

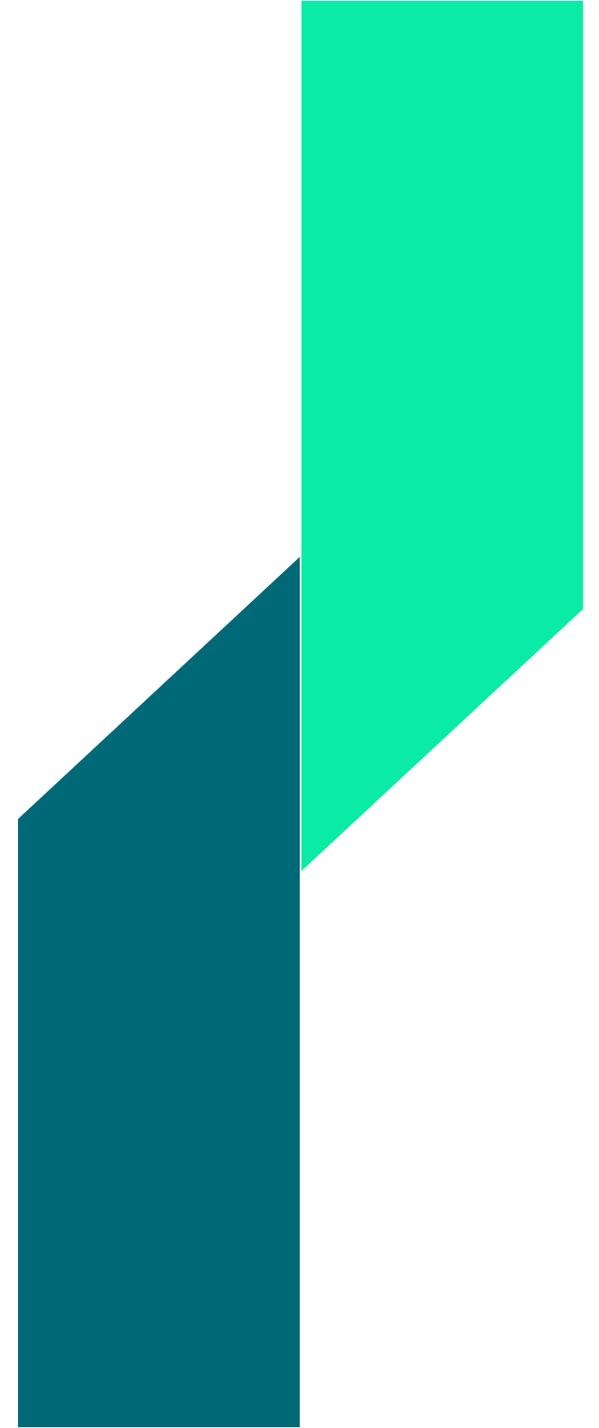
# PLEXIGLAS®

Soundstop

Best Practice in Noise and Wind Barriers worldwide

11/2025

Andreas Figl



# Best Practice in Noise and Wind Barriers worldwide

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- Testing and Qualification
- Examples

# Testing and Qualification

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## EN 1793-2 Laboratory test

- For diffuse sound conditions like tunnels and semi-enclosures
- Oldest and most established standard procedure for measuring airborne sound insulation
- Test room is separated by the noise barrier element, loudspeaker on one side, microphone on the other



# Testing and Qualification

## EN 1793-6 In-situ test

- For direct sound fields
- Typical application for noise barriers along the road
- Must be done on a full-scale noise barrier of certain height and length
- Can also be used to determine performance on an installed barrier as a means of quality control



Picture A.3.1: test setup, view from receiving side



Picture A.3.2: test setup, view from source side

# Testing and Qualification

Load test procedure acc. EN 1794-1

Page 6  
of 9 pages

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**Figure 4:** Deformation of the noise barrier element after exposure to 100% of the test load, 3-side mounting



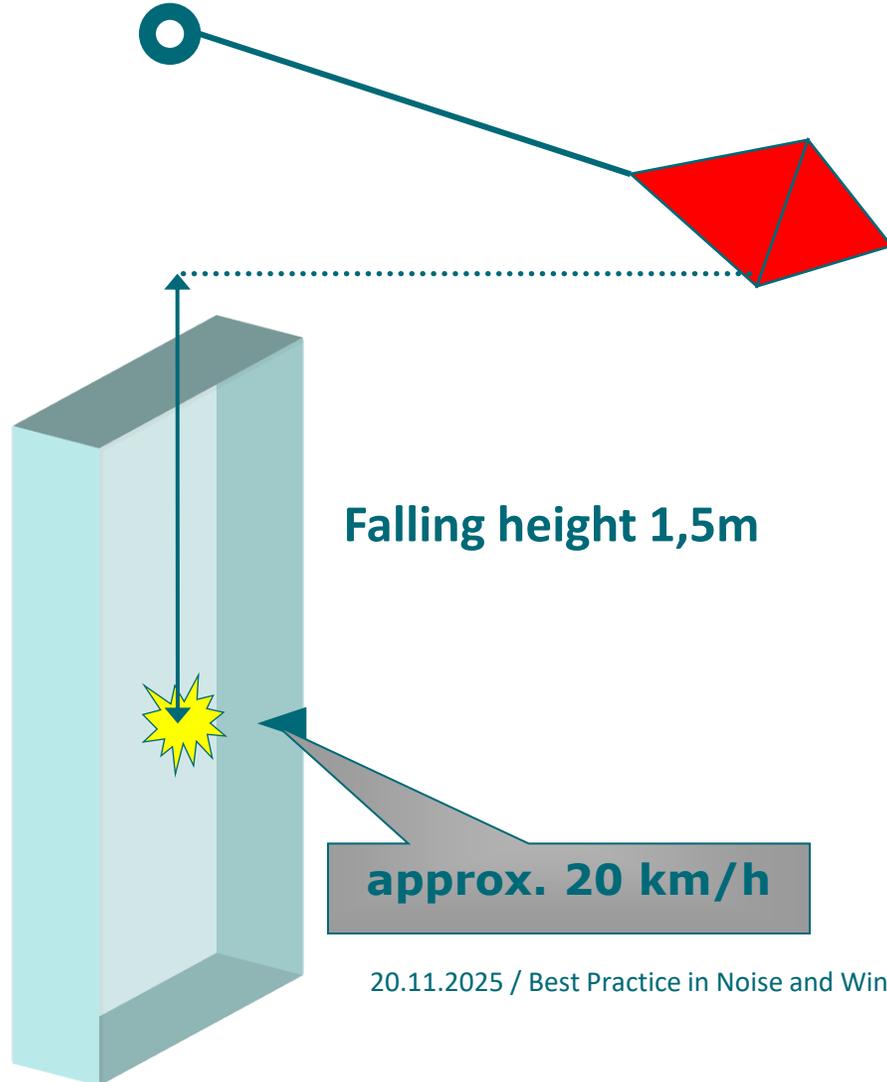
**Figure 5:** Deformation of the rubber profiles after exposure to 100% of the test load, 3-side mounting



