



# POLYSPORT **ACOUSTICS**



# WHO WE ARE

WE HAVE BEEN AN  
**INNOVATIVE** PARTNER  
FOR THE CONSTRUCTION OF SPORTS HALLS  
ACROSS **EUROPE** FOR  
MORE THAN **40 YEARS**



# YOUR **NO.1** IN EUROPE FOR THE INTERIOR DESIGN OF **SPORTS HALLS**

POLYSPORT guarantees the very highest levels of performance with an extensive network of partners specialising in sports hall construction in Germany and other European countries. Each individual component is selected for its quality and its properties are inspected in advance. Each and every day we live up to the high standards we set ourselves for the manufacture of **sports flooring, protective walls and acoustic elements.**

## OUR **CLAIM**



### HIGHEST SAFETY STANDARDS

The components used in POLYSPORT systems are selected based on strict safety-relevant specifications to protect users from dangerous substances. POLYSPORT offers system solutions with the lowest possible emissions of dangerous substances and a high fire classification.



### HIGHEST PERFORMANCE

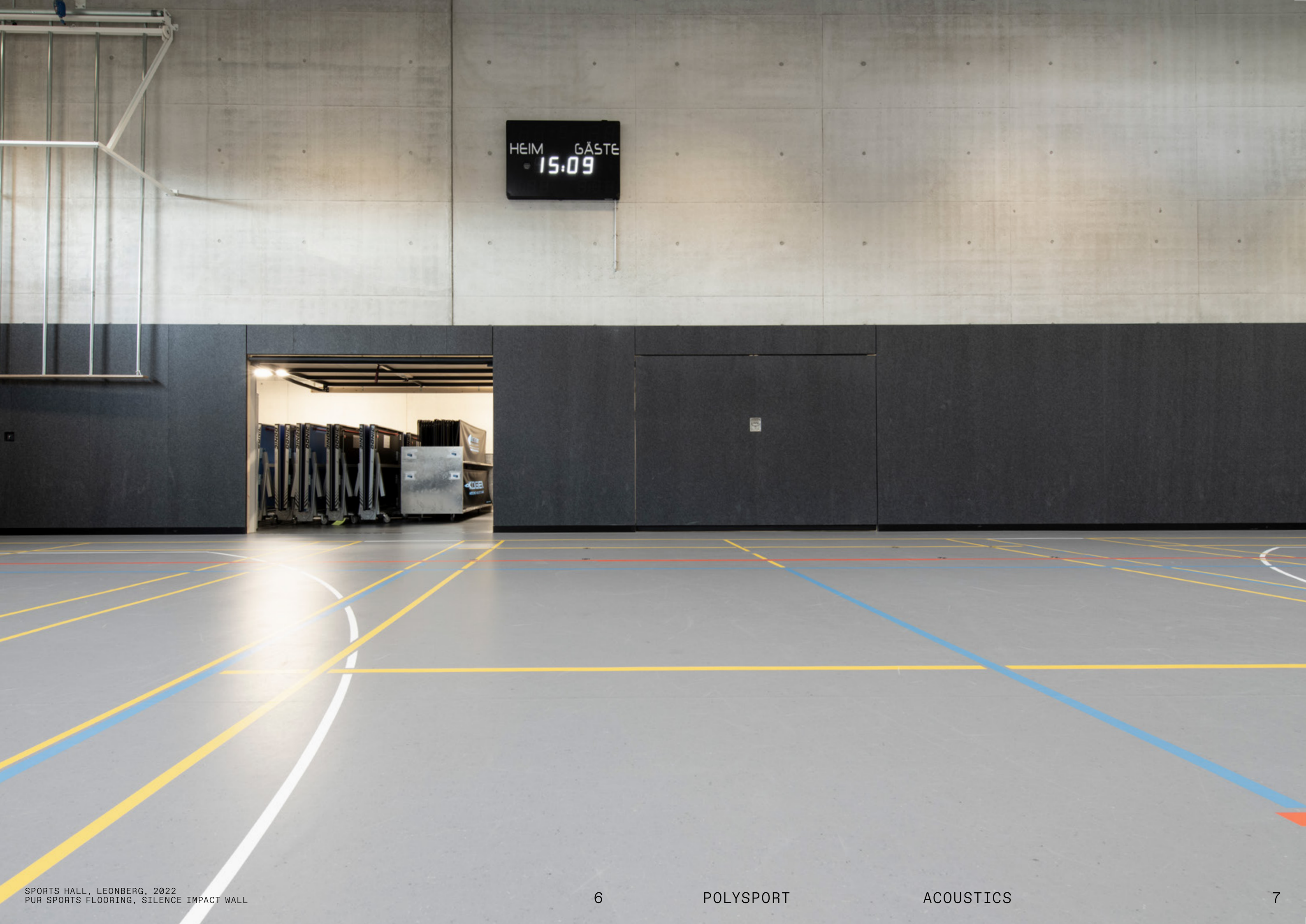
Our acoustic solutions offer optimum protection for athletes thanks to high levels of acoustic absorption. We ensure that our products are durable and robust in use by inspecting the impact resistance and ball impact safety in the system in accordance with DIN 18032-7.



