# AEROSOUND®

## ACOUSTIC FLOOR UNDERLAY

Underlayment Products for

## *Impact Sound Control*

www.aerofoam.ae

# ANNOYED BY THE LOUD NOISES IN YOUR BUILDING, HOME, HOTEL OR OFFICE? IT'S TIME TO TAKE NOISE POLLUTION SERIOUSLY!

Do you know that noise pollution can have adverse effects on you? Noise-induced hearing loss can be caused by long or repetitive exposure to sounds at or over 85 dB for example heavy city traffic. Constant exposure to loud noise or impact sound can cause increased tiredness, lack of concentration, problem with sleep and can cause increased possibility of chronic diseases.

Sound reduction solutions should be considered during the design and construction stages of residential and commercial structures. They are a must-have for any house or office facility that wants to maintain a calm, quiet, and tranquil environment.

Noise will be absorbed, reflected, or transmitted by your walls, ceiling, and flooring when it is made within your structure. Sound treatment has two goals:

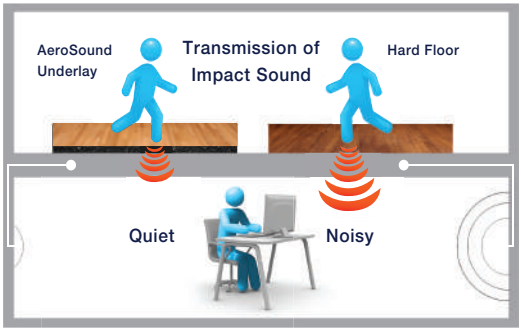
(1) To prevent sound transmission from room to room and floor to floor (structure noise).

(2) To reduce background noise to improve the quality of conversation or music within rooms. Acoustic flooring is a cost-effective and efficient approach to improve a room's acoustics.

Acoustic flooring in general, inhibit the transmission of two forms of noise:

## A. Impact Noise

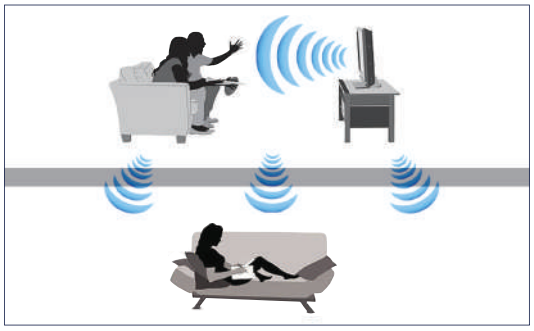
Floors take the brunt of impact within your facility, whether from foot traffic, carts, playgrounds for kids, gyms, dancing floors or vibrating machinery. The sound energy released by the hit can be carried through your building's structure, causing noise distortion, and upsetting workers, guests, or residents.




It is a serious design issue once the accurate acoustic material is not selected properly. It is relatively easy and cheap to select, design and install such material when the building is under construction. It becomes much more expensive and difficult to do soif the problem occurs once the occupants start using/living in the building. Sometimes it is even impossible to fix it. The implementation of the accurate underlay acoustic solution has to be done from the top side of the structure slab - never from the bottom.

## B. Airborne Sound

Loud conversation, singing, sound speakers, musical instruments and HVAC equipments are the most common sources of airborne sound. Airborne sound can be also a part of structure noise that can travel through your flooring into other areas of your building.



If properly selected and implemented, acoustic underlays are one of the most effective and affordable solution to improve overall indoor living environment which can prevent noise intrusion from our neighbors and in between floors.

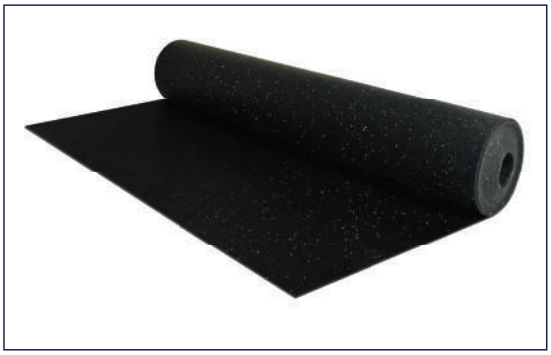
AeroSound® Acoustic Floor underlay is appropriate for any application that requires sound and vibration reduction, as well as durability and resilience to mechanical loads.

So, whether you're looking to buy, build, or restore the next best place to live, rest, or recover, keep in mind that a sustainable built environment is more than just low energy usage and "green" materials; it's also about how healthy a place it is to live.

Many countries developed standards and noise limits to be followed to protect the tenants from the exposure to unwanted sound. Refer to the local regulations and requirements while selecting the right acoustic solutions for your building.

