

More brightness. High visibility.

Transparent noise protection
with Soundgard TOP®.



K O H L H A U E R



Guaranteed.

Soundgard TOP® panels have an outstanding resistance to atmospheric corrosion, which guarantees impact resistance even after years. Even before their market launch in 1993, the panels were subjected to intensive testing methods. The panels are equipped with a 10-years guarantee for non-fragility and optical properties. With Kohlhauer, a guarantee for screen printing and coating comes as standard.

Properties	Test Conditions	Target Value	Unit
Physical			
Density		1.2	g/cm ²
Humidity absorption	23° C/50 % r.F.	0.15	%
Mechanical			
Yield stress		>60	MPa
Tensile strength		>60	MPa
Elongation at break		>70	%
Modulus of elasticity		2400	MPa
Threshold bending stress		ca. 90	MPa
Impact strength	Charpy without notch	w/o break	kJ/m ²
Thermal			
Vicat refractory deformation temperature Method B ₅₀		148	° C
Therm. coefficient of expansion		0.065	mm/m ° C
Thermal stability	Heat deform. A: 1,80 MPA	127	° C
	Heat deform. B: 0,54 MPA	139	° C
Light transmission in %	Soundgard TOP® 12 mm		81 %
Light transmission in %	Soundgard TOP® 15 mm		79 %
Fire behaviour	Oxygen index DIN 4102	28 %	B ₂



Due to the fact that Soundgard TOP® panels can be used in a variety of ways and are available in different material thicknesses and dimensions, they are just as suitable for noise protection projects along roads and railways as they are for the use as splash guard, rails covering or climb-over protection.

Furthermore, they can be used in a combination with other materials, including opaque, and processed with a number of support/frame systems. The use for transparent, absorbing/highly absorbing applications is also ensured, e.g. with the Clearwall® system developed by Kohlhauer.



All dangers averted.

As a basic material for transparent noise protection, plastics like polycarbonate prove to be extremely economic, safe and highly suitable for aesthetically demanding solutions. Maintenance and repair efforts as well as insurance damages are drastically reduced.



Top image:
240 kg ball dropped from a height of 6.4 m
to an aged panel

Bottom image:
Soundgard TOP® after accident

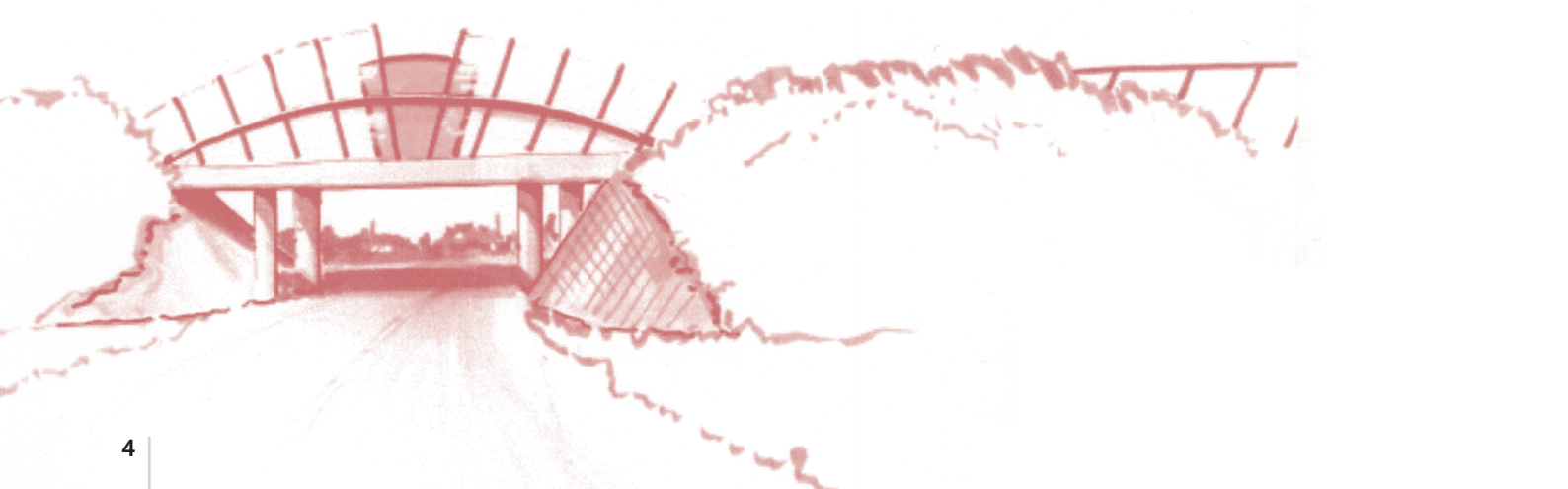
Stone impact resistance.

Soundgard TOP® panels from Kohlhauser® are "lightweights" made from polycarbonate but have an impact resistance that is 250 times higher than silicate glass and 20 times higher than Plexiglas. This means that these panels are unbreakable and shatterproof.

