

STRATOBEL SECURITY AND THERMOBEL STRATOBEL SECURITY

Anti-burglary, bulletproof and
anti-explosion glass

AGC



Your Dreams, Our Challenge

AGC Glass Europe presents...

The challenges involved in protecting people and property have changed drastically. Nowadays, we want to enjoy safe public spaces and we want to feel secure wherever we are. To that end, AGC has developed products to provide security for highly glazed facades and other areas of building glazing **with thinner and lighter products**, combining new technologies and aesthetic features.

In this brochure, **AGC** presents security glass solutions **for single and double glazing units**. This new range features protective products capable of withstanding physical assaults from manual attack, bullet and blast and deliver solutions for every scenario. By using a complex assembly of glass and interlayers (multiple thick layers of glass and interlayers), our security glass provides maximum protection suitable for banks, retail outlets, airports, public spaces and even building facades.

Security glass featuring
a perfectly neutral appearance
and excellent light transmission
with Clearvision

By assembling **AGC Stratobel Security** with our Clearsight (anti-reflective glass) or our highly transparent Clearvision glass (low iron or highly transparent) you obtain maximum protection with a perfectly neutral appearance.

AGC's security glass range complies with all security standards levels as well as with architects' and designers' requirements. All our products are **CE-marked** in accordance with official standards.

... A more secure world






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Good to know : Which level of protection do you need?	– 05
Stratobel Security Burglary	– 06
Stratobel Security Bullet	– 08
Stratobel Security Explosion	– 10



Good to know

WHICH LEVEL OF PROTECTION DO YOU NEED?

	AGC brand name	Resistance against break-ins (complying with EN 356)
	Stratobel Stratobel Security Burglary	Classifications : ▶ From P1A to P5A → protection against small-scale of manual attack ▶ From P6B to P8B → very high level of protection against break-ins
	AGC brand name	Resistance against firearms & ammunitions (complying with EN 1063)
	Stratobel Security Bullet	Classifications : ▶ From BR1 to BR7 → resistance to firearms and ammunitions SG1 & SG2 → specific to shotgun munitions
	AGC brand name	Protection against the effects of explosion blast and projections of glass shards (complying with EN 13541)
	Stratobel Security Explosion	Classifications : ▶ From ER1 to ER4 → resistance against explosion blasts (classification level increases with the quantity of explosive material)

BR : Bullet Resistance
 SG : ShotGun
 ER : Explosion Resistance

S : Splitting = Risk of fragments of glass on the rear (protected) side
 NS : Non Splitting = No glass ejected on the rear side



Stratobel Security:
 Laminated safety glass with PVB interlayers

Thermobel Stratobel Security:
 Insulating glass unit with laminated safety glass



Our Security products are stamped with the «S» mark.
 It guarantees that your glass is certified Security.



Protection from break-ins

STRATOBEL SECURITY BURGLARY

Description

Stratobel Security Burglary is laminated glass that complies with European standard EN 356. It delivers high protection **against organised theft and manual attack** (levels P6B, P7B and P8B). For levels P1A to P5A, please see the Stratobel range.

Protection from break-ins

In the event of repeated and premeditated manual attack by perpetrators wielding a larger array of weapons, Stratobel Security Burglary can delay and prevent the break-in and theft of goods. Even if cracked, the glass remains in place and continues to act as a barrier.

Performance and availability

	Norms		Total thickness	Weight	Acoustics ⁽¹⁾	Light & Energy properties		Availability (single CS / mount IGU)*
	Break-in	Impact						
	EN 356	EN 12600						
			mm	kg/m ²	Rw (C;Ctr) (dB)	LT (%)	EA (%)	cm x cm
Stratobel Security Burglary 502-2	P6B	1B1	15	33	37 (-1;-4)	87	25	Max 600 x 321
Stratobel Security Burglary 103-7	P7B	1B1	21	45	39 (-1;-3)	86	29	Max 600 x 321
Stratobel Security Burglary 303-7	P8B	1B1	23	47	39 (-1;-3)	86	31	Max 600 x 321

*Single Cut Size / Max. surface available in Insulating Glass Unit

⁽¹⁾ These sound reduction indexes are estimated. These sound reduction indexes correspond to glazings which are 1,23 by 1,48 m². In-situ performances may vary according to the effective glazing dimensions, frame system, noise sources, etc. The accuracy of the given indexes is +/- 2 dB.

i Products listed above are available in **insulating glass units** (Thermobel) and in Clearvision (low iron glass).

