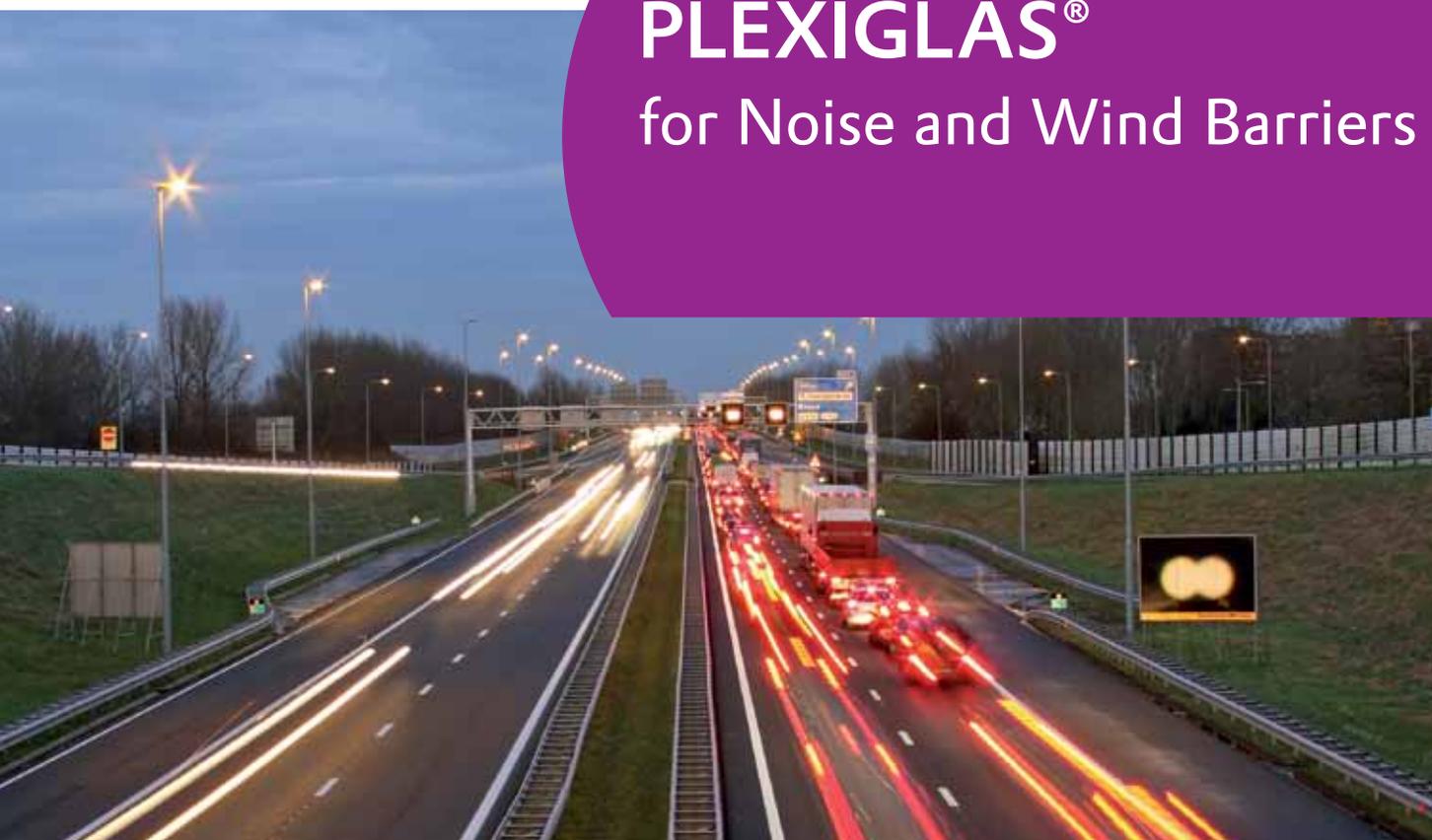


PLEXIGLAS® for Noise and Wind Barriers



PLEXIGLAS® 



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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 PLEXIGLAS® 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

PLEXIGLAS® is one of the world's highest-quality and most versatile plastics. It can be manufactured with many different functional properties and surfaces. PLEXIGLAS® 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. PLEXIGLAS® weighs only half as much as glass, but offers 11 times its impact strength. With its special properties, PLEXIGLAS® Soundstop also meets the most stringent requirements in terms of resistance to wind pressure.

