

**PLEXIGLAS®**

THE ORIGINAL BY RÖHM

## **PLEXIGLAS® Soundstop** for Noise and Windbarriers



**RÖHM**



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## Noise and the Environment

Noise is a complex phenomenon in our modern, mobile society.

**The growing noise level of rail and road traffic is detrimental to our health in the long term.**

Noise is the term we give to a sound we subjectively feel to be a nuisance. A good example is music, which may be “pleasant” or “obtrusive”, depending on the listener. On the other hand, noise is also a physical factor that can be precisely measured in the form of sound pressure, sound frequency and sound level.

The effects of noise on society and the physical burden imposed by noise have been the focus of numerous scientific studies in the recent past. Noise and its consequences are also the subject of a special report by the German experts’ council on environmental issues “Umwelt und Gesundheit” (Health and the Environment). Noise on our roads, for example, continues to rise and has long become one of the gravest problems in industrialized countries.



In densely populated industrialized countries, more people are affected by noise than by any other form of environmental pollution.

**Road traffic is clearly responsible for most noise in cities, before air and road traffic.**

An estimated 20% of the population in the European Union (some 80 million people) are exposed to daily traffic noise of more than 65 dB(A). The main source of noise is road traffic (approx. 70%), followed by air traffic (50%) and rail traffic (20%\*).

According to a field study by HAINES et al (1998) on whether people become accustomed to traffic noise, our perception of noise remains the same at constant noise levels. The study gives no indication that the human ear gets used to noise.

If exposure to noise endures for a prolonged period, this is classified as negative stress that is often accompanied by physical reactions. One result of stress through noise are hormone reactions, including the release of adrenaline, noradrenaline and cortisone. These hormones act on the cardiovascular system, the metabolism, the blood fat level and blood pressure. A long-term increase in cortisone levels may lead to arteriosclerosis and higher cholesterol levels. Sleeping disorders may be one of the secondary results.

\* Proportion of persons affected by noise among all those interviewed



Noise prevention and noise control have the highest priority.

**Noise barriers along heavily frequented traffic routes reduce the load on the environment without taking up too much space.**

The limiting value for the risk of heart attack due to noise is a level of 60 dB(A) during the day and 50 dB(A) at night, because this level provokes the release of higher quantities of stress hormones even while people sleep, and even if they are not wakened by the noise. At this noise level, the risk of heart attack goes up by 20%.

Noise is therefore a serious health risk to which we are exposed and to which we must react.

Despite a variety of steps, such as the noise limits for motor vehicles spelled out in EU Directive 2001/43/EG, the development of quieter tires and noise-reducing road surfaces, noise cannot be prevented completely.





Noise control along traffic routes is increasingly gaining in importance to control noise levels in the face of rising traffic volume.

#### Functional and aesthetic noise control with PLEXIGLAS® Soundstop

Earthberms and noise barriers of sufficient height are the number one noise control instrument. Since earthberms (usually landscaped) take up a lot of space, noise barriers are normally given preference in built-up areas. As the space between buildings and roads is becoming ever smaller, these barriers need to be attractive-looking as well as functional. Transparent sections in noise barriers help to avoid the tiring tunnel effect for drivers, and offer a better view without casting shadows on the road surface or neighbouring properties. Noise barriers

made from PLEXIGLAS® Soundstop combine functionality and attractiveness with protection for residents. At the same time, they create a more interesting environment for road users, and successfully dispel the impression of driving through a tunnel.

When noise barriers are installed along bridges, the inherent weight of the structure, its resistance to bridge vibrations and lightweight architecture play an important role in addition to space saving. Here too, highly transparent PLEXIGLAS® Soundstop, which is much lighter than silicate glass, and above all, much more break-resistant, has proved increasingly suitable in recent years.





# Product Overview

PLEXIGLAS® Soundstop is a grade of acrylic specially developed for use in transparent noise barriers. This material developed by the Acrylic Products Business Unit of Roehm America LLC was first employed in 1980.

That means 40 years of world-wide experience in the use of PLEXIGLAS® Soundstop. PLEXIGLAS® Soundstop is available in different variants to meet a wide range of requirements.



## PLEXIGLAS® Soundstop transparent

Large-sized, highly transparent cast (GS) or extruded (XT) sheets. The clear grade offers a light transmission of over 90 percent. PLEXIGLAS® Soundstop is available in clear color and in a series of transparent colors.



## PLEXIGLAS® Soundstop GS CC transparent with integrated filament retention

PLEXIGLAS® Soundstop GS CC with integrated black threads are very easy for birds to make out. The bird deterrent can also be further improved by a variety of measures. The most commonly used solutions are matte brushed stripes, stripes applied by screen printing, dots or symbols and foil stickers, with bird symbols, for example. Brushed stripes and screen-printed markings offer long-term durability and are included in the delivery package.



## PLEXIGLAS® Soundstop XT BirdGuard

Transparent acrylic sheet for noise barriers with printed 2 mm wide black stripes in a distance of 30 mm which are protected by a top layer made of PLEXIGLAS®. As these stripes are applied inside the material, they cannot be washed off by cleaning agents or graffiti removal procedures. These stripes are visible obstacles for birds while assuring the maximum transparency of the element.



## PLEXIGLAS® Soundstop SC with antireflective surfaces

This product variant has a surface texture that diffuses light and reduces reflections. Distracting reflections like the lights of other vehicles are reliably prevented. Although the texture reduces the transparency of the sheets, light transmission is retained on both sides of the barrier.



## PLEXIGLAS® Soundstop GS Opaque PLEXIGLAS® Soundstop GS CC Opaque

Homogeneously solid-colored cast sheets in two shades of gray enable an extremely wide range of design variants. These sheets are also available with embedded polyamide threads that prevent dangerous fragments from falling if and when an accident occurs.

# Product Properties

## PLEXIGLAS® Soundstop sheets (in transparent grades)

### are highly light-transmitting and transparent

The transparent grade has a light transmission of over 90 percent and is thus vastly superior to sheets of glass or other transparent plastics, such as polycarbonate. The light transmission is measured according to DIN 5036, Part 3 (illuminant C). The extremely good weather resistance of PLEXIGLAS® also ensures that the high transmission is retained for many years. On delivery, the measured values are 90% minimum, and still 88% minimum even after 30 years of use outdoors.

### offer extremely high resistance to weathering and aging.

PLEXIGLAS® acrylic material is well-known for its unsurpassed resistance to weathering and aging. International vehicle manufacturers prescribe the use of this material for reverse and signal lights, because only acrylic offers the long-term brilliance and color fastness required to retain the luminous intensity and signal effect of automotive lights.

In signage too, PLEXIGLAS® proves its extreme longevity without its surface becoming matte, without turning yellow or brittle, and without the colors fading. Even after many years of outdoor exposure, the surfaces of PLEXIGLAS® stay just as smooth as when they left the factory.

### are break-resistant.

PLEXIGLAS® Soundstop is about 11 times more break-resistant than window glass of comparable thickness. That makes it superior even to safety glass, and meets all the safety requirements for noise barrier materials.

The strength of the sheets plays a significant role when it comes to resisting impact as well as structural vibrations, e.g. on bridges.

### are lightweight.

PLEXIGLAS® Soundstop has a specific gravity of 1.19 g/cm³ and weighs only half as much as silicate glass. A 20 mm thick sheet therefore weighs only 24 kg per square meter. That makes it much easier to handle large sheets, in particular. The low weight of PLEXIGLAS® Soundstop also enables more lightweight construction, especially when installed on bridges

### are easy to form in a versatile manner.

PLEXIGLAS® Soundstop sheets can be installed flat, cold-curved or thermoformed. The minimum bending radius for installing cold-curved elements is 330 times the sheet thickness. The possible radius for 20 mm thick sheets is therefore 6600 mm. The structure must be sufficiently stable to maintain the cold-curved sheets in form. The sheets can be thermoformed into almost any imaginable configuration. They are heated to forming temperature and shaped as desired using suitable molds. After cooling, the sheets retain the given shape and are ready for installation.

The most frequent type of forming is line bending, e.g. of the upper, unsupported edge of the noise barrier facing the road. This increases the rigidity of the sheets that are not clamped along the top edge, and improves the noise protection offered by the elements.

### has excellent sound-insulating properties.

The weighted sound reduction index DLR according to EN 1793-2 is up to 33 dB. The sound reduction index DLSI when using the free-field measurement according to EN 1793-6 is 34 dB.

# Safety

## Transparent noise barriers made from PLEXIGLAS® Soundstop offer drivers greater safety than non-transparent systems.

### Prevention of Tunnel Effect

With its high transparency, PLEXIGLAS® Soundstop lets drivers look at the changing landscape. This successfully prevents the tiring and dangerous feeling of driving through a tunnel. Moreover, the high light transmission ensures that no harsh shadows are cast on the road and that the lighting conditions remain constant. The eye is not obliged to adjust to the effects of light and dark all the time.

### Resistance to Stone Impact according to EN1794

PLEXIGLAS® Soundstop is approved as safety glass and meets all the requirements of EN 1794 for the resistance of transparent noise barrier elements to stone impact. The high break resistance of PLEXIGLAS® Soundstop ensures that the sheets are not destroyed by stones or gravel projected by passing vehicles, nor by stones thrown from outside the barrier.

## PLEXIGLAS® Soundstop GS CC is approved for use in noise barriers along bridges without additional restraint systems.

### Fragment Retention

When noise barriers are installed on bridges, it must be ensured that the noise barrier presents no risk to persons or objects under the bridge. No fragments may be allowed to fall from the barrier after an accident, for example.

The German regulation ZTV-Lsw 06 and EN 1794 state that "if brittle materials or materials whose embrittlement cannot be excluded (e.g. plastics) are to be used, these elements or their fragments must be reliably secured by means of restraint structures."

The polyamide threads embedded in PLEXIGLAS® Soundstop GS CC correspond to these restraint systems, because they successfully prevent sheet fragments from falling. That is why PLEXIGLAS® Soundstop GS CC may be used in noise barriers along bridges without additional restraint systems.



# Approvals and Test Certificates

There are a number of standards and approvals that apply to materials designed to reduce noise along traffic routes.

