

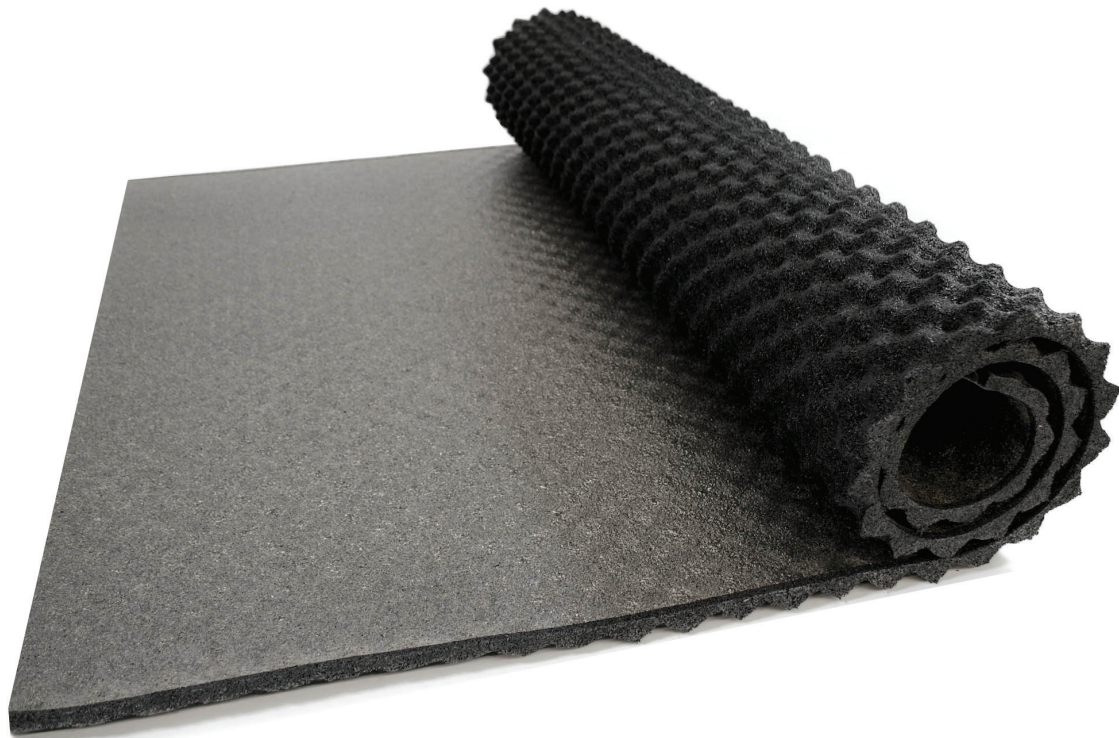


It's not magic, it's engineering.®

Impact Sound Control

GENIEMAT® FF

Floating Floor Systems for Airborne
& Impact Sound and Vibration Isolation



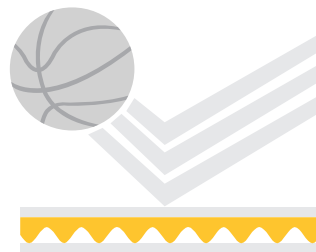
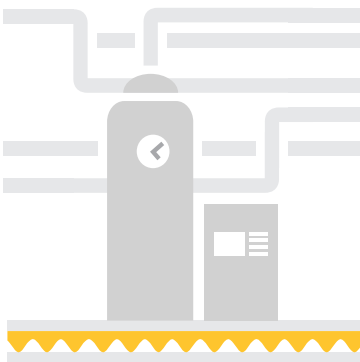
GENIEMAT[®] FF

The next generation of acoustical floating floor

PRODUCT FEATURES

- Continuous underlayment system that limits surface area contact down to 4% at 2 psi
- Achieves low natural frequency with systems available as low as 6 Hz
- Can be safely loaded over a wide range up to 1450 psi
- Composed of 92% recycled rubber content
- Integrated poly sheet
- Qualifies for LEED[®] points
- Mold, bacteria, fungi, and water resistant
- Penetrations for pipes, ductwork, electrical conduits, and drains are easily accommodated
- Rolls out quickly and is easy to install without the need for adhesive
- Can be used directly under gypsum, lightweight, or normal weight concrete with no plywood formwork required

GenieMat FF is used for multiple applications. Contact our engineers for your project specific questions.



