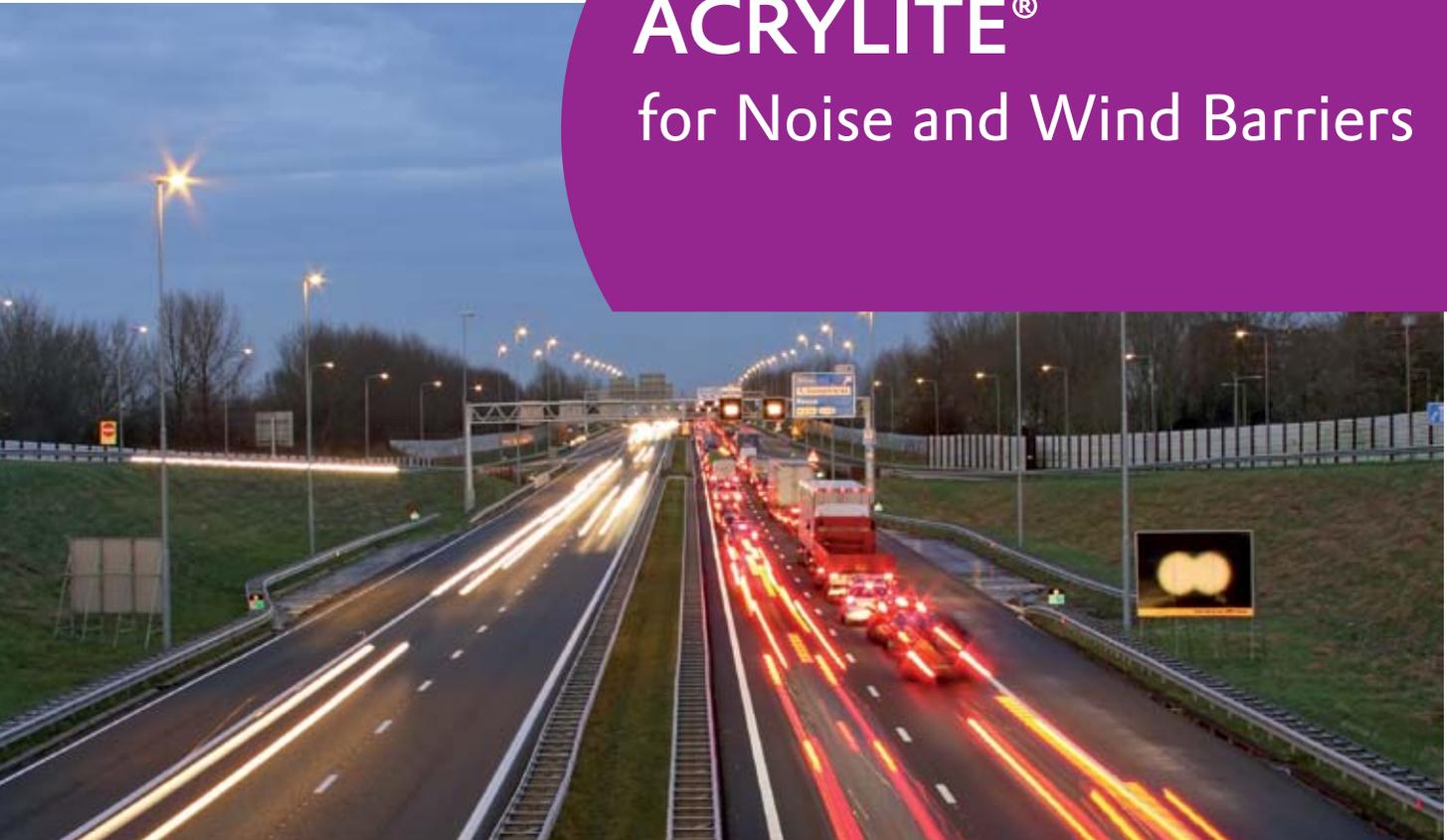


ACRYLITE® for Noise and Wind Barriers



ACRYLITE® 



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Noise control is gaining importance

Transportation of goods and passengers, both by road and by rail, is an indispensable part of economic progress. But the rising volume of traffic also has negative impacts, such as higher noise levels. Sound reduction measures include the installation of noise-control barriers and embankments. But embankments that are integrated into the landscape and usually planted, take up a lot of space. That is why noise control barriers are the preferred structures in many metropolitan areas. Owing to the increasing proximity of buildings to traffic routes, these barriers not only have to be functional, but also look attractive.

