

Transparent Acoustic Optimization



GUDI LASORBER®

GUDI ACOUSTICS

- Development
- Counselling
- Transparent
- Acoustic
- Elements

Gudi Lasorber® is developed with leading acoustics

specialists, pioneering solutions for the holistic living comfort. Gudi Acoustics is one of the most innovative enterprises in the industry.

Acoustics treatment and optimisation you can see through. Thanks to Gudi Lasorber®, people in swimming baths, open-plan offices, canteens, factories and conference rooms can now hear

what they're saying again. The innovative transparent or printed sheets and plexiglas elements from Gudi are attached by means of a proprietary mounting system and are also available as partitions or roller blinds. Position in front of sound-reflecting ceilings and walls, Gudi Lasorber® reduces echoes, reverberation times and noise levels significantly. It also lets

those inside see the architecture at the same time.



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Design for optimum acoustics

Gudi Lasorber® is the ideal solution for optimal acoustic performance, in architecture, design and transparency. The principle of microperforated films and artificial glass plates combines simplicity and efficiency: The sound at the perforations is converted into heat through friction due to vibration, thus reducing significantly the room reverberation and noise. Transparent films and translucent plates, Gudi Lasorber® offer various possibilities to associate an optimal acoustic design to an existing architecture. Finished products such as screens, shades, blinds and acoustic panels Gudi Lasorber® complete

the design program. They can be installed temporarily or retrofit to improve the acoustics of the space.

Whether in swimming pools, offices, canteens, churches and galleries, Gudi Lasorber® proven for many years in the most various locations across Europe. The Gudi Lasorber® team has become a partner of choice for architects and building owners. You too can discover the diversity of Gudi Lasorber®!



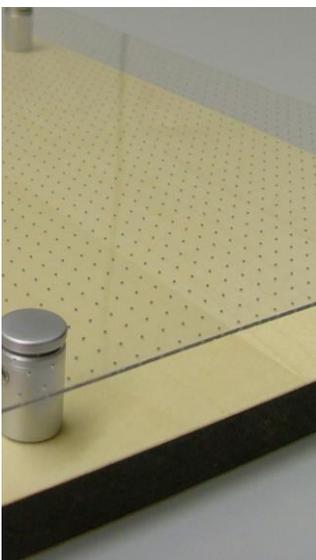
Gudi Lasorber® - Principle

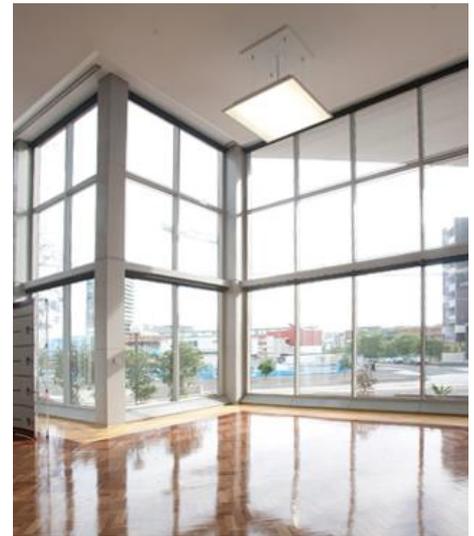
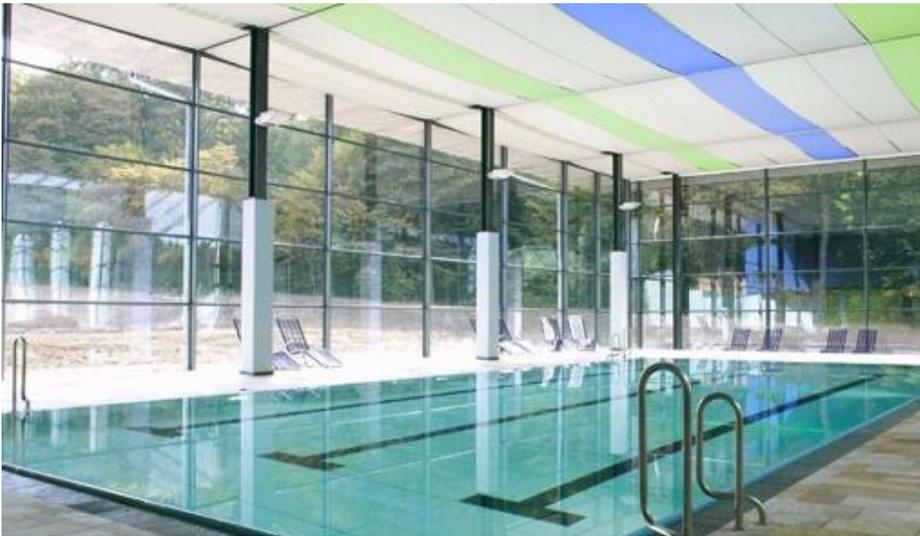
In the modern interior architecture, open spaces constructed of glass, metal and concrete take a predominant place. They are elegant, bright and welcoming, but the acoustics must be of good quality to feel really comfortable. Reverberant surfaces such as glass reflect each sound, and noise resulting harms the atmosphere of the place.