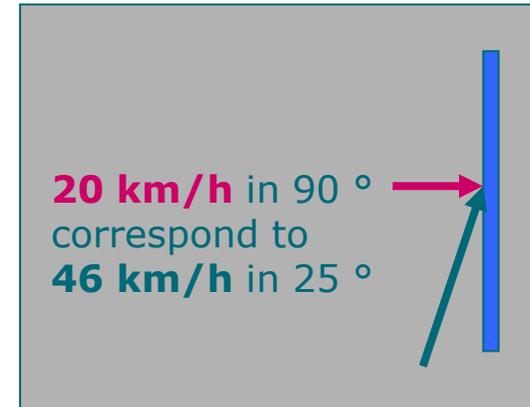
**Figure 6:** Deformation of the noise barrier element after removal of 100% of the test load, ruler for demonstration, measuring points, 3-side mounting

# Testing and Qualification

Secondary Safety acc. EN 1794-2:



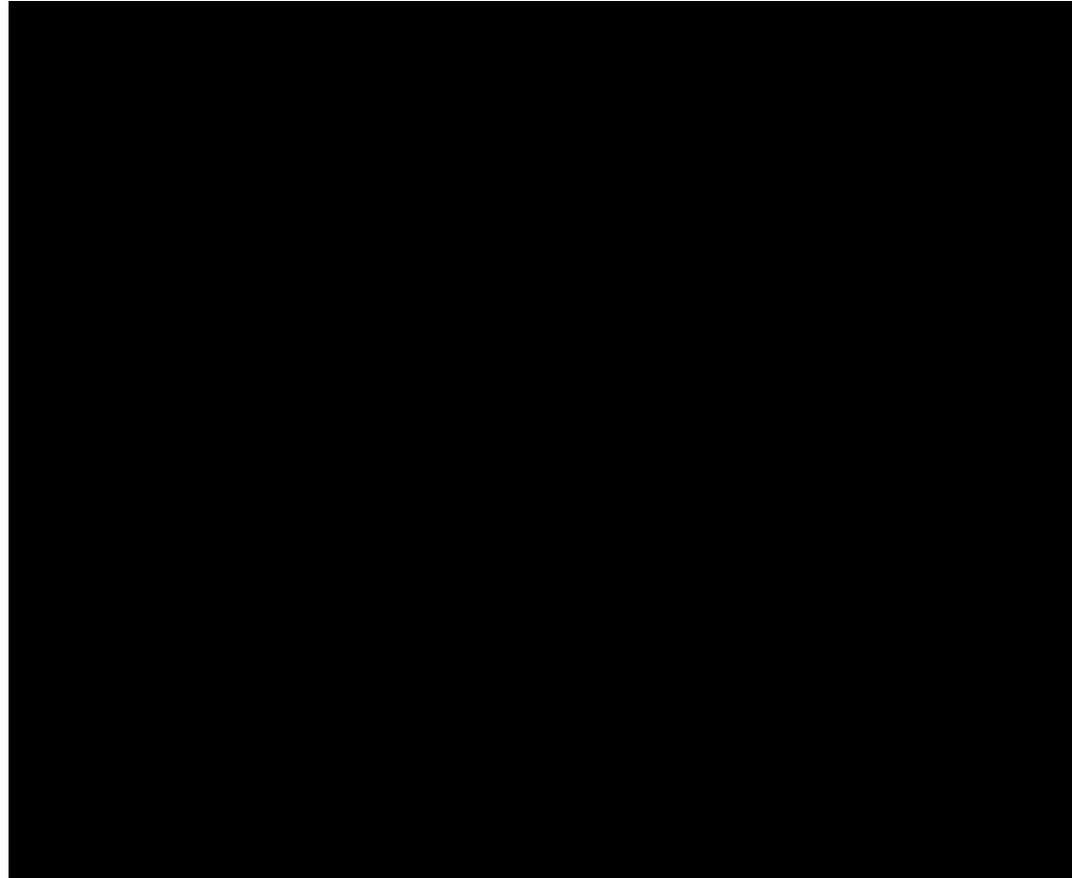
Double conical shape impactor  
Weight: 400kg  
Impact Energy: 6KJ



# Testing and Qualification

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EN 1794-2 Impact test with PLEXIGLAS® Soundstop GS CC



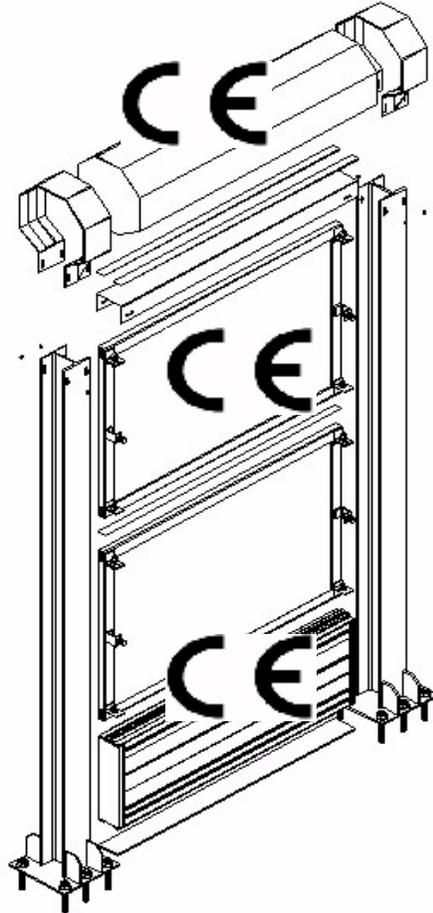
# PLEXIGLAS® Soundstop: Secondary Safety

EN 1794-2 Impact test with PLEXIGLAS® Soundstop GS CC



# Testing and Qualification

DoP of the noise barrier system



ENBF Brussels



NOISE BARRIER SYSTEM is the ROAD EQUIPMENT required for CE marking

DECLARATION of PERFORMANCE must be assessed by the CONTRACTOR in charge of supplying the **whole system**.

