

Akustik +
sylomer[®]
by getzner

**POOL ISOLATION
IN BUILDINGS**

AMC
MECANOCAUCHO

ABOUT AMC MECANOCAUCHO

Aplicaciones Mecánicas del Caucho (AMC) is a company that designs and produces anti-vibration mounts as well as noise insulation composites for the industrial and building sectors.

Since 1969 we have been developing noise and vibration solutions for a wide range of applications. To meet the demands of each project our products combine the properties of different isolating materials such as rubber, metal, springs and Sylomer.

Our dedicated engineering team are on hand to offer technical support with vibration calculations and product advice. On our website akustik.com you will find access to an extensive range of technical data for our products as well as calculation tools such as our acoustic mount selector. This tool allows the input of your system specifications and provides a recommendation of ceiling and floor mounts to meet the requirements of your project. Our library of acoustic test data is also available to view using our dB finder tool, this details the acoustic data we have obtained for various ceiling, wall and floor systems.

With a wide variety of clients served from across the world, we are ready to provide you with a personalised acoustic solution to your problem.





SOUNDPROOFING
OF SWIMMING POOLS



Rooftop pool isolation

Why isolate my pool?

A rooftop pool has its advantages:



- Extra value for sale.
- No loss of buildable land.

They are becoming more and more popular due to the lack of space in cities. But not everything is an advantage:

TRANSMISSION OF NOISE AND VIBRATIONS

Failure to properly isolate the pool can result in a **significant transmission** of noise and vibrations to the surrounding floors.

The disturbances produced by **jumping into the water and splashing** travel through the water, exciting a large surface area of the building structure which radiates **disturbing noises to neighbours**.



Noise problem in swimming pools

Context



Carrying out renovations on an already built pool can be a **big headache**.

It is necessary **to remove all the surrounding material, chip away at the existing slab** and **build a new one** with a suitable elastic suspension.

CASE STUDY

We can confirm the improved isolation with the following measured values:

UNTREATED POOL

45 dB(A) + 9 dB(A)
penalties for impulsive and low-frequency noise

NOISE LEVEL IN THE APARTMENT BELOW

54 dB(A)

POOL AFTER ISOLATION SYLOMER

34 dB(A) + 3 dB(A)
penalties for impulsive noise

NOISE LEVEL IN THE APARTMENT BELOW

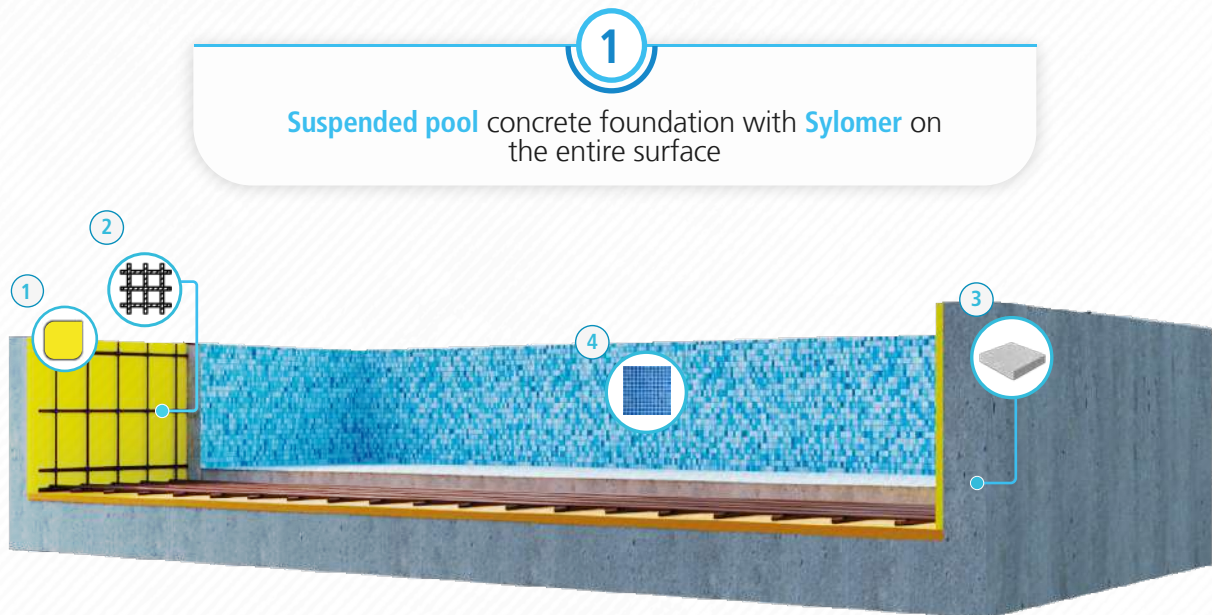
37 dB(A)

Isolation by Sylomer with an attenuation of 17 dB

Noise and vibration attenuation of approximately 85%.