# AEROSOUND® RSF

## Rubber Silent Floor



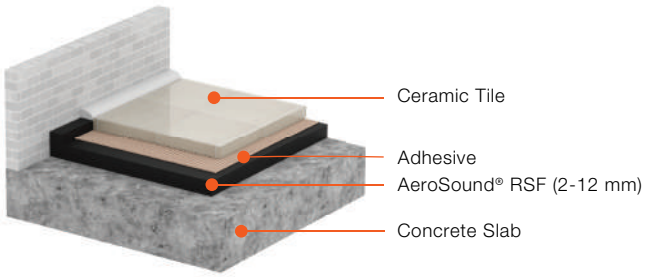
**AeroSound® RSF** has been designed to reduce impact sound in flooring systems.It is composed of elastomeric rubber mat with recycled rubber content bonded with PU. The rubber structure provides high acoustic, mechanical and thermal performance. Usual application is to separate concrete slab from the screed or final finish. Moreover, due to its high density and durability, it can also be installed directly under ceramic tiles with cement based glue. **AeroSound® RSF** can be used for heavy machines foundation to separate it from the structure of the building to avoid structural vibration transfer and noise transfer within the building. It can also act as a separation for the building structure elements like pre-casted stairs, elevator shafts from the staircase and stairs from structural slab. It is suitable for civil and industrial applications.

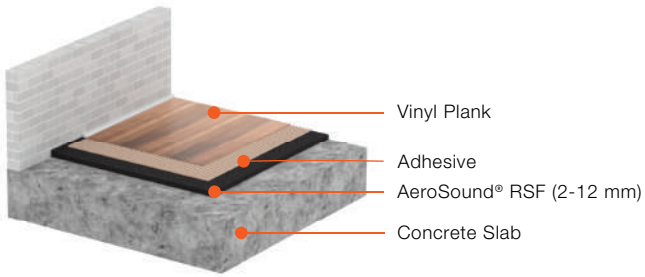
**Thickness:** 2 mm to 12 mm

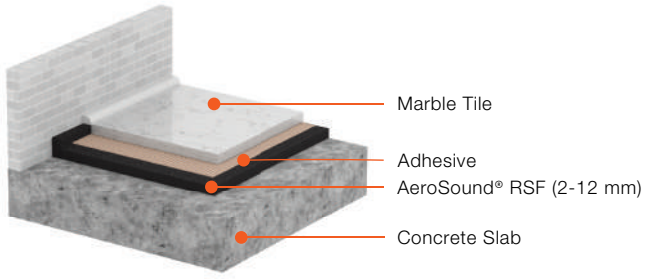
**Density:** 700-750 kg/m³ (±10%)

**Max. Load:** 3000 kg/m²

### Without Screed Applications





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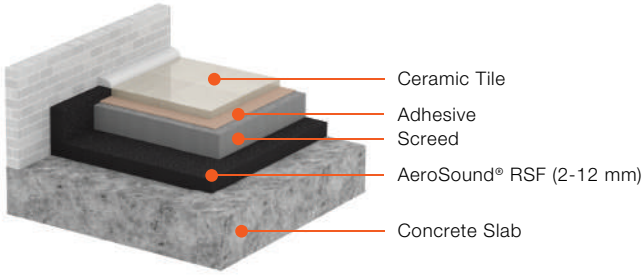
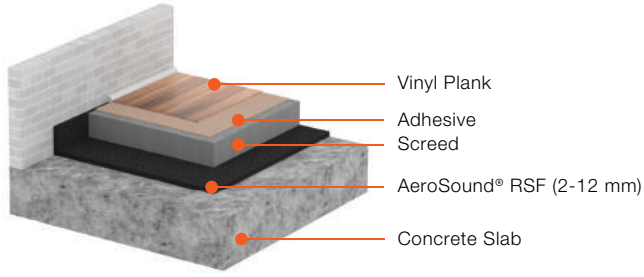
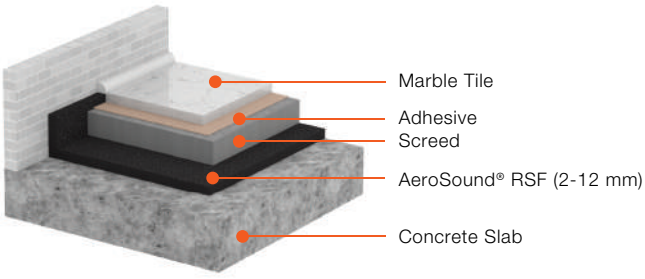
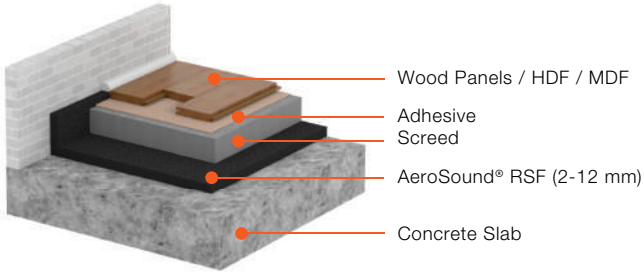


