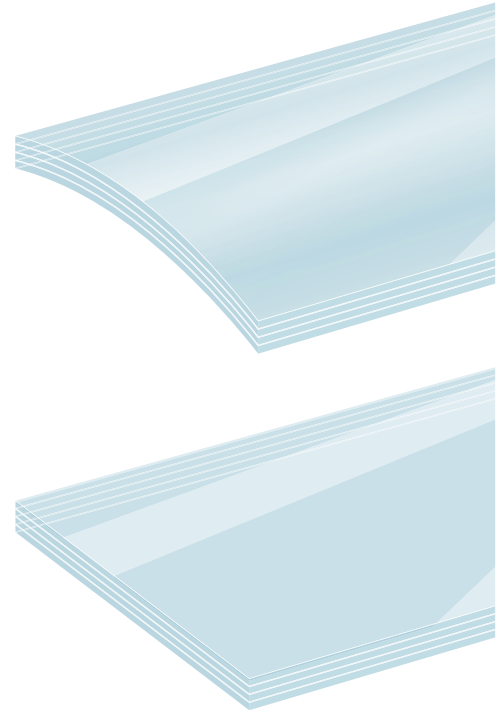
These specifications apply to certified standard structures. Thicker structures needed for structural reasons, for example, may require a new ballistic test.



Example structure

sedak secuprotect®:

- double to quadruple safety glass;
- multiple on request
- in two safety classes;
- flat or curved;
- available in formats up to 3.6 m x 20 m.



sedak – manufacturer of glass units up to 3.6 m × 20 m.

sedak is a premium manufacturer of optimum-quality safety and insulated glazing. As a leading glazing fabricators specialist in this high-expertise segment, we supply single-pane glass units, multi-layer glazing and functional insulating glass units in formats up to 3.6 m × 20 m – processed, tempered, laminated, printed, cold and hot bent. Manufacturing is optimized for extremely heavy glass with a unique degree of automation for panes this size.

The expertise and inquiring minds of the 190 sedak employees are the driving force behind constant innovations in glass manufacturing. As a full service supplier, sedak works in partnership with architects, developers, facade builders and metalwork companies and helps advance tomorrow's visionary architecture today with its innovative products.

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leading glass. **sedak**



bullet-resistant glass
with functional diversity



sedak isosecure® – provides shatterproof protection up to bullet resistance BR7

sedak isosecure unites bullet-resistant protection and high performance in a modern insulating glass. The ingenious pane structure means a conventional polycarbonate system is no longer needed – both outer panes are made of glass:

- the high aesthetic appeal of the transparent material is maintained
- scratch resistance: makes glass easier to handle and clean
- better fire safety rating
- available as float and heat-strengthened glass

This innovative insulating glass can be combined with standard solar control and heat insulation layers, thus complying with modern energy standard requirements.

sedak isosecure is certified for float and heat-strengthened glass and is suitable for glass façades on challenging buildings with a high level of protection. It provides shatterproof protection up to a level of bullet resistance BR7 as per EN 1063.

The innovative bullet-resistant glass structure is available as flat or curved insulating glass up to 3.6 x 20 meters.



greater safety with functional variety

Insulating glass thicknesses for sedak isosecure® - flat

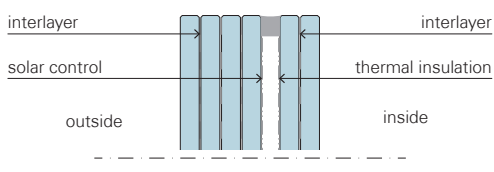
- BR2 NS: 89 kg/sqm, thickness¹ 53 mm
- BR3 NS: 99 kg/sqm, thickness¹ 57 mm
- BR4 NS: 115 kg/sqm, thickness¹ 64 mm
- BR5 NS: 131 kg/sqm, thickness¹ 71 mm
- BR6 NS: 150 kg/sqm, thickness¹ 79 mm
- BR7 NS: 200 kg/sqm, thickness¹ 100 mm