Solutions for pool foundations

Option 1



- ① Sylomer ② Reinforced concrete ③ Pool concrete foundation ④ Tile



The slab provides inertia to the system, making it more stable and absorbing part of the vibrations.



The tile, the larger the edge, the greater the inertia of the system; that is, it is more stable and absorbs vibrations.

sylomer?

Sylomer is a microcellular polyurethane specifically designed to provide noise and vibration isolation



Solutions for pool foundations

Option 2

2

Prefabricated metal tile with strips Sylomer:



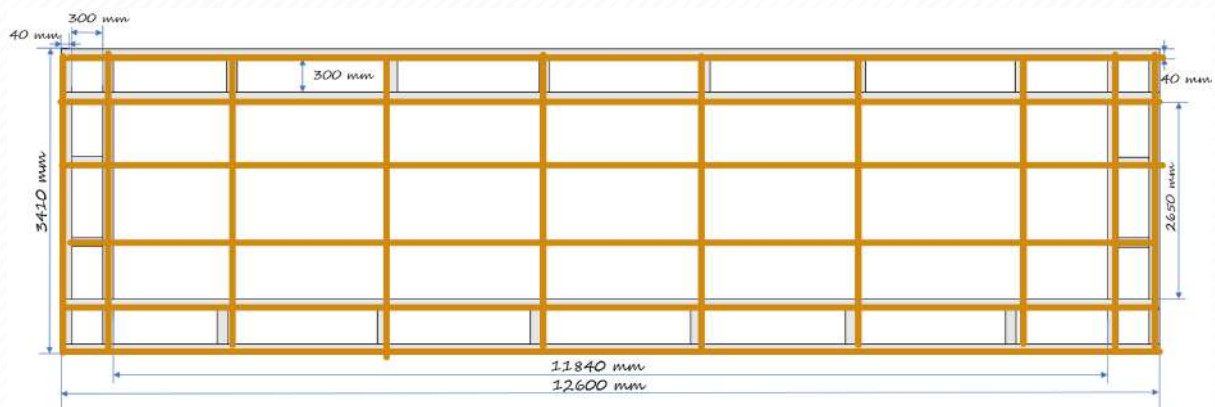
Sometimes it is not possible to make a new concrete foundation, in which case a **prefabricated metal frame can be constructed instead.**

Many times this type of metal frame can be fully supported on **strips of Sylomer.**



SR 110 (1.1 KG/CM2)

SYLOMER is resistant to water, oils and a wide variety of diluted acids, bases and atmospheric agents. It also covers a wide range of loads.

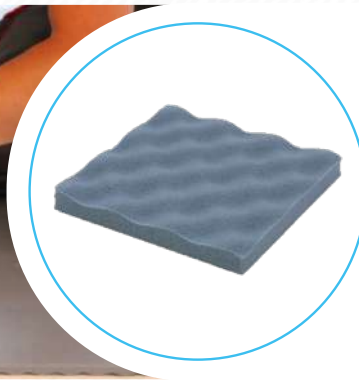
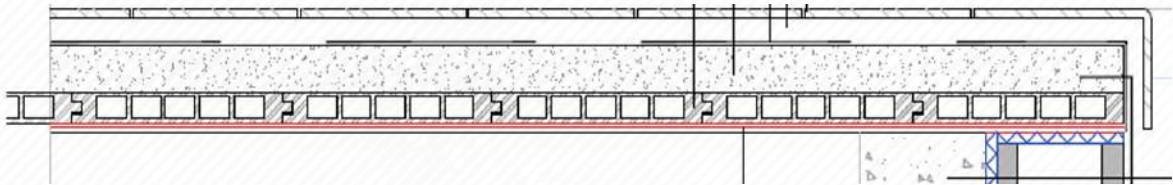


