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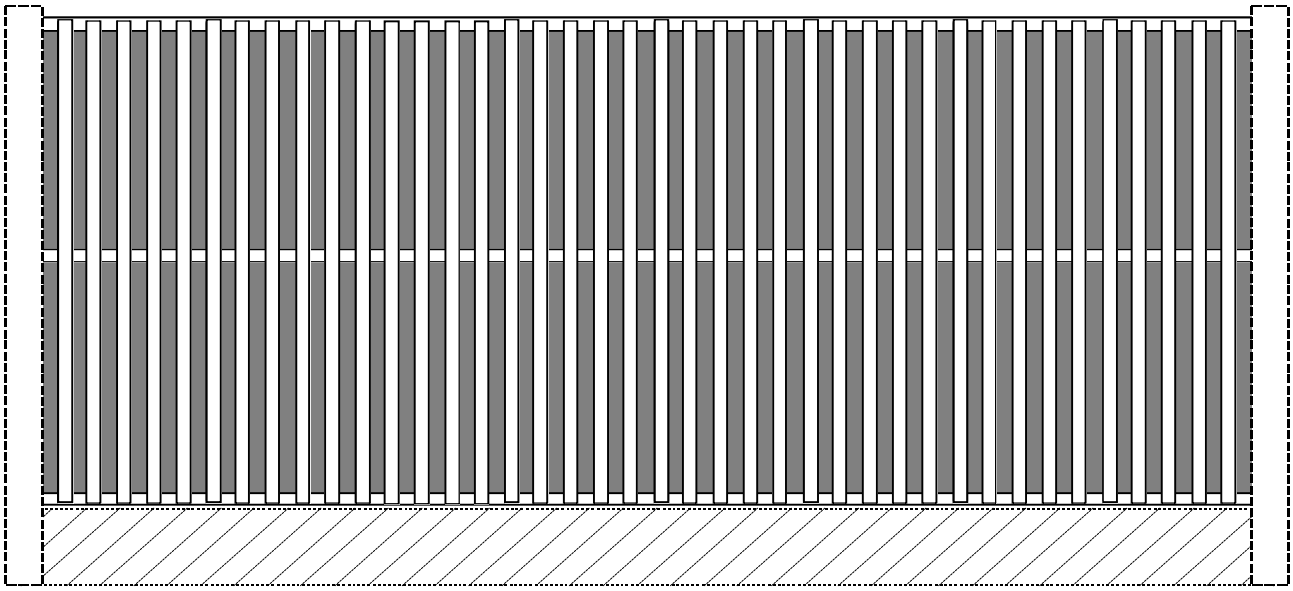
Absorbing wooden Noise Barrier HF-1



Use:
The noise pollution for the population continues to increase. Particularly the road noise does represent an impairment for the adjacent residents of strongly driven roads, which should not be underestimated. Noise pollutions go out also of the industry, which are not any more accepted by the adjacent residents today. By the vehicle manufacturers, also by the industry, intensified efforts are undertaken to reduce this burden directly at the vehicle or at the machine. Often these efforts are not enough to fulfil the laws about the reasonable burden of the adjacent residents. Here noise protection walls are used. Beside noise protection walls from aluminium, steel and concrete more and more the noise protection walls from the natural raw material wood become generally accepted.

The noise protection panels HF-1 are suitable outstanding for the application at motorways, other strongly driven roads and railroad lines. In addition, for noise protection measures at gas stations, hotels, supermarkets, shopping centres, strongly driven parking lots and industrial plants the noise protection panels HF-1 proved very well.

Wood:
Wood has a pleasant lively surface.
Wood inserts itself harmoniously into each environment.
Wood is a regenerating raw material.
Wood is a environmental friendly product.
Wood has an outstanding ecological balance.
Wood is CO2 neutrally.
Wood fits each landscape.
Wood is inexpensive.
Wood has a high life expectancy.
Wood does not need maintenance.
Wood for problem-free disposal.

