



Case Study



Property Owner
Aalto University



Main Contractor
FIRA



Architect
Alvar Aalto / Aalto University



Acoustic Consultant
Akukon

OVERVIEW

The original multidisciplinary research center Aalto Acoustics Lab at Aalto University in Finland was built in 1970 and included three anechoic chambers, all of which were built on elastomeric bearings.

As part of the 2019 renovation, the department wanted to upgrade the anechoic chambers to the latest industry standards.

Stravibase VHS, Stravibase Spring

- Very high stress bearings designed to support large loads whilst being significantly smaller in plan dimensions than traditional elastomer bearings (Stravibase VHS)
- Structural springs used for building base isolation, where an acoustic performance with a resonance frequency lower than 6 Hz is required (Stravibase Spring)

1738 kN

Laboratory units on Stravibase Spring

4945 kN

Laboratory units on Stravibase VHS

1729 kN

Laboratory units on Stravibase VHS



SOLUTION

Further to the university's plans, the acoustic consultant requested a solution with 3-4 Hz [Stravibase Spring](#) metal spring bearings for one of the smaller anechoic chambers. A 13-14 Hz acoustic solution with [Stravibase VHS](#) elastomeric bearings for the other small chamber, and a solution with 10-11 Hz [Stravibase VHS](#) elastomeric bearings for the large anechoic chamber.

As a result, the background noise level in all three chambers is now less than 0 dB, and in one room it is even -2 dB. With new and improved noise and vibration isolation measures in place, the Aalto Acoustics Lab for audio processing and spatial sound technologies research is ready for years to come.

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AT A GLANCE

CHALLENGES

- Removing the old bearings and installing the new ones while lifting the existing structures without any structural damage
- Checking of potential acoustic bridges

BENEFITS

- High-performance metal spring solution adjustable to loading requirements
- High-performance and high load elastomer bearings with adjustable acoustic performance