Insulating glass thicknesses for sedak isosecure® - curved

- BR6 NS: 175 kg/sqm, thickness¹ 89 mm
- Radius: from 1 m to ∞

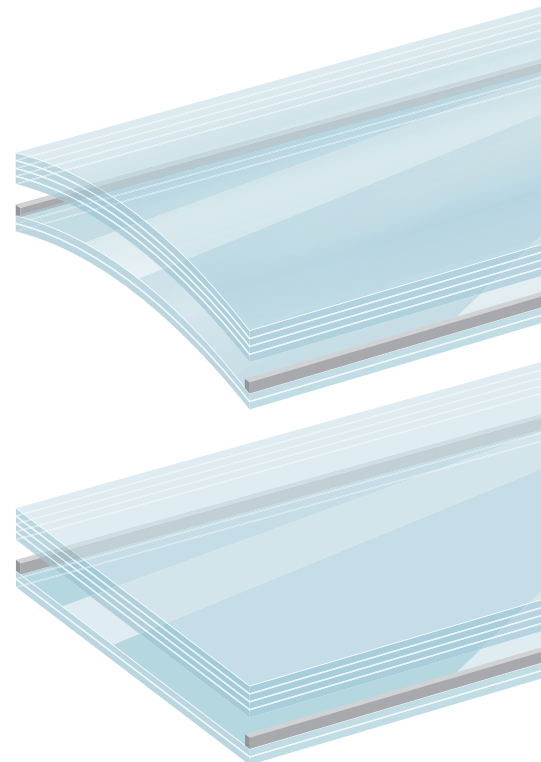
These specifications apply to certified standard structures.
Modified structures needed for structural reasons, for example,
may require a new ballistic test.

¹ including spacer



Example structure

sedak isosecure®:
double to quadruple insulating glass;
multi-layer glazing on request;
made of float or heat-strengthened glass;
in seven safety classes;
flat or curved;
available in formats up to 3.6 x 20 m.



sedak safety glass – ready for a burst of enthusiasm

Classified according to protective function, sedak secuprotect® can provide the following functions:

- suitability for foot traffic
- falling and fall-through resistance
- resistance to thrown objects
- resistance to manual attack
- bullet resistance
- blast resistance
- hurricane resistance

Testing levels according to DIN EN 1063 bullet-resistant glazing

To test the resistance sample panes are shot. The test is considered to have been passed successfully, if the bullet does not break through the glass. The suffix NS (no spall) stands for shatterproof protection.

Test level	Type of weapon	Calibre designation	Description of projectile type*	projectile mass in gramm/grain	Energie in joule / footpound
BR1 NS	long rifle	.22lr	L/RN	2.6/40	168/124
BR2 NS	handgun	9mm Luger	FMJ/RN/SC	8.0/124	689/508
BR3 NS	handgun	.357 Magnum	FMJ/CB/SC	10.2/158	943/696
BR4 NS	handgun	.44 Magnum	FMJ/FN/SC	15.6/240	1510/1114
BR5 NS	long rifle	5.56x45mm	FMJ/PB/SCP	4.0/62	1805/1332
BR6 NS	long rifle	7.62x51 mm	FMJ/PB/SC	9.5/147	3289/2426
BR7 NS	long rifle	7.62x51 mm	FMJ/PB/HC	9.6/148	3261/2405

Testing levels according to NATO AEP-55 STANAG 4569

Test level	Type of weapon	Calibre designation	Description of projectile type*	projectile mass in gramm/grain	Energie in joule / footpound
Level 3	long rifle	7.62x54 mm	FMJ/PB/HCI	10.4 / 160	3846/2837
Level 3	long rifle	7.62x51 mm	FMJ/PB/WC	8.4 / 130	3633/2680

*L = Lead, FMJ = Full Metal Jacket, RN = Round Nose, CB = Coned Bullet, FN = Flat Nose, PB = Pointed Bullet, SC = Soft Core, SCP = Soft Core with Steel Penetrator, HC = Hard Core, HCI = Hard Core with Incendiary, WC = Tungsten Carbide Core