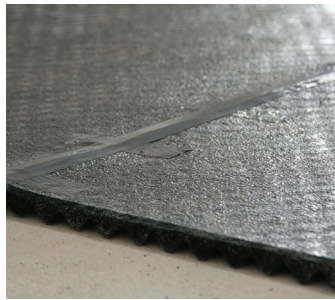
EASY INSTALLATION

ROLL IT OUT - TAPE THE SEAMS - READY TO POUR



Step 1

After installing perimeter isolation strips on the base of the walls, unroll **GenieMat® FF**.



Step 2

Duct tape all joints and seams, including between the perimeter isolation strips and the **GenieMat FF**.



Step 3

Pour gypsum, lightweight or normal weight concrete topping.



Step 4

Prepare concrete surface for floor finish.

SIGNIFICANTLY IMPROVES INSTALLATION EFFICIENCY

| STEPS | GENIEMAT® FF ROLL OUT SYSTEM | PLYWOOD FORMWORK ISOLATOR BASED SYSTEMS | SPRING JACK-UP TYPE SYSTEM |
|-------|--|---|---|
| 1 | Install GenieMat PMI | Design isolator layout | Coordinate load requirements with associated trades |
| 2 | Roll out GenieMat FF | Install perimeter isolation | Design isolator layout based on equipment placement |
| 3 | Tape the seams | Roll out mineral fiber matting with fiberglass isolators | Install perimeter Isolation |
| 4 | Layout reinforcement and pour concrete | Install additional isolators based on load design | Verify equipment placement, snap chalk lines and spray paint isolator locations |
| 5 | | Check isolators orientation and location | Layout clear polyethylene plastic sheathing |
| 6 | | Cut and install plywood formwork | Layout isolators and place rebar grid |
| 7 | | Install steel connecting corner plates | Pour concrete and cure to 17.2 MN/m ² minimum |
| 8 | | Layout reinforcement, waterproof membrane and pour concrete | Remove all isolator cover plates |
| 9 | | | To raise slab 50 mm, complete 2 turns of each isolator 8-10 times |
| 10 | | | Replace cover plates and pour additional floor levelling compound |

GENIEMAT[®] FF PHYSICAL PROPERTIES

| PLAN VIEW | PRODUCT | THICKNESS | DIMENSION | WEIGHT | AREA |
|-----------|----------------------|-------------------|---|------------------------------|---|
| | GenieMat FF06 | 1/4" (nom. 6 mm) | Rollgood: 4' wide, 30' long (1.2 m wide, 9.1 m long) | 80 lb/roll (36 kg/roll) | 120 ft ² (11.1 m ²) |
| | GenieMat FF10 | 2/5" (nom. 10 mm) | Rollgood: 4' wide, 30' long (1.2 m wide, 9.1 m long) | 130 lb/roll (59 kg/roll) | 120 ft ² (11.1 m ²) |
| | GenieMat FF17 | 2/3" (nom. 17 mm) | Rollgood: 4' wide, 15' long (1.2 m wide, 4.6 m long) | 104 lb/roll (47 kg/roll) | 60 ft ² (5.6 m ²) |
| | GenieMat FF25 | 1" (nom. 25 mm) | Rollgood: 4' wide, 15' long (1.2 m wide, 4.6 m long) | 132 lb/roll (60 kg/roll) | 60 ft ² (5.6 m ²) |
| | GenieMat FF50 | 2" (nom. 51 mm) | Rollgood: 4' wide, 15' long (1.2 m wide, 4.6 m long) | 180 lb/roll (82 kg/roll) | 30 ft ² (2.8 m ²) |
| | GenieMat FF75 | 3" (nom. 75 mm) | Rollgood: 4' wide, 15' long (1.2 m wide, 4.6 m long) | 396 lb/roll (180 kg/roll) | 20 ft ² (1.9 m ²) |