## **DIN EN 1793-1** **Road Traffic Noise Reducing Devices**

Test method to determine acoustic properties Part 1: Product-specific characteristics of sound insulation. November 1997

## **DIN EN 1793-2** **Road Traffic Noise Reducing Devices**

Test method to determine acoustic properties Part 2: Product-specific characteristics of airborne sound insulation. November 1997

## **DIN EN 1793-3** **Road Traffic Noise Reducing Devices**

Test method to determine acoustic properties Part 3: Standardized traffic noise spectrum. November 1997

## **DIN EN 1793-5** **Road Traffic Noise Reducing Devices**

Test method to determine acoustic properties. Part 5: Product-specific characteristics of sound insulation according to the free field measurement.

## **DIN EN 1793-6** **Road Traffic Noise Reducing Devices**

Test method to determine acoustic properties. Part 5: Product-specific characteristics of airborne sound insulation according to the free field measurement.

The list gives a general overview without claiming to be complete:

## **DIN EN 1794-1** **Road Traffic Noise Reducing Devices**

Non-acoustic properties Part 1: Mechanical properties and stability requirements. October 1998

## **DIN EN 1794-2** **Road Traffic Noise Reducing Devices**

Non-acoustic properties Part 2: General safety and environmental requirements. October 1998

## **DIN EN 1794-3** **Road Traffic Noise Reducing Devices**

Non-acoustic properties. Part 3: Fire behavior of noise protection devices and classification

## **ZTV-Lsw 06**

Additional technical regulations and directives for installing noise barriers along roads German Ministry of Transport

## **GCW-2001**

“Richtlijnen geluidbeperkende constructies langs wegen” (NL) Directives for noise control structures along roads.

## **Bird protection**

We have a test report from the German society for the protection of birds and the Wiener Umwelthanwaltschaft concerning the bird-deterrent effect of PLEXIGLAS® Soundstop GS CC with black polyamide threads.



# Guarantees

We are convinced of the durable quality of our high-quality products that have proved their worth in practical experience. That is why we offer extensive guarantees for a number of properties:

## Playing it safe with PLEXIGLAS® Soundstop—30-year guarantee

The yellowing power of UV rays can't impact PLEXIGLAS® Soundstop, thanks to the NATURALLY UV STABLE technology. And because we're so certain, we give the following guarantees:

- 30-year no yellowing guarantee
- 30-year maximum light transmission guarantee



# Recycling

We have been successfully implementing and constantly developing our recycling process for decades. That is how we ensure that the material stays within a closed recycling loop.

## Environmental protection, ecology and recycling

Environmental protection, ecology and recycling are declared aims of the Röhm GmbH ESHQ strategy for the Acrylic Products Business Unit. Our active participation in the Environmental Products Declaration (EPD) of Institut Bauen und Umwelt e.V. (IBU) also documents how seriously we take our responsibility for the targets of environmental protection, safety, health and quality in connection with our products and production processes.

To ensure responsible handling of raw materials, we take back the products we deliver at the end of their service life and pass them on for recycling.

Extruded sheets of PLEXIGLAS® Soundstop are broken up, reground, regranulated and then reintroduced into the extrusion process for new sheets. Moreover, cast and extruded PLEXIGLAS® Soundstop can be reduced to the starting material by chemical means and reintroduced into the manufacturing process. Both these processes presuppose that the sheets to be recycled have been carefully separated from other materials.



# Product Range

Various colors in PLEXIGLAS® Soundstop range are available.

| Colors             |                  |                    |                    |
|--------------------|------------------|--------------------|--------------------|
| Transparent        | Transparent Blue | Transparent Green  | Transparent Brown  |
| Clear              | Midnight Blue    | Danish Green       | Smoky Brown        |
|                    | Steel Blue       | Forest Green       |                    |
|                    | Sky Blue         | Sea Green          |                    |
|                    | Sapphire         | Spring Green       |                    |
|                    |                  | Emerald            |                    |
| Transparent Orange | Transparent Red  | Transparent Violet | Transparent Yellow |
| Topaz              | Ruby             | Amethyst           | Citrine            |
| Opaque             | Opaque Grey      |                    |                    |
|                    | Light Grey       |                    |                    |
|                    | Stone Grey       |                    |                    |

| Product Type                      | Thickness in mm | Size in mm                                      | Miscellaneous                                                                                                                                                                                 |
|-----------------------------------|-----------------|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PLEXIGLAS® Soundstop XT           | 12, 15, 20, 25  | 2,000 x up to 6,000                             | Extruded transparent PMMA; various thicknesses, lengths over 6,000 mm, width 2,050 mm on request                                                                                              |
| PLEXIGLAS® Soundstop XT BirdGuard | 12, 15, 20, 25  | 2,000 x upto 6,000                              | Extruded transparent PMMA with internal bird-deterrent stripes; various thicknesses, lengths over 6,000 mm, width 2,050 mm on request                                                         |
| PLEXIGLAS® Soundstop GS           | 12, 15, 20, 25  | 3,050 x 2,030<br>4,050 x 2,030<br>5,050 x 2,030 | Cast PMMA; transparent or opaque; translucent and matte on one side on request                                                                                                                |
| PLEXIGLAS® Soundstop GS CC        | 12, 15, 20, 25  | 3,050 x 2,030<br>4,050 x 2,030<br>5,050 x 2,030 | Cast PMMA; transparent or opaque; translucent and matte on one side on request; with integrated splinter-free black polyamide threads lengthways and sideways; transparent threads on request |

# Surface Design

PLEXIGLAS® Soundstop has perfectly smooth surfaces that are available in different versions.

Standard

- two high-gloss sides

Special manufacture

- one side matte (SC)



# Functional Surfaces

Depending on requirements, the surfaces of PLEXIGLAS® Soundstop can be provided with functional features.

**Bird Deterrent**

- PLEXIGLAS® Soundstop XT BirdGuard with internal bird-deterrent stripes
- Brushed bird-deterrent stripes; stripe width and stripe spacing on request
- Bird-deterrent screen printing; decoration type on request

**Fabricating: Cut-to-size**

- Rectangular cuts
- Bevel cuts; drilled holes on request

**Fabricating: Reshaping**

- All-over thermoforming and splaying on request



# Technical Data

PLEXIGLAS® Soundstop Surfaces are non-porous. They are different Versions available.

|                                                        | PLEXIGLAS® Soundstop XT<br>PLEXIGLAS® Soundstop XT<br>BirdGuard | PLEXIGLAS® Soundstop GS<br>PLEXIGLAS® Soundstop GS CC | Test Method    |
|--------------------------------------------------------|-----------------------------------------------------------------|-------------------------------------------------------|----------------|
| Tensile strength                                       | 70 MPa                                                          | 70 MPa                                                | ISO 527-2/1B/5 |
| Elongation at break                                    | 5 %                                                             | 5 %                                                   | ISO 527-2/1B/5 |
| Flexural strength                                      | 100 MPa                                                         | 98 MPa                                                | ISO 178        |
| Elastic modulus                                        | min. 3000 MPa                                                   | 3000 MPa                                              | ISO 527-2/1B/5 |
| Apparent density                                       | 1,19 g/cm³                                                      | 1,19 g/cm³                                            | ISO 1183       |
| Coefficient of linear thermal expansion<br>0 bis 50 °C | 7 · 10 <sup>-5</sup> 1/K                                        | 7 · 10 <sup>-5</sup> 1/K                              | DIN 53752-A    |
| Vicat softening temperature                            | 102 °C                                                          | 110 °C                                                | ISO 306/B50    |
| Light transmission of crystal-clear sheets             | min. 90 %                                                       | min. 90 %                                             | DIN 5036       |
| Weighted sound reduction index                         |                                                                 |                                                       |                |
| DL <sub>R</sub> 12 mm                                  | 29 dB                                                           | 29 dB                                                 | EN 1793-2      |
| 15 mm                                                  | 30 dB                                                           | 30 dB                                                 | EN 1793-2      |
| 20 mm                                                  | 32 dB                                                           | 32 dB                                                 | EN 1793-2      |
| 25 mm                                                  | 33 dB                                                           | 33 dB                                                 | EN 1793-2      |
| DL <sub>St</sub> 15 mm                                 | weighted with the road traffic noise spectrum                   | weighted with the road traffic noise spectrum         |                |
| Element                                                | 34 dB                                                           | 34 dB                                                 | EN 1793-6      |
| Post                                                   | 34 dB                                                           | 34 dB                                                 | EN 1793-6      |
| Total                                                  | 34 dB                                                           | 34 dB                                                 | EN 1793-6      |
| DL <sub>St</sub> 15 mm                                 | weighted with the road traffic noise spectrum                   | weighted with the road traffic noise spectrum         |                |
| Element                                                | 36 dB                                                           | 36 dB                                                 | EN 16272-3-2   |
| Post                                                   | 35 dB                                                           | 35 dB                                                 | EN 16272-3-2   |
| Total                                                  | 35 dB                                                           | 35 dB                                                 | EN 16272-3-2   |



# Bidding Texts

Below you will find several examples of bidding texts for transparent noise barriers. Please select the suitable example as a basis for your application.

**Example 1:**  
**Manufacturing Noise Control Glazing**

Manufacture and install soundproof noise control glazing made of PLEXIGLAS® Soundstop GS CC clear or equivalent on bridges with embedded black polyamide threads, sheet thickness 20 mm, including 4 clamping structures according to ZTV-Lsw 06 and/or EN 1793 & 1794, including addendum, according to drawing and statement in the building specifications. A 30-year guarantee for no yellowing and maximum light transmission is required for the glazing material of noise protection.

**Example 2:**  
**Manufacturing Touch-Protection Barrier**

Manufacture touch-protection barrier according to statical, construction and safety requirements. Touch-protection barrier according to RIZ Elt 2 Sheet 1 / Sheet 2. Barrier elements made of clear-transparent acrylic with embedded clear polyamide threads with test certificate according to ZTV-LSW 06 and/or EN 1793 & 1794. Sheet thickness: 20 mm. Elements with matte stripes applied at the factory (stripe width approx. 20 mm, stripe spacing approx. 60 mm) parallel to upper edge of touch-protection barrier. Secure elements with clamping structure to prevent them from falling.

