NOISTOP®

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Sound pollution is one of the biggest problems in the residential environment. Noise can originate from a number of sources including busy roads, railway tracks and from activities in neighbouring areas - just think of gardens that are adjacent to a schoolyard or a workshop. The Noistop® by ROCKWOOL® system offers a solution for sound pollution. Unlike many other acoustic barriers that only shield against noise, Noistop® also absorbs the sound waves. This reduces the ambient sound significantly.

MODULAR

Noistop® noise-reducing screens are unique - not only do they obstruct noise, they absorb it. This significantly reduces environmental noise. The noise-reducing barrier is constructed of modular panels with a core of compressed rock wool. This construction provides extremely high insulation values.

NOISE POLLUTION

Noistop® can be used in various applications. As fencing it offers immediate privacy, safety and, of course, peace and quiet. The screens are effective in high noise areas, next to railways, near play areas or along busy highways - endless possibilities! Noistop® noise reducing screens are available in three types: Essential, Wood and Steel.

NOISTOP® MATERIALS

Noistop® Essential: Noistop® Essential is covered with a galvanised steel mesh (EN ISO 1461-2011) and is available in Black (RAL 9005) and Anthracite (RAL 7016) with a polyethylene (PE) mesh and is fully recyclable. The optional wooden cladding is made of 1st class European pine. All wood is chromium-free impregnated (EN 335:2013) and is available in a natural or brown colour (RAL 8003).

Rock wool core: In both Noistop® Steel and Wood, there is an inner core of rock wool with an expected life span of at least 20 years.

Noistop® Wood: The wood that has been used for the Noistop Wood panels is made of 1st class European pine wood. All the wood is impregnated without chrome (EN 335:2013) and has a natural colour.

Noistop® Steel: Noistop® steel is covered with a galvanized steel grid with a green polyethylene mesh (PE) and is fully recyclable

