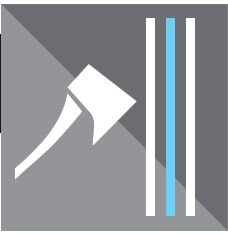


isophon^{GmbH}glas



| trisophon
SAFETY GLASS



TRISOPHON PROTECT / TRISOPHON ALARM PROTECT

Extreme attack resistance up to P8B with excellent optics and low element weight

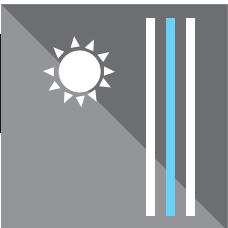
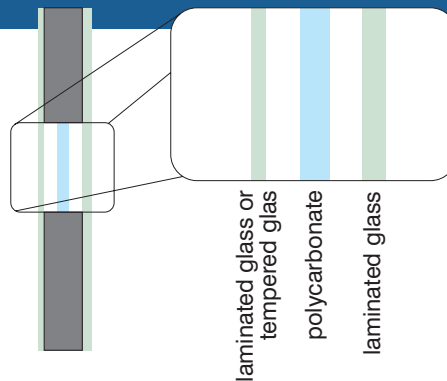
trisophon protect is the modular insulating glass system with highest attack resistance. The center pane is a practically invisible polycarbonate pane which absorbs kinetic energy over its entire surface and makes this system nearly impenetrable.

trisophon protect is extremely light with weights starting at 40 kg/m² as triple insulating glass with P8B attack resistance.

trisophon alarm protect is equipped with alarm glass and offers maximum security for high-end family homes, jewelry stores, galleries and anywhere else where exceptional protection is required.



- Attack resistance up to P8B
- Suitable for WK3/RC3 systems
- Low weight (40 kg/m²)
- High light transmission and color neutrality
- Unobtrusive appearance
- U_g-values down to 0.5 W/m²K possible



TRISOPHON SUN

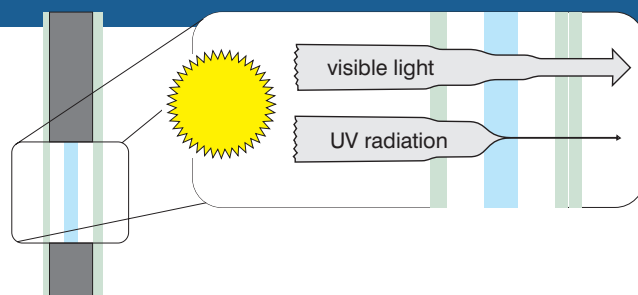
Custom tailored and optimized sun protection in combination with high security.

trisophon sun is the sun protection glass with maximum UV protection and modular combination options with regard to attack or bullet resistance. trisophon sun offers top notch sun protection. The specially extruded polycarbonate provides 100 % UV protection. Due to the fact that there is no lamination of the materials there is no problem with thermal stress resulting from the high absorption of the sun protection coating.

trisophon sun can be freely configured in order to meet highest security and sun protection requirements.



- 100 % UV protection
- Custom tailored sun protection can be combined with attack and bullet resistance
- Can be combined with thermal insulation
- Ideal for museums and galleries with high security requirements



TRISOPHON BULLET



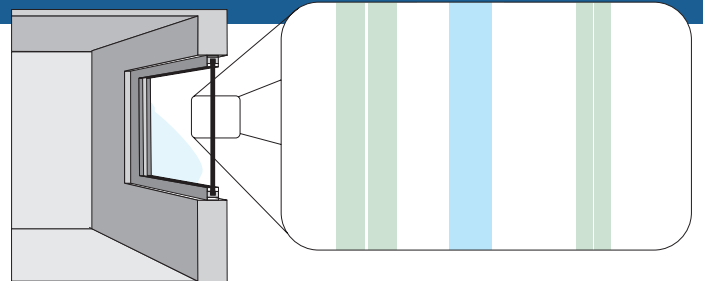
Extreme bullet resistance
with low element weight



Low weight, low element thickness and U_g values values down to to $0.5 \text{ W/m}^2\text{K}$: trisophon bullet combines these properties into an extraordinary product. The external laminated glass pane breaks up projectiles while the polycarbonate pane absorbs kinetic energy.

trisophon bullet is available with bullet resistance classes from BR3 NS to BR6 NS and always meets the highest attack resistance P8B. The absence of lamination results in a long service life and outstanding appearance.