COMPRESSIBLE ELASTOMER TECHNOLOGY ALLOWS FOR LOW NATURAL FREQUENCY AT LOW LOADS

Typical vulcanized, natural, and neoprene rubber isolators are defined as incompressible. They require heavy mass loading in order to obtain adequate deflection, and consequently, vibration isolation. For applications where minimum loading criteria are not met, data shows the systems do not perform well.

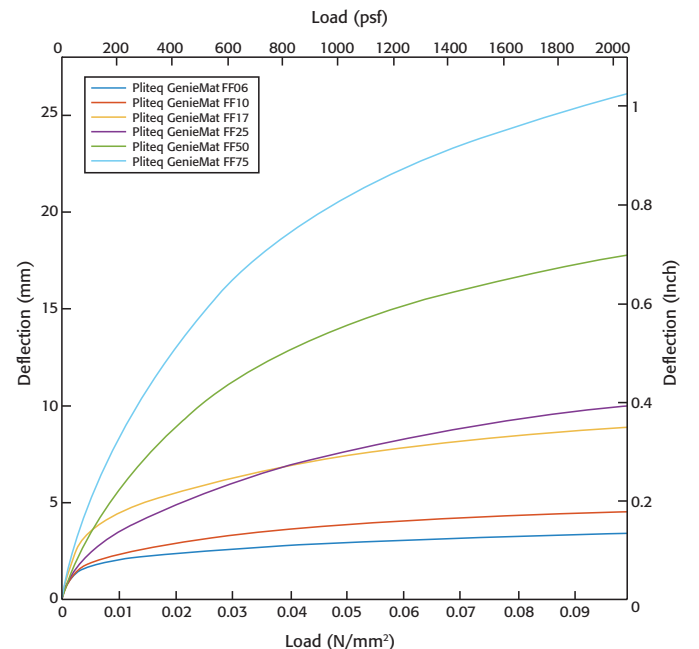
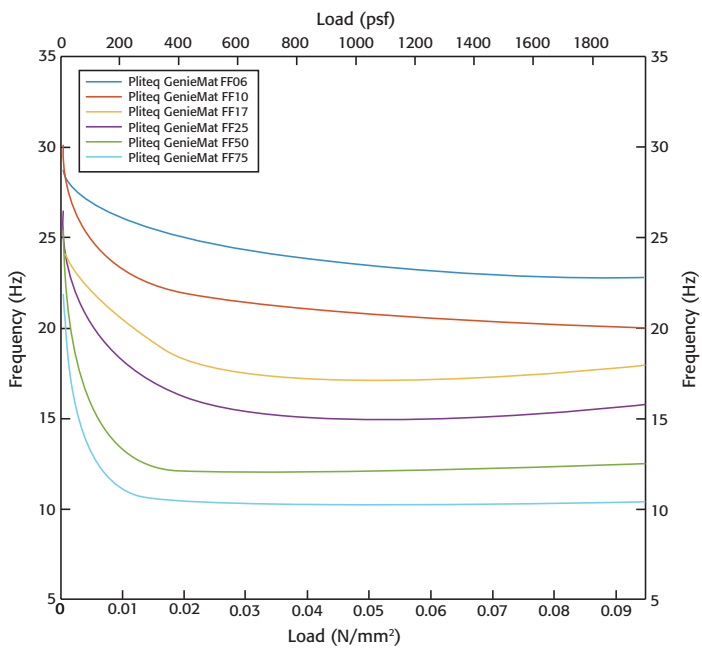
Fiberglass isolators are comprised of rigid particles that lose elasticity when compressed. Data shows a dramatic performance degradation over time.