UNIQUE FEATURES

Significant noise reduction and absorption

Choice of various types and dimensions

Easy and quick installation

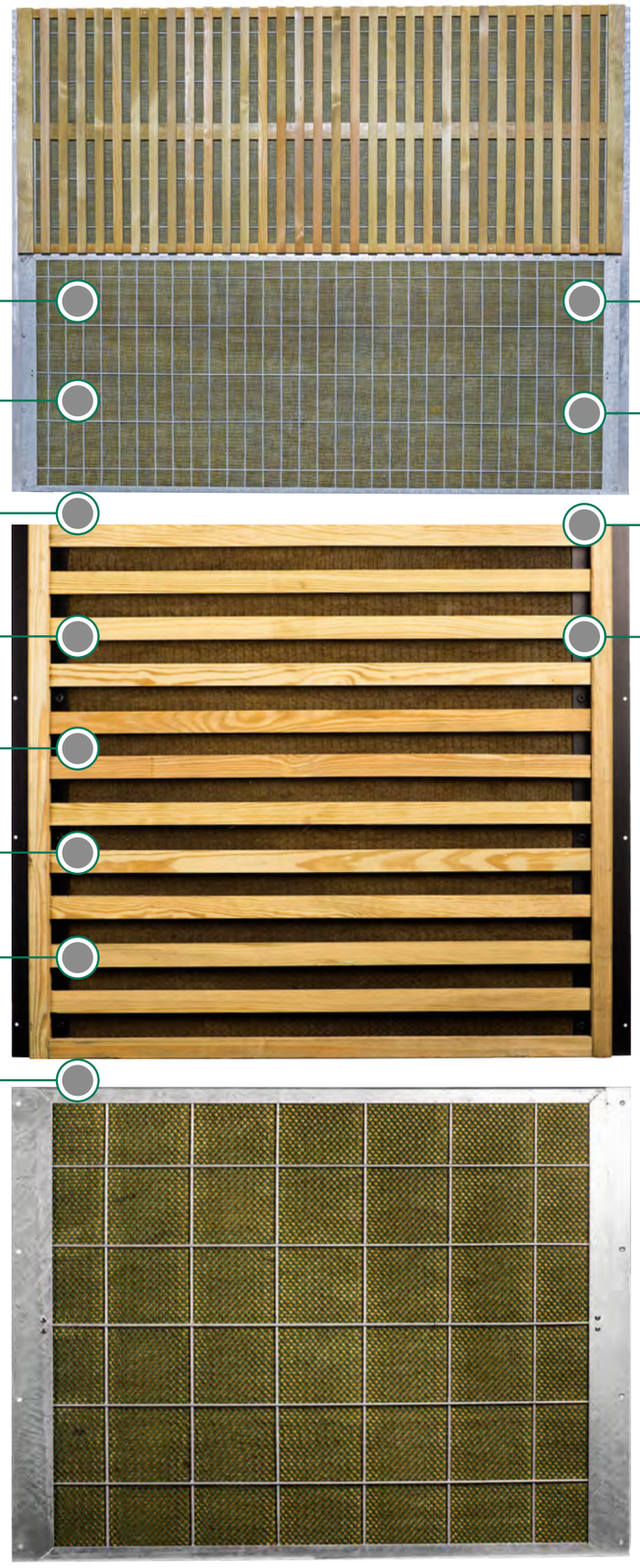
Made from durable natural stone wool

Maintenance free

Narrow design

Expected service life of at least 20 years

Fully recyclable



BENEFITS

Immediate peace, privacy and safety

Noise reduction separation

Environmentally friendly application

Can also be supplied in combination with a fully grown Mobilane Green Screen

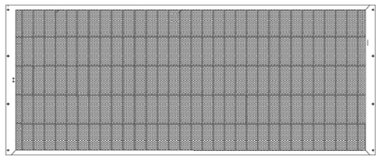
PRODUCT RANGE

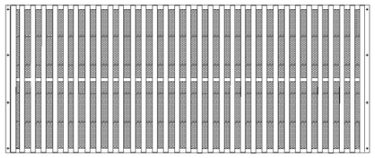
NOISTOP® ESSENTIAL

Noistop® Essential provides a modern look and has a slender construction. It offers unlimited design freedom and a customisable look. Noistop® Essential can be installed with or without wooden cladding. The wooden cladding, available as an accessory, can be easily mounted onto the module using a simple fixing technique and is available in a natural or a warm brown painting. Noistop® Essential is available directly from stock.

PRODUCT RANGE NOISTOP ESSENTIAL (L x H x D)

Panel	60 / 50 / 6 cm		240 / 50 / 6 cm
	60 / 90 / 6 cm		240 / 90 / 6 cm
	60 / 100 / 6 cm		240 / 100 / 6 cm
	120 / 50 / 6 cm	Door	100 / 180 / 6 cm
	120 / 90 / 6 cm		100 / 200 / 6 cm
	120 / 100 / 6 cm		





INSULATION TAPE

920 / 0,5 / 6 cm (L x H x D)

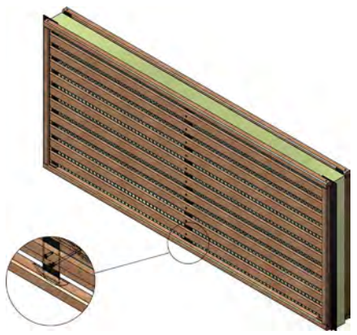
Insulation tape to be applied between two stacked panels.

NOISTOP® WOOD

With Noistop® Wood the mineral wool core is wrapped with a black mesh. The mineral wool is sandwiched between aluminium strips with impregnated wooden slats attached. The screens are easy to customise to a fixed size. For Noistop® Wood, delivery times and conditions are on request.

PRODUCT RANGE NOISTOP® WOOD (L x H x D)

Panel	100/45/17 cm	Door	94/180/17 cm
	100/90/17 cm		94/200/17 cm
	100/100/17 cm		94/225/17 cm
	200/45/17 cm		
	200/90/17 cm		
	200/100/17 cm		



INSULATION TAPE

Insulation tape is not needed when using Noistop® Wood.