Solutions for poolside

Options 1 and 2

1

Support on the entire surface with **Acoustic Floor Mat**



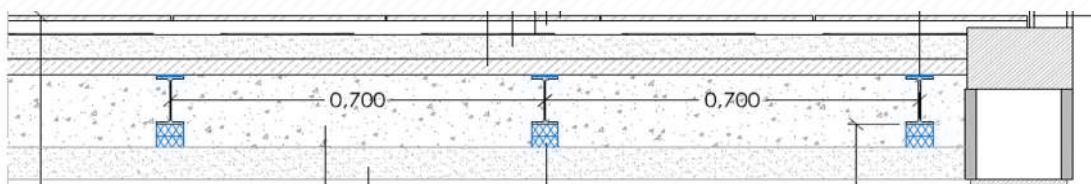
A simple system to effectively isolate a concrete slab with a small compression layer

Ability
loading

5000 kg/m2

2

Support in strips with **Sylomer**



A versatile system which can support a large range of loads thanks to different densities and thicknesses of Sylomer.

Solutions fot poolside

Option 3

3

Support on pads **Acoustic Floor Blocks**



Economical system with 50 mm Sylomer suspension, a natural frequency of around 8 Hz is achieved.

8 Hz

**50mm
Sylomer**



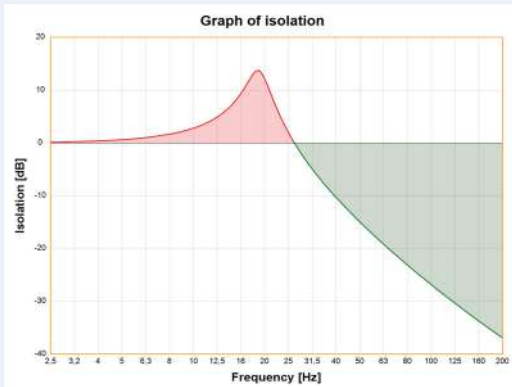
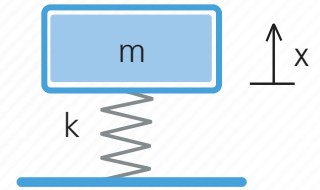
Selection tools for Sylomer

Freq Calc / Base Calc PRO

The selection tools allow you to select the most suitable density of Sylomer for each pool. In addition, it allows you to calculate the main elastic characteristics such as deflection, natural frequency and attenuation curve based on different thicknesses.