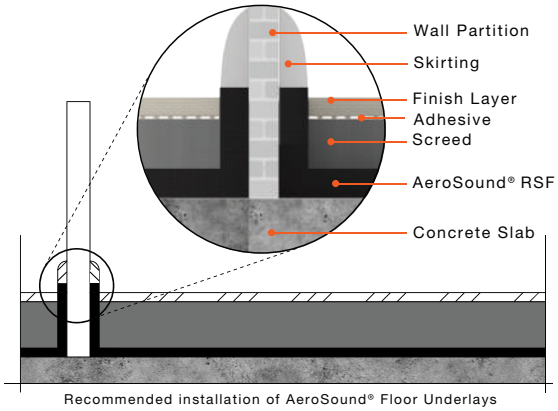
# SIZE CHART OF AEROSOUND® RSF

Below are the standard sizes/thicknesses for AeroSound® RSF, customized sizes can be manufactured on request.

| Width (mm) | Roll thickness (mm) | Sheet length (Mtr.) |
|---|---|---|
| up to 1200 ±20 mm | 2 ±0.3 mm | up to 10 mtr. ±50 mm |
| up to 1200 ±20 mm | 3 ±0.3 mm | up to 10 mtr. ±50 mm |
| up to 1200 ±20 mm | 4 ±0.3 mm | up to 10 mtr. ±50 mm |
| up to 1200 ±20 mm | 5 ±0.3 mm | up to 10 mtr. ±50 mm |
| up to 1200 ±20 mm | 6 ±0.3 mm | up to 10 mtr. ±50 mm |
| up to 1200 ±20 mm | 7 ±0.5 mm | up to 5 mtr. ±50 mm |
| up to 1200 ±20 mm | 8 ±0.5 mm | up to 5 mtr. ±50 mm |
| up to 1200 ±20 mm | 9 ±0.3 mm | up to 5 mtr. ±50 mm |
| up to 1200 ±20 mm | 10 ±0.5 mm | up to 5 mtr. ±50 mm |
| up to 1200 ±20 mm | 11 ±0.5 mm | up to 5 mtr. ±50 mm |
| up to 1200 ±20 mm | 12 ±0.5 mm | up to 5 mtr. ±50 mm |

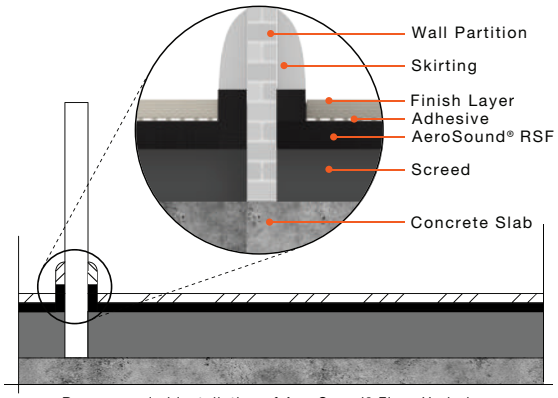
AeroSound® floor underlays can be installed in many other different configurations and applications. What matters the most, is way of installing the material, which should be as per below drawings:

## Under Screed



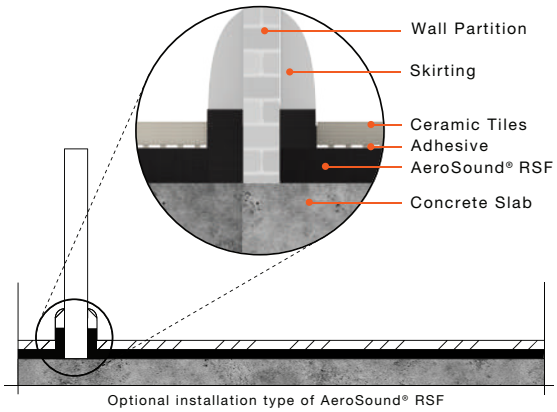

Recommended installation of AeroSound® Floor Underlays

## Above Screed




Recommended installation of AeroSound® Floor Underlays

## Without Screed




Optional installation type of AeroSound® RSF

Please contact AeroSound® Technical Support for further clarification regarding the most optimal installation methods.

# AEROSOUND® SF

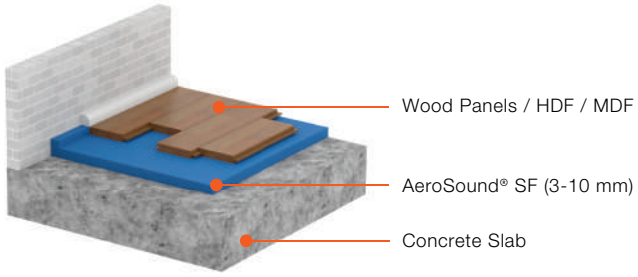
## Silent Floor

**AeroSound® SF** (Silent Floor) is a flexible cross-linked closed cell polyolefin blue foam with medium density suitable for all floating floor applications to reduce impact noise and sound transmission in flooring systems. **AeroSound® SF** floor underlay can be used in both commercial and residential buildings such as apartments, hotels, hospitals, schools and universities to reduce the sound transmission level between floors. It can also act as a separation for the building structure elements like pre-casted stairs, elevator shafts from the staircase and stairs from structural slab.