**Example 3:**  
**Installing Transparent Noise Barrier Elements**

Manufacture, supply and install transparent noise control elements in compliance with statical and construction requirements according to drawing. Sheet thickness = 20 mm. Material = transparent plastic (acrylic, min. E = 3,300 N/mm²) according to ZTV-LSW 06 and/or EN 1793 & 1794, clear with black polyamide threads for sliver retention and bird protection, PLEXIGLAS® Soundstop GS CC or equivalent product.

**Example 4:**  
**Manufacture and install transparent noise barrier elements with bird protection**

Acrylic sheet thickness 20 mm, color “Spring Green”, acc. ZTV-Lsw 06 and/or EN 1793&1794. Bird protection pattern with integral black and horizontal stripes. Width of stripe 2 mm and distance of stripes approx. 30 mm. Product: PLEXIGLAS® Soundstop XT BirdGuard or equivalent.

**Example 5:**  
**Install wall element for splash protection**

Mount a wall element for splash protection in compliance to statical and construction requirements acc. to drawing. Wall height 2,00 m, Post distance: 2,00 m. Secure wall element made from non-transparent, mineral filled acrylic sheet with integrated sliver retention and clamping structure. Colour: “Light Grey”.

PLEXIGLAS® Soundstop GS CC opaque or equivalent.

# Statical Calculations

On the following pages you will find information on the loadbearing capacity of PLEXIGLAS® Soundstop in relation to sheet thickness and height.

# Maximum Deflection

PLEXIGLAS® Soundstop 15 mm  
2000 mm width,  
loosely clamped on three sides

| Deflection           | w [mm]    | Sheet height [mm] |       |       |       |       |       |
|----------------------|-----------|-------------------|-------|-------|-------|-------|-------|
| Static wind pressure | q [kN/m²] | 1500              | 2000  | 2500  | 3000  | 4000  | 5000  |
|                      | 0.80      | 27.8              | 30.9  | 31.5  | 31.2  | 31.1  | 30.4  |
|                      | 1.00      | 33.9              | 38.4  | 39.6  | 39.2  | 38.9  | 37.8  |
|                      | 1.23      | 40.6              | 46.7  | 48.6  | 48.4  | 47.9  | 46.1  |
|                      | 1.45      | 47.0              | 54.8  | 57.6  | 57.7  | 57.1  | 54.6  |
|                      | 1.72      | 53.6              | 64.3  | 68.3  | 68.9  | 68.4  | 65.2  |
|                      | 2.00      | 60.5              | 73.4  | 78.8  | 80.1  | 79.9  | 75.9  |
|                      | 2.27      | 67.1              | 82.4  | 89.1  | 91.2  | 91.3  | 86.6  |
|                      | 2.54      | 73.6              | 89.4  | 99.2  | 102.2 | 102.7 | 97.3  |
|                      | 2.77      | 78.8              | 97.0  | 107.6 | 111.4 | 112.4 | 106.5 |
|                      | 3.00      | 84.0              | 103.8 | 114.4 | 118.6 | 122.0 | 115.7 |
|                      | 3.25      | 89.3              | 111.1 | 123.4 | 128.7 | 132.4 | 125.6 |
|                      | 3.50      | 94.4              | 118.1 | 131.3 | 137.2 | 142.7 | 135.5 |
|                      | 3.75      | 99.4              | 125.1 | 140.0 | 147.2 | 152.9 | 145.4 |
|                      | 4.00      | 104.3             | 131.8 | 148.1 | 156.1 | 163.0 | 155.1 |

On request, we will be pleased to calculate the deflection and material stress for other sizes, wind pressures and material thicknesses.

# Maximum Stress

PLEXIGLAS® Soundstop 15 mm  
2000 mm width,  
loosely clamped on three sides

| Stress               | σ [MPa]   | Sheet height [mm] |      |      |      |      |      |
|----------------------|-----------|-------------------|------|------|------|------|------|
| Static wind pressure | q [kN/m²] | 1500              | 2000 | 2500 | 3000 | 4000 | 5000 |
|                      | 0.80      | 5.0               | 5.4  | 5.5  | 5.5  | 6.1  | 6.0  |
|                      | 1.00      | 6.1               | 6.7  | 6.9  | 6.9  | 7.6  | 7.5  |
|                      | 1.23      | 7.3               | 8.2  | 8.5  | 8.5  | 9.4  | 9.1  |
|                      | 1.45      | 8.6               | 9.6  | 10.1 | 10.1 | 11.2 | 10.8 |
|                      | 1.72      | 9.9               | 11.4 | 12.0 | 12.1 | 13.5 | 13.0 |
|                      | 2.00      | 11.2              | 13.0 | 13.9 | 14.1 | 15.7 | 15.1 |
|                      | 2.27      | 12.5              | 14.7 | 15.7 | 16.1 | 17.9 | 17.2 |
|                      | 2.54      | 13.8              | 16.1 | 17.6 | 18.1 | 20.2 | 19.4 |
|                      | 2.77      | 14.8              | 17.4 | 19.1 | 19.7 | 22.1 | 21.2 |
|                      | 3.00      | 15.8              | 18.7 | 20.4 | 21.1 | 24.0 | 23.1 |
|                      | 3.25      | 16.9              | 20.1 | 22.0 | 22.9 | 26.0 | 25.1 |
|                      | 3.50      | 18.0              | 21.5 | 23.5 | 24.5 | 28.0 | 27.1 |
|                      | 3.75      | 19.0              | 22.8 | 25.1 | 26.3 | 30.0 | 29.0 |
|                      | 4.00      | 20.0              | 24.1 | 26.7 | 27.9 | 32.0 | 31.0 |



# Maximum Deflection

PLEXIGLAS® Soundstop 20 mm  
2000 mm width,  
loosely clamped on three sides

| Deflection           | w [mm]    | Sheet height [mm] |      |      |      |      |      |
|----------------------|-----------|-------------------|------|------|------|------|------|
| Static wind pressure | q [kN/m²] | 1500              | 2000 | 2500 | 3000 | 4000 | 5000 |
|                      | 0.80      | 12.3              | 13.1 | 13.1 | 13.0 | 13.3 | 13.2 |
|                      | 1.00      | 15.3              | 16.3 | 16.4 | 16.2 | 16.6 | 16.5 |
|                      | 1.23      | 18.6              | 20.0 | 20.1 | 19.9 | 20.2 | 20.1 |
|                      | 1.45      | 22.0              | 23.7 | 23.9 | 23.6 | 23.9 | 23.7 |
|                      | 1.72      | 25.9              | 28.1 | 28.4 | 28.1 | 28.4 | 28.1 |
|                      | 2.00      | 29.8              | 32.6 | 33.0 | 32.6 | 32.9 | 32.4 |
|                      | 2.27      | 33.4              | 37.0 | 37.7 | 37.2 | 37.3 | 36.6 |
|                      | 2.54      | 37.1              | 41.2 | 42.3 | 41.8 | 41.7 | 40.8 |
|                      | 2.77      | 40.2              | 44.9 | 46.0 | 45.5 | 45.5 | 44.4 |
|                      | 3.00      | 43.2              | 48.6 | 50.0 | 49.5 | 49.3 | 47.9 |
|                      | 3.25      | 46.4              | 52.6 | 54.2 | 53.7 | 53.5 | 51.8 |
|                      | 3.50      | 49.5              | 56.5 | 58.4 | 58.0 | 57.7 | 55.7 |
|                      | 3.75      | 52.6              | 60.4 | 62.7 | 62.3 | 61.9 | 59.6 |
|                      | 4.00      | 55.7              | 64.2 | 66.9 | 66.7 | 66.2 | 63.5 |

On request, we will be pleased to calculate the deflection and material stress for other sizes, wind pressures and material thicknesses.

# Maximum Stress

PLEXIGLAS® Soundstop 20 mm  
2000 mm width,  
loosely clamped on three sides

| Stress               | σ [MPa]   | Sheet height [mm] |      |      |      |      |      |
|----------------------|-----------|-------------------|------|------|------|------|------|
| Static wind pressure | q [kN/m²] | 1500              | 2000 | 2500 | 3000 | 4000 | 5000 |
|                      | 0.80      | 2.9               | 3.0  | 3.0  | 3.0  | 3.4  | 3.4  |
|                      | 1.00      | 3.6               | 3.8  | 3.8  | 3.8  | 4.3  | 4.3  |
|                      | 1.23      | 4.4               | 4.7  | 4.7  | 4.6  | 5.2  | 5.2  |
|                      | 1.45      | 5.2               | 5.5  | 5.5  | 5.5  | 6.2  | 6.2  |
|                      | 1.72      | 6.1               | 6.5  | 6.6  | 6.5  | 7.4  | 7.3  |
|                      | 2.00      | 7.0               | 7.6  | 7.7  | 7.6  | 8.6  | 8.5  |
|                      | 2.27      | 7.9               | 8.6  | 8.7  | 8.7  | 9.7  | 9.6  |
|                      | 2.54      | 8.8               | 9.6  | 9.8  | 9.7  | 10.9 | 10.7 |
|                      | 2.77      | 9.6               | 10.5 | 10.7 | 10.6 | 11.9 | 11.6 |
|                      | 3.00      | 10.3              | 11.3 | 11.6 | 11.6 | 12.9 | 12.6 |
|                      | 3.25      | 11.1              | 12.3 | 12.6 | 12.6 | 14.0 | 13.6 |
|                      | 3.50      | 11.9              | 13.2 | 13.6 | 13.6 | 15.1 | 14.7 |
|                      | 3.75      | 12.7              | 14.1 | 14.6 | 14.6 | 16.2 | 15.7 |
|                      | 4.00      | 13.4              | 15.0 | 15.6 | 15.6 | 17.3 | 16.7 |



# Maximum Deflection

PLEXIGLAS® Soundstop 15 mm  
 2000 mm width,  
 loosely clamped on four sides

| Deflection           | w [mm]    | Sheet height [mm] |      |      |      |      |      |
|----------------------|-----------|-------------------|------|------|------|------|------|
| Static wind pressure | q [kN/m²] | 1500              | 2000 | 2500 | 3000 | 4000 | 5000 |
|                      | 0.80      | 6.5               | 12.4 | 16.9 | 20.2 | 24.6 | 26.9 |
|                      | 1.00      | 8.0               | 14.8 | 19.9 | 23.7 | 29.8 | 33.2 |
|                      | 1.23      | 9.7               | 17.4 | 23.1 | 27.7 | 35.2 | 39.9 |
|                      | 1.45      | 11.3              | 19.6 | 25.9 | 31.1 | 40.2 | 46.1 |
|                      | 1.72      | 13.1              | 22.2 | 29.1 | 35.1 | 45.7 | 53.3 |
|                      | 2.00      | 14.8              | 24.5 | 31.9 | 38.5 | 50.9 | 60.0 |
|                      | 2.27      | 16.4              | 26.6 | 34.5 | 41.8 | 55.7 | 66.2 |
|                      | 2.54      | 18.0              | 28.6 | 36.9 | 44.9 | 59.8 | 72.1 |
|                      | 2.77      | 19.2              | 30.1 | 38.9 | 47.3 | 63.4 | 76.3 |
|                      | 3.00      | 20.4              | 31.6 | 40.7 | 49.6 | 66.8 | 80.9 |
|                      | 3.25      | 21.7              | 33.1 | 42.6 | 52.0 | 70.2 | 85.5 |
|                      | 3.50      | 22.9              | 34.6 | 44.5 | 54.3 | 73.5 | 89.9 |
|                      | 3.75      | 24.0              | 36.0 | 46.2 | 56.5 | 76.7 | 94.1 |
|                      | 4.00      | 25.1              | 37.3 | 47.9 | 58.6 | 79.7 | 98.2 |

On request, we will be pleased to calculate the deflection and material stress for other sizes, wind pressures and material thicknesses.

