

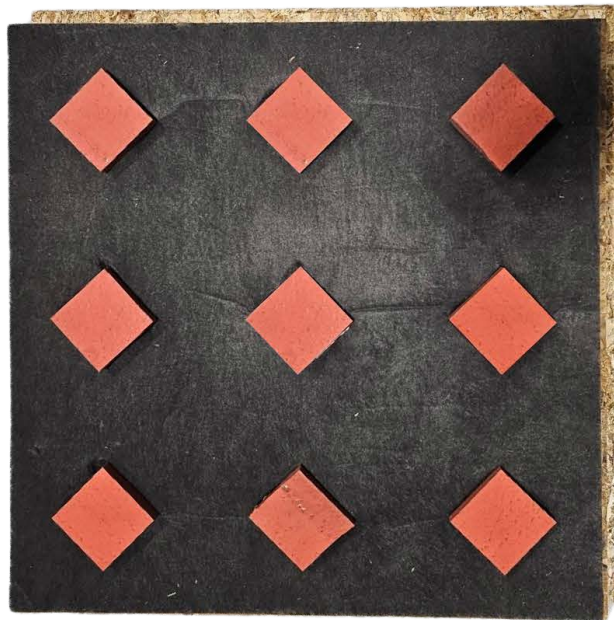


**It's not magic, it's engineering.®**

Impact Sound Control

# GENIEMAT® FF

Modular Panels for Airborne & Impact  
Sound and Vibration Isolation



AUSTRALIA EDITION

Patents: US 8240430, US8556029, CA 2500956, CA 2503420

# GENIEMAT<sup>®</sup> FF70

## Modular Panelized Floating Floor Systems

### OVERVIEW

Situations which involve:

- Multiple sources of noise and vibration
- Dynamic loads, and;
- Large ranges of dead and live loads

Require a system that is easily customized, easily installed on-site, but not to the detriment of airborne, impact, and vibration isolation.

**GenieMat FF70** modular panelized floating floor systems provide a prefabricated and modular panel for ease of install and guaranteed placement of the isolators.



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### FEATURES AND BENEFITS

- Achieves low natural frequency with systems available as low as 6 Hz
- Customizable isolators
- Adaptable height to reduce air stiffness
- Can be used directly under gypsum, lightweight, or normal weight concrete
- Can be used directly under plywood, OSB, or cement board
- Comes in easy to handle panels -nominal 610 x 610mm (2' x 2')
- Shiplap edge design lets you quickly and easily fit panels into place
- Sturdy 15 mm (5/8") engineered wood formwork
- Installed over wood or concrete subfloors
- No specialized installers required

## GENIEMAT® FF70-9R

- Panels are made with 50mm thick isolation pads embedded in a layer of acoustical insulation
- Natural frequency down to 10 Hz
- Subfloor contact area with the floor is reduced by 96%
- $\Delta L_{n,w}$  35



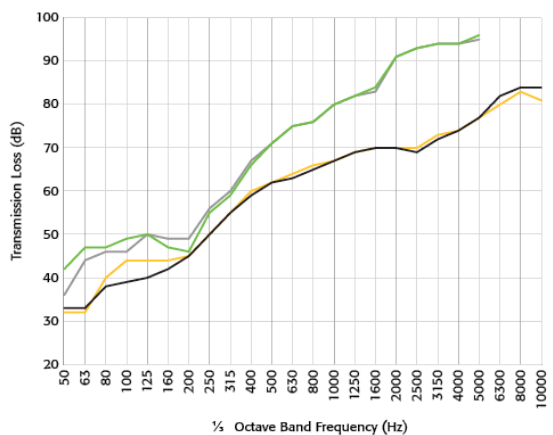
## GENIEMAT FF70LDM

- Panels are made with 50mm thick Low Dynamic Modulous proprietary Pliteq elastomer embedded in a layer of acoustical insulation
- Natural frequency down to 6 Hz
- Sub floor contact area with the floor is reduced by 96%
- $\Delta L_{n,w}$  44



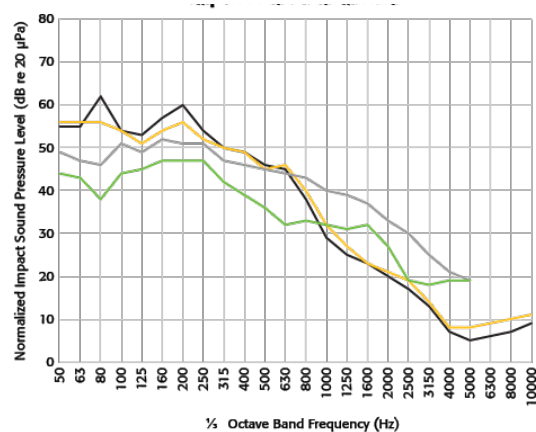
## DESIGN PARAMETERS OF GENIEMAT FF70 SYSTEMS

