

## INFRASTRUCTURE

TRAVEL CENTRES · NOISE BARRIERS · 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



*Hammerglass® is a nano technology coated polycarbonate sheet, 300 times stronger than glass and virtually unbreakable. The extremely hard, smooth surface makes it easy to remove graffiti and also helps to prevent pollutants from exhaust fumes, oil and asphalt from adhering to Hammerglass® as easily as to ordinary glass. 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.*



**CE-MARKED  
NOISE BARRIERS**

**FOR ROAD, BRIDGE & RAILWAY**



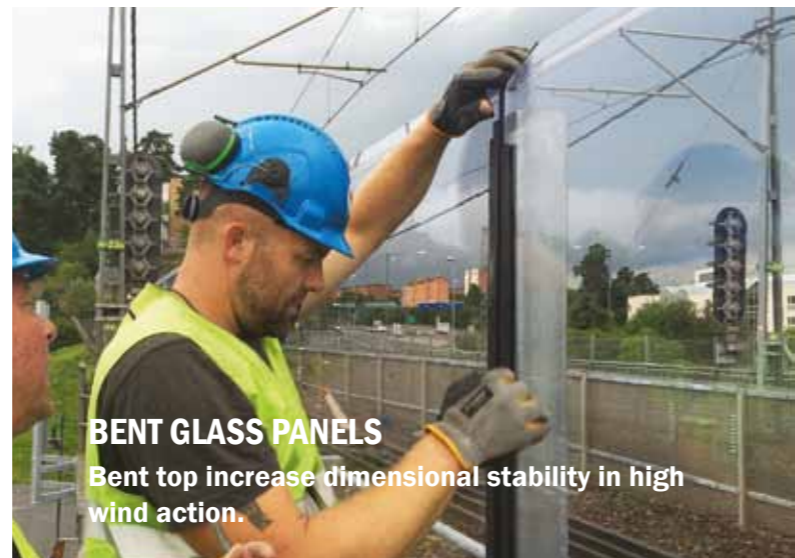
### SYSTEM GROUND-2 ON WALL

Length 750 m, height 2-6 m, a total of 40 tons Hammerglass. Leaf pattern to prevent birds from flying into the screens, as well as custom-made prints for Kalmar city.



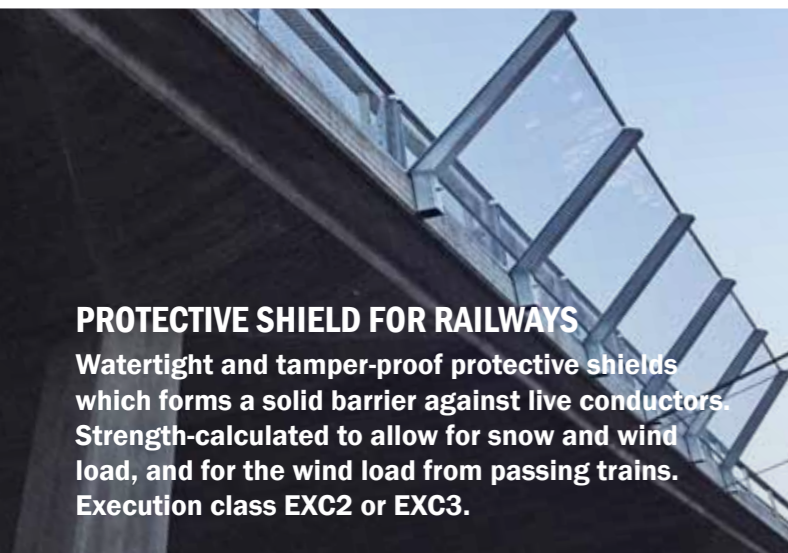
### SYSTEM GROUND-2

Buried panels in order to prevent the transmission of noise beneath the barrier.



### BENT GLASS PANELS

Bent top increase dimensional stability in high wind action.



### PROTECTIVE SHIELD FOR RAILWAYS

Watertight and tamper-proof protective shields which forms a solid barrier against live conductors. Strength-calculated to allow for snow and wind load, and for the wind load from passing trains. Execution class EXC2 or EXC3.