# Maximum Stress

PLEXIGLAS® Soundstop 15 mm  
 2000 mm width,  
 loosely clamped on four sides

| Stress               | σ [MPa]   | Sheet height [mm] |      |      |      |      |      |
|----------------------|-----------|-------------------|------|------|------|------|------|
| Static wind pressure | q [kN/m²] | 1500              | 2000 | 2500 | 3000 | 4000 | 5000 |
|                      | 0.80      | 2.1               | 2.8  | 3.6  | 4.1  | 5.3  | 5.6  |
|                      | 1.00      | 2.6               | 3.4  | 4.3  | 4.9  | 6.4  | 6.9  |
|                      | 1.23      | 3.2               | 4.1  | 5.1  | 5.8  | 7.7  | 8.4  |
|                      | 1.45      | 3.8               | 4.7  | 5.9  | 6.7  | 8.9  | 9.8  |
|                      | 1.72      | 4.4               | 5.5  | 6.7  | 7.6  | 10.3 | 11.4 |
|                      | 2.00      | 5.1               | 6.2  | 7.5  | 8.5  | 11.7 | 13.0 |
|                      | 2.27      | 5.7               | 6.9  | 8.3  | 9.4  | 12.9 | 14.5 |
|                      | 2.54      | 6.3               | 7.5  | 9.0  | 10.2 | 14.1 | 16.0 |
|                      | 2.77      | 6.7               | 8.1  | 9.6  | 10.9 | 15.1 | 17.1 |
|                      | 3.00      | 7.2               | 8.6  | 10.2 | 11.5 | 16.1 | 18.3 |
|                      | 3.25      | 7.7               | 9.2  | 10.8 | 12.2 | 17.1 | 19.5 |
|                      | 3.50      | 8.2               | 9.7  | 11.4 | 12.9 | 18.1 | 20.7 |
|                      | 3.75      | 8.7               | 10.2 | 12.0 | 13.6 | 19.1 | 21.8 |
|                      | 4.00      | 9.1               | 10.7 | 12.6 | 14.2 | 20.0 | 23.0 |



# Maximum Deflection

PLEXIGLAS® Soundstop 20 mm  
 2000 mm width,  
 loosely clamped on four sides

| Deflection           | w [mm]    | Sheet height [mm] |      |      |      |      |      |
|----------------------|-----------|-------------------|------|------|------|------|------|
| Static wind pressure | q [kN/m²] | 1500              | 2000 | 2500 | 3000 | 4000 | 5000 |
|                      | 0.80      | 2.8               | 5.7  | 8.0  | 9.5  | 10.3 | 10.8 |
|                      | 1.00      | 3.5               | 7.0  | 9.9  | 11.8 | 12.8 | 13.4 |
|                      | 1.23      | 4.3               | 8.5  | 11.9 | 14.2 | 16.2 | 17.4 |
|                      | 1.45      | 5.0               | 10.0 | 13.9 | 16.6 | 18.1 | 18.9 |
|                      | 1.72      | 6.0               | 11.7 | 16.2 | 19.3 | 22.9 | 23.1 |
|                      | 2.00      | 6.9               | 13.4 | 18.4 | 21.9 | 26.5 | 28.8 |
|                      | 2.27      | 7.8               | 14.9 | 20.4 | 24.4 | 28.4 | 30.4 |
|                      | 2.54      | 8.7               | 16.5 | 22.4 | 26.7 | 31.5 | 34.3 |
|                      | 2.77      | 9.4               | 17.7 | 23.9 | 28.6 | 33.4 | 37.4 |
|                      | 3.00      | 10.2              | 18.9 | 25.4 | 30.4 | 34.5 | 40.2 |
|                      | 3.25      | 11.0              | 20.1 | 27.0 | 32.4 | 37.3 | 43.6 |
|                      | 3.50      | 11.7              | 21.3 | 28.5 | 34.2 | 39.9 | 47.9 |
|                      | 3.75      | 12.5              | 22.5 | 30.0 | 36.0 | 43.0 | 50.5 |
|                      | 4.00      | 13.3              | 23.6 | 31.4 | 37.7 | 49.7 | 53.6 |

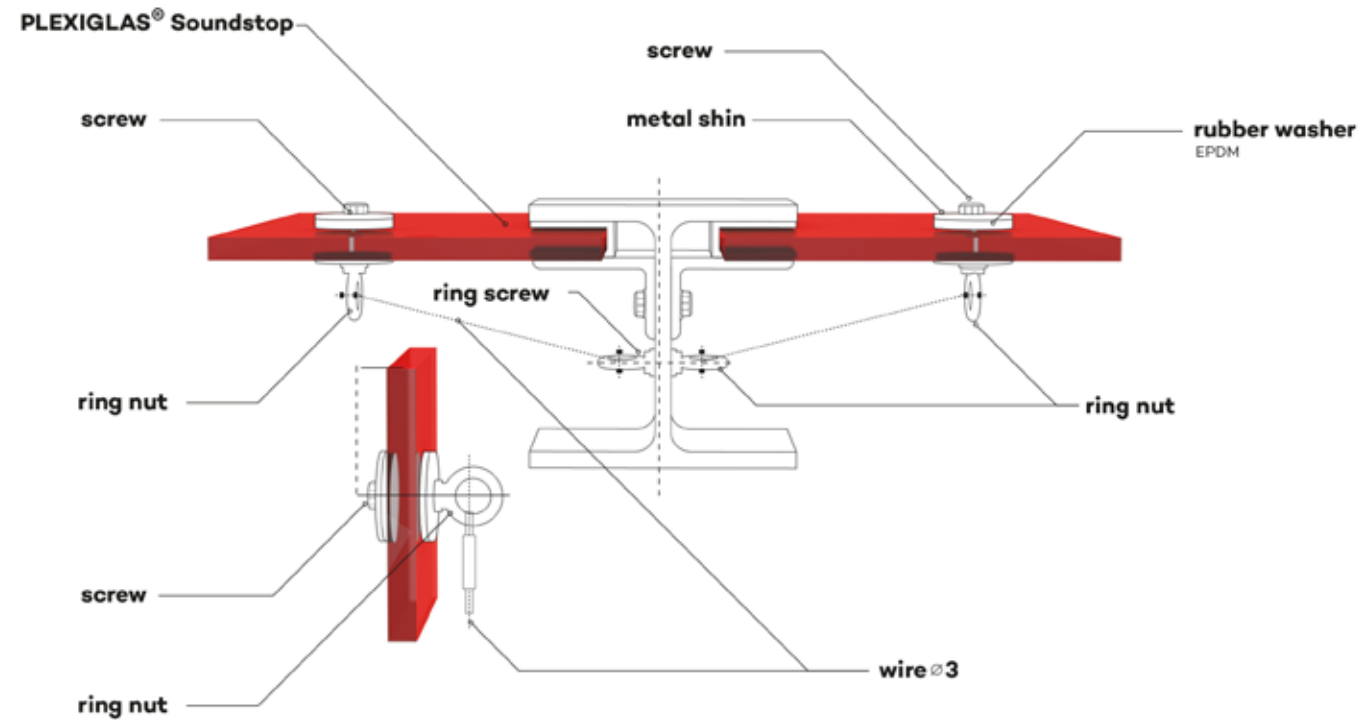
On request, we will be pleased to calculate the deflection and material stress for other sizes, wind pressures and material thicknesses.

