



No more broken windows!

 **hammerglass®**

From mach 2 to McDonalds

Few glass surfaces have to endure as much punishment as the canopy of a fighter jet. Extreme variations in pressure and temperature, not to mention the risk of flying into a flock of unsuspecting Canada geese, is why only one material is even considered: polycarbonate. Ordinary glass is simply not strong enough.

With the introduction of Hammerglass, the amazing properties of polycarbonate is now also available down on the ground – to the delight of all of us who have grown tired of replacing broken windows. Since a Hammerglass-window is almost impossible to break, big savings can be made in places like gas stations, boutiques, restaurants, schools and everywhere else where windows are often broken by burglars or vandals.

Thanks to a special coating, Hammerglass is almost as scratch resistant as ordinary glass. Graffiti can be removed using solvents. The new coating has also solved the only real drawback of the first generation of polycarbonate – where the material went slightly cloudy over time. We sold our first Hammerglass window over ten years ago, and it is still as clear as the day we installed it. Not to mention unbroken...





Unbreakable Hammergeglass is available in three versions that cover most requirements

Hammergeglass Insulate

Patented Insulated glazing system with unbreakable outer pane.



Hammergeglass Insulate is a patented insulated glazing system available as double or triple glazing with a Hammergeglass outer pane. Normally polycarbonate is not used in insulated glazing systems since the material is not 100% diffusion proof. Using our patented technology, we have overcome the problem of vapour in the dead space between the layers. We are alone in being able to deliver an unbreakable insulated glazing system with the same guarantees as given by the rest of the industry. Apart from its ability to withstand burglary and vandalising attempts, Hammergeglass Insulate also has excellent sound reduction properties and a low U-factor. It can even be ordered with solar film already installed. But perhaps the biggest advantage of Hammergeglass Insulate is that it is easily integrated into any facade system.

Hammergeglass Add-On

Patented profile system for add-on glazing with unbreakable glass.



Hammergeglass Add-On is our patented profile system for external or internal glazing with unbreakable glass. The system is mounted on ordinary windows, fixed as well as opening, glass-sections and doors, where existing glass needs protection against burglars and vandals. The system is available in 180 RAL colours.

Hammergeglass Add-On discourages burglars and vandals and the installation can be done without any damage to the existing architecture. The profile protects and strengthens existing wooden frames, which means lower maintenance costs. The system also gives a noise reduction of 30dB Rw. Furthermore, the system saves energy and improves the U-factor.

Hammergeglass Single

For replacement glazing (reglazing) with unbreakable glass in existing sashes/frames.



Hammergeglass Single is a single pane of Hammergeglass available in various thicknesses for reglazing in existing sashes/frames in e.g. older coupled sashes, Landmark buildings etc. The installation can be done without any damage to the existing architecture. The system saves energy and improves the U-factor. A further benefit is a noise reduction of 30dB Rw.

When used in a single glass window or in coupled sashes, the outer or inner pane is exchanged for Hammergeglass Single. Fastening in existing sashes is done with a special silicone because of the special scratch resistant coating on Hammergeglass panes.

Guarantees and certifications

We offer a unique 5 year insulated glazing guarantee and a five year guarantee on the glazing material. Guarantee times for other materials and installations are in accordance with the industry recognized guarantee conditions of AB 92. For security classes and other certifications, see www.hammergeglass.se

Ideal as protection against burglars...



How to prevent break-ins, is really a question of buying time. If the thief feels that his break-in attempt is taking too long, he will probably abort the attempt. Or refrain from trying altogether. The weakest link in the security of most buildings are the windows and doors with window sections. If these windows are exchanged for Hammergeass, the security levels are elevated quite substantially. The incredible strength of Hammergeass makes it very hard to penetrate.

With Hammergeass there is no need for unsightly barred windows or shutters in order to stop burglars or vandals. Your window displays can be appreciated at all hours.



...unbeatable at stopping vandals.