- Extreme bullet resistance
- Attack resistance P8B for all systems
- Long service life
- Modular system
- Sun protection optional
- Very high thermal insulation and good sound protection



TRISOPHON SILENT



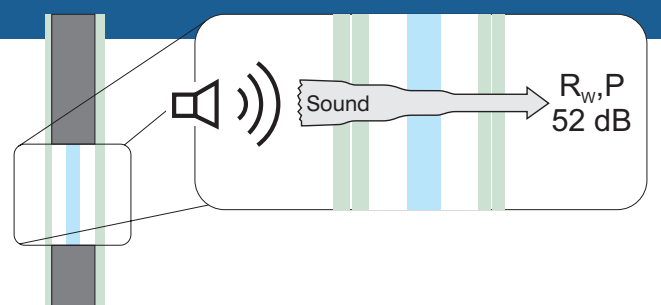
Sound insulation combined with
attack and bullet resistance

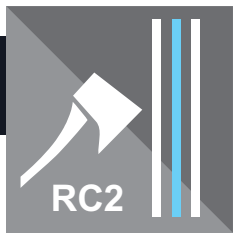


trisophon silent is a highly effective insulating glass system for noise protection combined with extreme extreme properties for attack resistance. Virtually impenetrable for break-ins with an axe or hammer, trisophon silent offers additional efficient noise protection.

The tested system is available in different versions from 38 - 52 dB. It always meets the P8B attack resistance and is also available with bullet resistance up to BR6NS.

- Noise protection up to 52 dB
- Attack resistance up to P8B
- Maximum UV protection, high light transmission and color neutrality
- Available with U_g values down to $0.5 \text{ W/m}^2\text{K}$



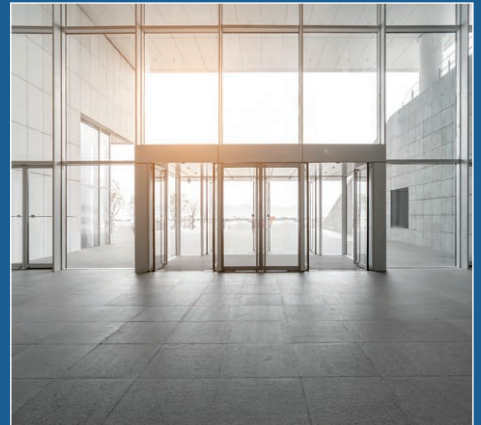


TRISOPHON PANIC PROTECT RC2

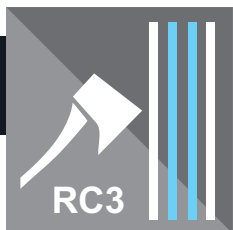
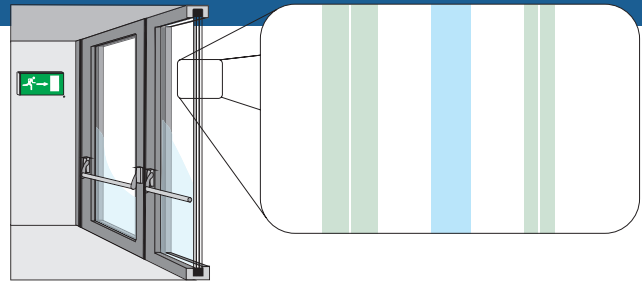
The compliant safety glass with polycarbonate for panic door requirements with RC2

DIN EN 1125 specifies doors with an anti-panic function in all public buildings. Often the use of 8 mm polycarbonate for the glazing is mandatory with respect to the fact that the fitting elements in these door systems make it very easy to open once the intruder can penetrate the glass.

trisophon panic protect RC 2 is an elegant solution for these requirements. In this triple safety insulating glass, an 8 mm polycarbonate pane is integrated as a floating middle pane, which drastically increases attack resistance.