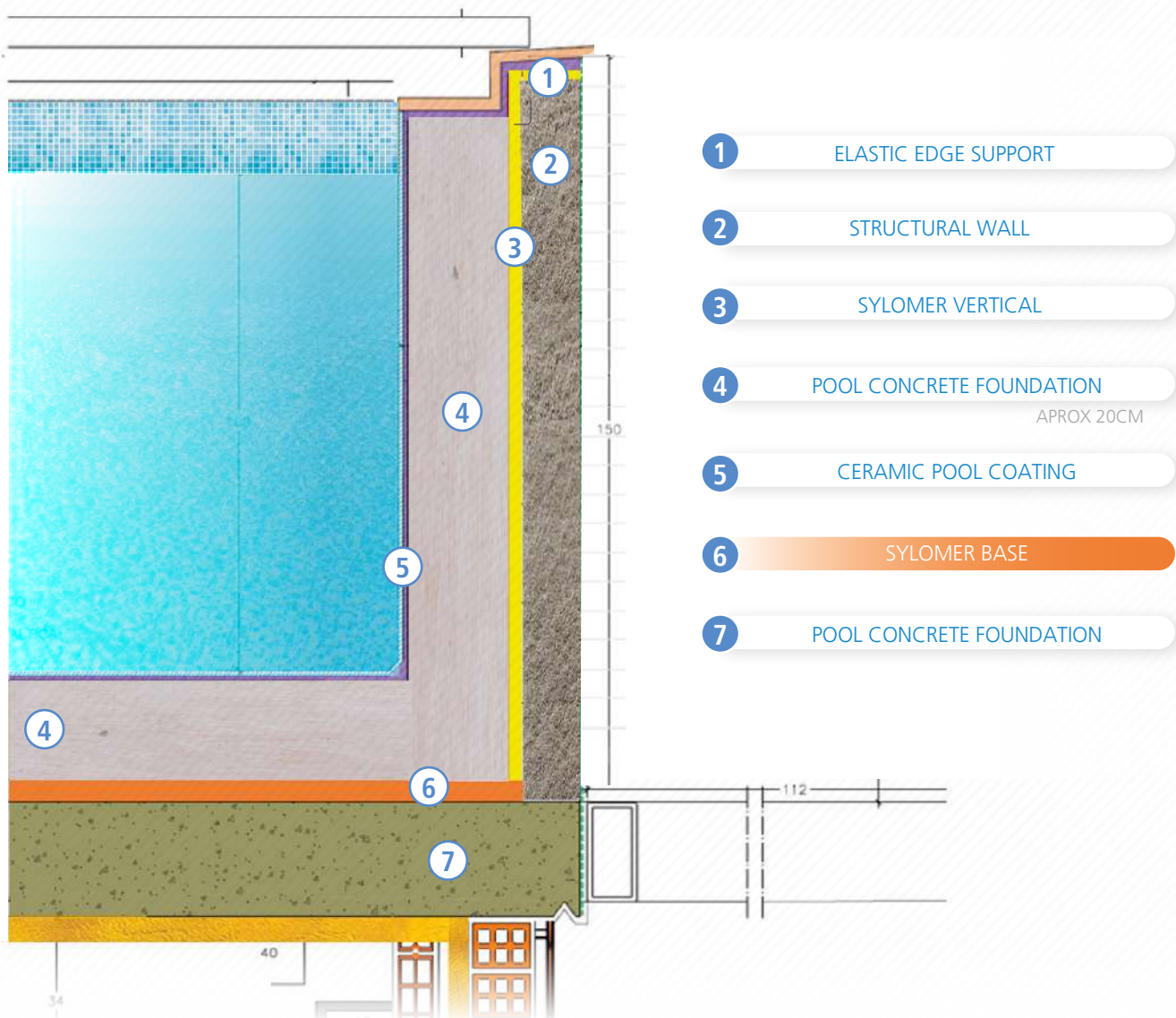


Getzner has various calculation programs available.



FreqCalc: calculations in 1 degree of freedom

For the simplest cases with constant depth, a uniform load distribution can be assumed.



Selection tools for Sylomer

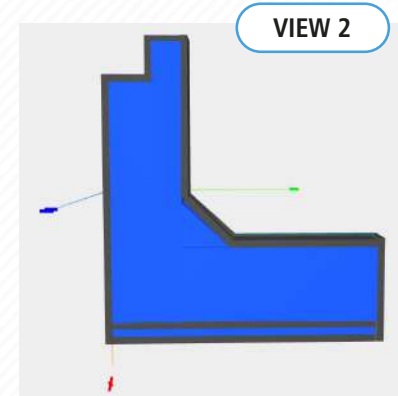
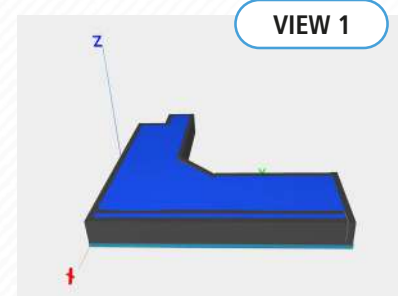
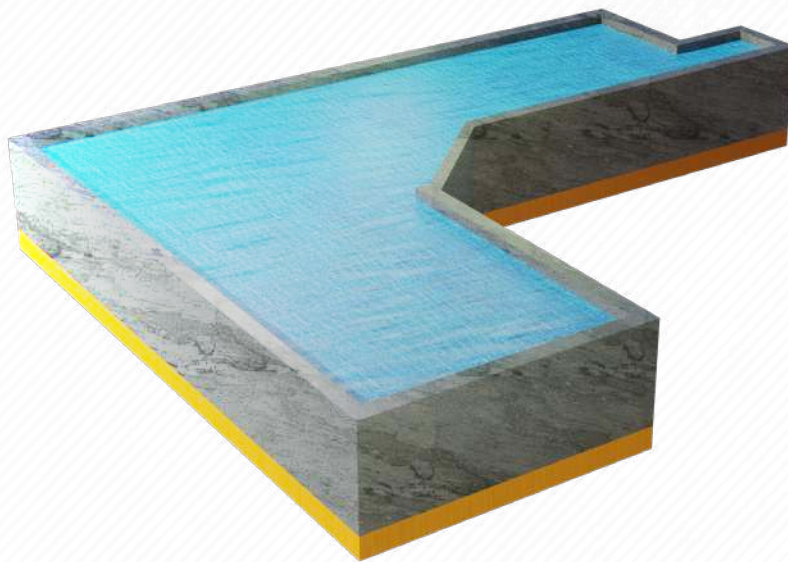
Freq Calc / Base Calc PRO