It is NOT a mere collection of single components technical datasheets

# Best Practice in Noise and Wind Barriers worldwide

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■ Testing and Qualification

■ Examples

# Bridge over Britzer Canal, A 113, Berlin, Germany

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**PLEXIGLAS® Soundstop GS CC, 20 mm, 500m<sup>2</sup>**  
**Contractor: DEGES**  
**Fabricator: Alusyston**

# Poland Warsaw



PLEXIGLAS® Soundstop XT, 15 mm,  
2200 m<sup>2</sup>

**POLYVANTIS**



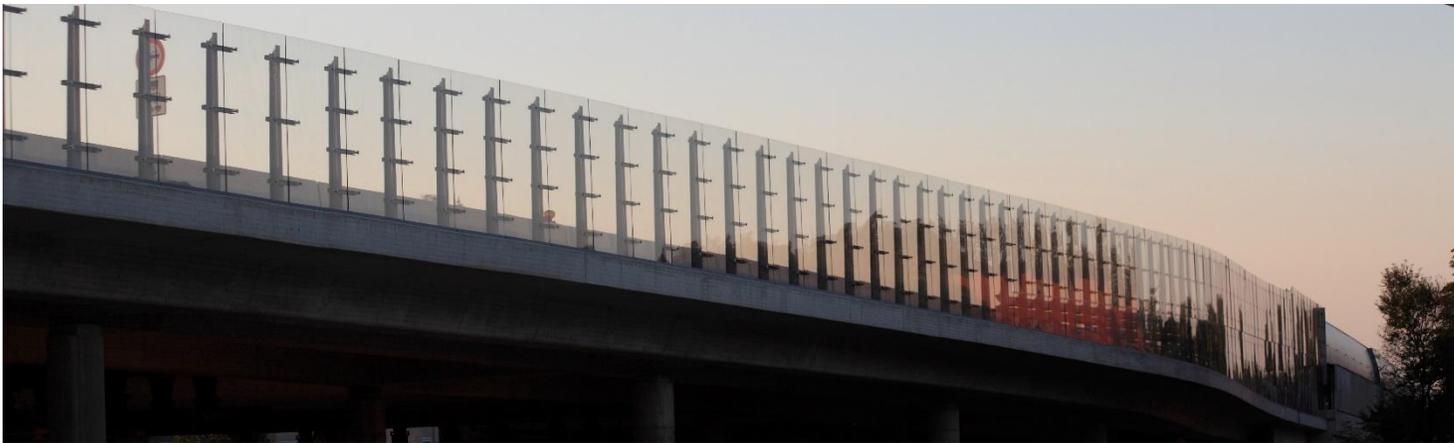
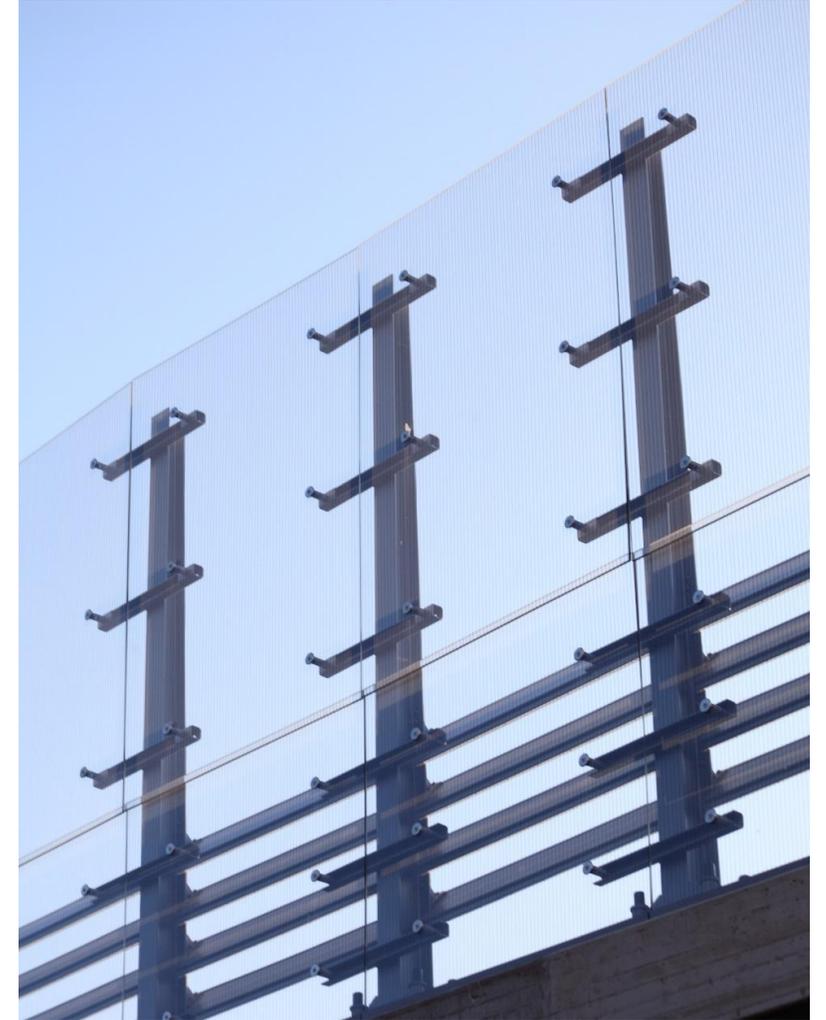
# Toyoda-Project, Nagoya, Japan