### CERTIFIED QUALITY

In addition to the initial emissions inspection, TÜV-certified acoustic elements are inspected annually by an external party to ensure low emissions of dangerous substances in the system. Trained partner companies guarantee flawless installation of the POLYSPORT systems.





HEIM GÄSTE  
15.09



# ACOUSTICS

OUR **ACOUSTIC  
SOLUTIONS** FOR WALL  
AND CEILING ENSURE  
**PERFECT SPORTING  
PLEASURE**





# ACOUSTICS PLAY A **KEY ROLE** IN WELL-BEING DURING **SPORT**

Both physical education and team sports require a minimum acoustic quality to safeguard users' health and enable them to communicate with one another guaranteeing the safety of the students and athletes. Acoustic treatments measures to avoid health risks due to poor room acoustics have become increasingly important over recent years.

Students generate sound as they engage in the physical activity, yet it is essential that speech can be easily understood during physical education. Our acoustic systems represent a significant improvement in the room acoustics and reduce sound-related stress to a pleasant level, which in turn enhances the quality of learning and teaching in a healthy, sustainable school.

Room acoustics play a key role in a range of different fields for the quality of a room and its potential uses. The most significant KPI of room acoustics is a room's reverberation time, which is a measurement of how echoey a room is. It describes how long an acoustic signal in the room needs to fall by 60 dB after the sound cuts out.



# THE GREATER A ROOM'S **ACOUSTIC ABSORPTION**, THE SHORTER THE **REVER- BERATION TIME**

If a room's reverberation time is too long, the long decay of a syllable obscures the following syllables when someone speaks. The voice signal is distorted, and what the person is saying is harder to understand. Specifications for the reverberation time exist depending on the size of a room and its intended use. These are set out in DIN 18041 'Acoustic quality in rooms'.