### Airborne Sound Transmission Lightweight vs Heavyweight Topping



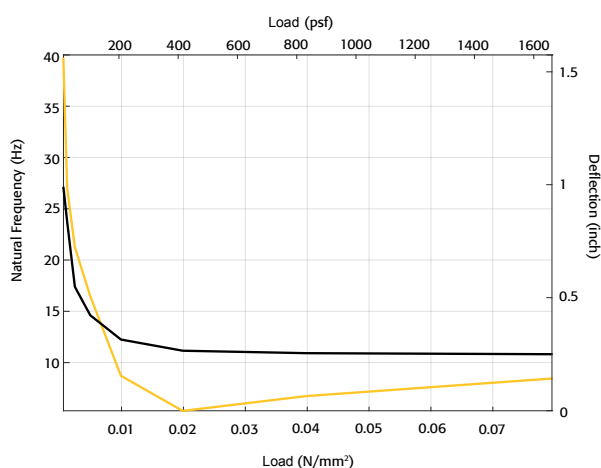
- Plywood - 19mm, GenieMat FF70 - 70mm, Concrete Slab - 150mm,  $R_w$  61dB
- Plywood - 19mm, GenieMat FF70LDM - 70mm, Concrete Slab - 152mm,  $R_w$  63dB
- Concrete Topping - 100mm, GenieMat FF70 - 70mm, Concrete Slab - 150mm,  $R_w$  67dB
- Concrete Topping - 100mm, GenieMat FF70LDM - 70mm, Concrete Slab - 150mm,  $R_w$  68dB

### Impact Sound Transmission Lightweight vs Heavyweight Topping



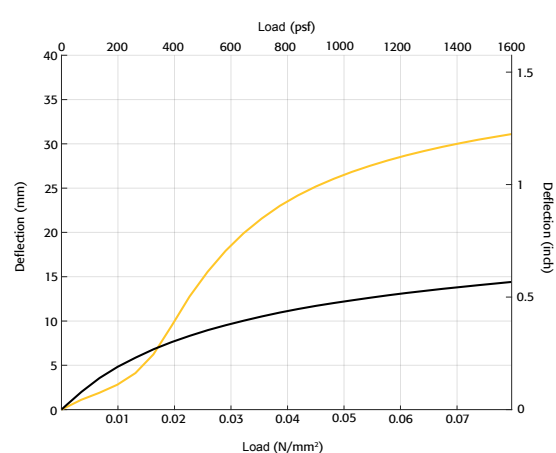
- Plywood - 19mm, GenieMat FF70 - 70mm, Concrete Slab - 152mm,  $L_{n,w}$  48dB
- Plywood - 19mm, GenieMat FF70LDM - 70mm, Concrete Slab - 152mm,  $L_{n,w}$  46dB
- Concrete Topping - 100mm, GenieMat FF70 - 70mm, Concrete Slab - 150mm,  $L_{n,w}$  45dB
- Concrete Topping - 100mm, GenieMat FF70LDM - 70mm, Concrete Slab - 150mm,  $L_{n,w}$  39dB

### System Natural Frequency vs. Load



- GenieMat FF709R - Point Isolator
- GenieMat FF70LDM - Point Isolator

### Deflection vs. Load



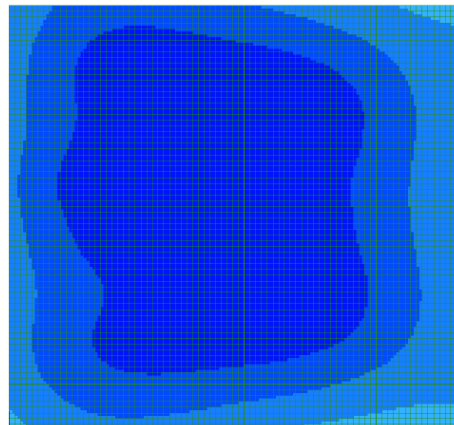
- GenieMat FF709R - Point Isolator
- GenieMat FF70LDM - Point Isolator