BaseCalc PRO: calculations in 6 degrees of freedom

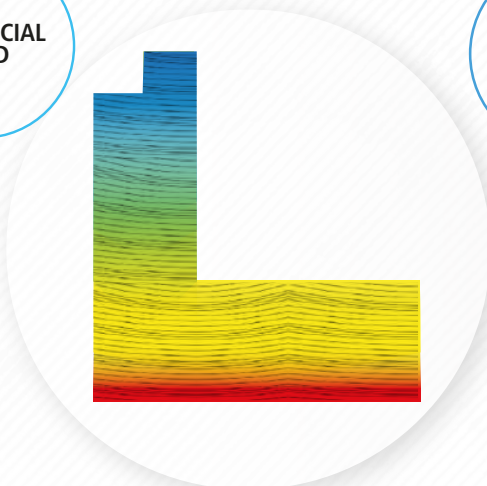
For more complex architectural designs, we can build a 3D model and calculate the load distribution on the surface. This allows us to obtain **6 different vibration modes for the analysis of vibration transmission in all directions**.



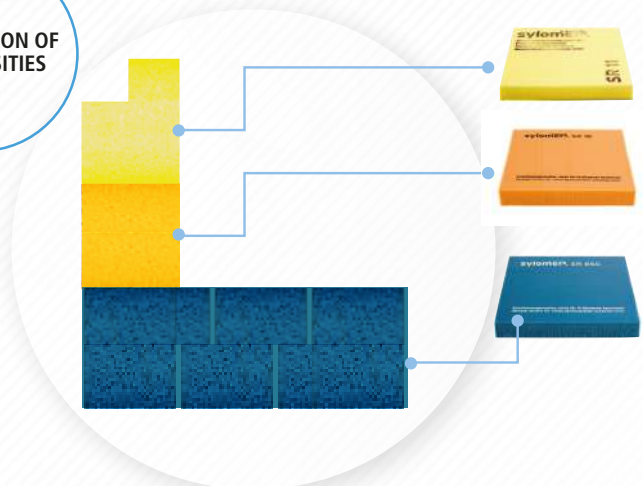
It allows us to combine different densities of sylomer to optimize insulation and unify deflection.