Integrated crash barrier and integrated lighting solution

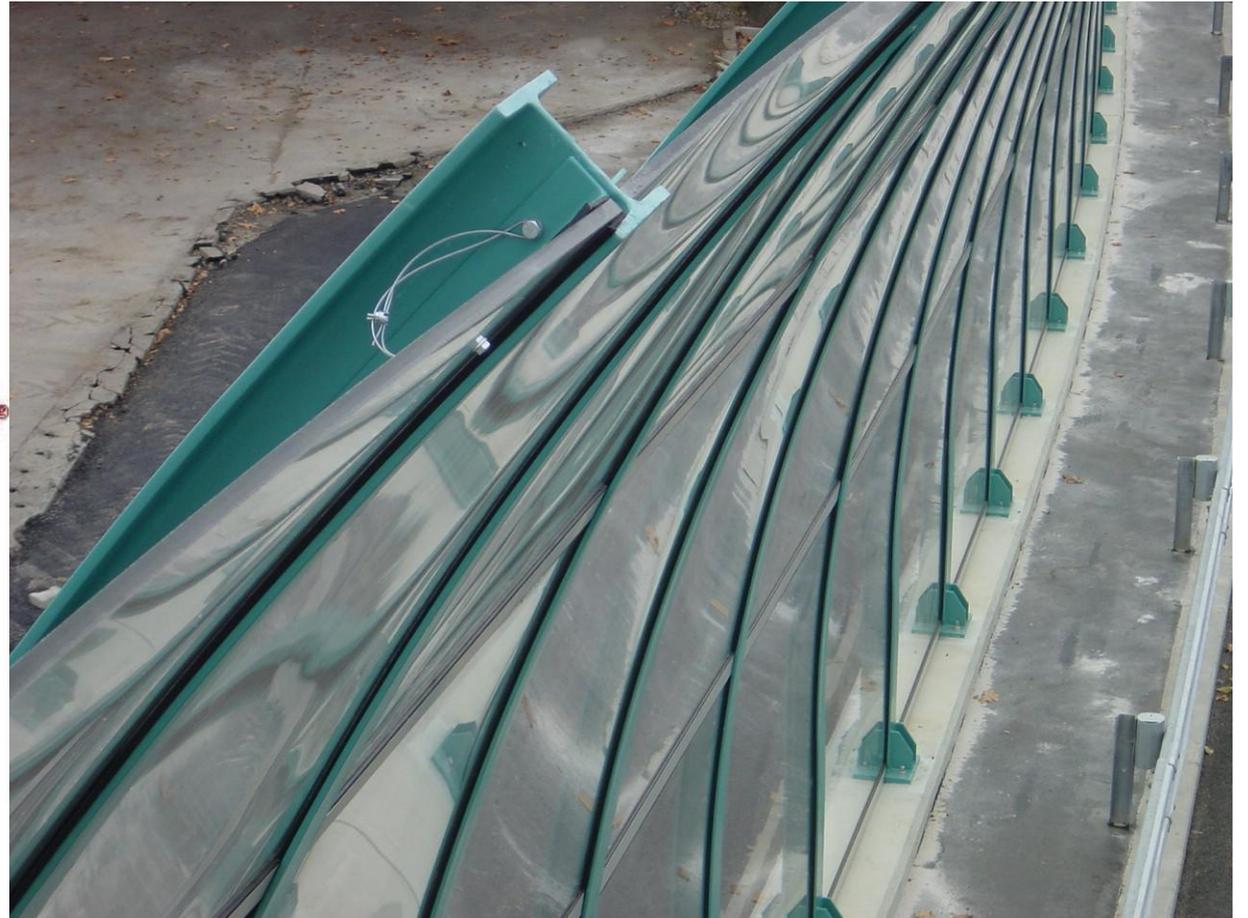
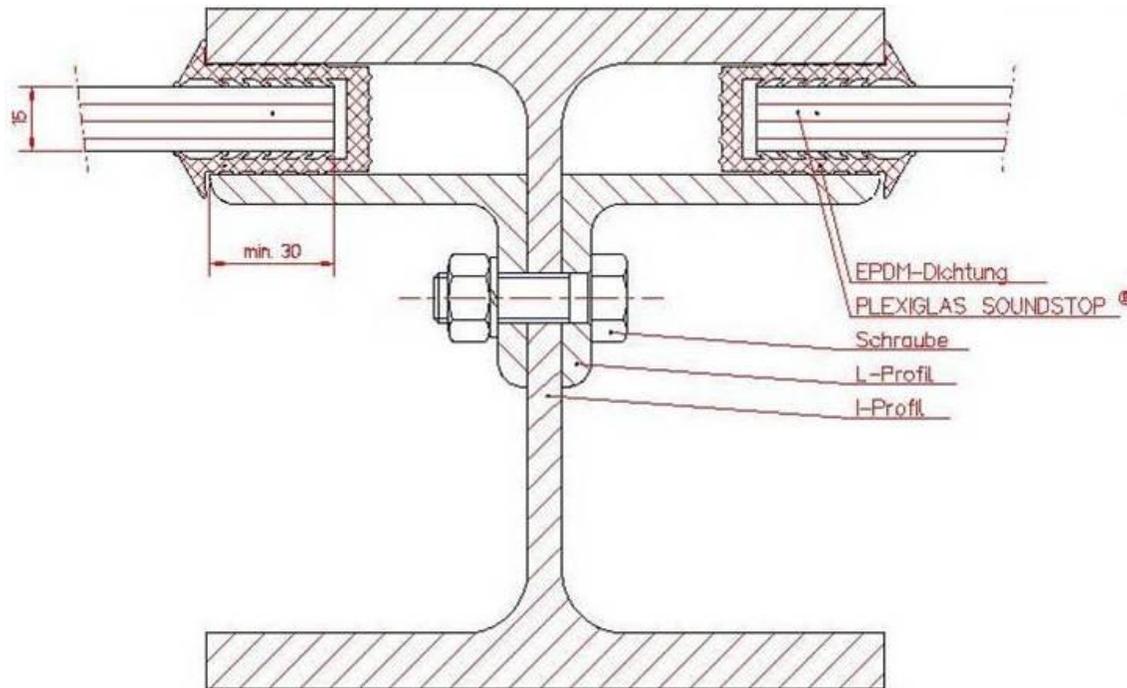


PLEXIGLAS® Soundstop GS CC 20 mm  
80.000 m<sup>2</sup> in total

## Point fixing:



## I-beam with elbow clamp system (L-profile)



# Prague - Modrany, Komoko, Czech Republic



PLEXIGLAS® Soundstop XT 15 mm clear,  
2500 m<sup>2</sup>, cold bending



# Bully bypass, Wollongong Australia

PLEXIGLAS® Soundstop GS CC 20 mm,  
1000 m<sup>2</sup>, cold bending  
contractor: Reed Constructions