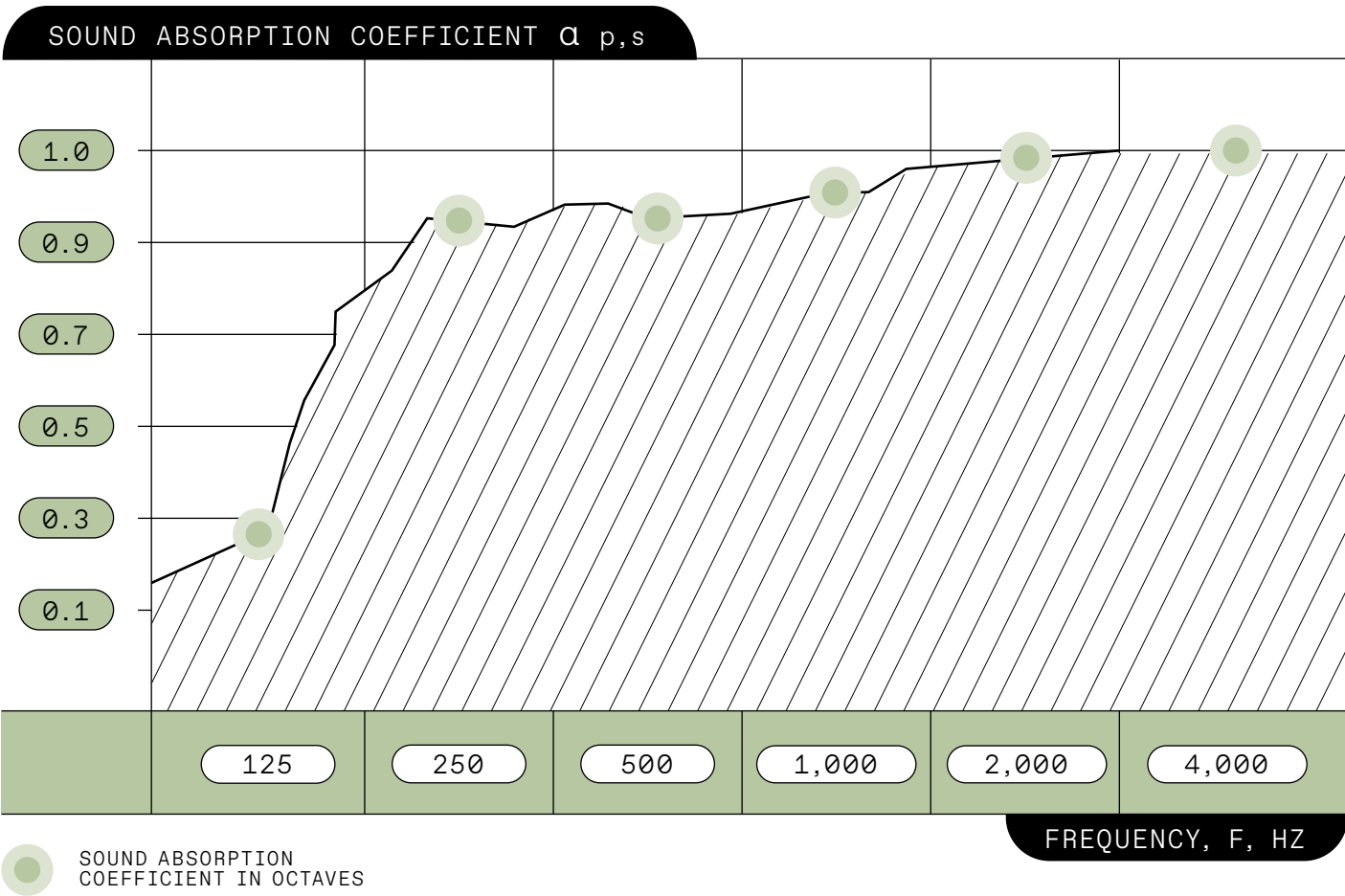


	<h2>ACOUSTIC ABSORPTION</h2> <p>Acoustic absorption refers to the process of reducing acoustic energy, especially by converting it to heat. 'Absorb' means the same as 'swallow' and 'soak up'.</p>
	<h2>REVERBERATION TIME</h2> <p>The reverberation time is a measure of the energy reduction in a room. The higher a room's ability to absorb sound, the quicker the acoustic energy is reduced and the shorter the reverberation time.</p> <div><div><math display="block">T = 0.163 \cdot \frac{V}{A}</math></div><div><div>T: REVERBERATION TIME [s] V: VOLUME [m³] A: EQUIVALENT ACOUSTIC ABSORPTION SURFACE [m²]</div></div></div>



# THE SOUND ABSORPTION COEFFICIENT

The sound absorption coefficient varies depending on the frequency. It is visualised by plotting the sound absorption coefficient over the frequency range in thirds and octaves (see diagram). These values enable an acoustic technician to calculate the reverberation time in a room/sports hall in advance.

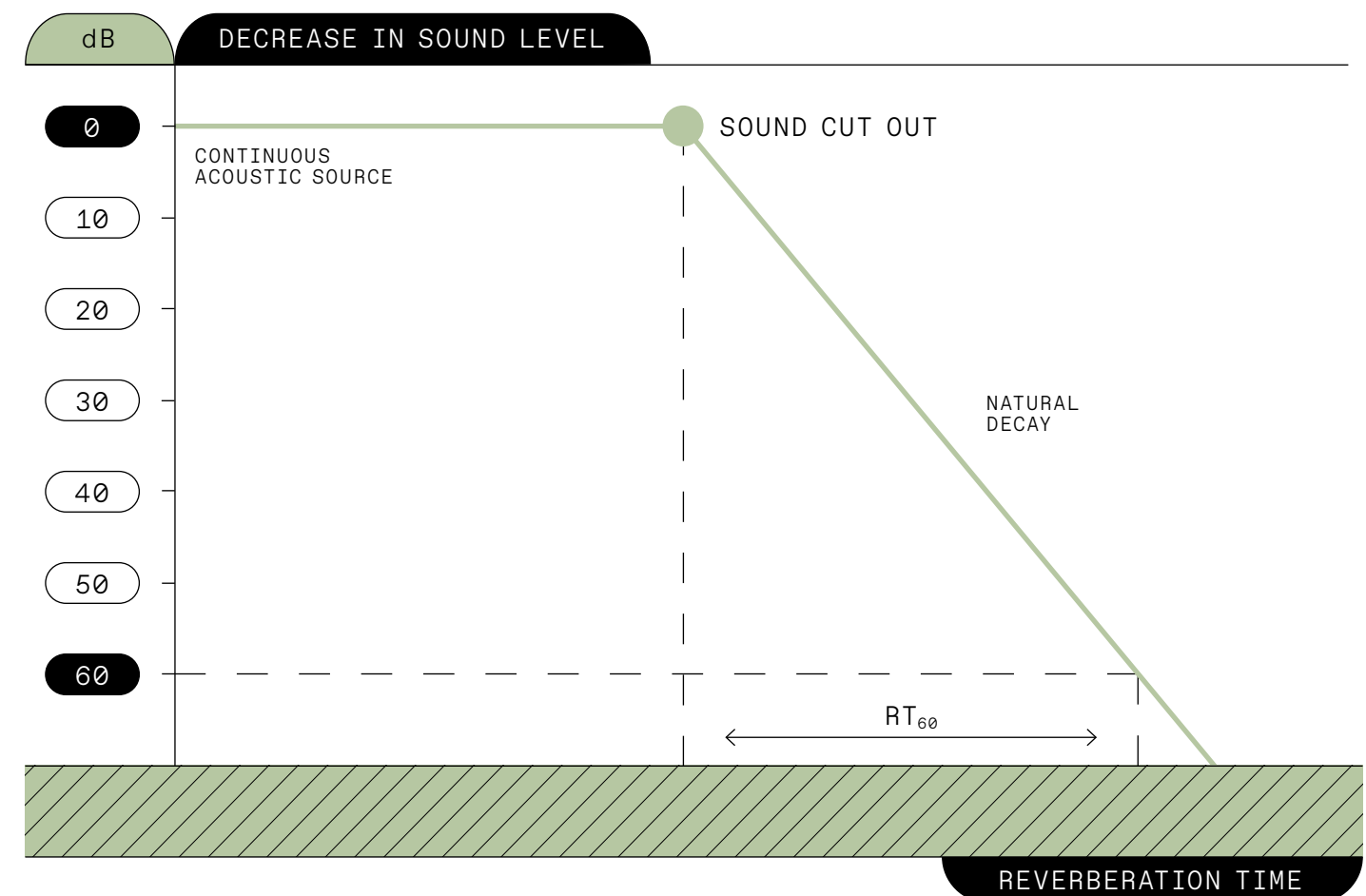






## THE **REVERBERATION TIME**

Loudspeakers are used to create a high sound pressure level in an reverberation room in a lab. The decay curve is plotted after the loudspeakers cut off. This can be used to determine the reverberation time as shown below. The reverberation time describes how long it takes for the sound pressure level to drop by 60 dB (see diagram for an example). Two measurements are performed – one with and one without the test object. These two measurements are used to calculate the sound absorption coefficient of the test object.

