

A nighttime photograph of a city skyline, likely Singapore, with numerous skyscrapers illuminated. In the foreground, a swimming pool with a mosaic tile floor is visible, reflecting the city lights. A large white circular graphic element is overlaid on the image, partially enclosing the pool and the city.

**cdm**   
**stravitec**

Making your world a quieter place

**SWIMMING POOL ISOLATION SYSTEMS**  
REDUCING STRUCTURAL VIBRATION  
FROM POOLS AND SPAS

# Rooftop Pools & Spas

## A Potential Noise Concern

Swimming pools and spas typically occurred in single-story commercial buildings, but today they are more common in high-rise residential buildings as space becomes increasingly scarce.

Podium pools present a number of design challenges compared to in-ground swimming pools. As the risk of installation errors is considerably higher, they require additional construction measures. One of those risks, is the transmission of structure-borne noise, associated with people diving and playing, as well as pool mechanical equipment, including massage jets, integrated waterfalls, and pumps. A specialist approach, incorporating an elastic suspension for the pool's structure, covering both bottom and walls of the pool shell, is required and offers several advantages.



Increased user comfort  
in adjacent spaces



Added value to  
hotels, commercial  
& residential buildings



Efficient solutions for  
all types of swimming pools  
& support structures



Long-lasting &  
durable solutions



### MAIN DESIGN CONSIDERATIONS:

- Required level of isolation (and consequently the natural frequency of the solution to be used)
- Imposed loads (vertical, horizontal and variable loads)
- Maximum permissible creep to avoid problems with piping and floor levels and to ensure long-term performance
- Maximum permissible differential deflection (empty vs full swimming pool)
- Systems compatibility (thermal insulation, waterproofing, lining, drainage, lighting, skimmer, etc.)
- Adjacent technical areas (pump rooms, balancing tanks, and other mechanical equipment)

# Pool Isolation Systems Selection Guide

Various Stravibase and Stravifloor solutions are well suited for the effective decoupling of swimming pools and spas. The selection of the right solution is based on the natural frequency and type of support structure available.

For more information on our Stravibase and Stravifloor solutions, please visit [www.cdm-stravitec.com](http://www.cdm-stravitec.com).

**stravibase**  
by CDM Stravitec

**stravifloor**  
by CDM Stravitec

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## Stravibase Mat

Low-profile roll-out isolation solution for lateral decoupling.

Natural frequency:  
Elastomeric mats:  $\geq 9\text{Hz}$

### Continuous Support Structure

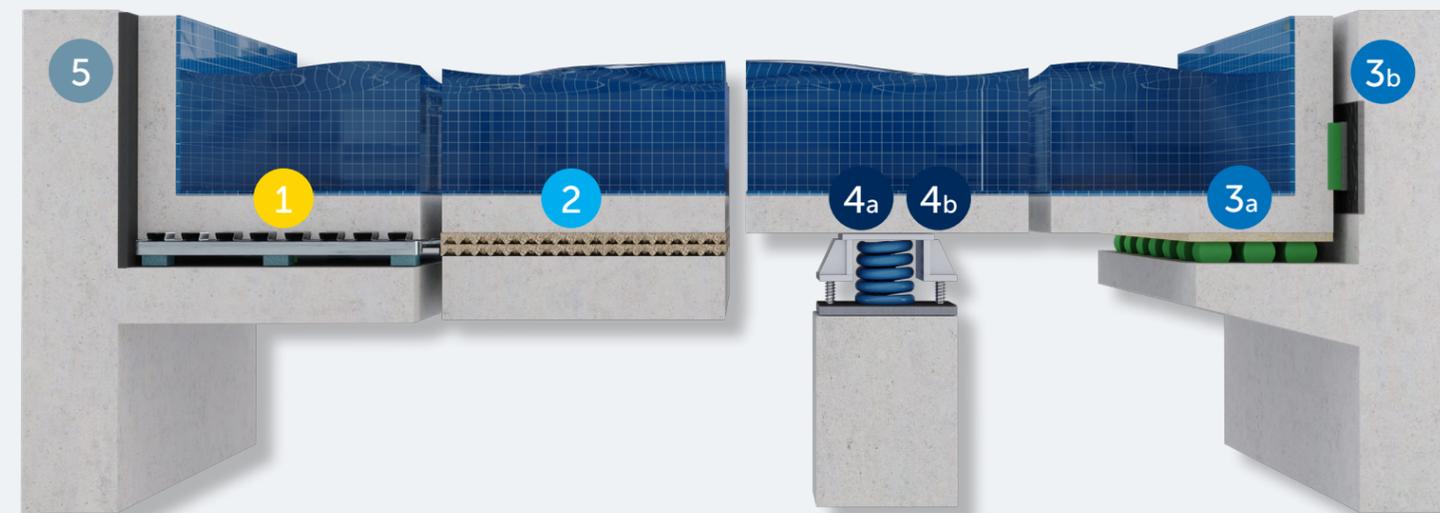
### Discrete Support Structure

Discrete Isolation

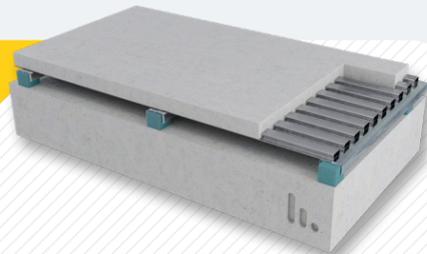
Full-surface Isolation

Punctual Isolation

Linear Isolation



1



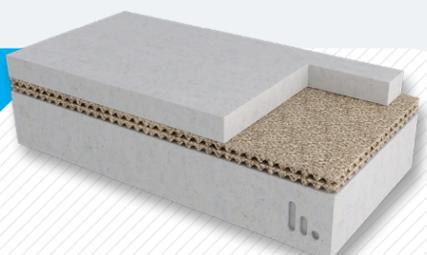
## Stravifloor Deck\*

Discrete solution available with either springs or elastomeric pads as resilient support.