It is particularly important that the atmosphere in the pools, and large offices and galleries enjoyable. How then is it possible to optimise the acoustics without changing the design, lighting and the architectural concept as a whole?

The solution has a name: Gudi Lasorber®. Hanging signs or against walls, transparent films or printed artificial glass plates Gudi Lasorber® offers many design possibilities, that integrate with all concepts.

Gudi Lasorber® is the result of collaboration between the Institute of Energy and Gudi Acoustics. Gudi Lasorber® reduces the reflected energy and reverberation time in buildings.





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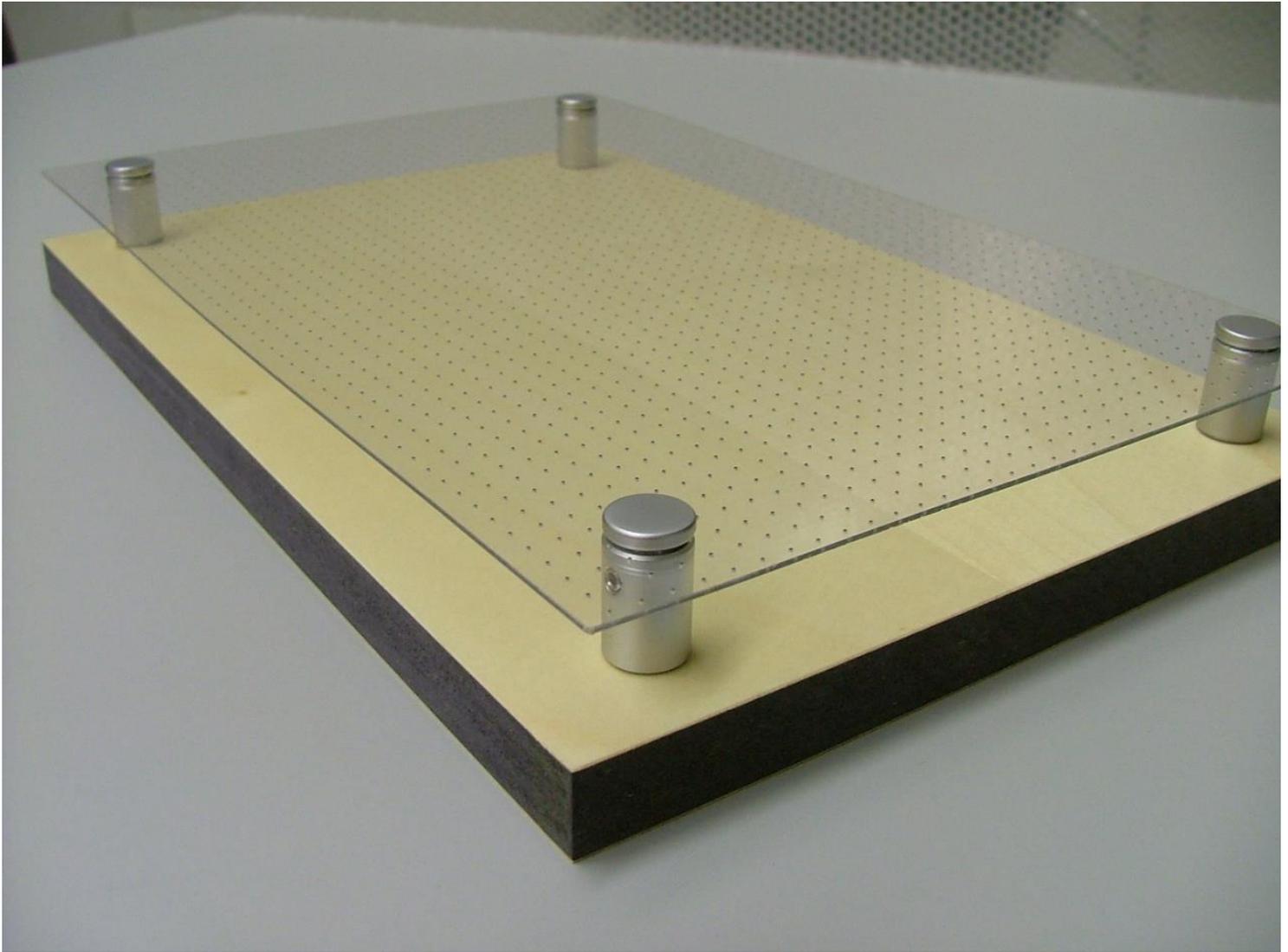
Gudi Lasorber® - Transparent plates