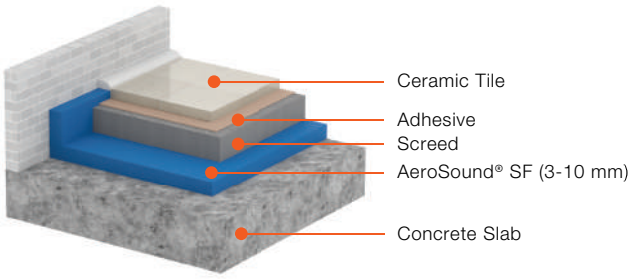
Usual application is to seperate concrete base floor from final screed. This type of floor underlay is resistant to moisture and water, can be used in wet areas without additional plastic foil covering applied before casting the screed.

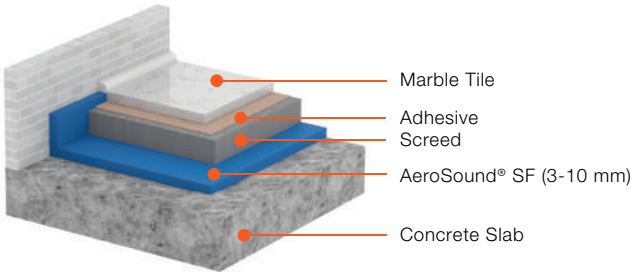
**Thickness:** 3 mm, 5 mm, 8 mm and 10 mm (other thicknesses available upon request).
**Density:** 25 kg/m³ (±10 %)
**Max. Load:** 400 kg/m²

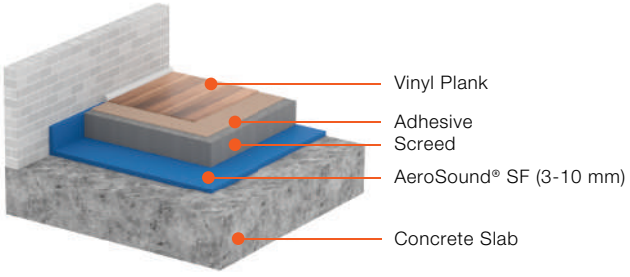
### Without Screed Applications

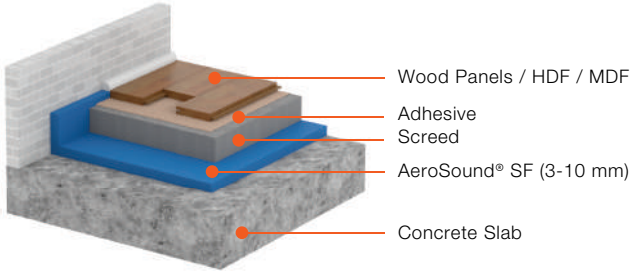



### Under Screed Applications



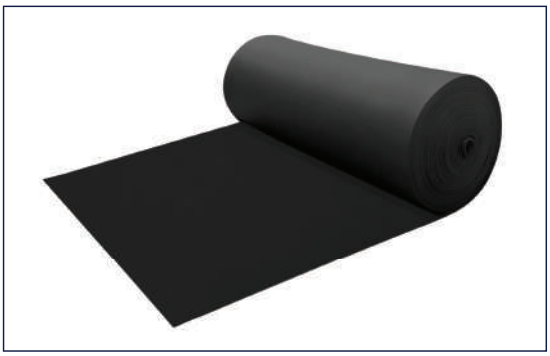



# AEROSOUND® ESF

## Elastomeric Silent Floor



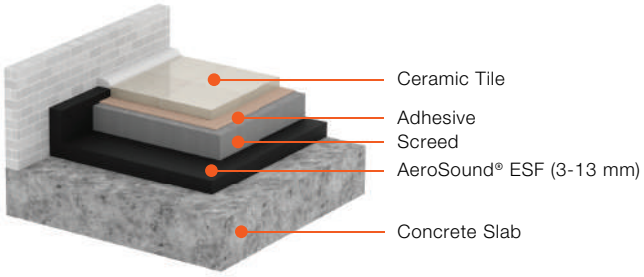
**AeroSound® ESF** (Elastomeric Silent Floor) is a flexible closed-cell elastomeric black foam with medium density suitable for all floating floor applications to reduce impact and sound transmission in flooring systems. **AeroSound® ESF** floor underlay can be used in both commercial and residential buildings such as apartments, hotels, hospitals, schools and universities to reduce the sound transmission level between floors. It can also act as a separation for the building structure elements like pre-casted stairs, elevator shafts from the staircase and stairs from structural slab.