# Randweg Eindhoven, Netherlands



**PLEXIGLAS® Soundstop XT, 25 mm, 2010**  
**panel size: 8200 x 2000 mm**  
**Screen printed tree silhouettes and stripes**

# Sochi, Russia

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PLEXIGLAS® Soundstop XT  
sky blue, 12 mm

4900 m<sup>2</sup>  
Contractor: ZAC

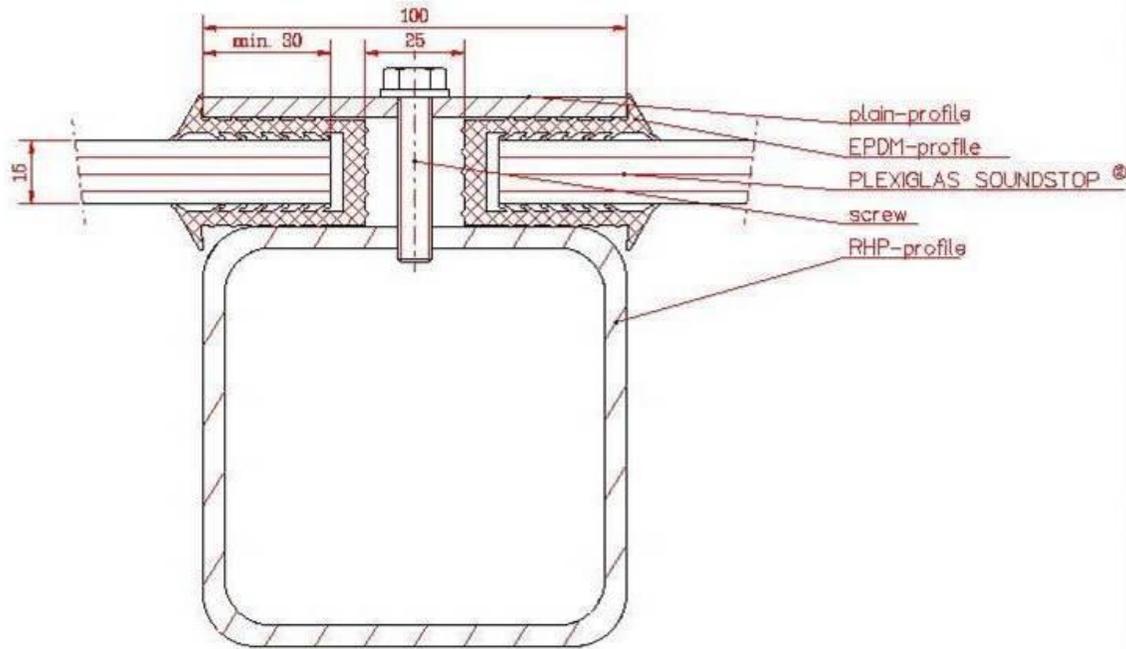
# New Zealand St. Marys Bay

PLEXIGLAS® Soundstop XT BirdGuard, 15 mm  
3800 m<sup>2</sup>

Contractor: Fletcher Corp.



# Fixing on a square tube



PLEXIGLAS® Soundstop GS and GS CC  
3360 m<sup>2</sup>, cantilevering, line bended  
Contractor: Tokyo Rope Mfg. Co., Ltd.

# Motorway junction Neukölln A 100 / A 113, Berlin



PLEXIGLAS® Soundstop GS CC, 20 mm, Alusyston, 2003

# Airport Bridge A 281, Bremen, Germany

PLEXIGLAS® Soundstop GS CC, 20 mm



## Transparent frame panels

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KOHLHAUER CLEARWALL® HS with PLEXIGLAS® Soundstop GS CC

# M5 East Freeway, International Airport, Sydney, Australia



Completed 2001 by Baulderstone  
Hornibrook Bilfinger Berger Joint Venture

1100 m<sup>2</sup> PLEXIGLAS® Soundstop XT clear  
800 m<sup>2</sup> PLEXIGLAS® Soundstop XT clear  
with bird stripes  
300 m<sup>2</sup> PLEXIGLAS® Soundstop XT clear

# Lukovica Highway, Slovenia

DELTABLOC PHONOBLOC® AL,  
Transparent PLEXIGLAS® Soundstop XT BirdGuard, 1000 m<sup>2</sup>



## BP Petrol Station, Wesseling, Germany



120 m<sup>2</sup> PLEXIGLAS® Soundstop GS CC clear, 15 mm  
Alusyston Lärmschutz

# Würzburg-Heidingsfeld, Germany



**KOHLHAUER ALUMNA®**, **KOHLHAUER SCORSA®** FRAME  
7000 m<sup>2</sup> + 2500 m<sup>2</sup>

# Aschaffenburg Strietwald A3, Germany



KOHLHAUER ALUFERA<sup>®</sup>, KOHLHAUER VOLTA<sup>®</sup>  
168 kWp Solar power,



# Prnjavor-Doboj, BiH



**KOHLHAUER ALUFERA®**, light weight and economic

# Gera-Maua, Germany



KOHLHAUER SCORSA® CLEARWALL®, transparent and absorbent

**POLYVANTIS**

## A22 Trento, Italy

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PLEXIGLAS® Soundstop SilentView,  
transparent and noise absorbant



# Ring road Ljubljana, Slovenia

DELTABLOC PHONOBLOC® DB 100 NBF,  
double-sided concrete/ wood concrete  
4000 m<sup>2</sup>



# Trinajstići Node, near Opatija/Rijeka, Croatia

DELTABLOC PHONOBLOC® DB 100 NBF,  
one-sided concrete/ wood concrete  
2000 m<sup>2</sup>



# Railway viadukt Pesnica, Slovenia



OBRT – OPREMA INŽENIRING d.o.o.  
Transparent acrylic panels  
PLEXIGLAS® Soundstop XT 2700 m<sup>2</sup>  
PLEXIGLAS® Soundstop GS CC 126 m<sup>2</sup>  
Construction date: 2023



# REMETINEC RING ROAD, ZAGREB

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**Contractor:** Multivario d.o.o.  
**Products:** Transparent panels  
**Quantity:** 2.000 m<sup>2</sup>  
**Realisation:** 2019



# LJUBLJANA RING ROAD

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**Contractor: Multivario d.o.o.**

**Products: One side absorbing aluminium panels,  
transparent panels**

**Quantity: 3.100 m<sup>2</sup>**

**Realisation: 2023**



# Brezovica – Vrhnika, Highway A1- Ljubljana – Koper – Slovenia

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Contractor: Multivario d.o.o.