Noise control barriers with transparent elements prevent the tunnel effect that is tiring for drivers, and provide a better view of the road, without casting shadows on the highway or neighboring plots. Noise control barriers made with ACRYLITE® Soundstop combine functionality and good looks with protection for nearby residents.

Join us in creating quality of life!



A specialized material that is reliable and durable

ACRYLITE® is one of the world's highest-quality and most versatile plastics. It can be manufactured with many different functional properties and surfaces. ACRYLITE® Soundstop was specially developed back in 1980 for use in noise control barriers. Today, Evonik is one of the market leaders, with over 30 years of experience in this segment. Customers therefore benefit from time-tested products as well as comprehensive technical advice and support.

Besides its certified sound reflection, the material withstands rough treatment and is easy to fabricate. ACRYLITE® weighs only half as much as glass, but offers 11 times its impact strength. With its special properties, ACRYLITE® Soundstop also meets the most stringent requirements in terms of resistance to wind pressure.

The material also offers excellent weather resistance. ACRYLITE® stays as clear as on day one, even years later. There is no yellowing or embrittlement. The transparent material comes with a 30-year non-yellowing guarantee. All ACRYLITE® Soundstop sheets can be provided with various functional surfaces for specific applications, such as bird protection.



Since ACRYLITE® remains virtually unchanged, it does not have to be replaced in time like other plastics. In addition, it can be completely recycled, either by chemical conversion to its starting materials, or by direct reuse. These aspects, together with environmentally sound production, define ACRYLITE® as a sustainable product.

To offer proof of this sustainability, we have performed an extensive life cycle assessment of the material from cradle to grave.

From production to recycling, the different environmental impacts of ACRYLITE®, including its greenhouse gas reduction effect due to the material's longevity, were determined and confirmed in this Life Cycle Assessment (LCA) in accordance with DIN ISO 14040ff.

ACRYLITE® also makes an essential contribution to reducing the burden on the environment during manufacture. According to recent calculations, the carbon dioxide equivalent is 3.8 kg CO₂ per kg of molding compound.



ACRYLITE® noise control barriers and wind screens

Today's urban environments impose stringent demands in terms of noise control. Noise control barriers not only have to fulfill their role as a safety factor in road traffic to protect nearby residents, they also have to retain their attractive appearance and fit into the landscape. This is how noise control makes for better quality of life.

ACRYLITE® Soundstop is an acrylic product that was specially developed for use in noise control barriers. It is available in different grades to meet a variety of requirements, for example in extremely large sizes, various thickness and colors, with an integrated fragment retention system and with bird protection.



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ACRYLITE® integrated frag- ment retention for even greater safety

When noise control barriers and wind screens are installed on bridges, they should not constitute a danger to people underneath the bridge: any fragments caused by an accident must not fall down. Directives such as the German ZTV- Lsw 06 and EN 1794 call for corresponding restraint systems. ACRYLITE® Soundstop GS CC meets these requirements for fragment retention. It does so by means of the polyamide threads that are embedded in the acrylic sheets. In the event of damage to the sheets, these threads retain any fragments and prevent them from falling.

That is why ACRYLITE® Soundstop GS CC is approved for use on bridges around the globe, without additional metal netting. This makes ACRYLITE® Soundstop GS CC much more attractive than the systems with add-on or supplemental fragment retention systems. All of this gives architects greater freedom of design and allows bridges to fit into the landscape more harmoniously. Finally, the material is extremely weather-resistant and withstands the extreme wind pressures that frequently prevail on high bridges.