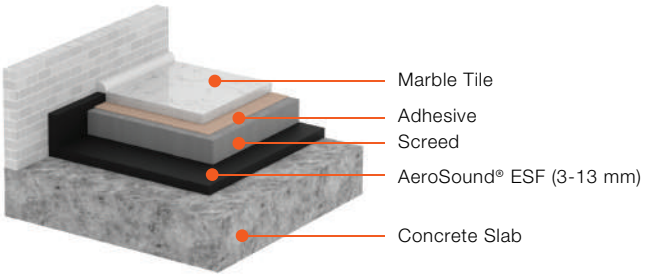
Usual application is to seperate concrete base floor from final screed. This type of floor underlay is resistant to moisture and water, can be used in wet areas without additional plastic foil covering applied before casting the screed.

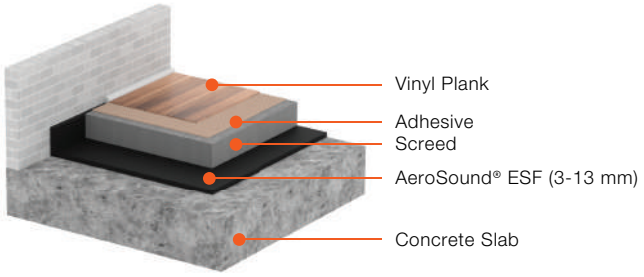
**Thickness:** 3 mm, 5 mm, 8 mm, 10 mm and 13 mm (other thicknesses available upon request).
**Density:** 60-85 kg/m³ (±10 %)
**Max. Load:** 400 kg/m²

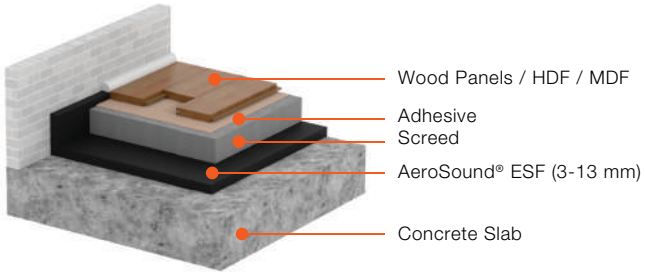
### Without Screed Applications


### Under Screed Applications



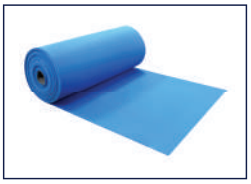
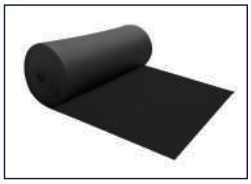
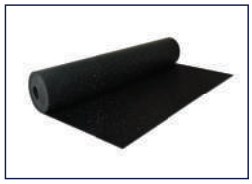



# AEROSOUND® FLOOR UNDERLAYS

AeroSound® Floor Underlays solutions are designed to reduce impact noise transfer within the building structure to avoid propagation of structural sound while using the combination of AeroSound® underlay and AeroSound® perimetric tapes.

It is ideal for commercial, industrial and residential buildings to reduce the sound transmission between floors but also as an underlay of foundation for heavy machines and HVAC-R equipment to separate it from the structure of the building.

## TECHNICAL DATA

| Properties | AeroSound® SF | AeroSound® ESF | AeroSound® RSF | Tested acc.: |
|---|---|---|---|---|
| **Material type** | Cross-linked polyolefin foam | Flexible elastomeric foam | Elastomeric rubber mat with recycled rubber content | |
| **Color** | Blue | Black | Black/ Anthracite/ Orange | |
| **Thicknesses*** | 3, 5, 8, 10 mm | 3, 5, 8, 10, 13 mm | 2-12 mm | |
| **Thickness tolerance** | -1 mm / +1.5 mm | | 2-6 mm: ±0.3 mm<br>7-12 mm: ±0.5 mm | |
| **Size** | W: 1.2 m \| L: 20 m | W: 1 m \| L: 8 -30 m | W: 1.2 m \| L: 5 -10 m | |
| **Size tolerance** | W: ± 20 mm \| L: ± 50 mm | | | |
| **Density** | 25 kg/m³ (±10%) | 60-85 kg/m³ (±10%) | 700-750 kg/m³ (±10%) | |
| **Recycled content** | No | No | Yes | |
| **Dynamic stiffness** | 64.3 MN/m³ (3 mm) | 59.27 MN/m³ (10 mm) | 73 MN/m³ (3 mm) | |
| **Maximum load** | 400 kg/m² | 400 kg/m² | 3000 kg/m² | |
| **Tensile strength at peak load** | 0.82 kg/cm² | 2.71 kg/cm² | 3.48 kg/cm² | ASTM D412/ ASTM D751 |
| **Elongation break** | 36.37% | 128.87% | 47.5% | ASTM D412/ ASTM D751 |
| **Compressibility** | 84% | 94.06% | 93.7 % | ASTM D3575/ ASTM F3616 |
| **Hardness, Shore A** | 11-17 | 15-18 | 65-69 | ASTM D2240 |
| **Temperature range** | -80 °C to +105 °C | -80 °C to +110 °C | -30 °C to +85 °C | |
| **Thermal conductivity at 23 °C** | 0.035 W/m·K | 0.033 W/m·K | 0.106 W/m·K | ASTM C518 |
| **Water absorption** | 0.013 g/cm² | 0.09 g/cm² | 0.009 g/cm² | JIS K 6767 |
| **Chemical resistance** | Yes | Yes | Yes | |
| **Resistance to fungi** | Pass | Pass | Pass | ASTM G21 |
| **Resistance to bacteria** | Pass | Pass | Pass | ISO 22196 |
| **ODP, GDP** | ODP=0, GDP <5 | ODP=0, GDP <5 | ODP=0, GDP <5 | |
| **VOC** | - | - | ≤160 µg/m²hr | ASTM D5116 |
| **Puncture testing** | - | - | 91.44 cm | ASTM F924 |
| **Rolling load** | - | - | Pass (at 500 cycles) | EN 985 |