COVER

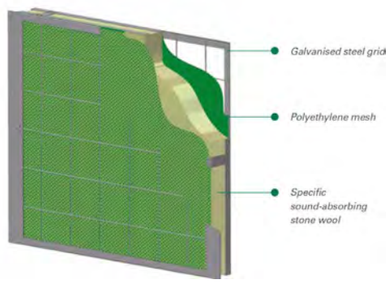
200/2/17,5 cm (L x H x D)
Cover plate to be applied as a finishing edge on the top panel to protect the core of the Noistop® panels

NOISTOP® STEEL

Noistop® Green acoustic wall consists of specialized stone wool held in place by a galvanized steel frame and highly durable polyethylene mesh. The galvanised steel frame is designed for use with climbing plants. The vegetation does not affect the sound absorbing and sound isolating properties of the acoustic wall. For Noistop® Steel, delivery times and conditions are on request.

PRODUCT RANGE NOISTOP® STEEL (L x H x D)

Panel	100/45/11 cm	Door	94/180/11 cm
	100/90/11 cm		94/200/11 cm
	100/100/11 cm		94/225/11 cm
	200/45/11 cm		
	200/90/11 cm		
	200/100/11 cm		
	300/60/11 cm		



INSULATION TAPE

1000/0,5/10 cm (Lx H x D)
Insulation tape to be applied between two stacked panels.

COVER

200/3,2/11,4 cm (L x H x B)
Cover plate to be applied as a finishing edge on the top panel to protect the core of the Noistop® panels

TECHNICAL SPECIFICATIONS

ISULATION AND ABSORPTION VALUES

NOISTOP® ESSENTIAL

- Noistop® Essential sound insulation: DLR: 18 dB(A) Euroklasse B2*
  Noistop® Essential sound absorption: DLα: 9 dB(A) Euroklasse A3*

NOISTOP® WOOD

- Noistop® Wood sound insulation: DLR: 21 dB(A) Euroklasse B2
- Noistop® Wood sound absorption: DLα: 11 dB(A) Euroklasse A3

NOISTOP® STEEL

- Noistop® Steel sound insulation: DLR: 21 dB (A) Euro Class B2
- Noistop® Steel sound absorption: DLα: 9 dB(A) Euro Class A3
- Noise reduction: between 9 and 12 dB (A), which is equivalent to a reduction of 50 - 70% of the perceived noise volume

This result depends on the height, length and siting of the Noistop acoustic wall in relation to the sound source and the receiver.

WEIGHT

The weight of the Noistop® is; Noistop® Essential ca. 23 kg/m^2 + ca. 6 kg/m^2 for wooden cladding, NoiStop® Wood ca. 30 kg/m^2 and Noistop® Steel ca. 25 kg/m^2.

WARRANTY AND LIFESPAN

The expected lifespan of the Noistop® acoustic wall is more than 20 years. The warranty period is five years.

FIRE CLASSIFICATION NOISTOP® STEEL

Fire Class A1 (EN 13501 -1)