Natural frequency:  
Elastomeric pads:  $\geq 6\text{Hz}$   
Steel springs:  $\geq 2.5\text{Hz}$

\*Other Stravifloor systems may also be suitable for the acoustic decoupling of swimming pools and spas. The correct selection should always be made according to the project-specific requirements.

2

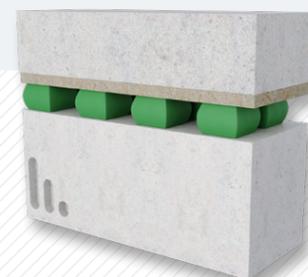


## Stravifloor Mat

Low-profile roll-out isolation solution made of regenerated materials.

Natural frequency:  
Elastomeric mats:  $\geq 9\text{Hz}$

3a



## Stravibase SEB

Elastomeric bearings to accommodate high acoustic design loads.

Natural frequency:  
Elastomeric pads:  $\geq 6\text{Hz}$

3b



## Stravibase SEB

Structural elastomeric bearing for lateral decoupling.

Natural frequency:  
Elastomeric pads:  $\geq 6\text{Hz}$

4b

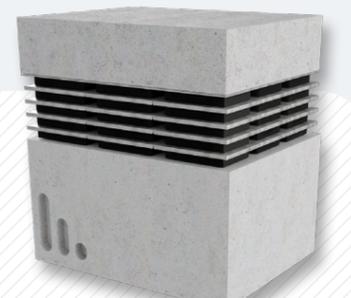


## Stravibase SpringBox

Pre-compressed spring bearings with high load capacity.

Natural frequency:  
Steel springs:  $\geq 2.5\text{Hz}$

4a



## Stravibase VHS

Very high stress bearings designed to support large loads whilst being significantly smaller in plan dimensions than traditional elastomer bearings.

Natural frequency:  
Elastomeric pads:  $\geq 8\text{Hz}$

# References

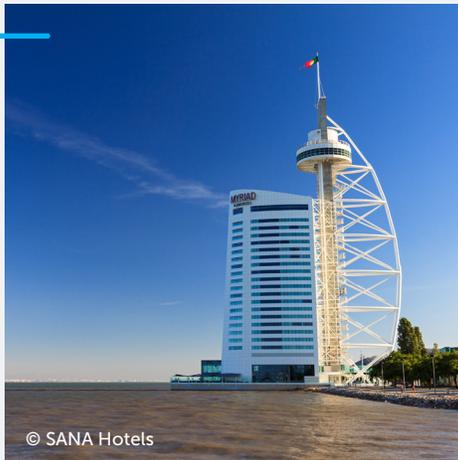
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At CDM Stravitec, we take pride in the quality of work that we produce. Since the founding of our company in 1951, we have made many contributions to the intelligent design and noise mitigation of swimming pools, spas, and the mechanical components with our engineered products. Take a look at some of our latest projects carried out with well-known brands and reputable acoustical consultants.



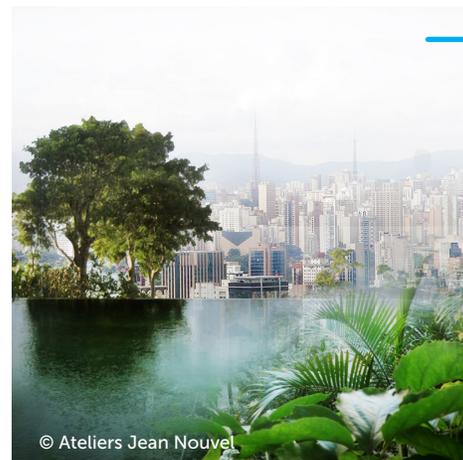
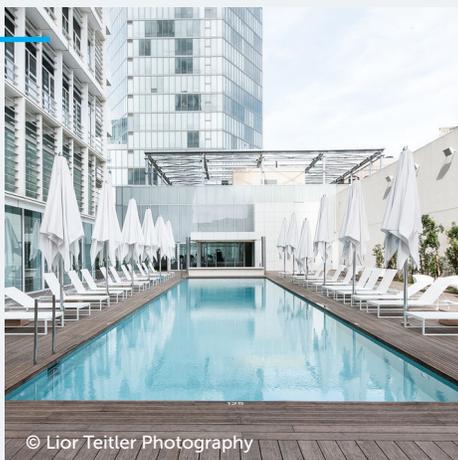
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Kuala Lumpur (MY)

**Myriad by SANA Hotels**  
Lisbon (PT)



**Address Sky View**  
Dubai (UAE)

**Rothschild Tower**  
Tel Aviv (IL)



**Rosewood Hotel**  
São Paulo (BR)



We have qualified engineers in noise and vibration based at different locations around the world – they are only a phone call away.

For general enquiries please contact our head office or visit our website.

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