* Other thicknesses available upon the request.

AeroSound® floor underlays impact sound performance with different configurations:

| Impact Sound Insulation & Sound Reduction | | | | ISO 10140-3, EN ISO 10140-1 rated as per ISO 717-2 | | ASTM E2179-3 & rated as per ASTM E898 | |
|---|---|---|---|---|---|---|---|
| Configuration | | | | Lnw (dB) | ΔLw (dB) | IIC (dB) | ΔIIC (dB) |
| **AeroSound® Underlay** | Slab (mm) | Screed (mm) | Finish Type | | | | |
| **AeroSound® RSF 3 mm** | 140 (6") | 80 | Ceramic tiles 7 mm | 62 | 18 | 47 | 22 |
| **AeroSound® RSF 3 mm** | 140 (6") | 80 | Vinyl 5 mm | 58 | 21 | 52 | 25 |
| **AeroSound® RSF 5 mm** | 140 (6") | 80 | Ceramic tiles 7 mm | 61 | 19 | 49 | 21 |
| **AeroSound® RSF 5 mm** | 140 (6") | 80 | Vinyl 5 mm | 57 | 21 | 51 | 25 |
| **AeroSound® SF 3 mm** | 140 (6") | 90 | Bare screed | 55 | 18 | - | - |
| **AeroSound® SF 5 mm** | 140 (6") | 80 | Ceramic tiles 7 mm | 58 | 20 | 50 | 22 |
| **AeroSound® SF 5 mm** | 140 (6") | 80 | Vinyl 5 mm | 54 | 23 | 54 | 25 |
| **AeroSound® SF 10 mm** | 140 (6") | 90 | Bare screed | 50 | 22 | - | - |
| **AeroSound® ESF 10 mm** | 140 (6") | 90 | Bare screed | 54 | 19 | - | - |

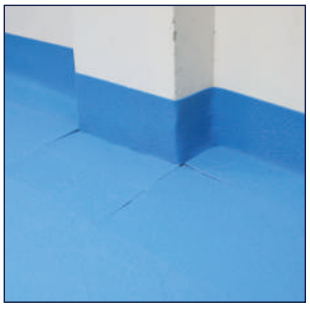
## FEATURES & ADVANTAGES

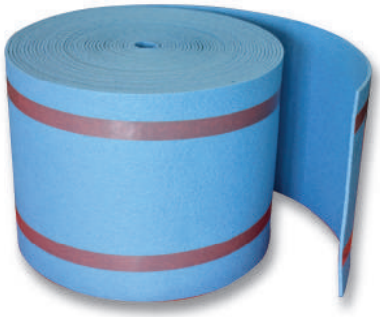
- Long lifespan
- Environmental friendly
- Does not absorb water
- Excellent acoustic properties
- Helps to protect screed from cracking
- Resistant to bacteria, mold, fungi growth

## APPLICATIONS

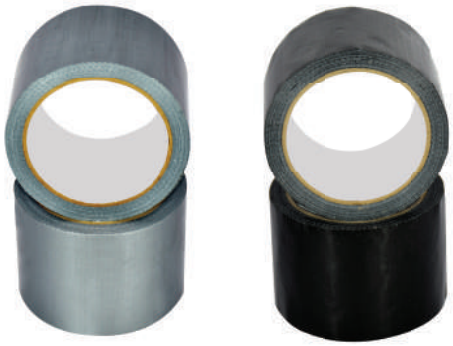
- Gyms, clubs & dancing floors
- Hotels, offices & medical facilities
- Recording studios & movie theaters
- Industrial buildings & machinery foundation
- Automotive industry - wheel arch & chassis
- Residential, commercial & high-rise buildings
- Sports Court & Running Track