The material also offers excellent weather resistance. PLEXIGLAS® 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 PLEXIGLAS® Soundstop sheets can be provided with various functional surfaces for specific applications, such as bird protection.

Since PLEXIGLAS® 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 PLEXIGLAS® 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 PLEXIGLAS®, 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.



PLEXIGLAS® noise control barriers and wind screen

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.

PLEXIGLAS® Soundstop is an acrylic product that was specially developed for use in noise control barriers.

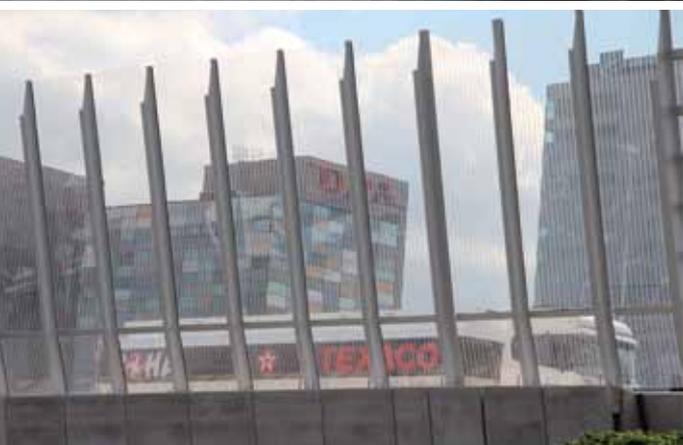
It is available in different grades to meet a variety of requirements, for example in extremely large sizes, various thickness and colors, with an integrated sliver retention system and with bird protection. It can be used for non-transparent sight screening and glare protection, and in combination with transparent elements.



PLEXIGLAS® integrated fragment 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. PLEXIGLAS® 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, which are not affected by cleaning operations or graffiti removal. In the event of damage to the sheets, these threads retain any slivers and prevent them from falling.

That is why PLEXIGLAS® Soundstop GS CC is approved for use on bridges around the globe, without additional metal netting. This gives architects greater freedom of design and allows bridges to fit into the landscape more harmoniously. In addition, the material is extremely weather-resistant and withstands the extreme wind pressures that frequently prevail on high bridges.



PLEXIGLAS® excellent noise control, whether cast or extruded

Conventional noise barriers are predominantly intended to protect nearby residents from noise. Large noise control barriers made of highly transparent PLEXIGLAS® Soundstop sheets, in cast (GS) or extruded (XT) grades, meet the most stringent requirements for sound reduction, call for fewer steel supporting structures, ensure that the noise barrier is as transparent as possible and provide great creative scope and aesthetic design. The light transmission of clear-transparent PLEXIGLAS® Soundstop is over 90%.

Like all materials in the PLEXIGLAS® range, PLEXIGLAS® Soundstop GS and XT are extremely weather-resistant and withstand high wind pressure. The extruded sheets are available in sizes of up to 8 by 2 meters.