The transparent film Gudi Lasorber® integrates seamlessly with existing installations without influencing architecture.

properties:

- Low flammability
- UV resistant
- 0.5mm diameter holes, 5mm apart
- Neutral behaviour towards static electricity thanks to a relative humidity of at least 40%
- Colourless, clear
- Standard Dimension: 1220 mm x 2440mm

Maximum Dimension: 2000 mm x 3000mm



GUDI LASORBER®

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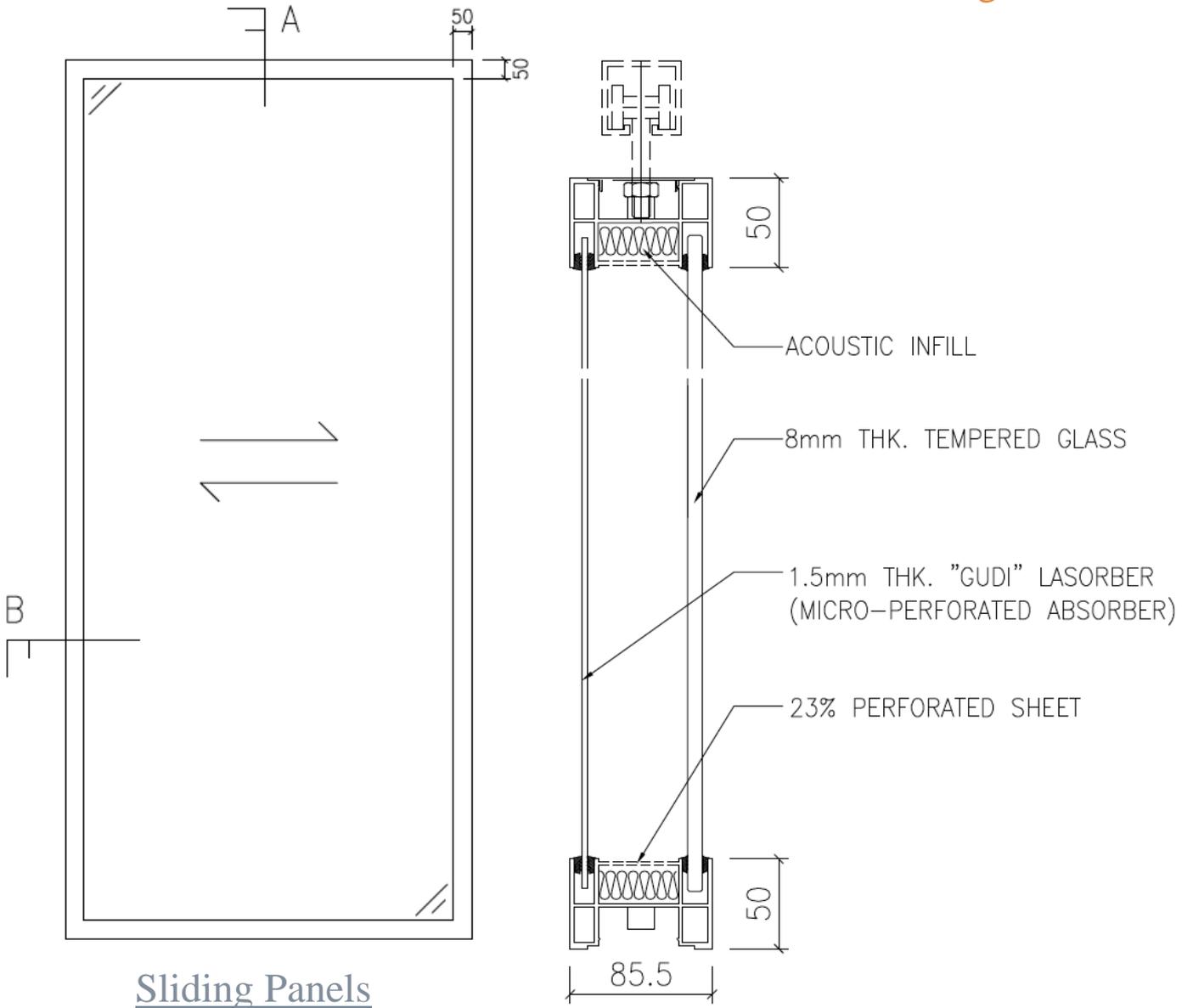
Gudi Lasorber® is an innovative sound absorbing system. The range covers a variety of transparent, translucent and printed foils and acrylic glass panels which reduce reflected sound and reverberation time in buildings.