WIND LOAD

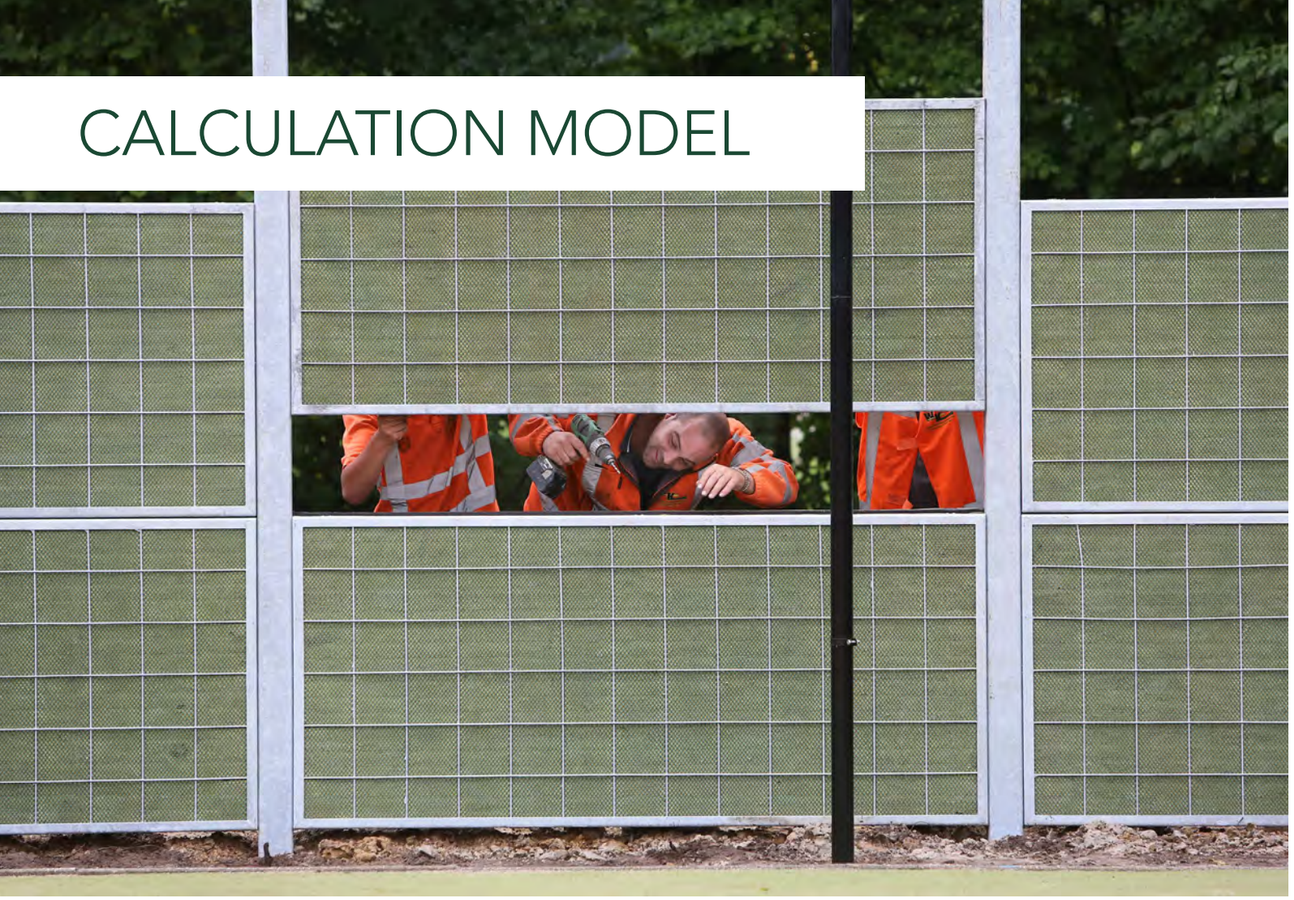
Noistop® Essential is tested with a maximum wind load of 0,83 kN/m^2 in accordance with EN1794-1 (Storm 24 m/s = 0,81 kN/ m^2). Noistop® Wood and Noistop® Steel 200x90 are tested with a maximum wind load of 1.02 kN/m^2 (Storm 24 m/s = 0.81 kN/m^2) in accordance with EN 1794-1: 2003.