Products: One side absorbing aluminium panels

Quantity: 23.000 m<sup>2</sup>

Realisation: 2014/2015



# Wuchang section of Wuhan 2nd ring road, China



roofing part: **PLEXIGLAS® Soundstop GS**, 9572 m<sup>2</sup>  
vertical wall: **PLEXIGLAS® Soundstop GS CC**, 4956 m<sup>2</sup>

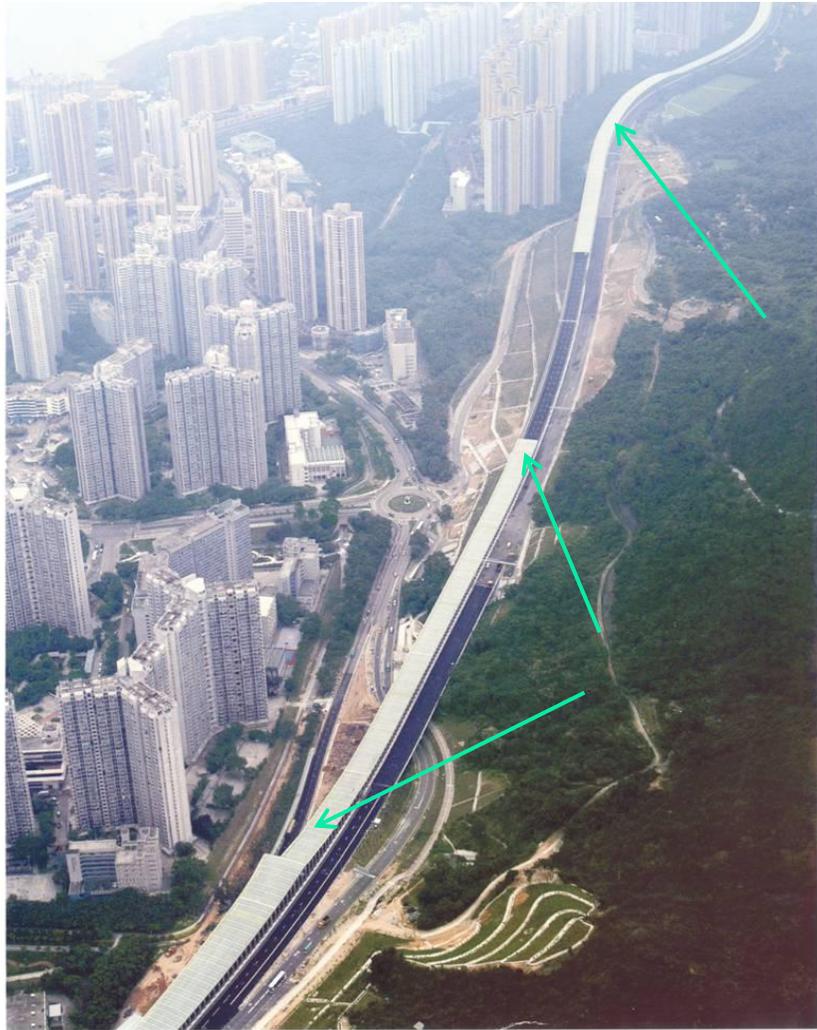


# Eastern Korridor, Hong Kong

PLEXIGLAS® Soundstop GS CC,  
20mm  
5450 m<sup>2</sup>



# T7 Hong Kong – Ma On Shan



65,000 m<sup>2</sup> PLEXIGLAS SOUNDSTOP®  
GS and GSCC light spring green  
Satinice, translucent roof  
Active Way Ltd., Hong Kong

## Monte Barro, Civate/Pescate (Lecco), Italy

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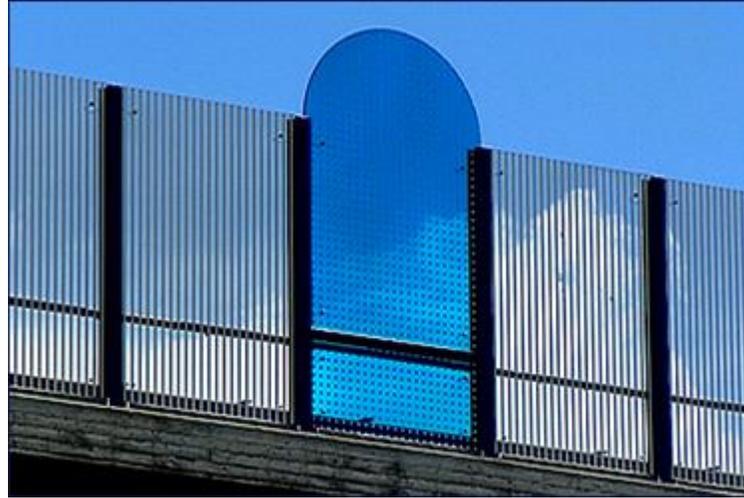


PLEXIGLAS® Soundstop XT, 15 mm, 6000 m<sup>2</sup>,  
Tubosider, Asti, 1998

# Motorway A9 Nuremberg – Berlin, Germany close to Hof/Bavaria



3500 m<sup>2</sup> PLEXIGLAS® Soundstop XT,  
20 mm, clear & blue  
Alusyston Lärmschutz, 2000



# Randweg Den Bosch NL



**3500 m<sup>2</sup> PLEXIGLAS® Soundstop XT,  
18 mm, custom color, 7600 m<sup>2</sup>  
Holland Scherm, 2009**

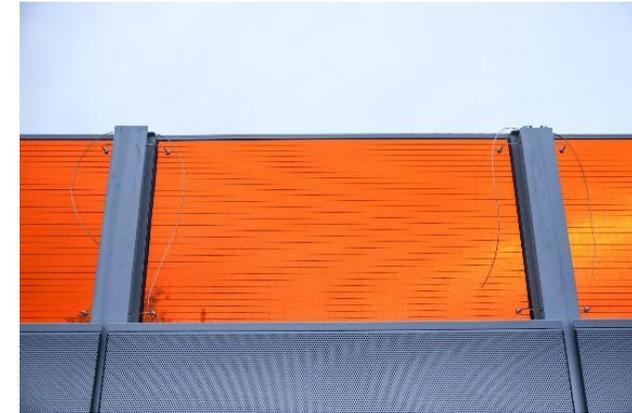
# Ansfelden A1 Austria

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PLEXIGLAS® Soundstop GS CC,  
Citrine, 20mm, 3100 m<sup>2</sup>