*Watch us try to break
a Hammerglass-window
on our web page!*

Few things are as depressing as replacing a window, only to have it broken again two weeks later. With Hammerglass you can break this vicious circle. Hammerglass-windows are able to absorb incredible amounts of force. It's impossible to kick in a Hammerglass window. A baseball bat hardly makes a dent. Even a pavement stone, thrown with full force, won't shatter a Hammerglass window!

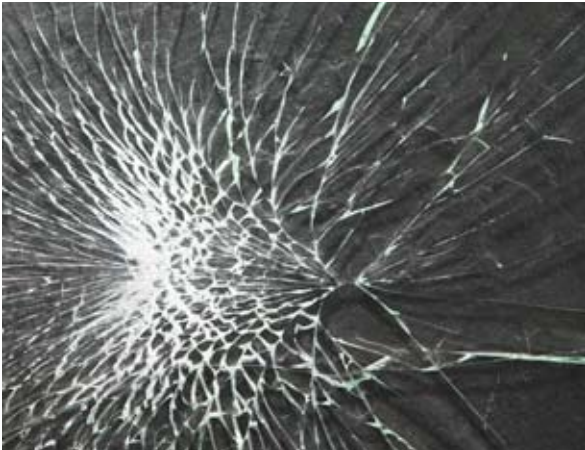
Frequent replacing of windows in exposed environments can be a costly affair. A Hammerglass window with the same measurements as in the example to the right, costs about SEK 9,500. That extra cost is quickly recouped. An equivalent installation with a tempered outer window pane costs about SEK 7,500. A laminated window costs about SEK 8,500.

A cost and time estimate for one broken shop window (2 m² double paned insulating float glass window):

Security company	1,000
New window	5,000
Installation	500
Total	SEK 6,500
Discussions	approx. 1h
Inventory	approx. 2h
Damage and police report	approx. 1h
Clean up time	approx. 1h
Total	5h

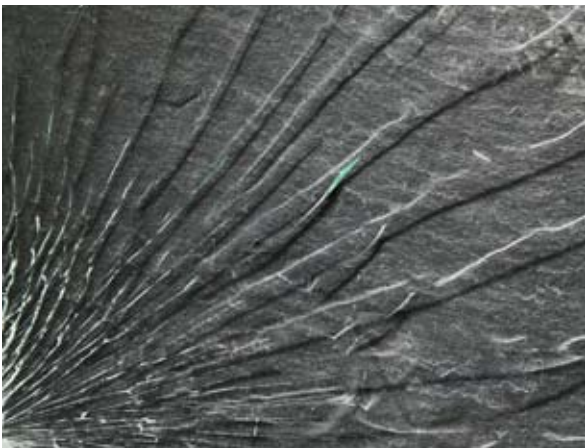
How does Hammerglass stack up against other types of glass materials?

There are many types of glass materials marketed as "Safety glass" or "Security glass":



Safety glass

Ordinary float (annealed) glass can be laminated on one or both sides with a safety window film. This is an easy and cost effective way of making float glass somewhat more impact resistant. But the main benefit of safety film is that it prevents sharp shards of glass being thrown around if the window breaks. Safety film can be applied to already installed windows. On the other hand, the film does not make the glass in itself very much stronger. It is still quite easily broken, and will have to be replaced (and new film applied).



Laminated glass

Laminated glass is a composite of two or more sheets of glass with an intermediate layer of transparent plastic or resin. It is sometimes called shatterproof glass. Laminated glass can be made very thick. This, together with the tough intermediate layers, can make it very hard to penetrate, even bullet proof if sufficiently thick. However, laminated window panes are very expensive, not to mention difficult to install. But the biggest drawback is that laminated glass – as apposed to Hammerglass – is easily cracked (even though it doesn't shatter). This makes for an expensive material if used in exposed environments.