INSTALLATION

INSTALLATION RECOMMENDATIONS

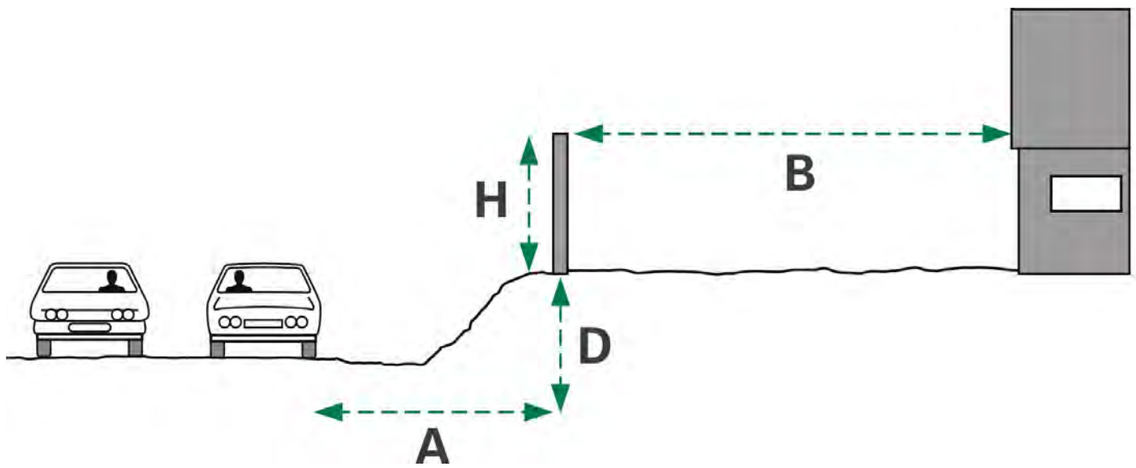
- To install Noistop®, wooden posts of 9 x 9 cm can be selected. For a corner post the minimum dimension is 11.7 cm. Sometimes a galvanised steel tube or galvanised steel H-section is used (requires the flange to be ground down), but the use of wooden posts is most common.
- The posts are dependent on the type of soil and the wind load on the appropriate depth and/or in concrete foundation levelled with 100, 200 or 300 cm spacing between the poles.
- The lower panels are preferably placed on a concrete plinth or skirting.
- The Noistop® panel is then positioned in between the posts in such a way that the fitting are at the outer side. The fittings are then fixed to the posts using screws and the holes provided.
- NOTE After installation of the bottom panels of Noistop® Steel, Noistop® isolating tape is fixed to the top of the panel along the whole length. This is fitted in one piece from post to post
- If the property boundary is situated below the sound source, then the difference should be added to the recommended height of the noise screen.
- The next element is placed on the lower element, and screwed in place.
- Installation of Noistop® acoustic walls up a height of 2.70 cm is possible without using lifting equipment.

CALCULATION MODEL



NoiStop acoustic wall height determination:

A: distance from the road to the Noistop® acoustic wall
B: distance from the Noistop® acoustic wall to the house
D: level difference between the road and the garden
H: recommended height of Noistop® acoustic wall



	A Distance - NoiStop							
	5	10	15	20	25	30	40	50
B Distance NoiStop - house 10	180 cm	225 cm	225 cm	270 cm	270 cm	270 cm	315 cm	360 cm
15	180 cm	225 cm	225 cm	270 cm	270 cm	315 cm	315 cm	360 cm
20	225 cm	225 cm	270 cm	270 cm	315 cm	315 cm	360 cm	360 cm
25	225 cm	270 cm	270 cm	315 cm	315 cm	360 cm	360 cm	360 cm
30	225 cm	270 cm	270 cm	315 cm	360 cm	360 cm	360 cm	405 cm
40	270 cm	270 cm	315 cm	360 cm	360 cm	360 cm	405 cm	405 cm
50	270 cm	270 cm	315 cm	360 cm	360 cm	405 cm	405 cm	405 cm

CALCULATION EXAMPLE

The road is 20 m long by a 10 m plot boundary and the garden, the Noistop® screen is 225 cm high.

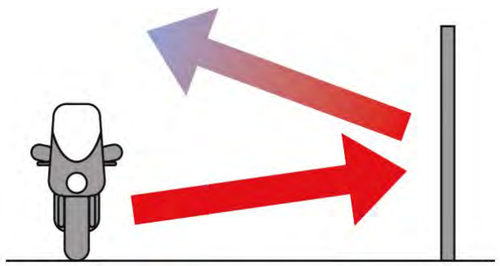
- If the garden/plot boundary is higher than the sound source then the height of the noise screen can be reduced by half of this difference.