# Maximum Stress

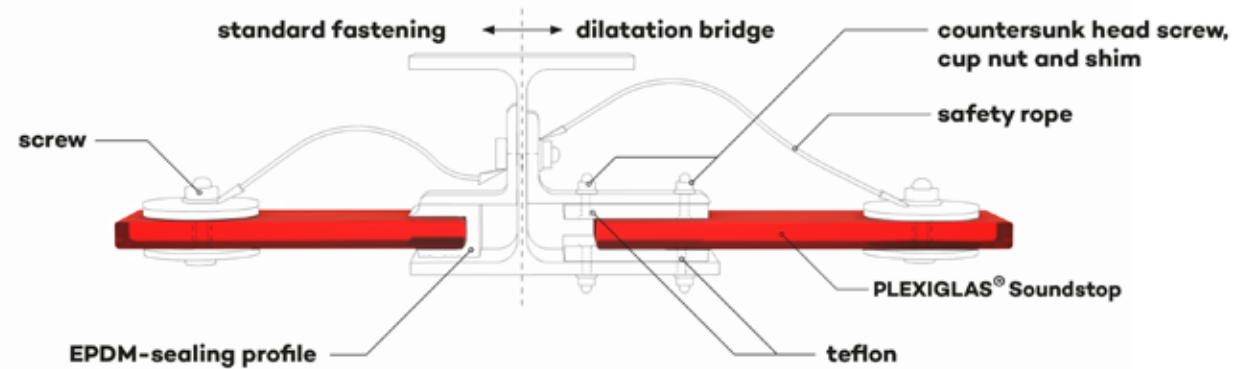
PLEXIGLAS® Soundstop 20 mm  
 2000 mm width,  
 loosely clamped on four sides

| Stress               | σ [MPa]   | Sheet height [mm] |      |      |      |      |      |
|----------------------|-----------|-------------------|------|------|------|------|------|
| Static wind pressure | q [kN/m²] | 1500              | 2000 | 2500 | 3000 | 4000 | 5000 |
|                      | 0.80      | 1.2               | 1.6  | 2.1  | 2.5  | 2.8  | 3.2  |
|                      | 1.00      | 1.5               | 2.0  | 2.7  | 3.1  | 3.5  | 4.0  |
|                      | 1.23      | 1.8               | 2.5  | 3.2  | 3.7  | 4.5  | 5.2  |
|                      | 1.45      | 2.2               | 2.9  | 3.8  | 4.4  | 5.3  | 5.9  |
|                      | 1.72      | 2.6               | 3.4  | 4.5  | 5.1  | 6.3  | 7.5  |
|                      | 2.00      | 3.0               | 4.0  | 5.1  | 5.8  | 6.9  | 8.2  |
|                      | 2.27      | 3.4               | 4.5  | 5.7  | 6.6  | 8.5  | 9.1  |
|                      | 2.54      | 3.8               | 5.0  | 6.4  | 7.2  | 9.3  | 10.1 |
|                      | 2.77      | 4.1               | 5.4  | 6.8  | 7.8  | 10.0 | 10.6 |
|                      | 3.00      | 4.5               | 5.8  | 7.3  | 8.4  | 10.5 | 11.2 |
|                      | 3.25      | 4.8               | 6.2  | 7.9  | 8.9  | 12.2 | 13.0 |
|                      | 3.50      | 5.2               | 6.7  | 8.4  | 9.5  | 13.1 | 13.6 |
|                      | 3.75      | 5.5               | 7.1  | 8.8  | 10.1 | 13.7 | 14.5 |
|                      | 4.00      | 5.9               | 7.5  | 9.3  | 10.6 | 14.2 | 15.2 |