# Voestbrücke A7, Austria



PLEXIGLAS® Soundstop GS CC,  
Topaz, 20mm, 4500 m<sup>2</sup>

# Center Highway No 7 Thailand



PLEXIGLAS® Soundstop GS CC,  
sky blue, 3500 m<sup>2</sup>



# Motorway Turin – Bardonecchio, Piemont / Italy

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**8.000 m<sup>2</sup> PLEXIGLAS® Soundstop XT, 15 mm, 9 different shades of blue  
Tubosider, Asti, 1993 / 1995**

## PLEXIGLAS® Soundstop: Wind protection

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# PLEXIGLAS® Soundstop: Wind protection

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## Material characteristics

- light weight
- high transparency
- can be thermoformed for maximum stiffness / minimum deflection
- shape options:

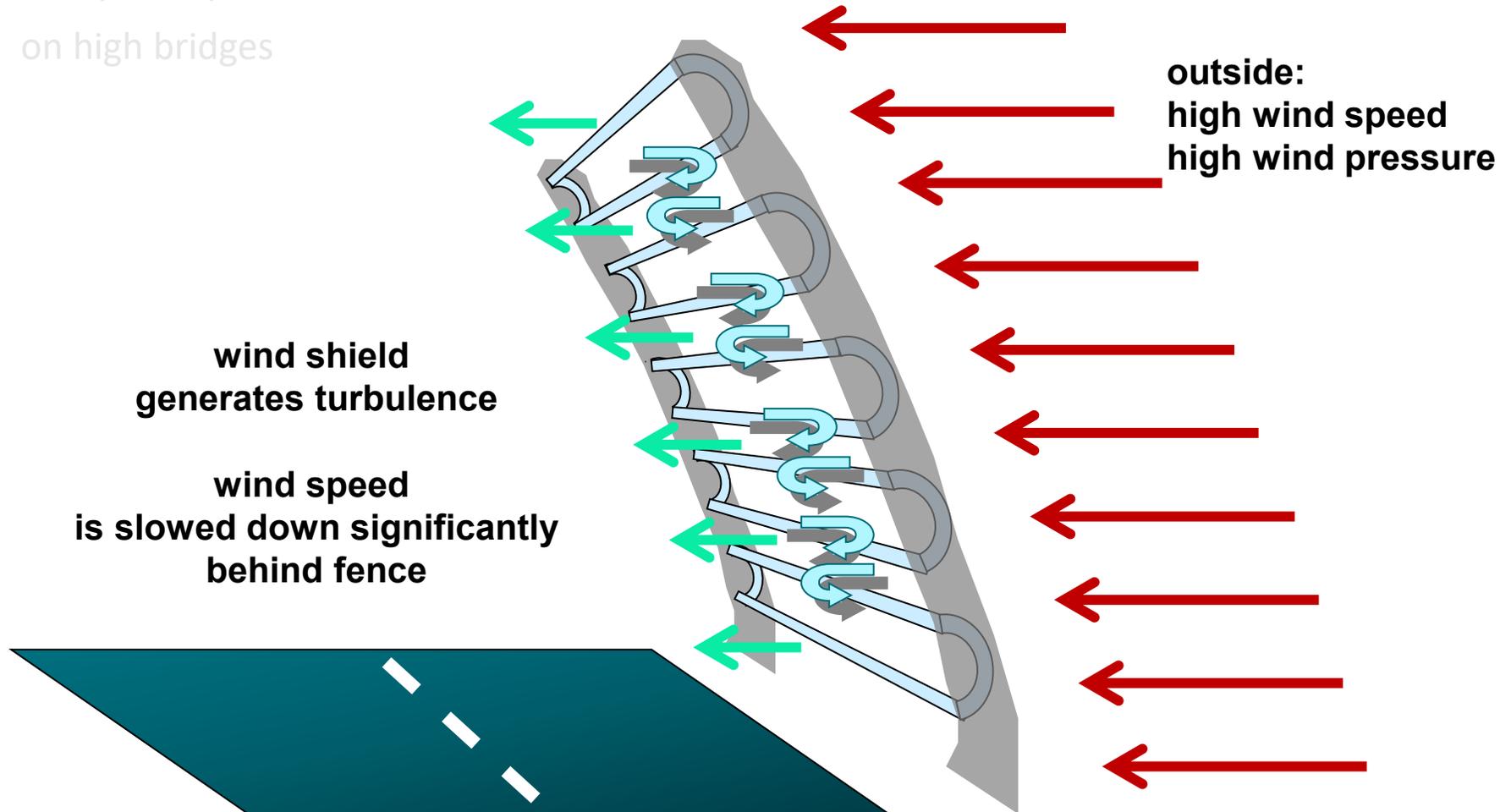


- improved safety by integrated polyamide threads (fragment retention and bird protection)
- outstanding weathering resistance



# PLEXIGLAS® Soundstop: Wind protection

in exposed positions  
on high bridges



# The Črni Kal bridge; Slovenia

PLEXIGLAS® Soundstop GS CC, 4800 C-shape elements  
Contractor: Petrič d.o.o.



# The Črni Kal bridge; Slovenia

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# The Črni Kal bridge; Slovenia

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# Viaduc d'Echingen, Boulogne sur Mer, France

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**PLEXIGLAS® Soundstop XT, 18 mm**  
**55 metric tons of Z-bevelled mouldings**  
**fabricator: B.F.P. France, 1997**

# Queensferry Bridge, Scotland

PLEXIGLAS® Soundstop GS CC, 3000mm length C- shapes, 11856 pcs



# Mersey Gateway Bridge

PLEXIGLAS® Soundstop, 4000mm length C- shapes, 5386 pcs



# Le Viaduc de Millau: Europe's tallest motorway bridge (300 m)



Total length	2460 m
Height above ground	300 m
Width	26 m
Total height of pylons	343 m
PLEXIGLAS SOUNDSTOP® elements	7320
construction steel	S355: 30 800 t S460: 15 600 t



architect: Sir Norman Foster  
constructor: Eiffel / Eiffage

# Installation of half-pipe shaped PLEXIGLAS® Soundstop GS CC elements



PLEXIGLAS® Soundstop GS CC elements  
post-to-post distance: 3,50 m  
element width: 50 cm  
7320 pcs.