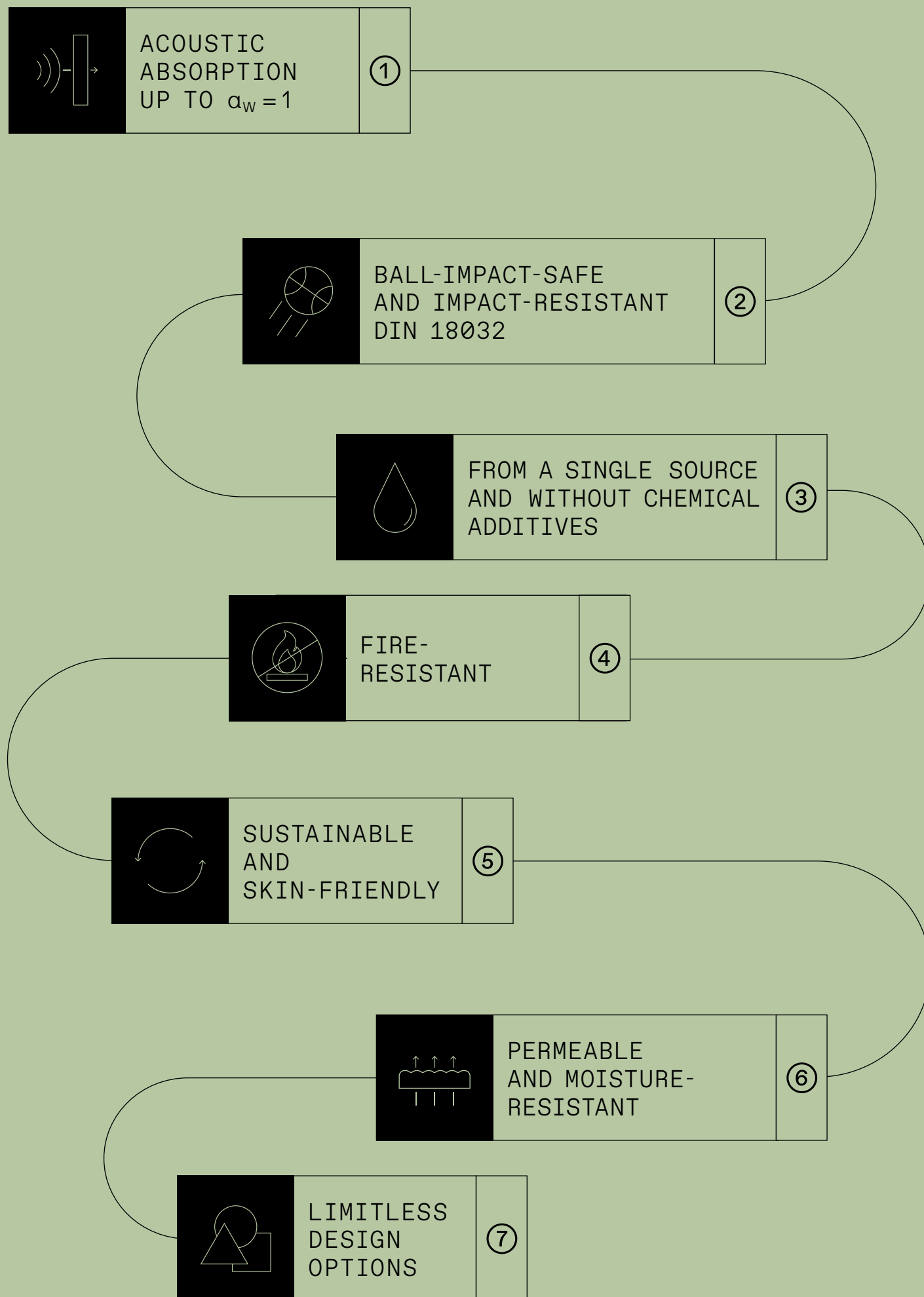




# ACOUSTIC MODULES

**INDIVIDUAL SOLUTIONS  
FOR ACOUSTIC  
COMFORT**





# THE BENEFITS OF POLYSPORT SILENCE

In addition to their excellent protective functionality, the high-quality POLYSPORT Silence acoustic panels also feature optimum acoustic properties with ultra-low emissions of dangerous substances and a high fire classification. Digital printing technology means that POLYSPORT Silence can be designed to suit all wishes – from a logo print through wood effect right up to custom patterns.