Material:
The noise protection panels HF-1 can be produced from various timber species:
- Pine – impregnated according to DIN 68.800
- Larch - impregnated according to DIN 68.800
- Larch - untreated
- Douglas Fir - untreated
- Oak - untreated
- Black Locust - untreated
- Kusia - untreated
- Yellow Balau - untreated
- FSC-certified tropical timbers – untreated

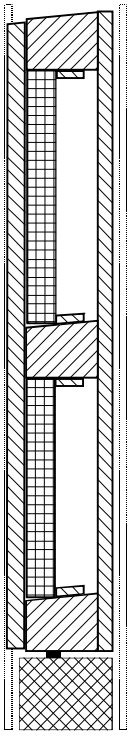
As absorption material exclusively black glas fleece covered mineral wool from renowned manufacturers with a gross density of 100kg/m³ is used. This mineral wool is officially quality-monitored in accordance with DIN 18165. If desired the mineral wool can be covered by an additional vandalism protection.

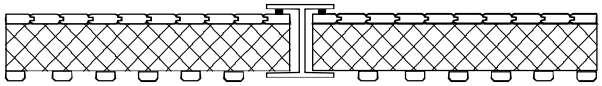
All connecting devices are made of high-grade stainless-steel (V4A), material 1,4401 or 1.4571.

As connecting devices come to the application, depending on wood species and installation place, grooved nails, screw nails, staples and screws All these connecting devices worked in application satisfactorily for years and decades.

Assembly:
An important factor for the price worthiness of a noise protection panel is easy installing and dismantling. The noise protection panels HF-1 are already provided ex factory with an EPDM weather-strip, below the lower beam and at the rear wall, in the merge area into the supports. Thereby complicated and time-consuming being busy with weather-strips is allotted to the building site. Hanging up loops or hanging up screws for an easy crane assembly are likewise already inserted ex factory. Thereby unbeatable low assembling times are achieved.

Execution:
The noise protection panel HF-1 indicates itself by the vertical front battens and the vertical rear wall boards in connection with a basic structure from horizontal beams. The influencing wind forces are led away depending on the item height to up to 6 horizontal beams. Through this it is possible to evenly spread the affecting wind pressure to the supports. Also the thickness of the rear wall can be reduced thereby; which enables a better adjustment to the seasonal air humidity fluctuations. A very important feature of the noise protection item HF-1 is that no lateral beam is needed. Only this permits the air circulation prescribed by the “ZTV Lsw” also between damming wool and rear wall.





Standard panel lengths are 3,96m for 4m raster and 4,96m for 5m raster. By the project-related manufacturing other lengths are problem-free possible, e.g. for bridges or ramming obstacles.

With the panel heights there are no standards. Item heights over 2,50m height are multipart executed. In individual cases also one-piece item heights up to 3,50m are possible.
The acoustic source turned front battens and the rear wall boards turned away from the acoustic source are usually vertically executed. Special panels e.g. trapezoid or rhombic panels, inserted transparent surfaces, special dimension panels in all sizes, ornamentations on the front or rear side or inserted escape doors are possible.

Inspection results:
Sound absorption coefficient according to ZTV Lsw 88 $\Delta L_{A,\alpha,Str}$ = 10dB
Sound absorption coefficient according to EN 1793-1 DL_a = 12dB = Group A 4
airborne sound insulation according to ZTV Lsw $\Delta L_{A,R,Str}$ = 29dB
evaluated sound reduction index according to DIN 52210.4 R'_w = 34dB
evaluated sound reduction index according to EN 1793-2 DL_R = 28dB = Group B 3

Durability:
By a consistent attention to the principles of the constructional wood preservation during the development of the noise protection panel HF-1, in connection with the use of wood with natural very high or highest resistance, or with impregnated woods, an above average life span is achieved.

Repair possibility:
Due to the simple structure of our system, noise protection panels HF-1 can be easily repaired or changed in case of accident damages or road construction activities. In case of accidents an exchange of the panels is often not necessary. The sections of the panel concerned by the accident can be repaired in many cases "locally" with a section repair.

Quality assurance:
The noise protection panels HF-1 are not foreign "cheap product", they are " Made in Germany ". With regular company intern quality controls of all levels of production and over 150-years of experience with wood of the Fahlenkamp company a continuously high quality level can be assured.
Additionally our noise protection production is foreign monitored by a governmental institute.