# Le Viaduc de Millau

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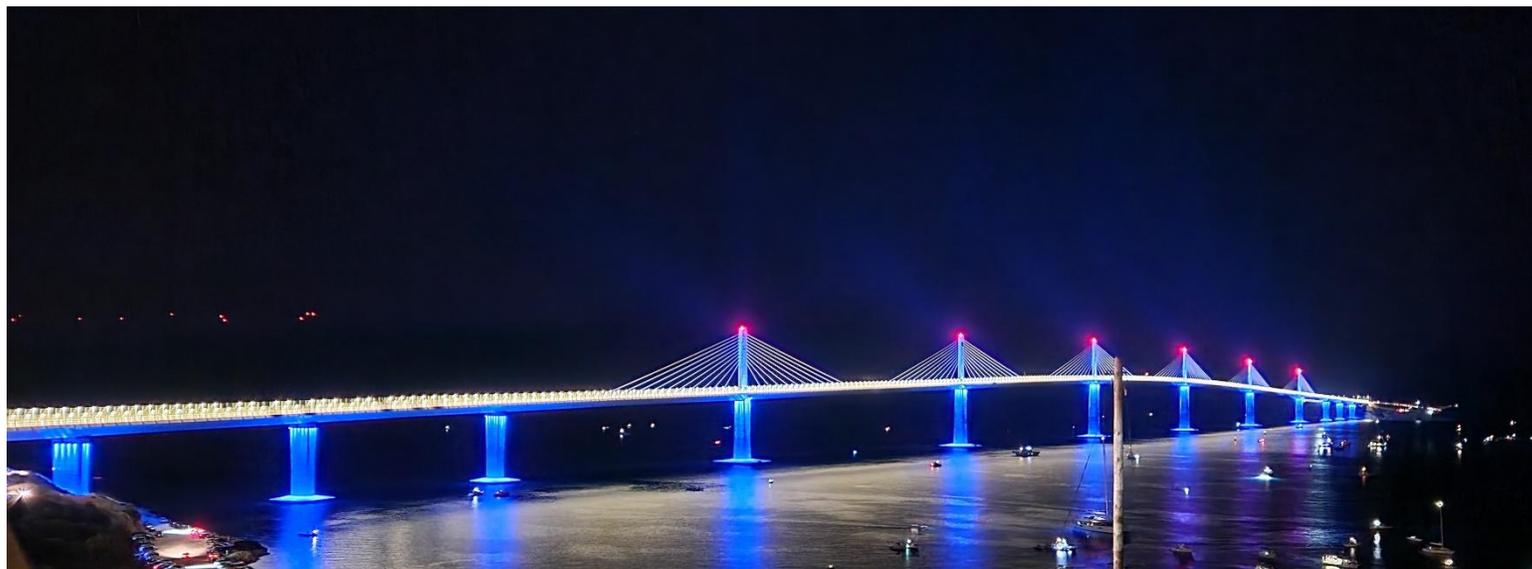
# Le Viaduc de Millau

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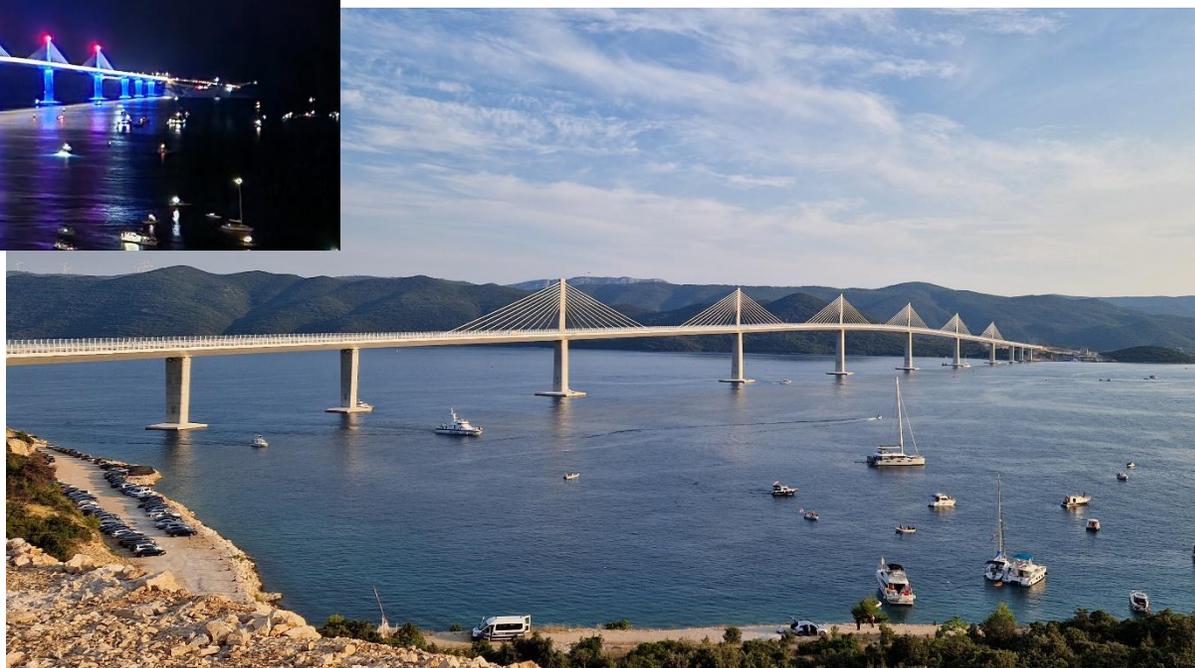


# Peljesac Bridge; Croatia

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PLEXIGLAS® Soundstop GS CC elements  
post-to-post distance: 3 m  
element width: 30 cm  
11400 pcs.



# Peljesac Bridge; Croatia

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# Peljesac Bridge; Croatia



Thank you for your attention !