



DESIGNED SECURITY

**PROTECTION AGAINST VANDALISM & BREAK-INS,
AS WELL AS PERSONAL PROTECTION
FOR ALL TYPES OF BUILDINGS**

Hammerglass in residential housing



US Airbase, Kuwait



Hammerglass Single applied to of church windows





THE COMPLETE CLASSIFIED SECURITY GLAZING SYSTEM

Hammerglass provides suitable protection in all environments where there is a risk of glass breakage, vandalism or burglary, explosions or shootings. A complete range of solutions for new build, re-glazing and add-on glazing with unbreakable glass panels.

SIMPLE

We have ready-made solutions that fit all types of windows and façades. Hammerglass can both be installed as interior and exterior protective glazing.

SECURE

Hammerglass provides protection against vandalism and break-ins, as well as personal safety against thrown objects, blasts and ballistics.

VALUE FOR MONEY

When building a new property or extending an existing one, the extra cost for installing Hammerglass is minimal compared to the added value. Even the cost of replacing existing glass with Hammerglass will be lower than the cost of a burglary - both in time and the inconvenience and distress caused.

ADVICE WHEN PLANNING

Bring us into the dialogue already at the planning stage to find the best protection alternative for the customer. Hammerglass AB offers customers confidential advice at the planning stage.

We provide technical support and are happy to work with architects and designers to produce proposals for functional solutions.

Our customers:

GOVERNMENT & PUBLIC AUTHORITIES

Embassies · Government buildings · Castles · Municipalities · Schools · Universities · Police stations · Courthouses · Prisons · Custodial facilities · Museums · Art centres · Churches · Arenas · Sports facilities · Zoos

HEALTH CARE

Hospitals · Mental health care institutions

HIGH RISK FACILITIES

Nuclear power stations · Military buildings

COMMERCIAL PROPERTIES

Shopping centres · Chain stores · Jewellers · Banks · Hotels · Offices · Gas stations

TRAVEL CENTRES

Train & Bus stations · Metro · Bus shelters

RESIDENTIAL

Apartment buildings · Villas



Burglary protection & Security Furnishings



Sliding doors, Stockholm Central Station



Protection against break-ins, Stockholm Castle



Protection against vandalism and break-ins for schools

UNBREAKABLE GLAZING SOLUTIONS

TESTED AND CERTIFIED PRODUCTS WITH WARRANTIES

Hammerglass® is a durable, optically clear polycarbonate sheet, 300 times stronger than glass – and virtually unbreakable.

Hammerglass® cannot be compared to standard polycarbonate (PC). Hammerglass® unique surface coating is resistant to most chemicals and provides 99.96% UV protection which prevents Hammerglass panes from clouding or becoming discoloured over time.

Hammerglass® does not contribute to the spreading of flames in the event of fire.

- 300 times stronger than regular glass
- Half the weight of regular glass
- Improved abrasion resistance
- Increased resistance against chemicals
- UV-resistance of 99.96%
- Non hygroscopic/no moisture ingress enables production of insulating glazing systems
- Higher gloss index than regular glass helps to ensure that dirt and dust can be washed off by the rain
- Good fire retardant qualities (self-extinguishing)
- Hammerglass® can be recycled
- Hammerglass® supplies tested and certified products with warranties
- All Hammerglass® products are marked with logo and serial number for traceability

HAMMERGLASS AB IN 1 MINUTE

Hammerglass AB's product development began in 1993, with the mission to reduce the ongoing costs of replacing broken glass.

Today the company consists of three main business areas: Property, Infrastructure and Automotive.

We supply our products to both European countries as well as selected overseas export markets with selected business areas.

Hammerglass is certified to ISO 9001, ISO 14001, and also as a 'Secured by Design' license holder.





PROTECTION AGAINST VANDALISM & BREAK-INS PERSONAL PROTECTION

The weakest point in most properties are the glass panes in doors and windows. If these glass panes are replaced with Hammerglass panes, the result will be a substantial increase in security.