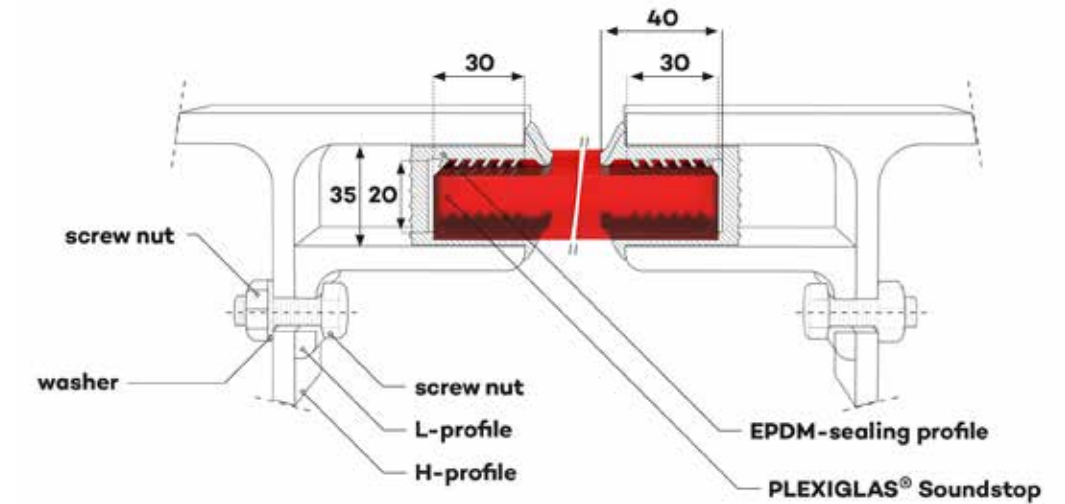
# Construction details



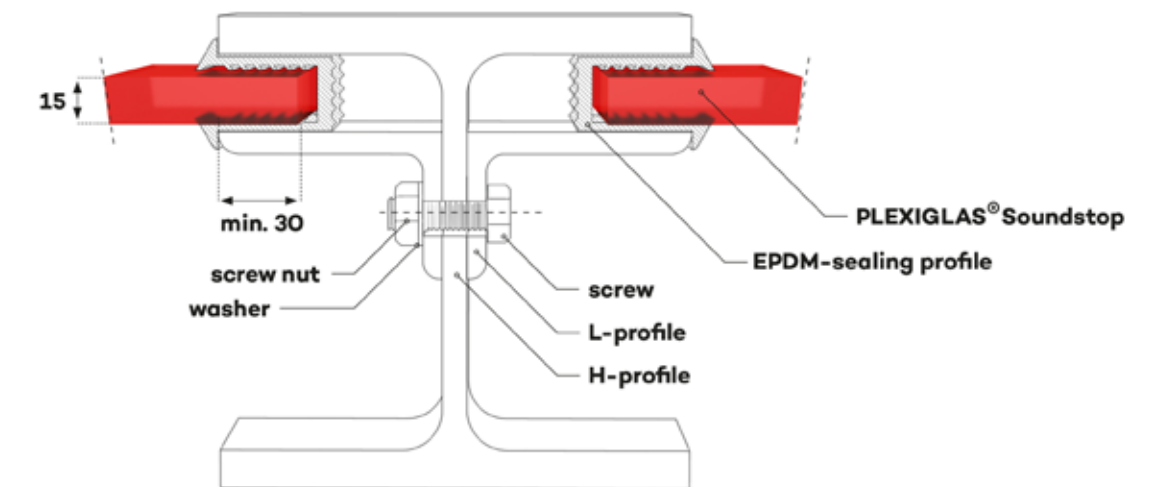
Posts with retention system 1



Posts with retention system 2



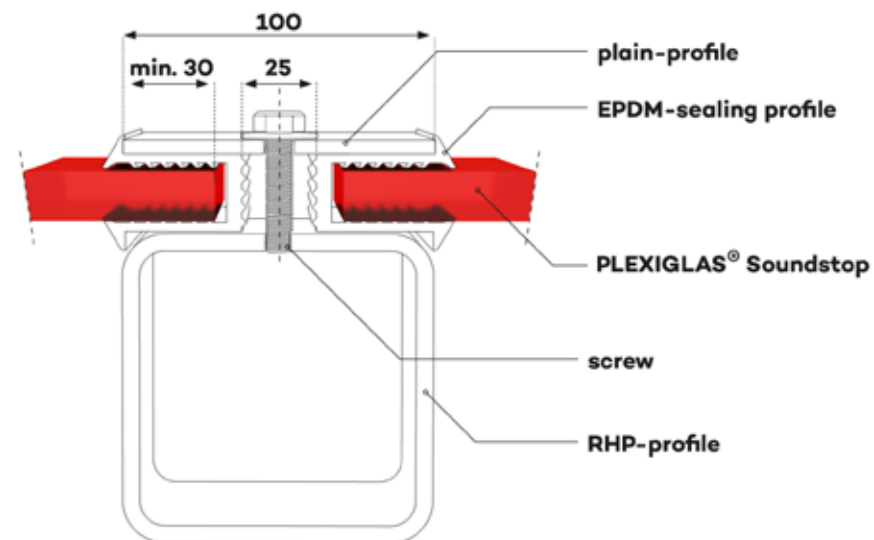
Fastening, Detail 1



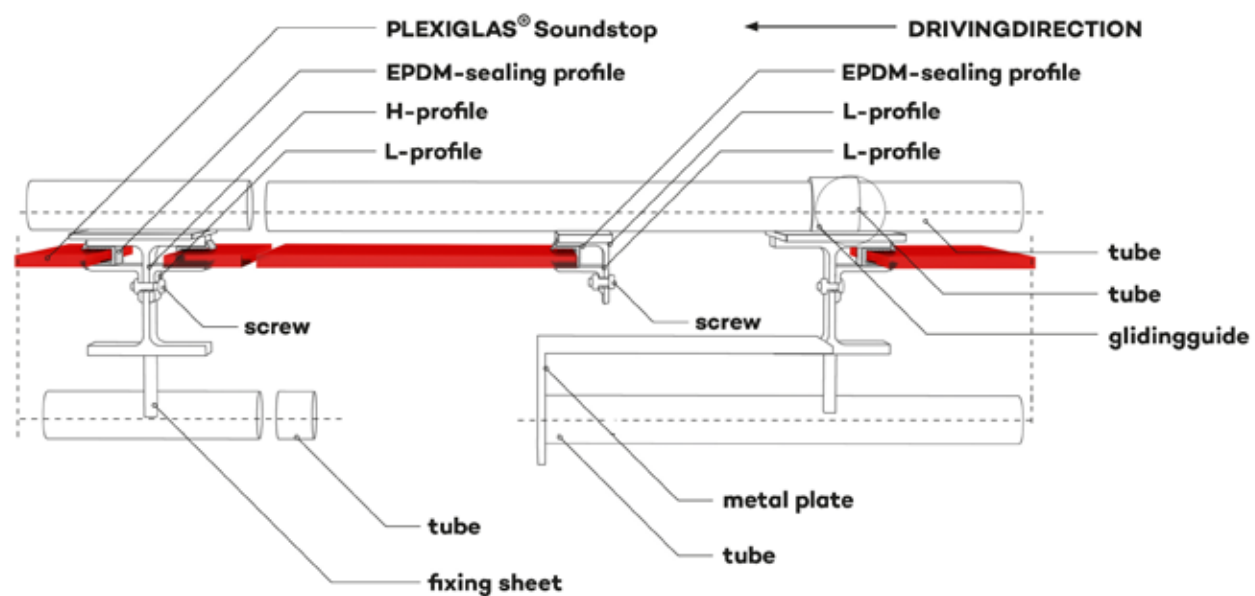
Fastening, Detail 2



# Construction details and Retention Systems



Fastening, Detail 3



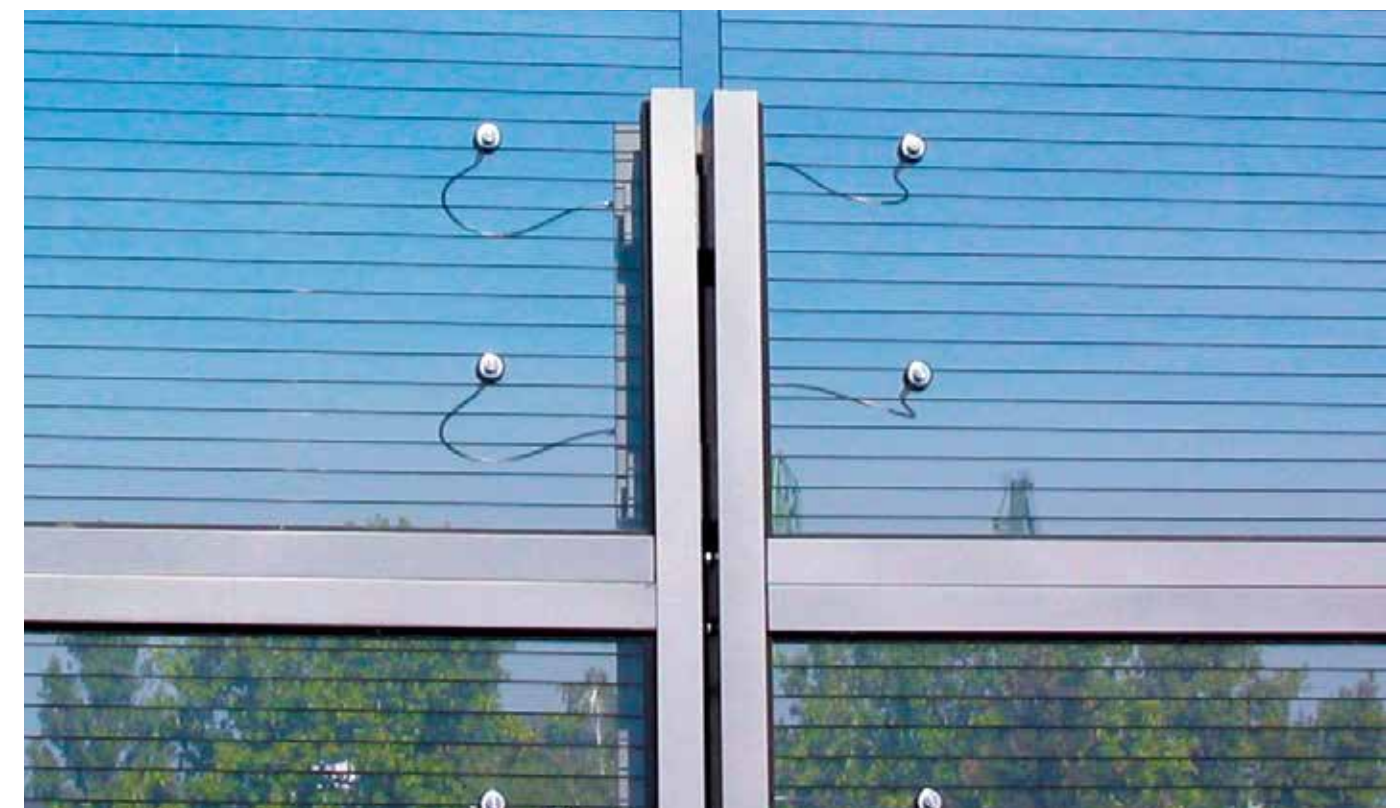
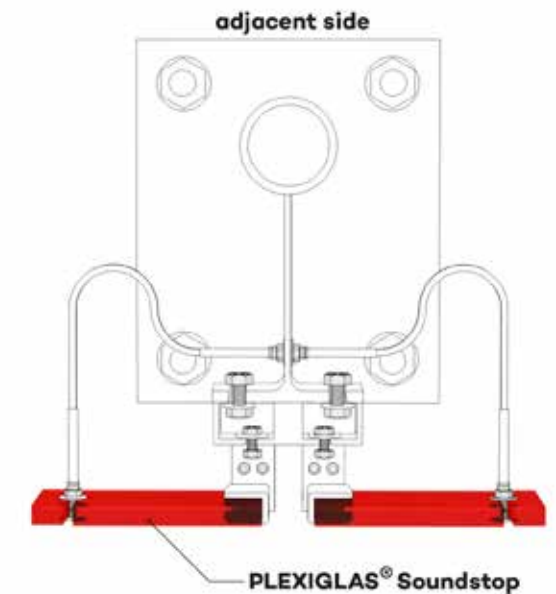
Fastening, Detail 4

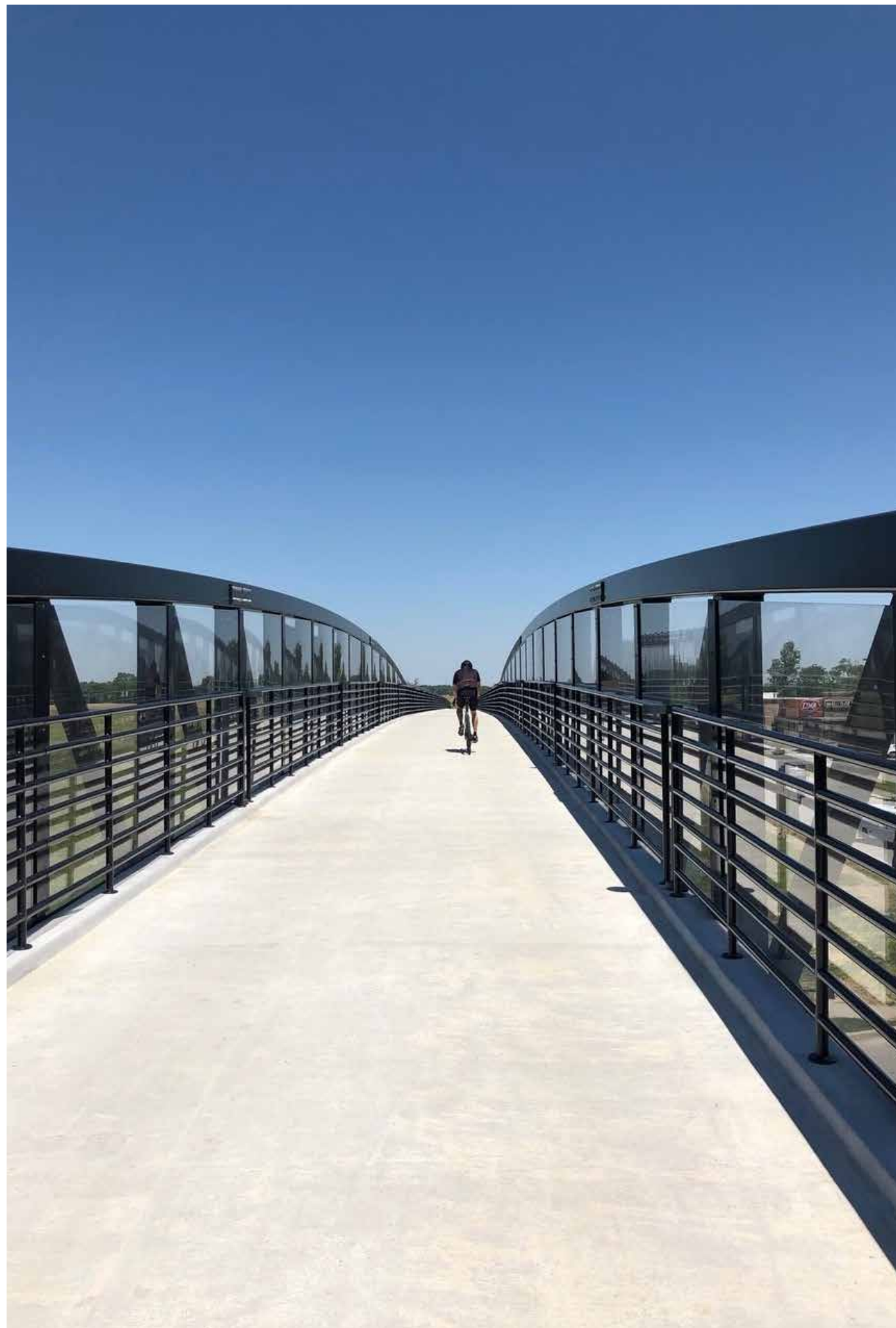
## Additional Securing of Elements and Parts Thereof

### ZTV-LSW 06 and/or EN 1793 & 1794 state

On bridges, supporting walls and similarly exposed sites on or immediately adjacent to public traffic areas, noise control elements must be secured against falling onto these surfaces by means of restraint structures. Thus, transparent elements or fragments must be secured against falling. This is done by means of restraint systems, e.g. wire netting or, in the case of transparent plastics, by integrated restraint systems with additional wire cables.

Restraint structures are to be calculated so as to withstand a load resulting from the fourfold weight of the elements filled to 20 % with water. The restraint structure is normally installed at the four corners of each noise barrier element, the loop length of the cable being calculated so that the element is restrained after 0.3 m.





# Cleaning

PLEXIGLAS® Soundstop has a perfectly smooth surface that shows no wear even after many years owing to its excellent weather resistance.

## Dirt is normally removed by rainwater.

That means rain is usually sufficient for adequate cleaning of the sheets. If more intensive cleaning is required, the sheets can be washed with low surface-tension water.

The most economical way is to use high-pressure cleaning equipment.



## Graffiti

Spray paints can be removed from PLEXIGLAS® Soundstop. We recommend the use of special graffiti removers e.g. PlexiClean from EAG GmbH, followed by washing with copious amounts of water.