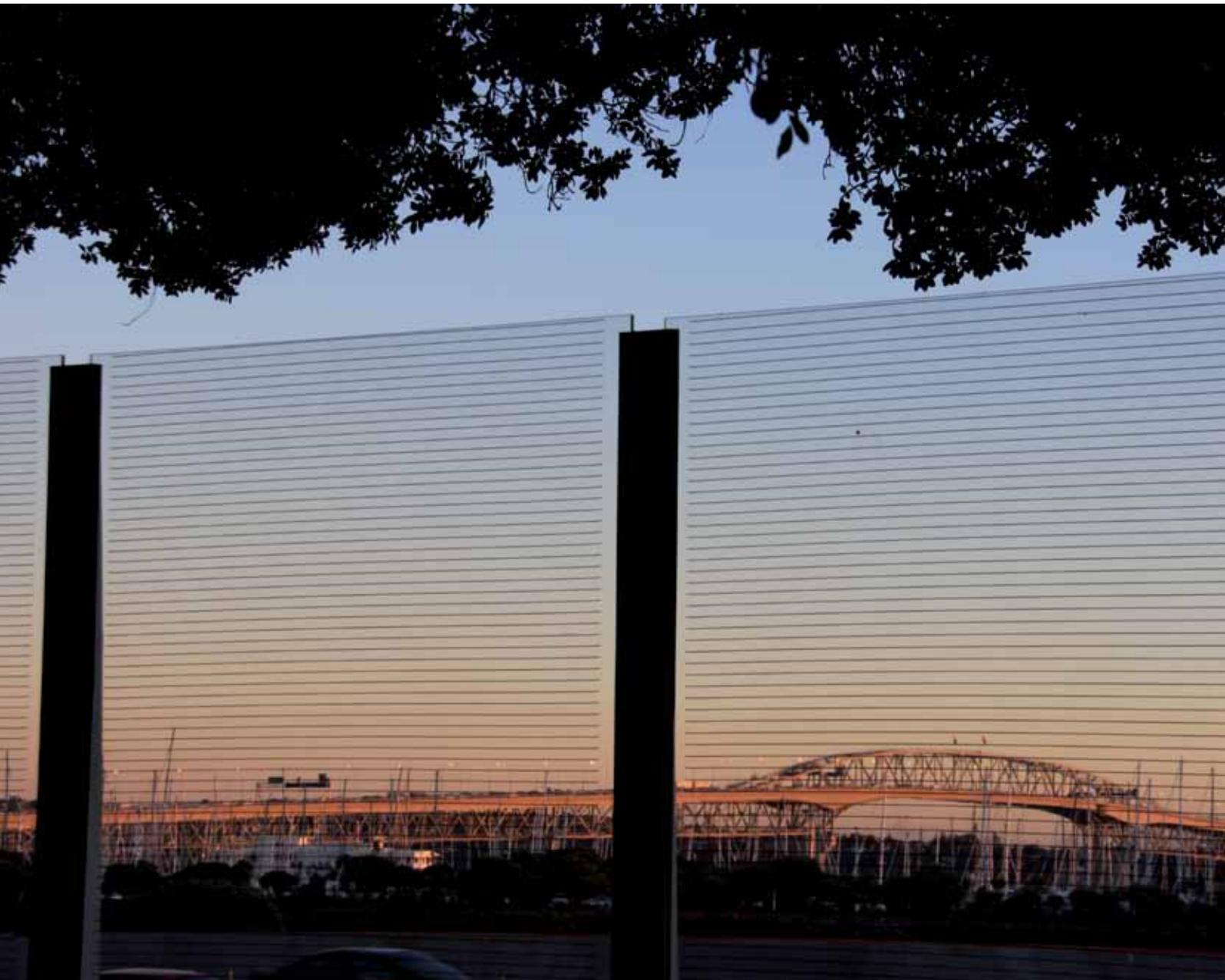
PLEXIGLAS®
**sight screens and
glare protection**



In the interests of variety, sights screens and glare protection can also serve as design elements, for instance by combining different grades of PLEXIGLAS®. 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 PLEXIGLAS® 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 PLEXIGLAS® 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, PLEXIGLAS® Soundstop NT offers all the time-tested advantages of PLEXIGLAS®: excellent resistance to weathering and aging and ease of forming and machining.

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



PLEXIGLAS®

**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 PLEXIGLAS® 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 sliver retention is very similar to our bird guard product, PLEXIGLAS® Soundstop XT, with 2 mm wide black stripes spaced at 30 mm intervals. These stripes are located inside the material and protected by a cover layer of PLEXIGLAS®. That means they are retained after cleaning operations or graffiti removal. These stripes act as a visible deterrent for birds and are highly effective, while ensuring that the elements themselves retain maximum transparency. PLEXIGLAS® Soundstop XT with 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 PLEXIGLAS® 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

Product overview

	PLEXIGLAS® Soundstop GSCC	PLEXIGLAS® Soundstop GS/XT	PLEXIGLAS® Soundstop XT (Bird Guard)	PLEXIGLAS® Soundstop NT
Properties				
Resistance to weathering and aging	•	•	•	•
Sliver retention	•			
Loadbearing capacity reducible by thickness, size, geometry (thermoforming)	•	•	•	•
Transparence	•	•	•	
Cleaning-safe bird protection	•		•	
Sizes (Oversizes)				
up to 8x2 m		• (XT)	•	
up to 5x2 m	•	• (GS)	•	•

Products and Properties



® = registered trademark

PLEXIGLAS is a registered trademark of Evonik Röhm GmbH, Darmstadt, Germany

Certified to DIN EN ISO 9001 (Quality) and DIN EN ISO 14001 (Environment)

Evonik Industries is a worldwide manufacturer of PMMA products sold under the PLEXIGLAS® trademark on the European, Asian, African and Australian continents and under the ACRYLITE® trademark in the Americas.

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