Their verified bolt resistance or resistance against stone throwing has also been proven in numerous safety glazings. Vandalism is thus not given any chance. Furthermore, the danger of injury on impact and replacement and maintenance works is diminished.

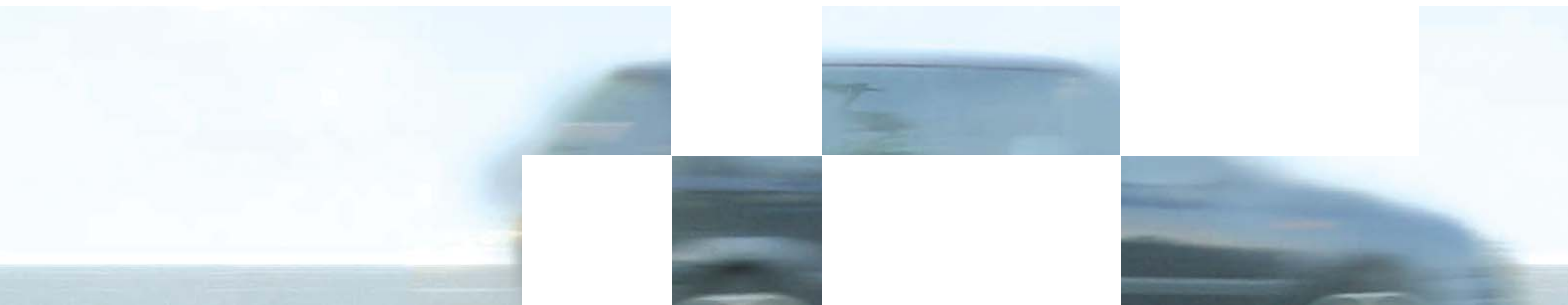
Sound absorption.

Sound absorption according to ZTV-Lsw, Section 7.2.1 in connection with DIN 522210 has been confirmed by a recognised German institute. With a wall thickness of 12 mm, there is an absorption of 29 dB at a specific gravity of 14.40 kg/m². The further development of the 15 mm wall thickness offers a corresponding reserve at best visual characteristics.



The outstanding features at a glance:

Impact resisting, protected against vandalism
Temperature-resistant from -40 to + 120° C
Light transmission from 76 to 92 % (depends on thickness)
Highly resistant against solar radiation and climatic influences
Resistant against abrasion and chemicals
Graffiti and bonding can be removed without problems
Customer-related surface qualities
Material thickness up to 15 mm
Desired colours can also be delivered with small quantities.
Frame solution
Project-related advice/customer solutions



Flame retardant.

Soundgard TOP® sound insulation elements meet the requirements of European fire protection regulations, including ZTV-Lsw, Section 7.2.6. They are naturally flame retardant and have a very high ignition point. Flame propagation is restricted, thus preventing knock-on fires or a spread of fire to neighbouring areas.

Tested resilience.

The resistance of the subsurface against chemical cleaning agents (graffiti cleaner) has been tested according to EN ISO 2812-1:1994. After usual cleaning intervals, as well as after a 4-hour sprinkling of the panels, no changes of the surface structure could be detected. Nor did the shine and roughness readings show any indications of significant changes. (Performance test in Dr. Kupfer's laboratory; test certificate can be obtained upon request)

Surface refined.

Due to the customer-specific abrasion-resistant surface refinement on both sides, Soundgard TOP® panels are resistant against deicing salt, fertilizers, fuels and oils, dirt, nitro containing paints and cleaners. This means that graffiti, posters and glue residues can be removed without any problems. Bird protection patterns are applied underneath the KASI®* surface before final coating. With the new KASI®* coatings, which prevent paints from sticking, ensure that graffiti is a thing of the past.

* Registered trademark of



The Technology

The dual technique developed by Kohlauer offers the double benefit of UV-protected, co-extruded polycarbonate types with screen-printing patterns and an additional UV- and weather protection. This specific surface technique can be customised, e.g. with regard to properties like abrasion, colour, self-cleaning and anti graffiti. Just get into contact with us!



Systems and workmanship.

In order to offer installers reliable products that are easy to mount in terms of workmanship and quick processing, Kohlauer, apart from screen printing, coating and panel processing, pre-fabricates the frames in the plant, including all seals, rope protections and so on.

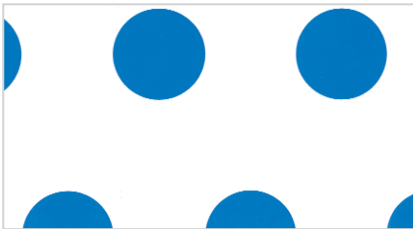
Approvals.

Naturally, Soundgard TOP® fulfils the criteria of ZTV-Lsw with regard to rockfall, fire, sound insulation, wind load as well as tension and heat.

Special paint systems.