- Attack resistance up to P8B, optimized for public buildings with RC 2 in accordance with DIN EN 1627/1630
- Suitable for WK2/RC2 panic doors
- Low weight, high thermal insulation, U_g values down to 0.5 W/m²K possible
- Can be combined with any solar and thermal insulation glass and also available as alarm glass



TRISOPHON PANIC PROTECT RC3

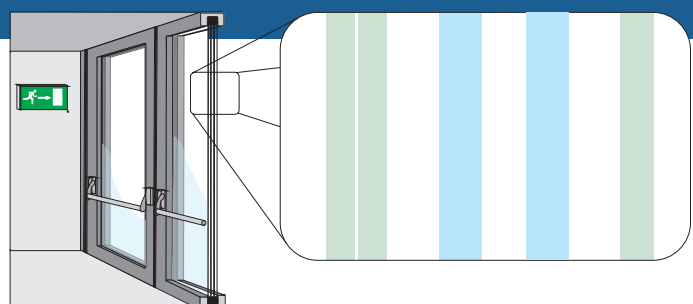
The safety glass with polycarbonate for resistance class RC 3

Resistance class RC 3 in accordance with DIN EN 1627/1630 is used for applications that require a "level of protection with increased requirements".

trisophon panic protect RC 3 is a 4-panel IGU with two 8 mm polycarbonate panes as middle panes.



- Resistance class RC 3
- Suitable for WK3/RC 3 panic door systems
- Low weight, high thermal insulation, U_g values down to 0.5 W/m²K possible
- Can be combined with any solar and thermal insulation glass and also available as alarm glass



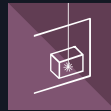
TECHNICAL DATA

	panic protect RC 2	panic protect RC 3	bullet BR3NS	bullet BR4NS	bullet BR6NS
Glass	Laminated Glass or Tempered glas / Laminated glass	Laminated Glass or Tempered glas / Laminated glass	Laminated Glass	Laminated Glass	Laminated Glass
Polycarbonate	1 x 8 mm	2 x 8 mm	1 x 8 mm	1 x 8 mm	2 x 8 mm
Thickness	42 mm	54 - 57 mm	52 mm	57,5 mm	97 mm
Weight / m²	40 kg	45 - 50 kg	50 kg	67 kg	125 kg
Ug-value (in standard version)	0.7 W/m ² K	0.7 W/m ² K (for all 4)	0.7 W/m ² K Arg 9 / 17 mm	0.7 W/m ² K Arg 9 / 17 mm	0.7 W/m ² K Arg 9 / 9 / 9 mm
Attack resistance DIN EN 356 / DIN 16272 x LowE, 2 x Argon, 11 mm	P6B - P8B / RC 2	P6B - P8B / RC 3	P6B - P8B / RC 2	P6B - P8B / RC 2	P6B - P8B / RC 2
Bullet proof DIN EN 1063	-	-	BR 3 NS	BR 4 NS	BR 6 NS
	silent 38 dB	silent 43 dB	silent 49 dB	silent 52 dB	
Glass	Laminated Glass	Laminated Glass	Laminated Glass	Laminated Glass	
Polycarbonate	1 x 8 mm	1 x 8 mm	1 x 8 mm	1 x 8 mm	
Thickness	42 mm	47 mm	51 mm	55 mm	
Weight / m²	40 kg	50 kg	60 kg	80 kg	
Ug-value 2 x LowE, 2 x Argon, 11 mm	0.7 W/m ² K	0.7 W/m ² K	0.7 W/m ² K	0.7 W/m ² K	
Attack resistance DIN EN 356 / DIN 16272 x LowE, 2 x Argon, 11 mm	P6B - P8B / RC 2	P6B - P8B / RC 2	P6B - P8B / RC 2	P6B - P8B / RC 2	
Sound protection	38 dB (-2; -6)	43 dB (-2; -6)	49 dB (-1; -6)	52 dB (-1; -5)	

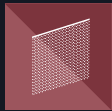
INNOVATIONEN



isodefend ALARM GLASS
IGU with alarm circuit



isophoton 3D VISIONS IN GLASS
One of the most advanced laser engraving facilities for glass