SUPERFICIAL
LOAD



DISTRIBUTION OF
THE DENSITIES



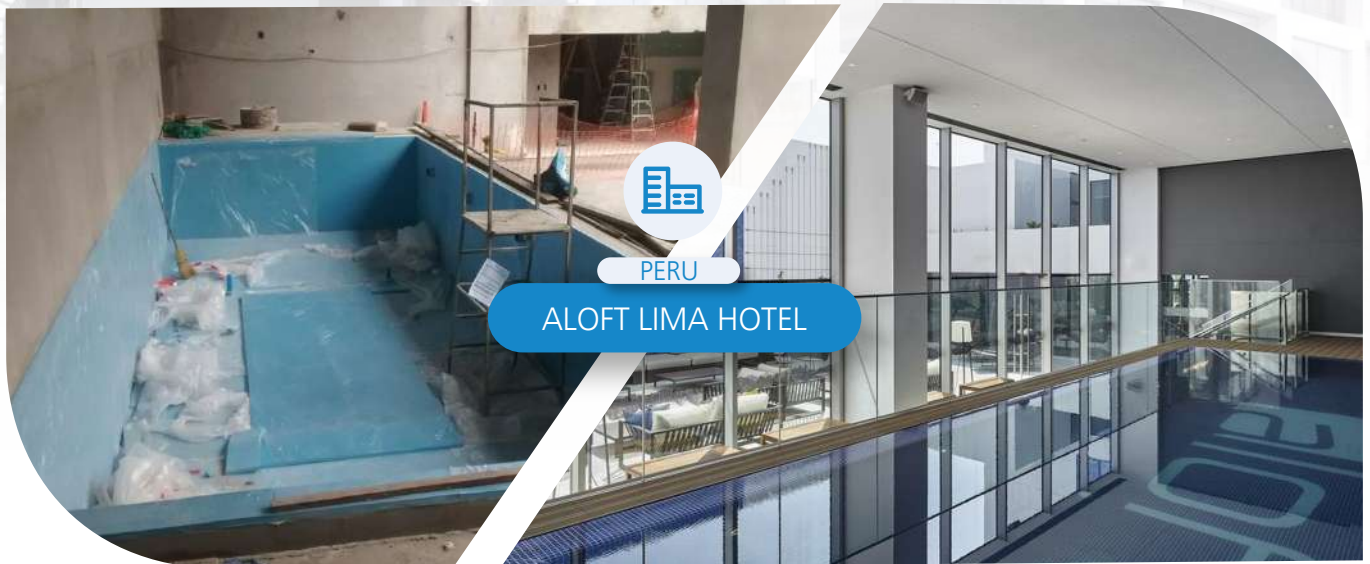
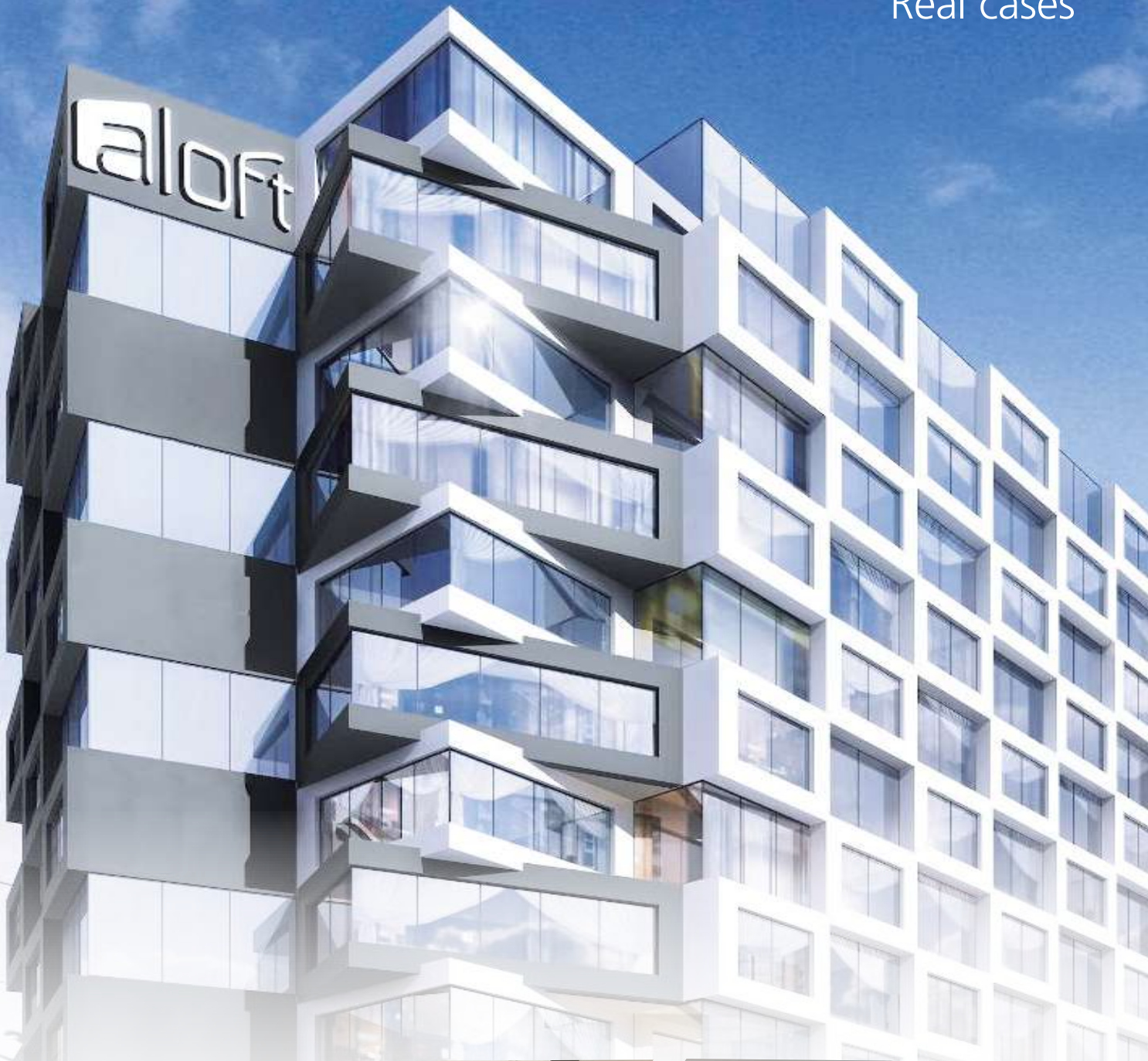
ARTICLE WITH
REFERENCES