## ACCESSORIES



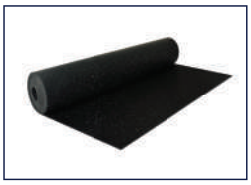


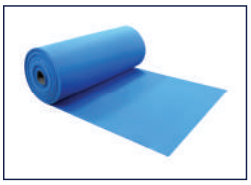
AeroSound® Perimetric Tape

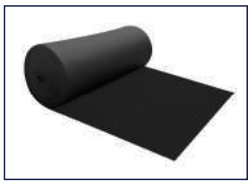


Duct Tapes

# KEY FEATURES OF AEROSOUND® UNDERLAY TYPES

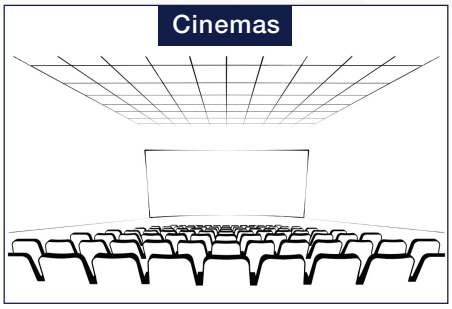


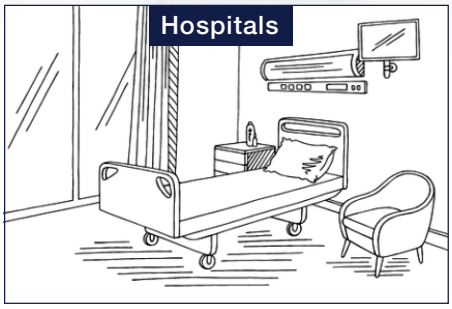


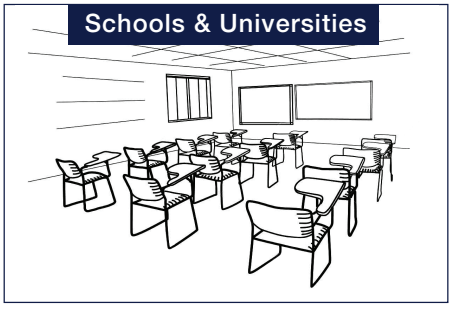


| | RSF | SF | ESF |
|---|---|---|---|
| **Material type** | Elastomeric rubber mat with recycled rubber content | Semi open cell polyolefin foam | Semi open cell elastomeric foam |
| **Density** | 700-750 kg/m³ | 25-30 kg/m³ | 60-85 kg/m³ |
| **Dynamic stiffness** | 73 MN/m³ (for 3 mm) | 64.3 MN/m³ (for 3 mm) | 59.27 MN/m³ (10 mm) |
| **Recycled content** | Yes | No | No |
| **Application structure** | Under the screed<br>Above the screed<br>Directly under final finishing including ceramic tiles and marbles,<br>Under wooden panels | Under the screed<br>Under the carpet, wooden panels | Under the screed<br>Under the carpet, wooden panels |
| **Application area** | Rooms and corridors, habited aeras, non-habited aeras, industrial foundation | Rooms, excluding corridors | Rooms, excluding corridors |
| **Installation recommendation** | No need for additional reinforcement of screed.<br>Ceramic tiles and marble can be installed directly on the material<br>Recommended installation with adhesive depends on final finish<br>Requires use of PE foil under the screed during casting | Reinforcement of the screed in a lower range of thicknesses of screed to prevent cracking below 50 mm<br>Ceramic tiles and marble should not be installed directly on the material<br>No need to use adhesive<br>No need of PE foil under the screed | -<br>Ceramic tiles and marble should not be installed directly on the material<br>No need to use adhesive<br>No need of PE foil under the screed |
| **Durability** | Very High | Medium (depends on the thickness) | Medium (depends on the thickness) |
| **Max. load** | 3000 kg/sqm | 400 kg/sqm | 400 kg/sqm |
| **Weight** | High | Low | Medium |
| **Impact sound reduction** | Finish type - Ceramic tiles:<br>Ln, W = 61 dB, ΔLw = 19 dB<br>for 5 mm thick underlay | Finish type - Ceramic tiles:<br>Ln, W = 58 dB, ΔLw = 20 dB<br>for 5 mm thick underlay | Finish type - Ceramic tiles:<br>Ln, W = 54 dB, ΔLw = 19 dB<br>for 5 mm thick underlay |
| **Green sustainable product** | Yes | Yes | Yes |
| **Size of roll** | Thickness 2-12 mm<br>W: 1.2 m<br>L: 5-10 m | Thickness: 3, 5, 8, 10 mm<br>W: 1.2 m<br>L: 20 m | Thickness: 3, 5, 8, 10, 13 mm<br>W: 1 m<br>L: 8-30 m |
| **Size of roll - sqm** | 2-6 mm: 12 sqm<br>7-12 mm: 6 sqm | 24 sqm | 3 mm - 30 sqm<br>5 mm - 30 sqm<br>8 mm - 20 sqm<br>10 mm - 20 sqm<br>13 mm - 14 sqm |