ACRYLITE® unparalleled crash security

Evonik's TL4 Noise Barrier System for Bridges

The TL4 System by Evonik offers the impact resistance and safety necessary for elevated roadways, while providing unobstructed views to maintain natural aesthetics and light transmission. Used primarily on highway bridges where safety barriers and the noise barriers attached to them are close to travel lanes and therefore more prone to collisions, the TL4 system is capable to absorb an impact without endangering the lives of vehicle occupants or areas under the bridge structure. Performance tested at the University of Nebraska, USA, the TL4 system prevents vehicle snagging and occupant compartment intrusions, requirements for TL-4 impact standards for attachments to existing roadside safety features. These features, in combination with observed benefits to vehicle stability during test collisions, resulted in approval by the US Federal Highway Authority approval of the TL4 system for use on the National Highway system as an attachment to crash rated barriers.

ACRYLITE® Soundstop with Ready Fit Panels – Post and Panel Compatible, Easy to Install

Ready Fit panels by Evonik make specifications of transparent panels easy. Ready Fit panels are ready to install Soundstop noise barrier panels in an aluminum frame that are installed just like their concrete counterparts. Pick them up and drop them in place. One big benefit however is weight which means many more Ready Fit panels can be delivered in one shipment versus heavier concrete panels.





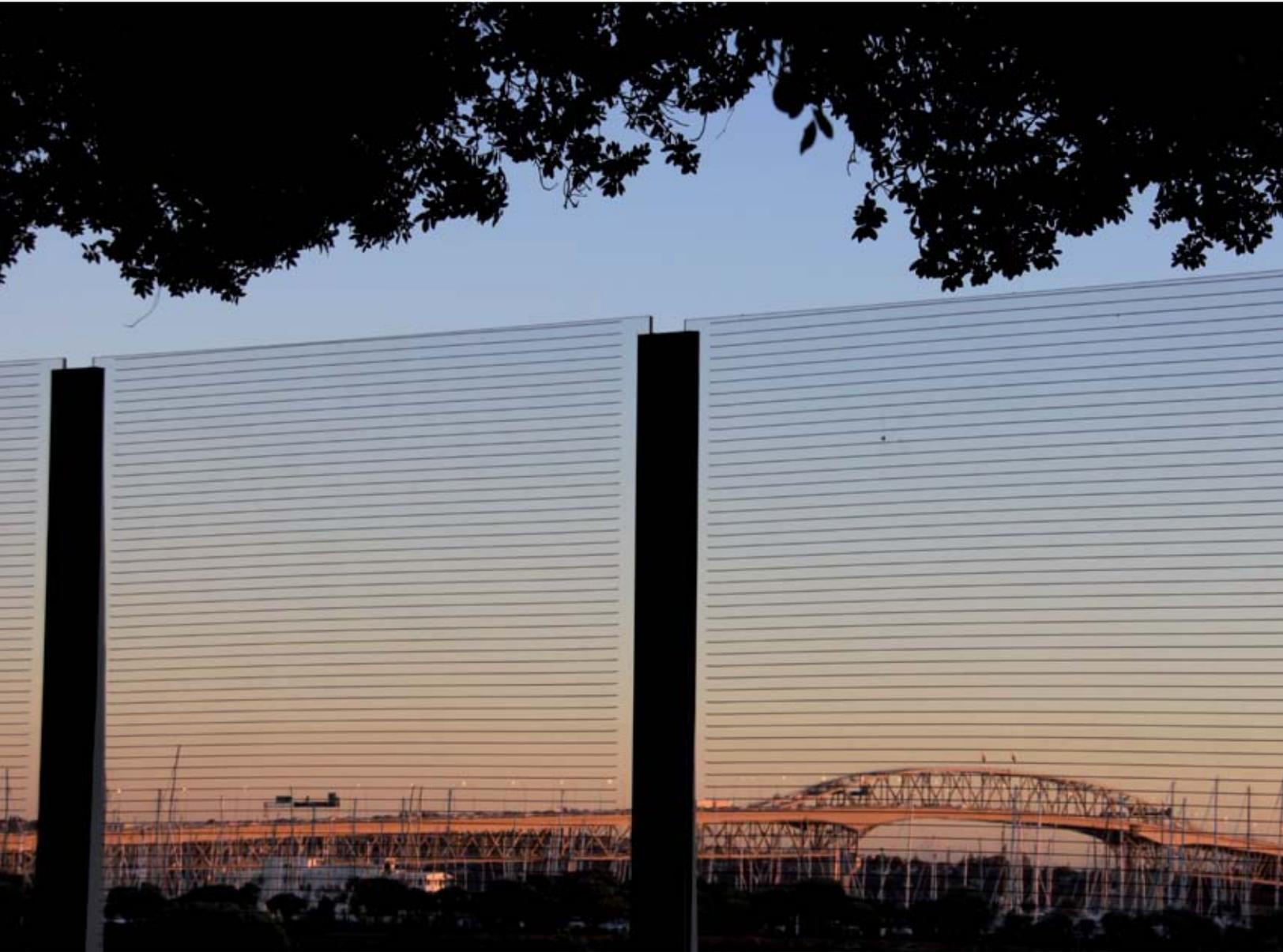
ACRYLITE®
**sight screens and
glare protection**