## BENEFITS

- |  |  |
|--|--|
| <p>① <b>SOUND ABSORPTION</b><br/>Acoustic absorption in the system up to <math>\alpha_w = 1</math> with e.g. POLYSPORT Wool.</p>   | <p>⑤ <b>SUSTAINABLE AND SKIN-FRIENDLY</b><br/>Made from 100% skin-friendly polyester with up to 70% recycled fibres and is a designated sustainable product.</p>                 |
| <p>② <b>BALL - IMPACT - SAFE AND IMPACT - RESISTANT</b><br/>Ball impact safety and impact resistance pursuant to DIN 18032.</p>  | <p>⑥ <b>PERMEABLE</b><br/>The material is durable and moisture-resistant with a breathable, vapour-permeable structure.</p>  |
| <p>③ <b>NO CHEMICAL ADDITIVES</b><br/>From a single source and without any chemical additives, compliance with the highest emissions standards in accordance with TÜV PROFICERT.</p> | <p>⑦ <b>LIMITLESS DESIGN OPTIONS</b><br/>The sky is the limit in terms of design. Any design can be realised – from standard colours through to digital printing technology.</p> |
| <p>④ <b>FIRE - RESISTANT</b><br/>Fire-resistant, making it suitable for events and long escape routes.</p>   |  |



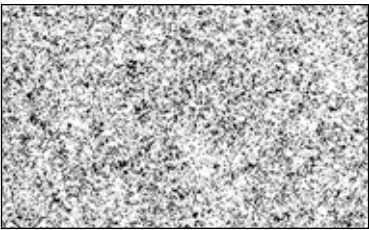


# A POLYSPORT **SILENCE**

EXAMPLE:  
ANTHRACITE GRAY



DETAIL  
CROSS SECTION,  
FLEECE



## PROPERTIES

- Acoustic absorption in the system up to  $\alpha_w = 1.0$  with e.g. POLYSPORT Wool
- Fire-resistant and suitable for places where people assemble
- Can also act as an acoustic solution with no restrictions when used as an impact wall at play level
- Infinite design concepts possible, from plain natural colours to custom-designed prints
- Vertical and horizontal installation possible

EXAMPLE:  
DIGITAL PRINT IN WOOD LOOK



## PERFORMANCE

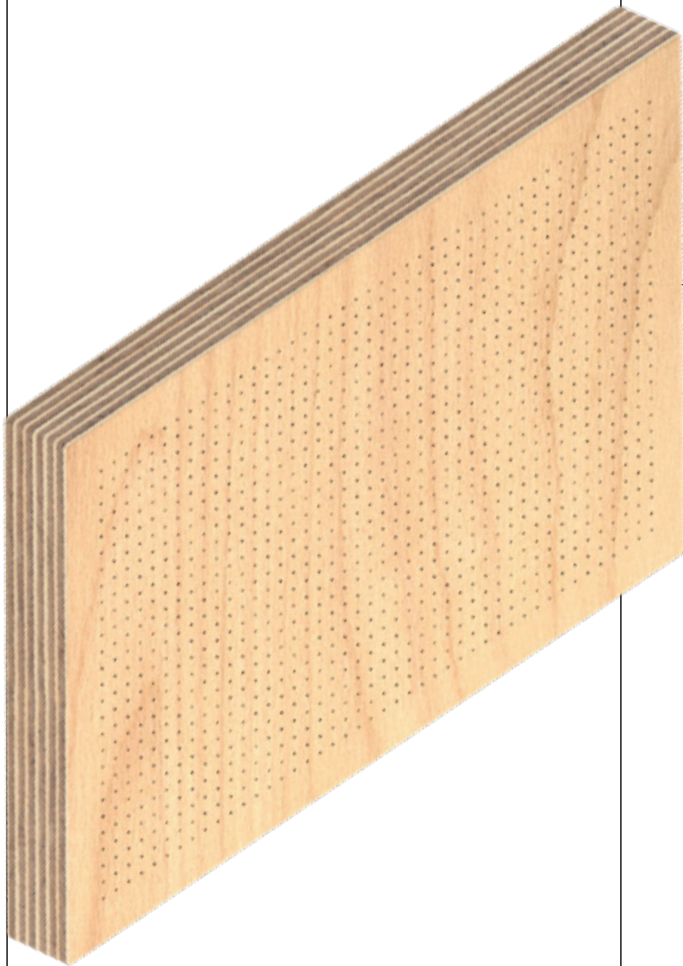
	HIGH ACOUSTIC ABSORPTION
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	LIMITLESS DESIGN OPTIONS
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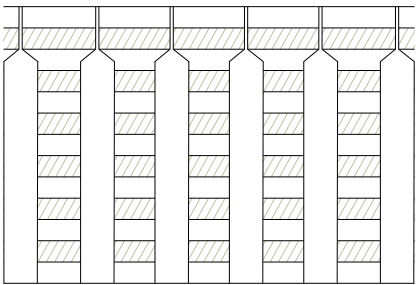
	FIRE- RESISTANT
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# B POLYSPORT MICROPERFO



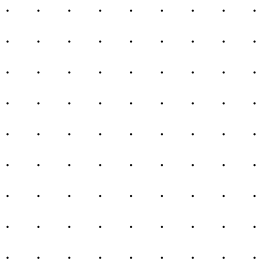
DETAIL  
CROSS SECTION



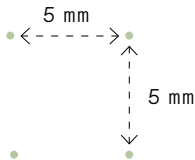
## PROPERTIES

- Acoustic absorption in the system up to  $\alpha_w = 0.65$  with POLYSPORT Wool
- The microperforations are almost invisible to the naked eye, retaining the high-quality wood effect
- Ball impact safety pursuant to DIN 18032
- Can also act as an acoustic solution with no restrictions when used as an impact wall at play level
- In design terms, the surfaces can be finished with any wood veneer, an HPL or melamine layer, or lacquered
- Vertical and horizontal installation possible