aequilux ILLUMINATED GLASS
Layer engraving for stunning effects in glass



isowall PARTITION WALL SYSTEMS
IGU Glass elements for partition walls



isoblinds IGU BLINDS SYSTEM
The unique insulating glass with integrated blinds



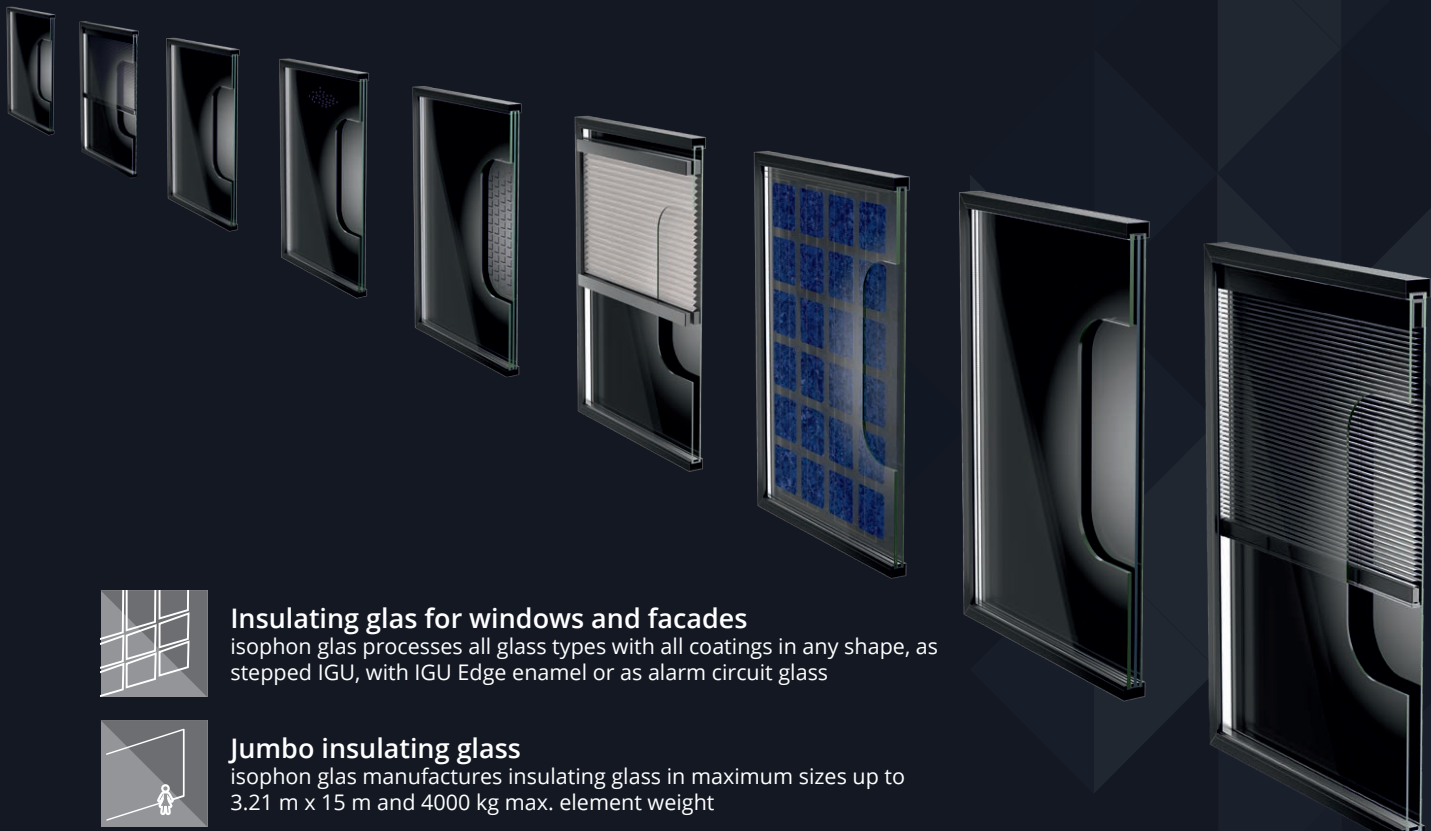
isoplix PLISSEE GLASS
The unique insulating glass with plisseé



isoCall+ RADIO GLASS
Extreme improvement of the radio wave transmission



isoPV+ PHOTOVOLTAIC GLASS
Insulating glass with outer panel as PV-module



Insulating glass for windows and facades
isophon glas processes all glass types with all coatings in any shape, as stepped IGU, with IGU Edge enamel or as alarm circuit glass



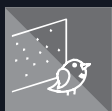
Jumbo insulating glass
isophon glas manufactures insulating glass in maximum sizes up to 3.21 m x 15 m and 4000 kg max. element weight



isophon logistics
We deliver to numerous locations in Germany in and vast parts of Europe with our in-house logistics team



isophon glass processing
Edge polishing, sandblasting, drilling, coating, bevelling, laser engraving and more including in-house tempering in-house heat-soak-test



Bird protection glass
We manufacture bird protection glass with all commercially available bird protection glass types with silk-screen printing, integrated palletes or isophon laser engraving

Further information about insulating glass with polycarbonate is available on the isophon glas homepage