HAMMERGLASS SINGLE AGAINST BURGLARY AND VANDALISM

Hammerglass Single is a lightweight and high security class system of re-glazing using existing sashes/frames. This single-glazing system is also suitable for old linked sashes in protected cultural buildings, including castles and churches. Installation will not compromise the existing architecture.

Hammerglass Single provides increased protection against burglary and vandalism, and is certified to EN 356 up to Security Class P8B (corresponds to Protection Class 3), the security class required by insurance companies for particularly exposed objects, such as goldsmiths, electronics companies and the like.

HAMMERGLASS INSULATE SECURITY CLASSIFIED GLAZING SYSTEM

Hammerglass Insulate is a high security grade and lightweight insulated glass system providing double or triple glazing. The unit can be made up with a glass of choice: Heat reducing, Low-E, laminated, privacy glass etc.

Hammerglass Insulate can be integrated into the existing fenestration. Over and above its resistance to burglary and vandalism, Hammerglass Insulates also provides personal protection when Hammerglass is installed as an inner pane.

Hammerglass Insulate also has excellent noise reduction properties and solar protection capability.

Hammerglass Insulate is also available with heat-reducing Hammerglass-IR, a lightly tinted Hammerglass which provides a heat reduction of 45%.

- Excellent noise reduction properties up to 37 dBRw
- Certified to EN 356, Security Class P8B
- Certified to Secured by Design, the British Police Standards for designing out crime
- 5 years full insulation glass warranty

HAMMERGLASS ADD-ON THE INVISIBLE SHUTTER

The Hammerglass Add-On System with profiles in cold-rolled steel plate has been installed on front of thousands of existing windows since 1994. This system for complementary glazing over existing windows is a discrete alternative to security grilles or roller shutters, as it does not advertise the fact that there is something in the property to be protected.

The profile in cold-rolled steel plate has no leverage points and therefore cannot be pulled away in an attempted break-in.

Hammerglass Add-On is available in a number of specifications for external or internal secondary glazing. When fitted internally Hammerglass Add-On also helps to provide effective personal protection, as the splinter-free Hammerglass panes prevent glass splinters from entering the room in case of an explosion.

Hammerglass Add-On is recommended by insurance companies as an alternative to anti-theft grilles and roller shutters.

- Protects against vandalism, break-ins and explosions
- Replaces grilles and roller shutters
- Burglar/vandal protection grade of Security Class P8B Personal protection/Explosion protection class EXR1/EXR2
- Recommended by insurance companies



BALLISTIC & EXPLOSION PROTECTION

In a changing world where gunfire, terrorist attacks, vandalism and burglary are increasingly becoming a part of everyday life, there is a growing need for advanced security products. In a powerful explosion, conventional glass panes will splinter even at a large distance from the explosion, often with serious splinter injuries as a consequence. In properties located in the immediate vicinity of the explosion even splinter-free panes will be forced in, despite being made from toughened or laminated glass.

BULLET RESISTANT GLASS

Hammerglass Ballistic Protection comprises unique, light-weight bullet-resistant solutions in the higher protection classes BR4-NS and BR6-NS (No Splinter), where laminated glass sheets are combined with a Hammerglass sheet to provide the lowest possible weight and thickness. Mounting in Hammerglass stainless steel bullet-proof reinforced partitions (Security Classes FB4 and FB6, EN 1522) provides complete protection against ballistic attacks. The ballistic resistance relates to both the glass and the accompanying frame. Our splinter-free solutions are extremely suitable for the protection of premises where threats may arise: Foreign embassies, national and local government offices, banks, media companies, VIP-residences, military establishments, nuclear power stations etc.

- **Bullet-resistant glass in Protection Class BR4-NS and BR6-NS (EN 1063)**
- **Reinforced stainless steel partitions, Security Class FB4/ FB6 (EN 1522)**
- **Thinner and lighter than comparable glass solutions**

We can provide you a comprehensive turnkey solution including risk analysis and security needs assessment.