Special paint systems (self-cleaning) on the basis of photocatalytic self-cleaning by means of titandioxide prevent the sheet of glass from dirt, particularly with regard to splashguard and site covering areas up to the height of handrails

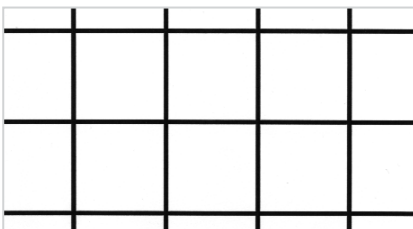
Common bird protection pattern variants:



40/60/40



2/30/2

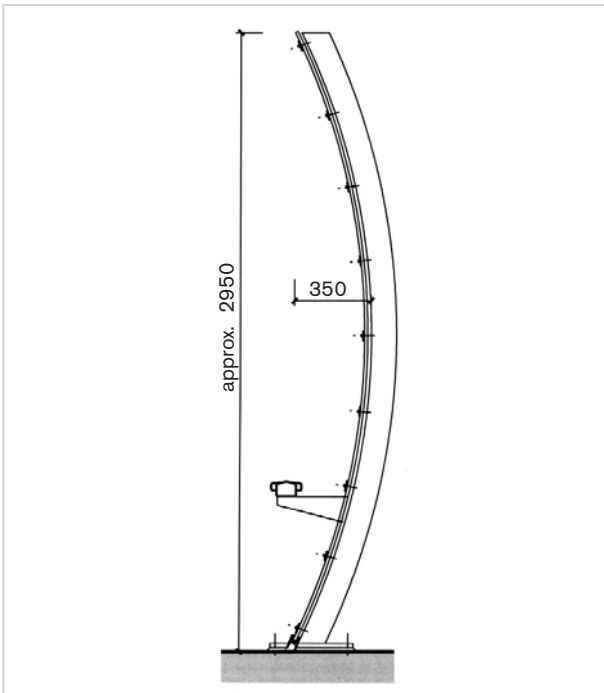


30/2/30



10/20/10

Various bird protection patterns are applied underneath the surface, using the screen-printing procedure. In this way, they are protected against environmental impacts and also withstand graffiti cleaning agents. Colours can be freely selected according to RAL, providing the planner with scope for visual effects. Further samples on request.



Curved.

Soundgard ST panels that are bent in cold condition bring the bend edge to the sound source and increase the panel stiffness at reduced thickness.



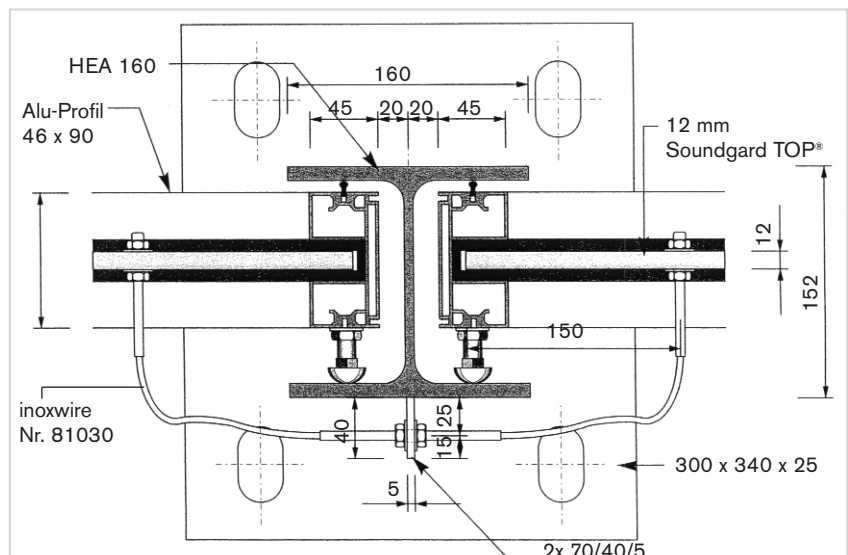
Bevelled.

By means of bevels, three-side enclosures without top edge profiles can be realised. Due to the bevel, residents will visually perceive the sound insulation wall to be lower.



Well advised, well planned.

Due to its wide product range, Kohlhauer has the suitable system solution available for every customer. By providing competent support in pre-planning, developing parts lists and reliable logistics up to the site, Kohlhauer is the chosen partner among noise protection processors for efficient and practically oriented projects.



The Kohlhauer® product range includes:

Transparent noise protection

- Clearwall®
- Soundgard TOP®
- Kohlhauer® Clearview
- Plexiglas Soundstop® GS CC

Systems

- Frames
- Posts
- Accessories

Processing

- Sawing
- Drilling
- Deformation

Long-term noise protection

- Plantable, recyclable
- Silicate-laminated glass
- RockDelta® Green
- Other developments

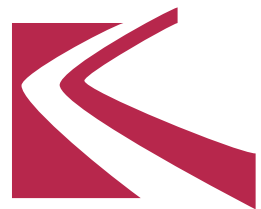
Photovoltaic integrations

- Opaque
- Semi-transparent
- Bifacial (two-sides)

Other information

- Coatings
- Cleaning
- Maintenance contract

Licence partners:



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