# References: Germany



**Noise barrier, Autobahn A9, Trockau**  
PLEXIGLAS® Soundstop GS CC  
Fa. Markus Kaiser



**Noise barrier, Railway station Baden Baden**  
PLEXIGLAS® Soundstop GS CC  
R. Kohlhauser GmbH



**Noise barrier, Travequerung, Lübeck**  
PLEXIGLAS® Soundstop GS CC  
Fa. Markus Kaiser



**Noise barrier, Landau**  
PLEXIGLAS® Soundstop GS CC  
R. Kohlhauser GmbH



**Noise barrier, Nibelungenbrücke, Regensburg**  
Lower part made of PLEXIGLAS® Soundstop NT  
Fa. Markus Kaiser



**Noise barrier, Eltville**  
PLEXIGLAS® Soundstop XT





**Noise barrier, gas station Wesseling**  
 PLEXIGLAS® Soundstop GS CC  
 installed as an acrylic element with aluminum frame  
 Alusyston Lärmschutz GmbH



**Noise barrier, Rheinbrücke A1, Leverkusen**  
 PLEXIGLAS® Soundstop GS CC  
 Alusyston Lärmschutz GmbH



**Noise barrier, Donaubrücke, Ingolstadt**  
 PLEXIGLAS® Soundstop GS CC  
 Fa. Markus Kaiser



**Noise barrier, Pirmasens**  
 PLEXIGLAS® Soundstop GS CC, 15 mm



**Noise barrier, Bridge Schwabach A6, Schwabach**  
 PLEXIGLAS® Soundstop GS CC







**Noise barrier, Pollenfeld**  
PLEXIGLAS® Soundstop XT BirdGuard, 20 mm



**Noise barrier, City Schwabach**  
PLEXIGLAS® Soundstop GS CC  
Franken-Schotter GmbH & Co. KG  
91757 Treuchtlingen Dietfurt



## References: Switzerland



**Noise barrier, Highway N1, Morges West, Kanton Waadt**  
PLEXIGLAS® Soundstop GS  
Usine des Jurats S.A.



**Noise barrier, Baregg**  
PLEXIGLAS® Soundstop GS CC und XT  
Weleco AG, Dietikon



# References: Austria



**Noise barrier, A23, Knoten Inzerdorf**  
PLEXIGLAS® Soundstop GS CC  
Forster Metallbau Gesellschaft m.b.H. Wien



**Noise barrier, Rederbrücke, Steyr**  
PLEXIGLAS® Soundstop GS CC  
STRABAG-Thalgau, Forster Lärmschutz Elemente, Forster Metallbau Gesellschaft m.b.H.



**Noise barrier, A1, Melk**  
PLEXIGLAS® Soundstop XT  
Alpine, Salzburg



**Noise barrier, regional tram Traun test track**  
PLEXIGLAS® Soundstop GS CC  
Forster Metallbau Gesellschaft m.b.H. Traun



**Noise barrier, A1, Steinhäusl**  
PLEXIGLAS® Soundstop GS CC  
Forster Metallbau Gesellschaft m.b.H.



**Printed noise barrier**  
PLEXIGLAS® Soundstop GS CC  
Forster Metallbau Gesellschaft m.b.H. St. Pölten



# References: Netherlands



**Noise barrier, Dordrecht**  
PLEXIGLAS® Soundstop XT  
Combinatie Aannemers Bedr. Van Lee B. V.



**Noise barrier, Velperbroek**  
PLEXIGLAS® Soundstop XT  
Combinatie Heijmans-Strukton



**Noise barrier, A15, Tiel**  
PLEXIGLAS® Soundstop XT  
Holland Scherm B. V. Rotterdam



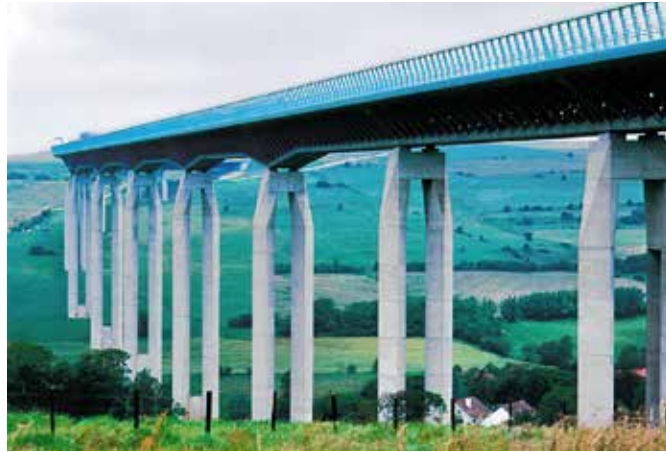
**Noise barrier, A15, Gorinchem**  
PLEXIGLAS® Soundstop XT  
Heijmans B. V., s'Hertogenbosch und Strukton Betonbouw, Maarssen



**Noise barrier, Terbregseplein**  
PLEXIGLAS® Soundstop GS  
Reynolds Special Products B. V. Lelystad



## References: France



**Wind screen, Boulogne sur mer**  
 PLEXIGLAS® Soundstop XT  
 Boulogne sur mer



**Noise barrier, Boulevard Intercommunal du Parisis**  
 PLEXIGLAS® Soundstop GS CC  
 Direction Départementale de l'Équipement, Val d'Oise