Example: A = 20 m and B = 15 m, the screen should be 270 cm tall. If the garden/yard line is 90 cm higher, then half (45 cm) of the height of the noise barrier can be removed. The noise screen is then 225 cm (270 cm - 45 cm) high

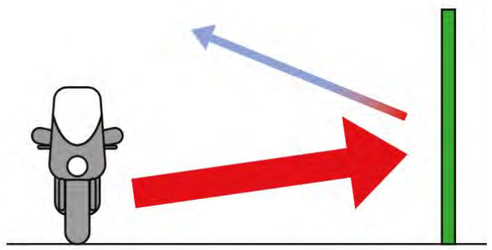
- Is the property boundary lower than the sound source, then the difference has to be added to the recommended height of the noise screen.

NOTE:

These are guidelines based on our experience with Noistop® acoustic wall. However, every situation is different and we can not guarantee that acoustics generate the same effect in every situation. If an exact calculation is required, consultation with an acoustics expert is recommended.



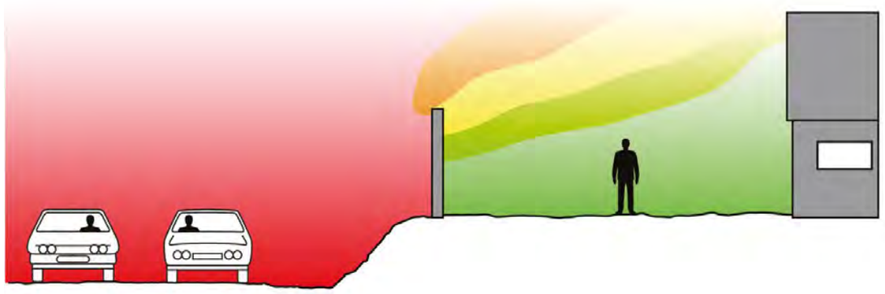
Normal acoustic shield: only shielding



Noistop acoustic wall: Shielding and absorption

SOUND ATTENUATION

The effect on sound attenuation of installing a Noistop® acoustic wall depends on various factors. Where an exact calculation is required, an acoustic consultancy should be contacted. An estimate can be generated based in the information below.



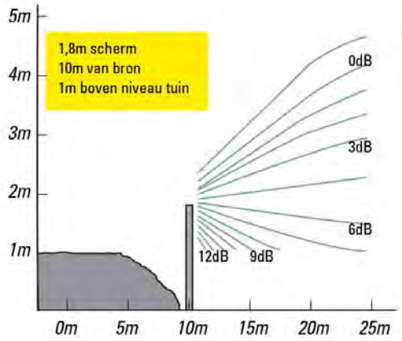
FACTORS SOUND ATTENUATION

The noise depends on several factors:

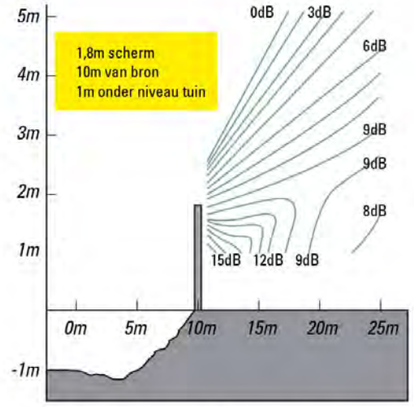
- The distance from the screen Noistop® from the sound source.
- The distance from the Noistop® screen to the receiver.
- The height of the noise barrier Noistop® relative to source and receiver.
- The length of the Noistop® screen.
- The shape of the Noistop® screen.
- Reflection of sound against buildings.