Benefits

- ✓ Thinner solutions
- ✓ Very good optical quality due to high light transmission
- ✓ Excellent UV blocking performance
- ✓ For interior or exterior applications
- ✓ For single glazing or insulating glass units
- ✓ Safety can be combined with solar control, thermal insulation or acoustic insulation in a single product.

Applications

- ★ Residential: houses and apartments
- ★ Non-residential: offices, workshops, stores, jewellery shops, museums, schools, airports.

**Stratobel Security Burglary
provides maximum protection
suitable for banks, retail
outlets and similar.**





High bullet resistance

STRATOBEL SECURITY BULLET

Protection against Kalashnikov attacks



Description

Stratobel Security Bullet is laminated glass that complies with EN 1063. It delivers protection **against various kinds of weapons and ammunition.**

Bullet resistance

Stratobel Security Bullet delivers effective protection against different types of firearms. We have developed our products to guarantee security for people working in places where risks can occur and for people in public areas. Specific tests with real Kalashnikov gun have been performed in an official laboratory.

The appropriate structure should be selected on a case-by-case basis depending on the risks that might be encountered.

Bulletproof glass must be fitted in accordance with prevailing standards and regulations. Glazing must always be fitted into frames of an equivalent performance classification.

Insulating glazing

We offer a range of monolithic glass solutions. These monolithic glasses can be assembled into insulating glazing. For thinner solutions in double glazing, see **Thermobel Stratobel Security Bullet** solutions.

Performance and availability

STRATOBEL SECURITY BULLET (MONOLITIC)

= tests with Kalashnikov weapon or equivalent	Norms		Total thickness mm	Weight kg/m ²	Acoustics ⁽¹⁾ Rw (C;Ctr) (dB)	Light & Energy properties	
	Break-in	Bullets				LT (%)	EA (%)
	EN 356	EN 1063					
Stratobel Security Bullet 402-1-B	P3A-P4A	BR1-S	14	32	37 (-1;-4)	87	23
Stratobel Security Bullet 802-5-B	P3A-P4A	BR1-NS	18	42	39 (-1;-3)	86	26
Stratobel Security Bullet 902-7-B	P5A	BR2-S	19	43	39 (-1;-3)	86	28
Stratobel Security Bullet 104-1-B	P6B	BR2-NS	31	73	43 (-1;-3)	81	37
Stratobel Security Bullet 403-5-B	P6B	BR3-S	24	54	40 (-1;-3)	84	32
Stratobel Security Bullet 704-3-B	P6B	BR3-NS	37	88	45 (-1;-4)	79	40
Stratobel Security Bullet 004-8-B	P6B	BR4-S	30	67	42 (-1;-3)	83	36
Stratobel Security Bullet 304-6-B	P6B	BR4-S / SG1-S	32	75	43 (-1;-3)	81	38
Stratobel Security Bullet 106-1-B	P7B	BR4-NS	51	123	47 (-1;-4)	75	48
Stratobel Security Bullet 504-4-B	P8B	BR5-S / SG2-S	35	81	44 (-1;-5)	81	39
Stratobel Security Bullet 806-2-B	P7B	BR5-NS	58	141	47 (-1;-4)	72	51
Stratobel Security Bullet 905-9-B	P7B	BR6-S	49	116	47 (-1;-4)	76	47
Stratobel Security Bullet 408-1-B	P8B	BR6-NS	73	179	47 (-1;-4)	68	57
Stratobel Security Bullet 009-1-B	P8B	BR7-NS	80	188	47 (-1;-4)	67	59









More information about max. dimensions, processing possibilities and availability ?
Mail to Stratobel.Security@eu.agc.com

S : Splitting = Risk of fragments of glass on the rear (protected) side. / NS : Non Splitting = No glass ejected on the rear side.

Products listed above are also available in Clearvision, except for the 806-2-B and 408-1-B.