Solutions for swimming pools
Real cases

Solutions for poolside

Real cases



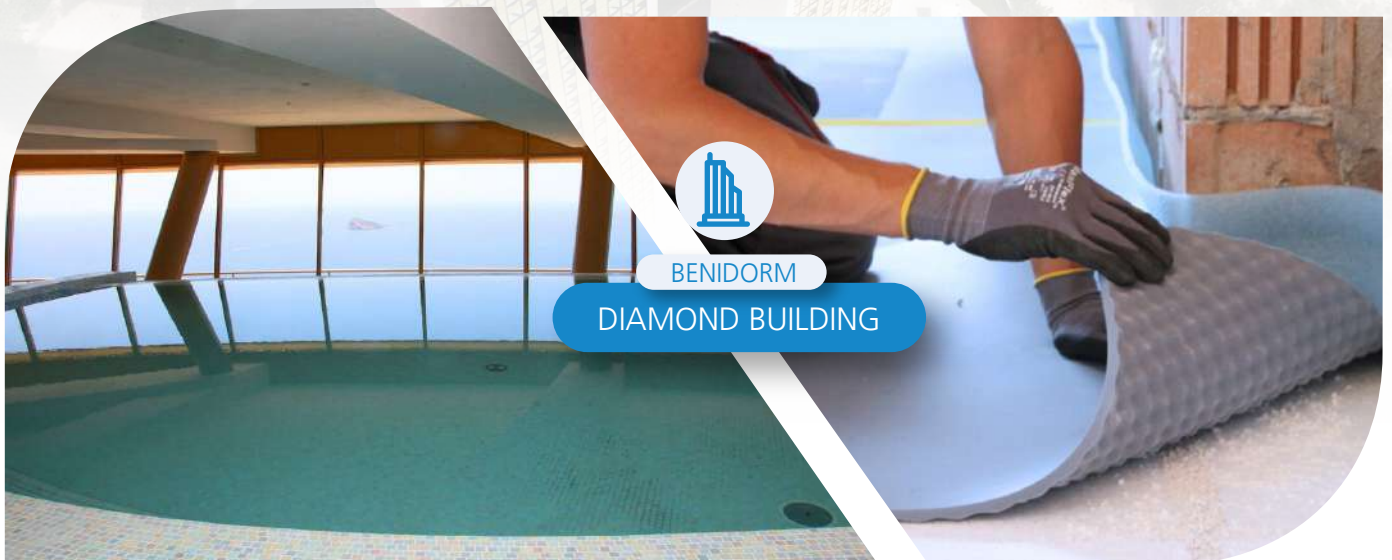
PERU

ALOFT LIMA HOTEL

Solutions for poolside

Real cases

Intempo / Render creado
por Nucleo Creative Communication



Solutions for poolside

Real cases



SAN SEBASTIAN

VILLA ALMUDENA

Solutions for poolside

Real cases



Solutions for poolside

Real cases



ALMERIA

VILLA PEPITA

Calculation Tool

Apps & Web

Vibration Isolator PRO
Web-based
selection tool

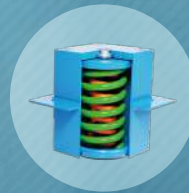


Vibration Isolator
PRO App



VIBRATION ISOLATOR PRO

By using the **isolation calculator** from the AMC Mecanocaucho website, you can obtain a mount recommendation for your system given the inputs seen below. Through this, you can get a better understanding of what mount types would work best for you.