The graphs below illustrates how effective sound insulation can be:

Fig 7.6



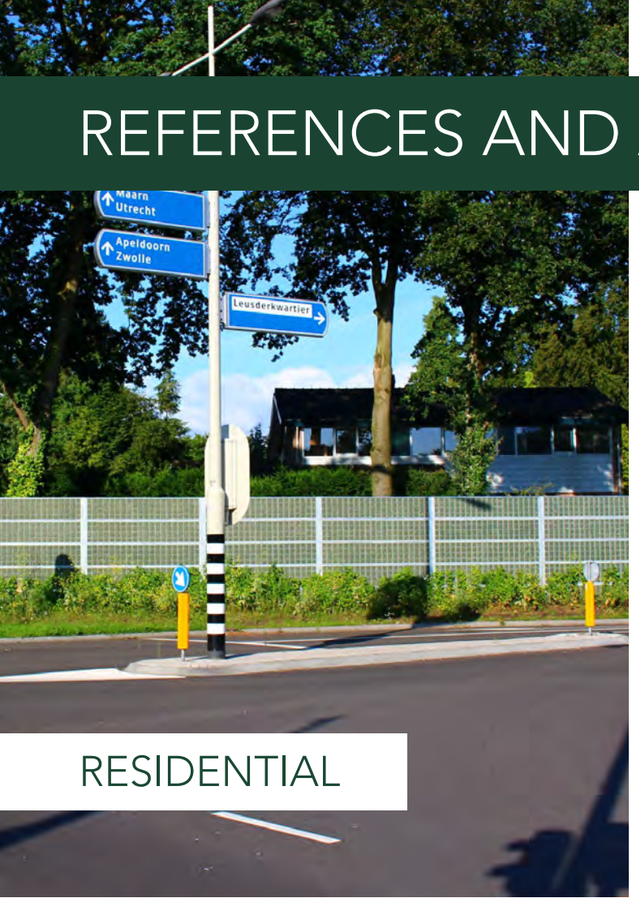
For high locations of the sound source with respect to screen and receiver



For low locations of the sound source with respect to screen and receiver

For maximum isolation from sound pollution the receiver should be isolated from the noise. This might mean that the Noistop® acoustic wall should not just be installed between the sound source and receiver, but also at the sides, thereby creating a U-shaped wall.

REFERENCES AND APPLICATIONS



RESIDENTIAL

PUBLIC SPACE

RESIDENTIAL

PUBLIC SPACE

CASE STUDY

PROJECT INFORMATION

Since the new residential area Zuidhoek in the Zeelandic municipality of Kappelle is located next to a railway, measures have been taken to prevent noise pollution from passing trains. A 3m high noise barrier has been installed between Zuidhoek 3 – the last phase of the project plan – and the railway track, with a sound-absorbing Noistop screen of 1.45m on top. This guarantees tranquility and enjoyment of living of the residents. With the first installation, the screen is 400m long and in the future, another 200m of screens will be installed.

SOUND-ABSORBING SCREENS

The municipality of Kappella has chosen the Noistop® sound-absorbing screens due to the previous positive experience experienced by the same system that was used in 2010 for 200 m on the A58. Melvin Poppe, the project leader of Civil Engineering at the municipality of Kappelle: "The system is excellent and achieves the desired noise reduction. In addition, it is a modular system where the elements are easy to install and have a long lifespan. The system is suitable for growing plants against it and we are going to do that again. The whole of Zuidhoek is a sustainable residential area and this contributes to the green image that we want to achieve. Of course, the fact that it is a sustainable and circular product also played a role, this was absolutely a condition. It was the complete picture that made us choose Noistop® again.

CLIENT : Gemeente Kapelle
CONTRACTOR: H2 Groen
YEAR OF CONSTRUCTION : 2020
LOCATION : Kapelle, NL

CAD AND BIM

All CAD and BIM models can be downloaded from the Mobilane website www.mobilane.com or by scanning the QR-code. CAD and BIM can be used for Revit, IFC, and Civil 3D by architects, engineers and construction professionals (AEC).

SCAN FOR CAD AND BIM MODELS