## SURFACE TEXTURE



## E.G. DISTANCE CLEARANCE



## PERFORMANCE

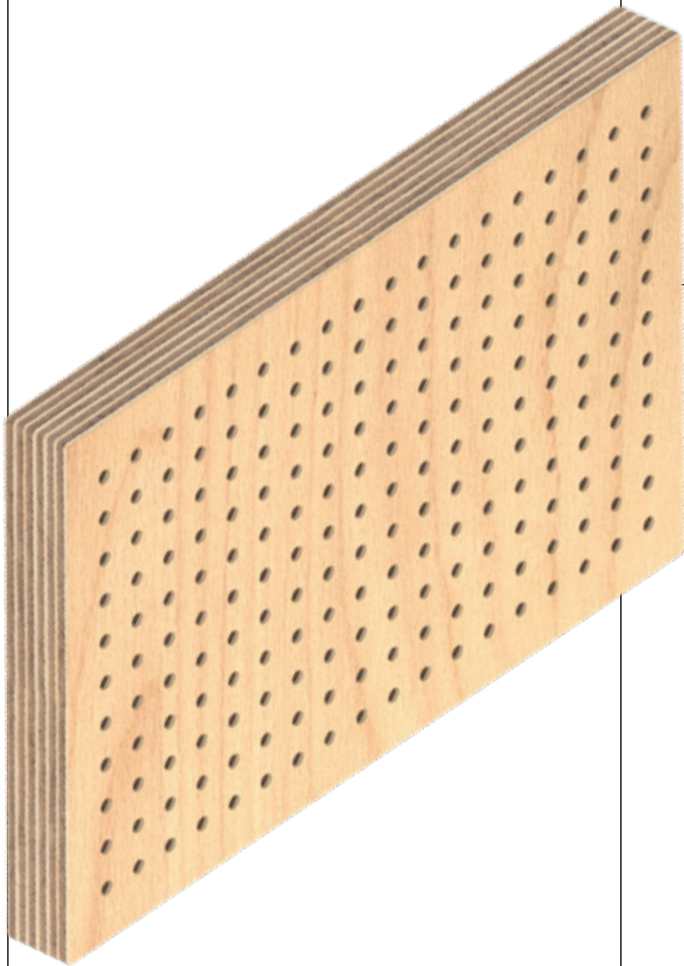


HIGH  
ACOUSTIC  
ABSORPTION

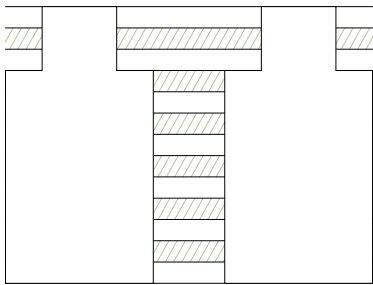


LIMITLESS  
DESIGN  
OPTIONS

# C POLYSPORT PERFO



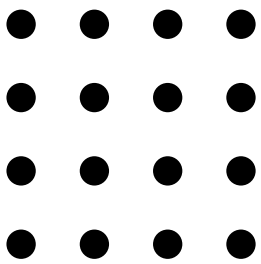
DETAIL  
CROSS SECTION



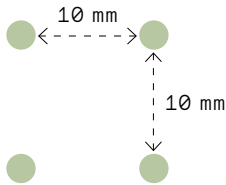
## PROPERTIES

- Acoustic absorption in the system up to  $\alpha_w = 0.65$  with POLYSPORT Wool
- Ball impact safety pursuant to DIN 18032
- Can also act as an acoustic solution with no restrictions when used as an impact wall at play level
- In design terms, the surfaces can be finished with any wood veneer, an HPL or melamine layer, or lacquered
- Vertical and horizontal installation possible