### HAMMERFOAM NOISE ABSORBENT

The Hammerglass panel supplies a noise reduction of 34 dBRw. Hammerfoam Noise Absorbent adds another 10,1 dB LAeq.

# TRANSPARENT NOISE BARRIERS



CE-marked noise attenuation solutions for roads, bridges and railways. Both the low weight and the hard surface of Hammerglass makes it a popular choice not only for new projects but also for glass replacement.

## POSTS AND FITTING SYSTEM

Hammerglass Noise Reduction systems fit most of the market's existing posts and fittings. We also provide custom systems in galvanised steel. The posts can be attached to railings terminals or onto walls. The Hammerglass panels are clamped between an HFRHS post and a robust clamping profile, and then secured with wire or bolt mountings. Before the panels are cut, each compartment is individually measured, allowing the production of screens that follow the ground level (trapezoid). Consequently, the noise reduction barrier does not need to be stepped when there are changes in ground level.

## NOISE REDUCTION

Hammerglass	12 mm	34 dBRw, 30 DL <sub>r</sub>
Hammerglass	15 mm	35 dBRw
Hammerglass	17 mm	36 dBRw

## BENT GLASS PANELS

In order to increase dimensional stability in high wind action, it is possible to bend the top of the Hammerglass panels at a sharp angle. The inverted bent top of the screen also contributes to effective reduction of low frequency noise from trains etc. Additionally: Along railways, U-profiles in steel cannot be used as supporting elements, as in case they are struck by a power line, the whole barrier can become an electrical conductor.

## SCREEN PRINTING

The panels can be screen printed before they are coated with silicon oxide. The printing usually consists of patterns to prevent birds from flying into the screens. The technology also allows for printing in 4 colours for artistic decorations. The Hammerglass sheets may also be supplied in opal, or fully coloured.

## SOUND SIMULATION ON THE WEBSITE

How high should a noise screen be? The effect of a noise screen depends on:

- Screen height
- Speed of passing vehicles
- How far from the road the listener is situated

Chalmers University of Technology has based their noise reduction simulator at different screen heights on the Harmonoise model, simulating different distances from the road and varying vehicle speeds. The simulator is used to provide a preview of the final solution. You can try out the sound simulation at [www.hammerglass.com](http://www.hammerglass.com)

## SYSTEM GROUND-2

A complete CE-marked system using bolt groups for installation in the ground or onto walls, along roads or railways. When installed with bolt groups in the ground it is advisable to bury the panels to a depth of about 20 cm in order to prevent the transmission of noise beneath the barrier. Can be supplied up to a height of 6 metres.

## SYSTEM BRIDGE-2

A complete system for mounting onto bridge posts along roads or railways. Installation is carried out from the inside of the bridge.

## SYSTEM BRIDGE-3

A complete CE-marked system for mounting onto bridge to the side of the bridge edge girder along roads or railways. Normally the screen is angled outwards to maintain the working width of the road barrier. Can be supplied up to a height of 6 metres.

## HAMMERFOAM NOISE ABSORBENT

A complete CE-marked system for installing on bridges or walls along roads or railways. The system is based on a fully assembled Hammerglass Ground or Bridge solution and is supplemented by a highly absorbent mat which is fitted on that side facing the railway track or the carriageway. The Hammerglass panel supplies a noise reduction of 34 dBRw. Hammerfoam Noise Absorbent adds another 10,1 dB LAeq.

## ADVICE DURING CONSTRUCTION

Bring us into the dialogue already at the idea stage. Our engineers can assist with design suggestions, 3D models, strength calculations and finished dwg drawings. We are happy to tender on complete projects: Hammerglass cut to measure, posts, mounting systems and installation.

## DRAFT REGULATORY TEXT

*"The noise reducing screen shall be made from... (CE-marked)... 12 mm chemically resistant (withstand acetone) hard-coated and at least 99.96% UV resistant polycarbonate, type Hammerglass, mounted in galvanised posts, type Hammerglass System... /Ground-2... /Bridge-2... /Bridge-3... /."*

- 300 times stronger than glass - No glass breakage
- Half the glass weight
- Clear view of the surroundings
- Minimal maintenance - Estimated service life >40 years