# GENIEMAT® FF70 PANELISED SYSTEMS FOR BASKETBALL COURT ISOLATION

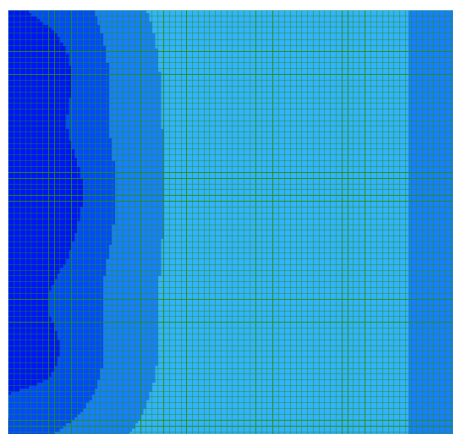
## HOW TO MANAGE ACOUSTIC AND ATHLETIC PERFORMANCE

Basketball courts generate multiple sources of noise and vibration (e.g. ball impacts and running/jumping) and can have varying loads from retractable raked seating. The floors also demand stringent ball bounce-back performance (ASTM F2117).

Using a heavy/soft impact ball for laboratory testing and analysis using finite element analysis (FEA), **GenieMat FF70** and **GenieMat FF70LDM** have been proven to effectively mitigate noise and vibration in numerous college, university, and professional sports applications.



Bleacher Open



Bleacher Closed





# FINITE ELEMENT ANALYSIS (FEA)

## WHAT IS FEA?

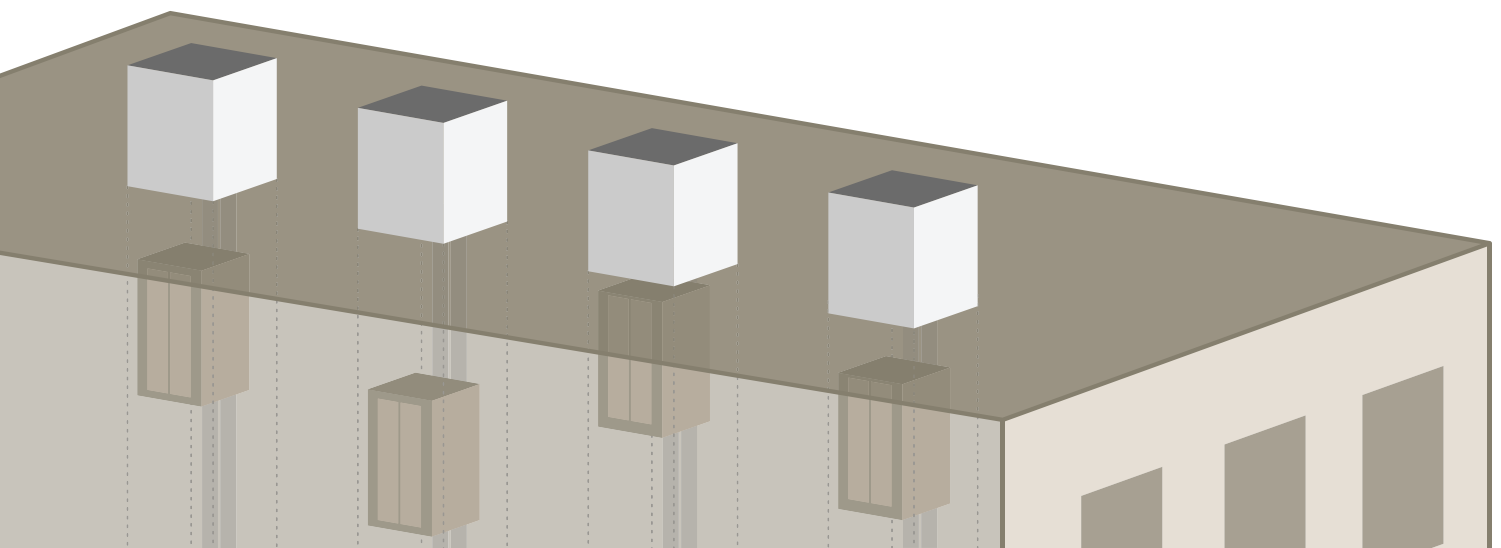
Finite Element Analysis (FEA) is a system to break complex structures into very small parts (finite elements) that can then be more easily modeled and assessed. FEA is done in such a way as to tie all these elements together so the larger motion of the complete structure can be seen and assessed.