The high-performance sound insulation effected by Gudi Lasorber® results from its micro-perforation. The foil and acrylic glass elements have holes measuring between 0,2 and 0,8 mm in

diameter. As soon as sound waves strike the Gudi Lasorber® a physical reaction takes place; the sound energy is converted into heat through the friction arising at the edges of the holes. This reduces the reverberation times and sound levels significantly. The principle of transparent sound absorption allows creativity in the (re-)design of buildings where room acoustics play a crucial role. Gudi

Lasorber® can be adapted to rooms and architectural structures individually or with finished products such as free-standing partitions, rollers blinds and lamella curtains.

De-mountable Design of MPA



Sliding Panels



Swing Door with "Gudi" Laserber

Project: The Met. Blossom (Shatin Town Lot No. 599)



Gudi Acoustics is developing and marketing acoustical ceilings and walls, utilizing revolutionary technologies; laser drill and cut acoustic micro holes and slots. Sound absorption by micro tunnels and slotting makes it possible to exploit new indoor areas with smooth surfaces and excellent finish. The technologies also eliminate use of mineral fibres, traditionally used in acoustic absorbers.

Unique Applied Technologies

Gudi Acoustics' technologies are developed with latest CNC machine tools. The technology is based on the well-known acoustic principle Helmholtz resonator. Gudi Acoustics' unique technology utilizes laser cut micro slits to perforate the surface. When sound waves, defined as compressed air, hit the perforated surface an overpressure arises on the front of the panel. To equalize the pressure, the compressed air is forced through the micro holes or slits, and viscous forces between the very narrow slit and the air causes friction. Hence the sound waves are absorbed and transformed into heat without use of any porous fibre-materials.

Excellent Esthetical Properties

Our sound absorbers offer excellent esthetical properties treasured by architects. We offer clean and smooth surfaces and a wide variety of colours and surface finishes. Gudi Acoustics's absorbers can be anodised, painted, engraved or printed on, and because they are fibre free they can be transparent, translucent or coloured. Panels can be mounted in traditional ceiling suspensions, directly on walls, as panel elements in office furniture systems or standalone partition walls.

The Safe and Healthy Alternative

Fibre free sound absorbers ensure a better indoor environment, especially for children and people with respiratory disorders. The products do not emit fibre particles, nor do they collect dust in the slits. They do not absorb moisture, which can lead to fungi and rot, and they are easy to clean with water-based products. These benefits reduce costs related to sick leave, loss of productivity and maintenance of facilities.

Dust from porous materials can be inflammable and create life-threatening hazards because of limited visibility and breathing difficulties in a fire emergency. Gudi Acoustics metal absorbers are made from 100% solid aluminium or steel without the use of porous layers or fibre membranes.

High Light Reflection

The laser cut micro perforated slits are less than 0.2mm wide and therefore barely visible at a normal distance from the ceiling. They cover less than 1% of the panel surface and consequently over 99% of the material is left as a reflecting area. By utilisation of the reflecting or transparent surfaces, Gudi Acoustics panels can lead the light into the room, something which has been difficult with traditional sound absorbers. Exploitation of daylight reduces lighting costs, and improves the users' well-being.

Energy Efficiency

Traditional suspended fibre based ceiling systems, in combination with active cooling in a concrete ceiling, will reduce the performance of the cooling system. The fibres will work as an insulating layer, and hence increase the energy consumption of the cooling system. Scientific reports on the energy efficiency of Gudi Acoustics products, states that this increase can be reduced with 50% by using Gudi Acoustics's aluminium absorbers compared to traditional fibre absorbers. The effect will also be considerable when utilising the thermal inertia of the building materials to keep the temperature at a comfortable and more stable level during the shifting day and night conditions.

Sound Absorption

Compared to the best porous absorbers, micro perforated products perform somewhat poorer in higher frequencies. However, higher frequencies are more easily absorbed by furniture, people and surface elements in the room. Therefore, excellent acoustic conditions can still be achieved based on the high absorption at low and middle frequencies. Scientific measurements from our reference projects show that values are below the required reverberation time for the whole frequency band.



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