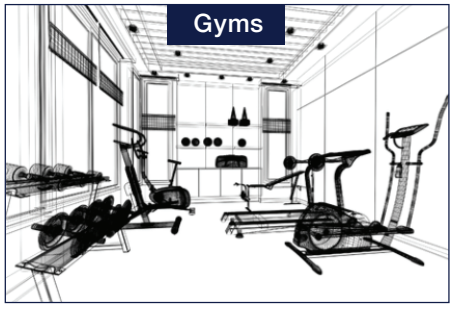
# AEROSOUND® - MAKE A SOUND DECISION

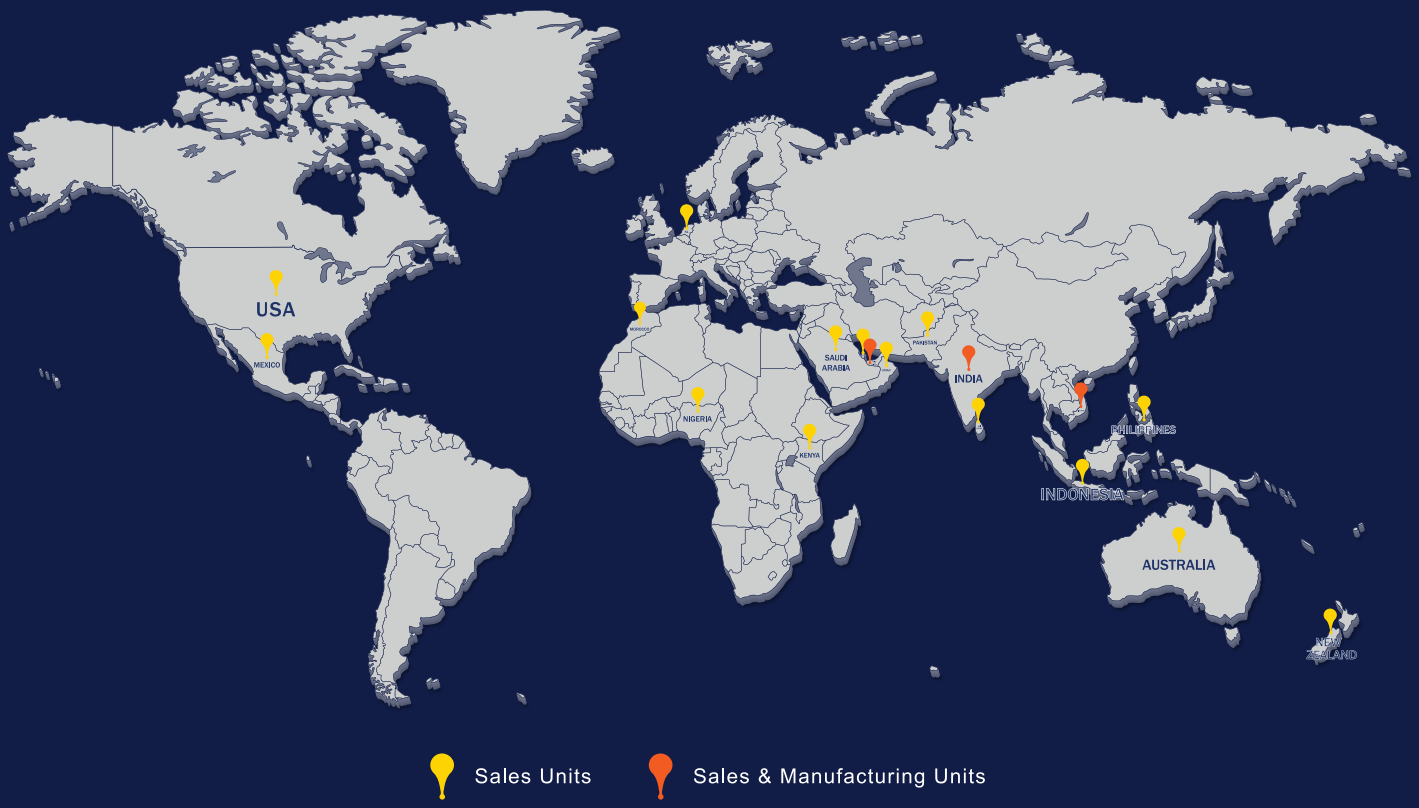







# AEROSOUND®

## Global Footprint




**Acoustic Engineering Applications:** In everyday life we can face many problems due to noise in our surroundings, thus we need to find solutions with the help of engineering to control/reduce annoying noise levels without affecting the performance of the construction. From auditoriums, theaters, concert halls to classrooms, hotel rooms, residential and offices, we can use AeroSound® products to reduce the noise that is transferred from one point to another and thus create acoustic comfort using the products alone or in combination with others. A clear example is the design of acoustic panels to absorb noise and avoid reverberation or echo, creating pleasant aesthetic designs by mixing colors for a better finish. In relation to exterior solutions, it can be used on the top of a building or outside a building. It is common to see very noisy electro-mechanical systems such as chillers, AC equipments, electric generators, compressors and boilers to name a few. In such cases, noise control is essential and that is why AeroSound® products can be used in combination with other materials for the construction of noise barrier walls. For better advice and more information, please contact our technical department or our local representative.

For LEED requirements/compliance, please contact our technical department or local representative.



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