AMC Mecanocaucho Products Engineering services Isolation Calc. Business Agents News

VIBRATION ISOLATOR PRO

Analyze the vibration of your application and find an anti-vibration mount that offers vibration isolation.

Weight Kg ☐ lbs ☐

Number of Isolators

Frequency Hz ☐ RPM ☐

Application

Isolation (%)

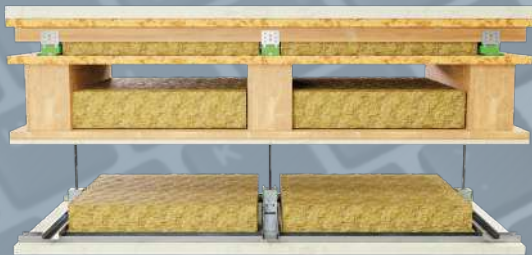
☐

Not Failsafe ☐

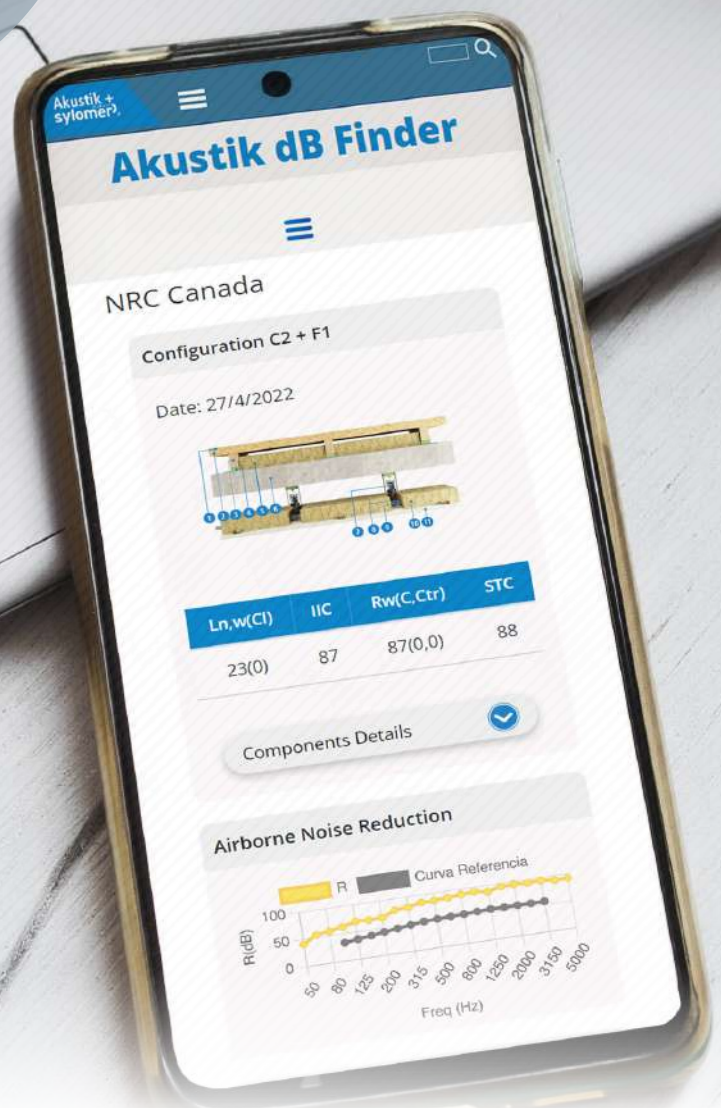
Failsafe ☐

AKUSTIK DB FINDER

Another useful tool on our website, the **Akustik dB Finder**, contains a catalogue of acoustic test data for various ceiling, wall and floor structures. You can use this data to visualise the effectiveness of different insulation systems and better understand how to address your particular acoustic problems.



Akustik dB Finder





Our expertise lies in the **Building** and **industrial acoustics field**, with a dedicated **technical department**. We have **skilled engineers** situated across **various countries** who are prepared to comprehend your specific situation and offer **suitable solutions**. Don't hesitate to get in touch with our main office or explore our websites and social media platforms.



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