## References: Spain



**Noise barrier, Parc Oceanografic Valencia**  
 PLEXIGLAS® Soundstop GS



# References: Italy



**Tunnel entrance, Monte Barro, Lecco**  
PLEXIGLAS® Soundstop XT  
Tubosider ITALIANA S.p.A.



**Noise barrier, high-speed section Rom–Neapel**  
PLEXIGLAS® Soundstop XT  
Saico Spa, Arezzo



**Noise barrier, Bridge Turin–Frejus**  
PLEXIGLAS® Soundstop XT  
Tubosider ITALIANA S.p.A.



**Noise barrier, Ponte Roma, Bolzano**  
PLEXIGLAS® Soundstop GS CC  
FIP Industriale Spa, Selvazzano Dentro (Padova)



**Noise barrier, Pontebba, Udine**  
PLEXIGLAS® Soundstop XT  
ABB installazioni Spa, Milano





**Noise barrier, Highway Trento Sud Flyover**  
PLEXIGLAS® Soundstop GS CC 20 mm, Clear  
Trento Sud Flyover



**Noise barrier, Highway Valdastico Sud**  
PLEXIGLAS® Soundstop XT 20 mm, Spring Green  
Valdastico



**Noise barrier, Piazza Maggi, Milano**  
PLEXIGLAS® Soundstop XT  
Technical, Provaglio (Brescia)



## References: England



**Wind screen, Mersey bridge, Liverpool**  
PLEXIGLAS® Soundstop GS  
Liverpool





## References: Czech Republic



**Noise barrier, Motoway D5, Lodenice**  
PLEXIGLAS® Soundstop XT  
Stavebni technologie



**Noise barrier, Praha 6, Ruzyne**  
PLEXIGLAS® Soundstop XT  
SMP Construction a.s.

## References: Greece



**Noise barrier, Sepolia „Schools of Athens“ (GR)**  
PLEXIGLAS® Soundstop XT  
Ergoakoustiki Ltd.

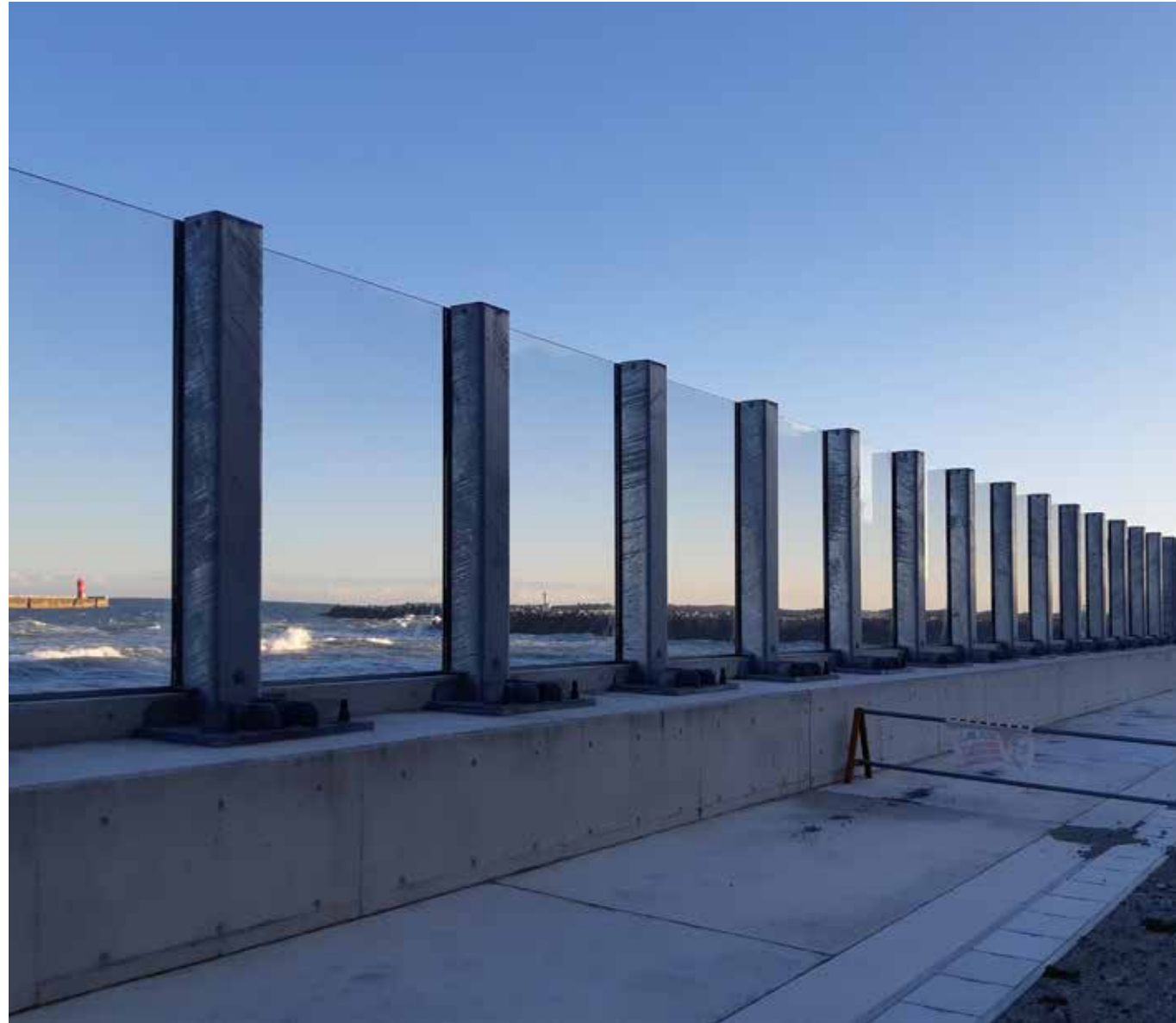


**Noise barrier, Bar Limanakia (GR)**  
PLEXIGLAS® Soundstop XT  
Ergoakoustiki Ltd.





# References: Japan



**Fukushima Tsunami barrier**  
PLEXIGLAS® Soundstop GS, 40 mm  
Fukushima



**Noise barrier, Obara**  
PLEXIGLAS® Soundstop GS CC  
Tokyo Rope Ltd.

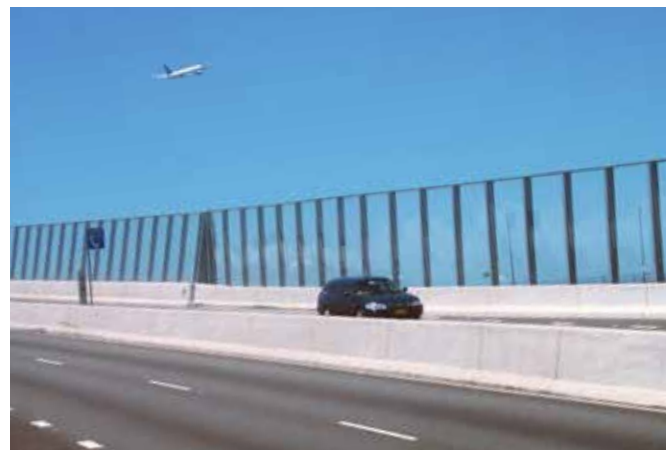


**Noise barrier, Highway Tsuruoka**  
PLEXIGLAS® Soundstop GS CC  
Tsuruoka





# References: Australia



**Wind screen, M-5 East Freeway, Sydney**  
PLEXIGLAS® Soundstop XT and GS CC  
Boulderstone Hornibrook  
Bilfinger Berger Joint Venture



**Noise barrier, Parramatta Rail Link, Sydney**  
PLEXIGLAS® Soundstop GS CC  
Ingal Civil Products



**Noise barrier, M5, Melbourne**  
PLEXIGLAS® Soundstop  
John Holland



**Noise barrier, Eastern Distributor, Sydney**  
PLEXIGLAS® Soundstop XT and GS CC  
Leighton Constructions



# References: Hongkong



**Noise barriers, noise control tunnel Eastern Corridor**  
PLEXIGLAS® Soundstop GS CC and GS  
Active Way Ltd.



**Noise barriers, noise control tunnel Eastern Corridor**  
PLEXIGLAS® Soundstop GS CC and GS  
Active Way Ltd.



**Inside view of noise control tunnel Eastern Corridor**  
PLEXIGLAS® Soundstop GS CC and GS  
Active Way Ltd.



**Noise barrier, Ho Lung Tao**  
PLEXIGLAS® Soundstop XT  
Active Way Ltd.



## References: North America\*



**Noise barrier, near Telegraph Canyon Road off the I-805 Freeway in Chula Vista, CA**  
ACRYLITE® Soundstop



**Noise barrier, South Bay Freeway (CA-54) in Spring Valley, CA**  
ACRYLITE® Soundstop



**Noise barrier, near Exit 90 Alicia Pkwy on the I-5 in Laguna Hills, CA**  
ACRYLITE® Soundstop



**Noise barrier, near Target on W Redondo Beach Blvd. in Gardena, CA**  
ACRYLITE® Soundstop



**Noise barrier, on I-75 in Dayton, OH**  
ACRYLITE® Soundstop

\* Röhm GmbH and its affiliates are 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.





**Noise barrier, Peters Creek Bridge (NC-150) over US-158/US-421 in Winston-Salem, NC**  
ACRYLITE® Soundstop GS CC Spring Green



**Noise barrier, Scudder Falls Bridge on I-295, Ewing Township, NJ**  
ACRYLITE® Soundstop GS CC



**Noise barrier, Governor Mario M. Cuomo Bridge, Tarrytown, NY**  
ACRYLITE® Soundstop GS CC



**Noise barrier, I-88 over Roosevelt Road and IL-38 in Elmhurst, IL**  
ACRYLITE® Soundstop GS CC Smoky Brown



**Noise barrier, I-5 in Mission Viejo, CA**  
ACRYLITE® Soundstop



Project:  
Bridge over  
Britzer Zweigkanal



| PLEXIGLAS® Soundstop GS CC |                                                                                            |
|----------------------------|--------------------------------------------------------------------------------------------|
| Material Grade             | Clear with black threads; Thickness: 20 mm                                                 |
| Site                       | A 113, Berlin, Britz quarter, Germany                                                      |
| Size                       | approx.. 500 m²                                                                            |
| Contractor                 | DEGES Deutsche Einheit Fernstraßenplanungs- und -bau GmbH<br>Zimmerstraße 54, 10117 Berlin |
| Construction               | Alusyston Lärmschutz GmbH, Düsseldorf                                                      |
| Build in                   | 2003                                                                                       |
| Special feature            | The noise barrier is curved 10° inwards in harmony with the bridge arches.                 |



**Detailed View**  
The inclination of the noise barrier follows the inclination of the bridge structure (inclined inwards by 10°).

The uppermost PLEXIGLAS® SoundstopGS CC elements are partially freestanding.



# Project:

## Noise Barrier

### AD Berlin / Neukölln



| PLEXIGLAS® Soundstop GS CC |                                                                                            |
|----------------------------|--------------------------------------------------------------------------------------------|
| Material Grade             | Clear; Thickness: 20 mm                                                                    |
| Site                       | A 100/A 113, Berlin/Neukölln, Germany                                                      |
| Size                       | 69.000 m² total surface area, largely transparent                                          |
| Contractor                 | DEGES Deutsche Einheit Fernstraßenplanungs- und -bau GmbH<br>Zimmerstraße 54, 10117 Berlin |
| Construction               | Various specialized companies                                                              |
| Build in                   | 2003/2004                                                                                  |



Detailed View



# Project: Noise Barrier Normandy



| PLEXIGLAS® Soundstop GS CC |                                                                               |
|----------------------------|-------------------------------------------------------------------------------|
| Material Grade             | Clear; Thickness: 15 mm                                                       |
| Site                       | A 14, Paris-Normandie, France                                                 |
| Size                       | ca. 10.000 m²                                                                 |
| Contractor                 | SAPN – Société d'Autoroute Paris-Normandie<br>Place Louis Armand, 75012 Paris |
| Construction               | Agence Lavigne, 8 rue Gambetta, 92170 Vanves                                  |
| Installation               | RCA SACO                                                                      |
| Build in                   | 1995/1996                                                                     |
| Special feature            | Integrated street lighting in upper frame profile                             |



Detailed View



# Project: Noise Barrier Komoko



| PLEXIGLAS® Soundstop XT |                                                     |
|-------------------------|-----------------------------------------------------|
| Material Grade          | Clear; Thickness: 15 mm                             |
| Site                    | Praha 4, Modrany, CZ                                |
| Size                    | 2.500 m²                                            |
| Contractor              | Metrostav a.s., Kozeluzska 224, Praha 8             |
| Construction            | AZENIT spol. s.r.o., Radlicka 138, CZ-15000 Praha 5 |
| Build in                | 2003                                                |
| Special feature         | Cold-curved                                         |



Detailed View



# About Us

The breadth of our range and innovative specialty products pave our customers’ way to tomorrow’s markets.

The Acrylic Products Business Unit of Röhm GmbH is a pioneer and world market leader in methacrylate chemistry.

- Acrylic was invented in 1933 by Dr. Otto Röhm, and PLEXIGLAS® is a registered trademark. In the Americas, our noise control products are marketed under the ACRYLITE® Soundstop trademark. With its high proportion of specialties and system solutions, the business unit ensures the constant further development of existing market segments and the discovery of new potential in future-ready applications. The breadth of our range and innovative specialty products pave our customers’ way to tomorrow’s markets.

- The business unit opened up the noise control marketsegment in 1980 with the specially developed product PLEXIGLAS® Soundstop. Since then, both the products themselves and the product range have undergone continuous development and been adjusted to the requirements of the global market.
- Today, noise barriers made from PLEXIGLAS® can be found in Europe and Australia as well as in many countries of Asia and in the USA. The Acrylic Products Business Unit pursues the same targets as Röhm GmbH as a whole. With our innovations, we would like to help achieve effective results in our fields of application and improve the quality of life for people everywhere, at all times.

Items made from PLEXIGLAS® Soundstop can be found in the following countries:

- |                      |               |               |
|----------------------|---------------|---------------|
| • Albania            | • Italy       | • Australia   |
| • Austria            | • Latvia      | • China       |
| • Belgium            | • Lithuania   | • Hongkong    |
| • Bosnia-Herzegovina | • Luxembourg  | • India       |
| • Bulgaria           | • Netherlands | • Indonesia   |
| • Croatia            | • Norway      | • Israel      |
| • Cyprus             | • Poland      | • Japan       |
| • Czech republic     | • Portugal    | • La Réunion  |
| • Finland            | • Romania     | • Malaysia    |
| • France             | • Russia      | • Mauritius   |
| • Germany            | • Serbia      | • New Zealand |
| • Great Britian      | • Slovakia    | • Singapur    |
| • Greece             | • Slovenia    | • South Korea |
| • Hungary            | • Spain       | • Taiwan      |
| • Iceland            | • Sweden      | • Thailand    |
| • Ireland            | • Switzerland |               |

- 
- Canada\*
  - USA\*
  - Mexico\*
  - Brazil\*
  - Argentina\*
  - Dominican Republic\*
  - Jamaica\*
  - Puerto Rico\*
  - Uruguay\*

\* marked under the trademark ACRYLITE® Soundstop



## United Nations Sustainable Development Goals: How PLEXIGLAS® supports sustainable action

The United Nations' 2030 Agenda for Sustainable Development aims to shape global economic progress in a socially just manner and within the Earth's environmental limits. At the heart of this agenda are 17 Sustainable Development Goals (SDG). These goals are to be achieved by 2030 through the joint efforts of states, companies and civil society. We at Röhm GmbH are also contributing toward this necessary change – through both our PLEXIGLAS® products and our company's sustainability strategy.



Find out which SDGs are particularly relevant for us and how PLEXIGLAS® supports sustainable action at [www.plexiglas.de/eco](http://www.plexiglas.de/eco).



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® = registered trademark

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

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