COMBINED BARRIER AND EXPLOSION PROTECTION

Hammerglass Explosion Protection is a glazing solution compatible with the building façade, comprising a 12 mm Hammerglass glazing pane mounted in a sturdy steel frame. The steel frame holds the whole package in place even in a powerful explosion. This splinter-free solution is thinner - and weighs substantially less - than comparable solutions based on normal glass.

For stores in sensitive urban locations, this system provides effective barrier protection against break-ins, and at the same time offers explosion protection without the risk of fragmentation. Installation does not cause any visible damage to existing display windows, yet provides considerably higher security for personnel working in the shop.

- **Explosion tested safety glass**
- **Classification EXR1 and EXR2 (EN 13123/EN 13124-2)**
- **Unique splinter-free lightweight solutions**
- **Architecturally compatible steel frame holds glazing panes in position**
- **Protects against explosion, break-ins and vandalism**
- **Advice when planning**


We assist with the evaluation of façade requirements based on the threat level. From the basic data relating to existing windows and doors we produce a proposal for an appropriate level of protection.



SECURITY LEVEL

Need to eliminate the risk of broken glass, attempted break-ins or protect against glass splinters from explosions? The required safety level varies according to the nature of the threat. Our unbreakable glazing solutions include security and safety classes up to P8B (the highest security class for anti-burglar grilles/roller shutters) – as well as ballistic and explosion protection.

PERSONAL PROTECTION - VANDALISM - BREAK-INS (EN 12600/356)

	Class	Laminated glass Thickness - Weight	Hammerglass product Thickness - Weight
Personal Protection Security film	Class 3		SafeCoat Safe 400 Mil
	Class 2		SafeCoat Safe 400 Mil
	Class 1		SafeCoat Safe 700 Mil
Vandalism Smash-and-grab	P1A	-	SafeCoat 800 Mil
	P2A	-	SafeCoat 1200 Mil
	P3A	-	HmG 4 mm - 4.8 kg/m ²
	P4A	10 mm - 22 kg/m ²	HmG 4 mm - 4.8 kg/m ²
	P5A	10 mm - 22 kg/m ²	HmG 6 mm - 7.2 kg/m ²
Break-ins	P6B (Class 1 & 2)	12/15 mm - 30/38 kg/m ²	HmG 6 mm - 7.2 kg/m ²
	P7B (Class 3)	19 mm - 42 kg/m ²	HmG 6 mm - 7.2 kg/m ²
	P8B (Class 3)	21/24 mm - 43/54 kg/m ²	HmG 8/10 mm - 9.6/12.0 kg/m ²
	P8B (Class 3)	-	HmG Insulate 6 mm (HG6-12-4.41)

BALLISTIC PROTECTION (EN 1063)

Class	Weapon	Caliber	Distance	Velocity	Hammerglass product
BR1-NS	Handgun/ Rifle	.22 LR	10 m	360 m/s	HmG RABS 12 mm + 4 mm-
BR2	Handgun	9 mm x19 Parabellum	5 m	400 m/s	-
BR3	Handgun	.357 Magnum	5 m	430 m/s	-
BR4-NS	Handgun	.44 Magnum	5 m	440 m/s	HmG BR4NS 23 mm
BR5	Rifle	5.56x45 mm	10 m	950 m/s	-
BR6-NS	Rifle	7.62x51 mm	10 m	830 m/s	HmG BR6NS 39 mm
BR7	Rifle	7.62x51 mm	10 m	820 m/s	-

EXPLOSION PROTECTION (EN 13123/13124-2)

Class	Charge	Distance	Pressure P _{so}	Impulse I _{so}	Hammerglass product
EXR1	3 kg	5 m	0.75 bar	1.05 bar/ms	HmG 12 mm
EXR2	3 kg	3 m	2.3 bar	1.65 bar/ms	HmG 12 mm
EXR3	12 kg	5.5 m	1.7 bar	2.25 bar/ms	-
EXR4	12 kg	4 m	3.6 bar	3.00 bar/ms	-
EXR5	20 kg	4 m	6.3 bar	4.20 bar/ms	-





Façade glass with photo print & LED lightning



Colour-impregnated facade glass panels



DESIGNED SECURITY

There are unlimited applications for Hammerglass. Many of our special solutions have been produced in response to customers' requests or in close co-operation with the architect or property owners. With our internal design department and CNC milling to over six metres we are able to create proposals for new and innovative solutions. We welcome you to challenge us!