In the interests of variety, sight screens and glare protection can also serve as design elements, for instance by combining different grades of ACRYLITE®. These noise-control sheets can be supplied not only in clear-transparent versions, but also in a series of transparent colors and in non-transparent material, as ACRYLITE® Soundstop NT. The latter is particularly suitable for use in glare protection and sight screening elements in areas exposed to heavy soiling, for example at wheel level in road and rail traffic.

The cast ACRYLITE® Soundstop NT sheets in sizes of up to 5 by 2 meters are available in various standard colors and enable structures with low weight per unit area. They can be used for the entire surface or combined with transparent elements. Since the sheets are self-colored through and through, the color cannot flake off. In addition to these specific properties, ACRYLITE® Soundstop NT offers all the time-tested advantages of ACRYLITE®: excellent resistance to weathering and aging and ease of forming and machining.

Alternatively, ACRYLITE® Soundstop NT can also be supplied as a fragment-retaining grade of ACRYLITE® NT CC, which has proved its worth in noise control barriers along bridges.



ACRYLITE®
**effective noise control
and bird protection**



Transparency is a safety factor in road traffic, but birds cannot detect transparent material when in flight. The anti-bird collision effect provided by ACRYLITE® Soundstop GS CC has been confirmed in tests conducted by a variety of recognized institutes. The material's design of embedded polyamide threads for integrated fragment retention is the basis for our bird guard product, ACRYLITE® Soundstop Bird Guard, with 2mm wide black stripes spaced at 30mm intervals. These stripes are located inside the material and protected by a cover layer of ACRYLITE®. That means they are unaffected by potential graffiti removal operations.

These stripes act as a visible deterrent for birds and are highly effective, while ensuring that the elements themselves retain maximum transparency. ACRYLITE® Soundstop Bird Guard stripes meets the requirements of ZTV-LSW 06, EN 1793 and EN 1794.

The right solution for noise control and wind screening

In addition to the specific performance characteristics described above, all products in the ACRYLITE® Soundstop range meet the following general specifications:

- Excellent resistance to weathering and aging
- Resistance to wind pressure
- Low weight
- Ease of forming and machining
- Certified in accordance with ZTV-Lsw 06, EN 1793 and EN 1794
- 30-year guarantee (in accordance with guarantee conditions)
- Durability confirmed by Life Cycle Assessment in accordance with DIN ISO 14040ff
- Recyclability and returnability to manufacturer





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