THERMOBEL STRATOBEL SECURITY BULLET (DOUBLE GLAZING)⁽²⁾

 = tests with Kalashnikov weapon or equivalent	Norms		Total thickness	Weight	Acoustics ⁽¹⁾	Light & Energy properties		
	Break-in	Bullets				LT (%)	EA (%)	Ug W/(m²K)
	EN 356	EN 1063	mm	kg/m²	Rw (C;Ctr) (dB)			
Therm. Strat. Security Bullet 9205-1-B ⁽²⁾	P6B	BR3-NS	49	93	44 (-1;-5)	72	47	1,4 ⁽²⁾
Therm. Strat. Security Bullet 1205-1-B ⁽²⁾	P5A	BR4-S	41	70	41 (-1;-4)	75	36	1,4 ⁽²⁾
Therm. Strat. Security Bullet 2207-1-B ⁽²⁾	P6B	BR4-S / SG1-S	62	113	47 (-1;-5)	70	43	1,1 ⁽²⁾
Therm. Strat. Security Bullet 6205-1-B ⁽²⁾	P5A	BR5-S	45	85	44 (-1;-5)	74	40	1,4 ⁽²⁾
Therm. Strat. Security Bullet 6206-2-B ⁽²⁾ 	P6B	BR4-NS / BR5-NS	56	111	45 (-1;-5)	70	49	1,4 ⁽²⁾
Therm. Strat. Security Bullet 4207-1-B ⁽²⁾ 	P8B	BR5-NS / SG2-S	64	127	45 (-1;-5)	68	53	1,4 ⁽²⁾
Therm. Strat. Security Bullet 7207-1-B ⁽²⁾	P6B	BR5-NS / SG1-NS	67	124	47 (-1;-5)	64	52	1,1 ⁽²⁾
Therm. Strat. Security Bullet 3206-1-B ⁽²⁾	P8B	BR6-S	53	100	45 (-1;-5)	71	44	1,3 ⁽²⁾
Therm. Strat. Security Bullet 4208-2-B ⁽²⁾ 	P6B	BR6-NS / SG2-NS	73	155	45 (-1;-5)	65	55	1,4 ⁽²⁾
Therm. Strat. Security Bullet 6208-1-B 	P8B	BR7-S / SG2-S	76	157	45 (-1;-5)	65	54	2,4
Therm. Strat. Security Bullet 8209-1-B 	P8B	BR7-NS	88	188	45 (-1;-5)	62	59	2,3



More information about max. dimensions, processing possibilities and availability ?

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Stratobel.Security@eu.agc.com

⁽¹⁾ These sound reduction indexes are estimated. These sound reduction indexes correspond to glazings which are 1,23 by 1,48 m². In-situ performances may vary according to the effective glazing dimensions, frame system, noise sources etc. The accuracy of the given indexes is +/- 2 dB.

⁽²⁾ These products include the low-e coating "iplus Top 1.1" and a filling with Argon 90%. On request, the thermal insulation can be improved down to a Ug value of 1.0 W/(m²K). The usage of other coatings is also possible.

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 Products listed above are also available in Clearvision, except for the 7207-1-B.

Benefits

- ✓ Thinner solutions
- ✓ Very good optical quality due to high light transmission
- ✓ Excellent UV blocking performance
- ✓ For interior or exterior applications
- ✓ For single glazing or insulating glass units
- ✓ Safety can be combined with solar control, thermal insulation or acoustic insulation in a single product.

Applications

- ★ Public areas (airports, train stations, shopping centres, offices, etc.)
- ★ Banks, cash transfer access areas, currency exchange offices
- ★ Museums
- ★ Police stations, prisons, etc.
- ★ Hotels
- ★ Munitions depots, armouries, ...
- ★ Security headquarters, embassies, consulates.





Effective protection against explosions

STRATOBEL SECURITY EXPLOSION

Description

Stratobel Security Explosion is high-performance laminated glazing designed to protect people from the impact of explosions: both the blast itself and the projection of glass shards. This range complies with EN 13541.

Levels ER1 to ER4: **resistance against explosion blasts**. The classification level increases with the quantity of explosive material.