Tempered glass

Tempered glass (sometimes called toughened glass) is up to five times stronger than ordinary float glass, but when it breaks it does so into countless thumbnail sized pieces, as anyone who has ever dropped a Duralex glass knows. However, the pieces have no sharp edges, which is why tempered glass is used for side windows in cars. Among the benefits of tempered glass is that it is comparatively inexpensive and easily installed. The downside is that it has to be made to measure, as tempered glass is very hard to cut, which leads to long delivery times. Furthermore, tempered glass is not very impact resistant. A light tap with a pointed object is often enough to shatter the pane.

Butik 13

Butik 13 is located in the middle of Helsingborg's night club district, which led to a large number of broken windows during the small hours. A decision was taken to try a Hammerglass window. 8 years later, the same window still sits proudly where we installed it.



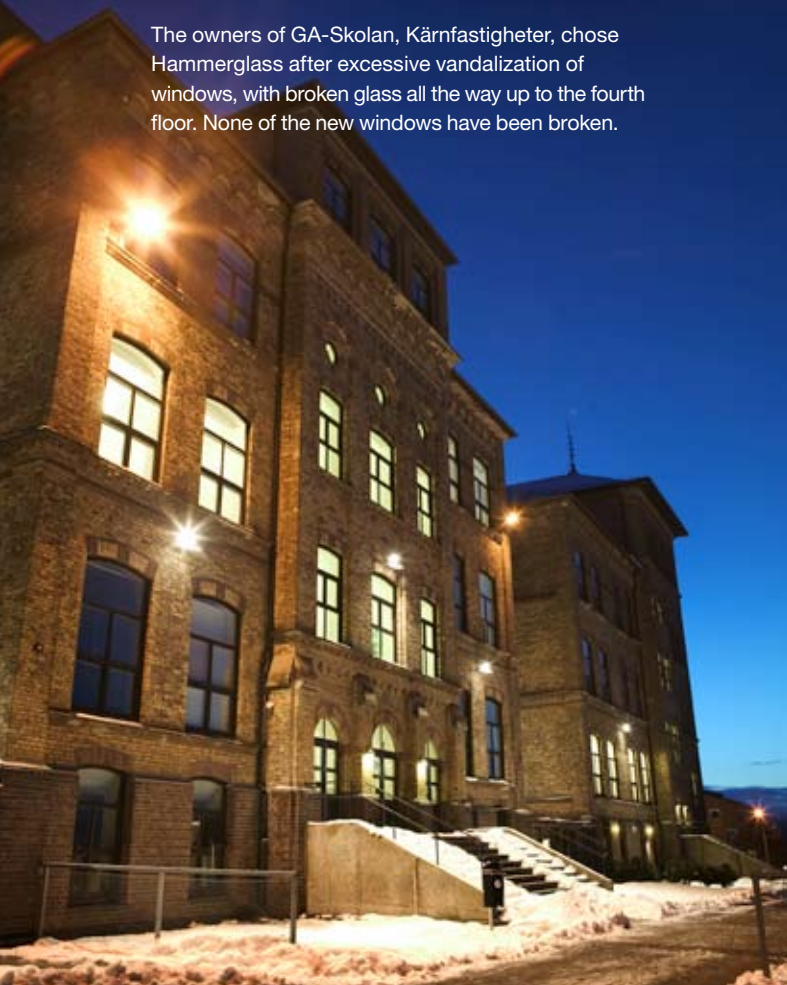
Kavalleristen

Since the installation of Hammerglass windows in the office building development Kavalleristen, there have been no more burglaries.



GA-Skolan

The owners of GA-Skolan, Kärnfastigheter, chose Hammerglass after excessive vandalization of windows, with broken glass all the way up to the fourth floor. None of the new windows have been broken.



HD

At the headquarters of Helsingborg's Dagblad, the windows have been changed for Hammerglass with very satisfactory results.



Hammerglass is sold only through licensed retailers that offer the full spectrum of services from consultation to comprehensive quality installations. Installations are exclusively done by fitters who have completed our extensive training programme. **Turn with confidence to:**