## SURFACE TEXTURE



## E.G. DISTANCE CLEARANCE



## PERFORMANCE



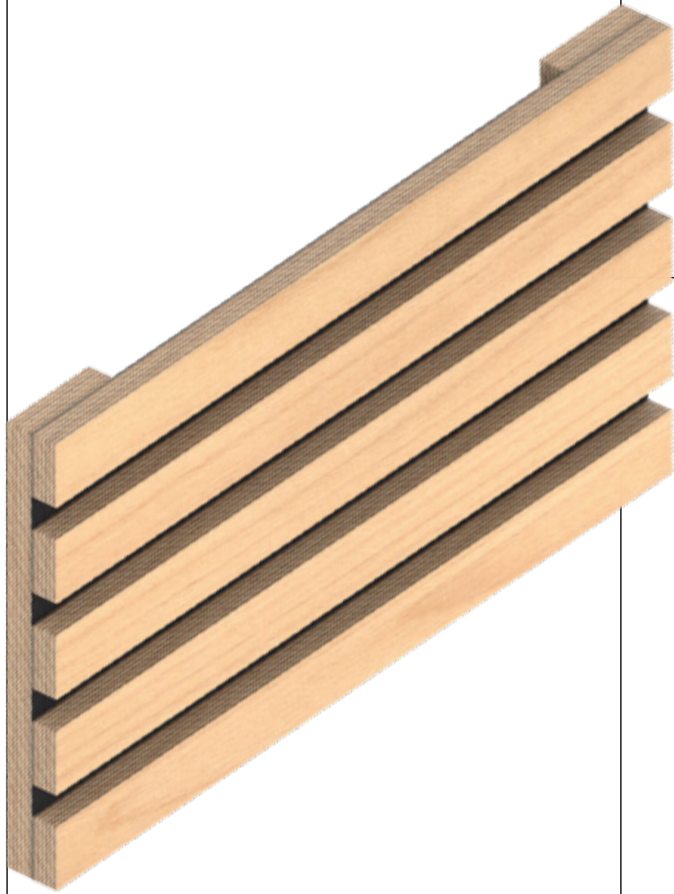
HIGH  
ACOUSTIC  
ABSORPTION



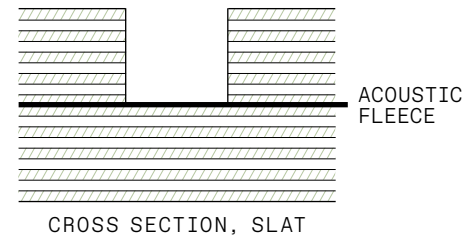
LIMITLESS  
DESIGN  
OPTIONS



# D POLYSPORT SLATS



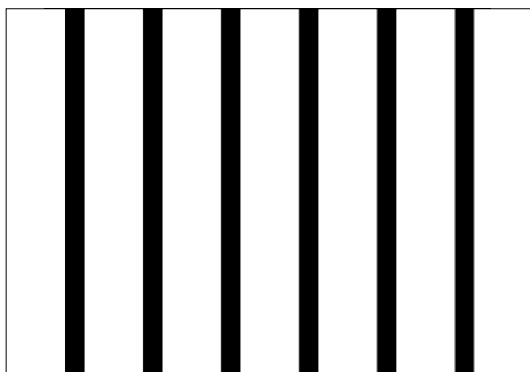
DETAIL



## PROPERTIES

- Acoustic absorption in the system up to  $\alpha_w = 0.80$  with POLYSPORT Wool
- The visually appealing slat can be selected in various joint widths
- Ball impact safety pursuant to DIN 18032
- Fire-resistant and suitable for places where people assemble
- POLYSPORT Slats with a joint width of  $< 8$  mm can also act as an acoustic solution with no restrictions when used as an impact wall at play level
- In design terms, the surfaces can be finished with any wood veneer, an HPL or melamine layer, or lacquered
- Vertical and horizontal installation possible