**Thinner products
designed & certified
directly in IGU
matching facade needs**

Blast resistance

Stratobel Security Explosion provides effective protection against explosions. During an explosion, the glass is under enormous pressure and how the glass reacts can have a huge impact on people. By using Stratobel Security Explosion, you protect the people inside and near the building. The appropriate structure should be selected on a case-by-case basis depending on the risks that might be encountered (protection inside or outside the building).

Performance and availability

= tests with Kalashnikov weapon or equivalent	Norms		Total thickness mm	Weight kg/m ²	Acoustics ⁽¹⁾ Rw (C;Ctr) (dB)	Light & Energy properties	
	Break-in	Explosion				LT (%)	EA (%)
	EN 356	EN 13541				LT (%)	EA (%)
Stratobel Security Explosion 002-2-EX	P5A	ER1-S	10	22	35 (-1;-3)	89	20
Stratobel Security Explosion 602-5-EX	P3A-P4A	ER1-NS	16	37	38 (-1;-3)	86	25
Stratobel Security Explosion 902-2-EX	P6B	ER2-S	19	43	39 (-1;-3)	86	28
Stratobel Security Explosion 403-6-EX	P3A-P4A	ER2-NS	24	57	41 (-1;-3)	83	31
Stratobel Security Explosion 004-9-EX	P6B	ER3-S	30	67	42 (-1;-3)	83	36
Stratobel Security Bullet 504-4-B	P8B	ER4-S	35	81	44 (-1;-5)	81	39



More information about
max. dimensions, processing
possibilities and availability ?
Mail to
Stratobel.Security@eu.agc.com

S : Splitting = Fragments which could cause injury to individuals, risk of fragments of glass on the rear (protected) side
NS : Non Splitting = No fragments which could cause injury, no glass ejected on the rear side

⁽¹⁾ These sound reduction indexes are estimated. These sound reduction indexes correspond to glazings which are 1,23 by 1,48 m².
In-situ performances may vary according to the effective glazing dimensions, frame system, noise sources etc. The accuracy of the given indexes is +/- 2 dB.

Products listed above are also available in Clearvision.

Benefits

- ✓ Thinner and lighter products
- ✓ Security solution for facades
- ✓ IGU as complete certified products
- ✓ Good durability

Applications

- ★ Security headquarters, embassies, consulates
- ★ Public locations (airports, stations, etc.)
- ★ Stadiums

**Products available with
most popular AGC coatings**



Customised Stratobel Security Service

AGC can use special software to calculate the explosion resistance performance of any given glazing system, including the dimensions of the glazing. This service is called: **Stratobel Security 'On Demand'**. An explosion-resistant glazing system can be designed based on the level of protection desired. Please contact **your AGC sales representative**.

Security and more

The assembly of panes and interlayers encourages multiple applications. By combining products from AGC Glass Europe's vast range, it is possible to combine safety with other functions, such as solar control, thermal insulation and acoustic insulation in a single product.

The energy properties and light properties of Stratobel Security products can be calculated using the **AGC Glass configurator** for each particular glass composition and PVB structure.

This range offers a multitude of solutions for exterior and interior architectural projects.

Availability and sizes

All products in this range are available in a wide range of standard sizes and structures.

For more information, please email: **stratobel.security@eu.agc.com**

Warranty conditions of our laminated glass STRATOBEL can be downloaded on www.agc-yourglass.com

Installation instructions

For further details, please see the **Installation Guide**, which is available on request or on **www.agc-yourglass.com**.

Tested and validated products

Fully approved at CE level with all **certificates** and documents available from www.agc-yourglass.com.

Looking for **safety glass** with **polycarbonate**?

See Stratobel PC® on **www.agc-yourglass.com**.

Security and safety are among the most pressing issues of modern times. AGC offers solutions to help achieve a more secure world. Modern security glazing must rise to the new challenge we face: collective security.



AGC GLASS EUROPE, A EUROPEAN LEADER IN FLAT GLASS

Based in Louvain-la-Neuve (Belgium), AGC Glass Europe produces, processes and markets flat glass for the construction industry (external glazing and interior decoration), car manufacture and solar power applications. It is the European branch of AGC, the world's leading producer of flat glass. It has over 100 sites throughout Europe, from Spain to Russia.

For more information, please mail to: stratobel.security@eu.agc.com

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