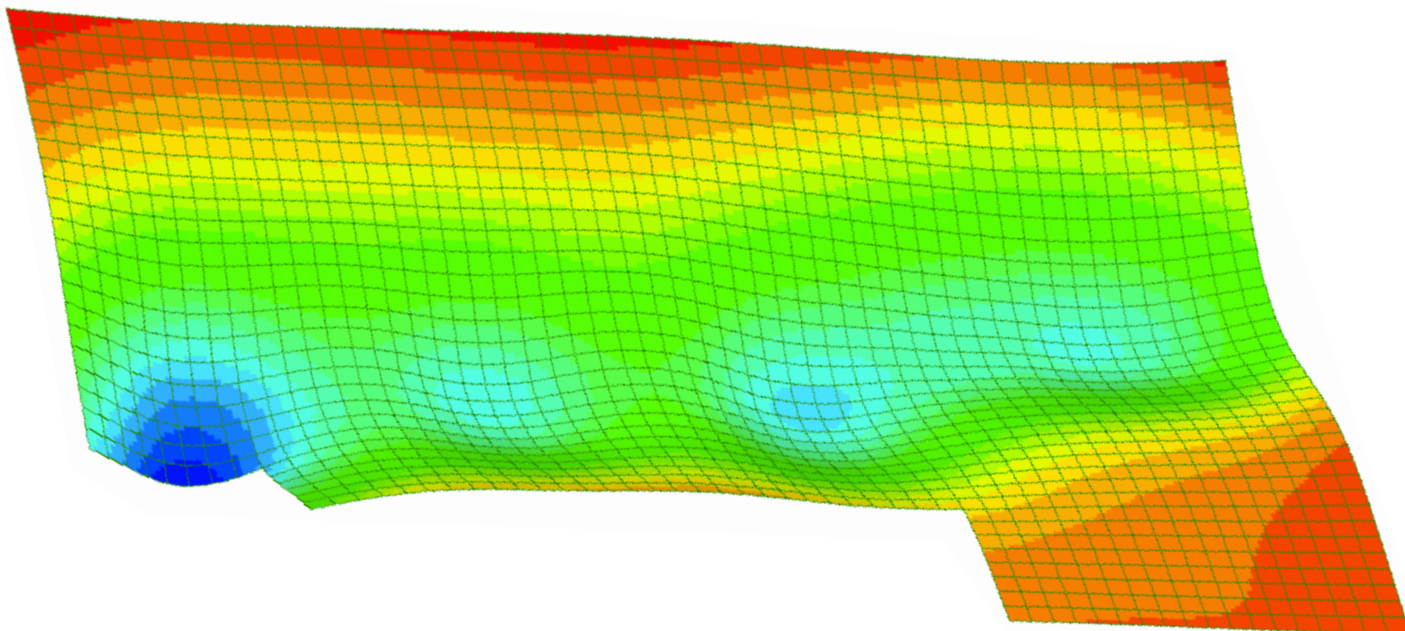
## WHY IS FEA USEFUL WHEN DESIGNING YOUR FLOATING FLOOR?

While you may not realise it, the concrete in your floating floor can bend and crack. This can happen when there are very high point loads (large HVAC equipment) or if the floor is only loaded on one side (like a basketball court with a full crowd in the bleachers). Running a FEA can ensure that your floor will not crack. It can also be used to ensure the correct material is used under high load areas and how much the floor will deflect.

## SITUATIONS IN WHICH FEA IS USEFUL:

- Non-uniform loading
- Predicting deflections to ensure smooth transitions
- Very high load equipment





This image shows FEA conducted on an elevator machine room loading floor. The various colours show the varying loads and how much they will make the floor deflect.

Analysis requires only the structural drawings and a list of the dead and live loads.

This analysis allows for value engineering solutions to be assessed to find the most cost-effective solution

## PRODUCT SPECIFICATIONS

PLAN VIEW	PRODUCT	THICKNESS	DIMENSION	WEIGHT	AREA
	<b>GenieMat FF70</b>	nom. 70 mm	Panel: nom. 0.6 m wide, 0.6 m long	5.8 kg	0.4 m <sup>2</sup>
	<b>GenieMat FF70LDM</b>	nom. 70 mm	Panel: nom. 0.6 m wide, 0.6 m long	5.4 kg	0.4 m <sup>2</sup>

## TEST RESULTS

TEST REPORT	PRODUCT	FLOOR TOPPING	STRUCTURE	R <sub>w</sub>	L <sub>n,w</sub>
A1-008867.5	<b>GenieMat FF70LDM</b>	100 mm Concrete Slab	150 mm Concrete Slab	67	39
A1-008867.4	<b>GenieMat FF70</b>	100 mm Concrete Slab	150 mm Concrete Slab	68	45
E5600.08-113-11-R0	<b>GenieMat FF70LDM</b>	19 mm Plywood	150 mm Concrete Slab	63	46
E5600.01-113-11-R0	<b>GenieMat FF70</b>	19 mm Plywood	150 mm Concrete Slab	61	48

## CONTACT Us

For Your Project Specific Questions

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