SURFACE TEXTURE



## PERFORMANCE



HIGH  
ACOUSTIC  
ABSORPTION

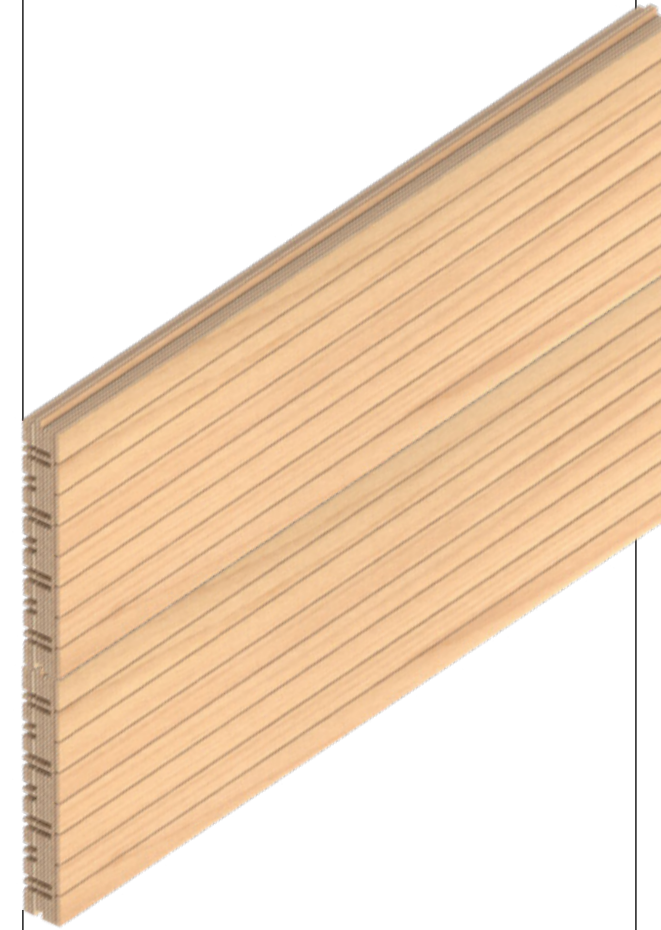


FIRE-  
RESISTANT



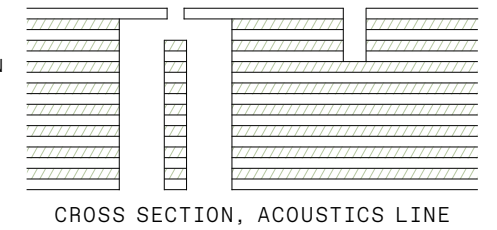
LIMITLESS  
DESIGN  
OPTIONS

# E POLYSPORT ACOUSTICS LINE



DETAIL

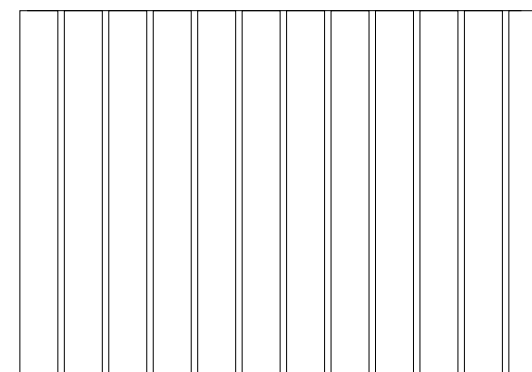
CROSS SECTION



## PROPERTIES

- Acoustic absorption in the system up to  $\alpha_w = 0.60$  with e.g. POLYSPORT Wool
- Ball impact safety pursuant to DIN 18032
- Fire-resistant and suitable for places where people assemble
- Can also act as an acoustic solution with no restrictions when used as an impact wall at play level
- In design terms, the surfaces can be finished with any wood veneer, or lacquered. The joints are almost invisible to the naked eye, retaining the high-quality wood effect.
- Vertical and horizontal installation possible

SURFACE TEXTURE



## PERFORMANCE



HIGH  
ACOUSTIC  
ABSORPTION



FIRE-  
RESISTANT



LIMITLESS  
DESIGN  
OPTIONS



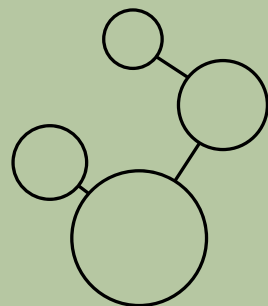


# SUSTAIN- ABILITY

**QUALITY AND  
ENVIRONMENTAL  
CERTIFICATES** ARE  
CORE COMPONENTS  
OF OUR WORK



# WE TAKE RESPONSIBILITY

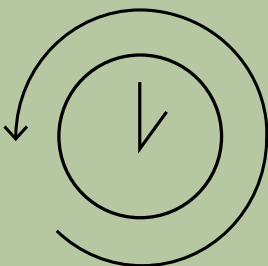
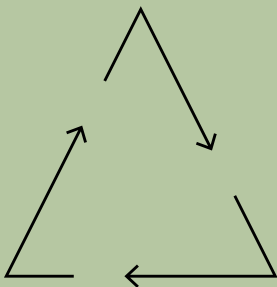


## INGREDIENTS

The acoustic solutions selected have a direct impact on health. The walls and ceiling are the largest surfaces in the sports hall and strongly influence the quality of the air. What matters most to us is people’s well-being, which is why our materials are low-emission and free from VOCs and plasticisers. We work exclusively with controlled ingredients which are conducive to good health and are inspected on an ongoing basis.

## RECYCLING

We want our sustainability strategy to be about more than ‘just’ future-proofing our own products. For that reason, our products consist of up to 60% renewable materials such as plywood, natural oils, mineral-based materials and a large share of recycled components such as polyester fibres for acoustic panels and acoustic insulation. We are also in the process of increasing the proportion of recycled ingredients further to demonstrate our responsible management of resources and the environment.



## ROBUST AND DURABLE

The components we use are selected in accordance with the highest quality standards to ensure the durability of our products across the total life cycle due to the increasing strain they are exposed to. We also consider renovation options that are gentle on the environment and energy-saving, and additionally have a positive influence on the life cycle costs.

## CERTIFICATION

Certainty for owners and planners thanks to the independent inspection and certification of our products. That means continuous monitoring of the products for harmful substances to guarantee quality and protection from product risks.



Das Zeichen für verantwortungsvolle  
Waldwirtschaft  
FSC® C106855







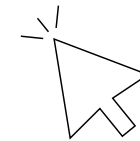




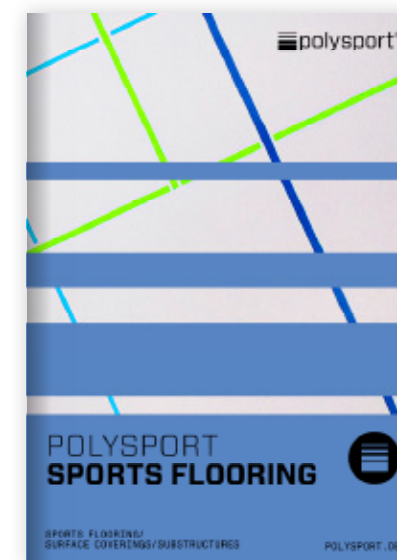
# THE **POLYSPORT** RANGE

- Sports flooring
- Point- and area-elastic impact walls
- Certified installation elements like gates and doors
- Acoustic solutions for ceiling and wall

We will be happy to provide you with no-obligation advice on interior planning for your sports hall or to send you our portfolio.



ORDER ALL  
OTHER BROCHURES  
ABOUT US AT  
[INFO@POLYSPORT.DE](mailto:INFO@POLYSPORT.DE)







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