ROOFING

Innovative and secure roof solutions for both larger property complexes and individual private houses. The extremely hardwearing and smooth silicon oxide surface with which the Hammerglass sheets are coated helps to ensure that dirt and dust are in most cases washed off the roof structure by the action of rain.

FAÇADE GLASS

Clear, opal or colour-impregnated Hammerglass panels for lining façades, stairwells, corridor systems etc. The Hammerglass panels form a modern and effective protection against vandalism. For the removal of marker tags, graffiti or dirt most detergents can be used. For artistic effect the panels can also be supplied with motif printing and back lighting.

BALUSTRADES

Splinter-free balustrade solutions for terraces, balconies, stairs and landings which are equally suited to both public areas and private houses - a modern lightweight alternative with a combination of transparency and security for new installation or replacement of glass on existing balustrade structures. Our unclimbable systems satisfy the child safety requirement specifying no openings larger than 100 mm. Rounded corners and bevelled edges eliminate the risk of cut injuries.

Choose between clear Hammerglass sheets, offering a clear view of the surroundings, and an opalescent version

for increased privacy. The Hammerglass panels can also be coloured or printed. Photos can be laminated between two Hammerglass panels, to be protected against vandalism and the sun's UV rays.

UNBREAKABLE MIRRORS

Unbreakable mirrors in Hammerglass reduce the costs caused by damage or vandalism, and increase personal safety in those environments where they are installed. Hammerglass Mirror Glass is recommended for public washrooms, changing rooms, sports facilities, lifts, prisons, psychiatric wards and the like.

SECURITY FURNISHINGS

Complete bespoke store fittings and security solutions for counters and cabinets in jewellery stores, museums, churches etc. The Hammerglass sheets are installed in the existing cabinet structure, or fixing solutions can be tailored to suit the project.

We also offer security entrance doors in Hammerglass for controlled customer flow in and out of retail premises. The entrance options are designed to suit the physical requirements of the current premises, and can also be integrated into small spaces. An investment in a safer working environment that benefits both customers and staff.



INFRASTRUCTURE

TRAVEL CENTRES · NOISE REDUCTION · BUS SHELTERS · PEDESTRIAN TUNNELS
BRIDGES · ROOFING · PROTECTIVE SHIELDS · WALL COPING · BALUSTRADES · MEDIA

PROPERTY

WINDOWS & DOORS · BALLISTIC PROTECTION · EXPLOSION PROTECTION · ROOFING
BALUSTRADES · SECURITY FURNISHINGS · ELECTRONICS PROTECTION · MIRRORS

AUTOMOTIVE

SAFETY SCREENS · EXPLOSION TESTED SCREENS · SACRIFICIAL SCREENS
SACRIFICIAL FILM · HEAT REDUCING SCREENS · BULLET PROOF SCREENS
EMERGENCY VEHICLES



Secured by Design



Secured by Design Licence Holder

Hammerglass® is a nano technology coated polycarbonate sheet, 300 times stronger than glass and virtually unbreakable. The surface treatment renders Hammerglass® resistant to most chemicals. Detergents can be used to clean up graffiti, marker tags or dirt, without the Hammerglass panels being damaged. The surface treatment also provides 99.96% UV protection, which means that the material will not cloud, discolour or undergo any other change in optical quality over time. Hammerglass® does not contribute to the spreading of flames in the event of fire.



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