GENIEMAT® FF PROPERTIES

| PRODUCT | 4" CONCRETE (50 PSF DEAD LOAD) | | | TYPICAL LOADING (400 PSF DEAD + LIVE LOAD) | | |
|----------------------|--------------------------------|--|------------------------|--|--|------------------------|
| | NATURAL FREQUENCY (HZ) | 10 HZ DYNAMIC STIFFNESS (LB/IN/IN ²) | CRITICAL DAMPING RATIO | NATURAL FREQUENCY (HZ) | 10 HZ DYNAMIC STIFFNESS (LB/IN/IN ²) | CRITICAL DAMPING RATIO |
| GenieMat FF06 | 27 | 25.0 | 9.5% | 25 | 173.8 | 8.4% |
| GenieMat FF10 | 25 | 21.9 | 9.7% | 22 | 138.0 | 9.6% |
| GenieMat FF17 | 23 | 19.4 | 12.5% | 18 | 91.7 | 11.2% |
| GenieMat FF25 | 22 | 16.5 | 11.5% | 16 | 72.8 | 10.8% |
| GenieMat FF50 | 18 | 11.2 | 10.2% | 12 | 40.2 | 9.7% |
| GenieMat FF75 | 16 | 8.2 | 9.6% | 10 | 28.5 | 9.1% |

DESIGN PARAMETERS OF GENIEMAT FF SYSTEMS

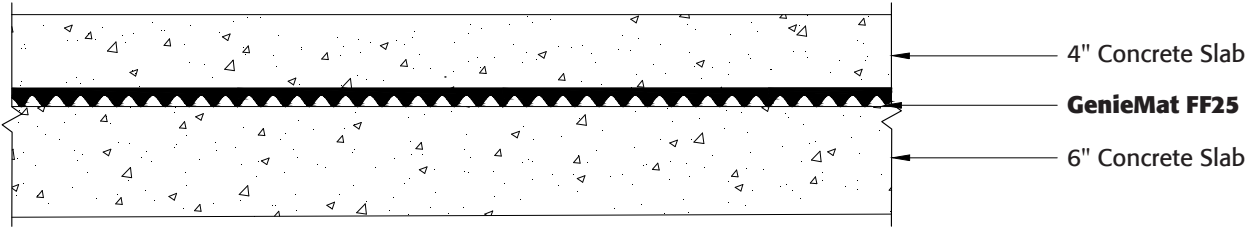
System Natural Frequency vs. Load Deflection vs. Load



GENIEMAT® FF ACOUSTICAL TEST DATA

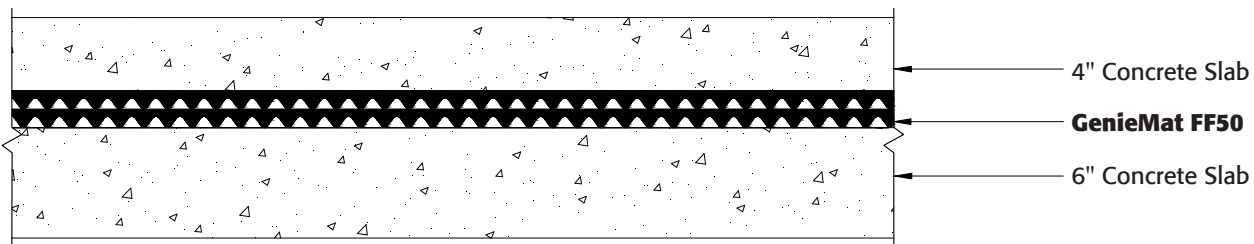
6" STRUCTURAL SLAB WITH FLOATING CONCRETE TOPPING

4" Concrete Topping on GenieMat FF25 on 6" Structural Slab



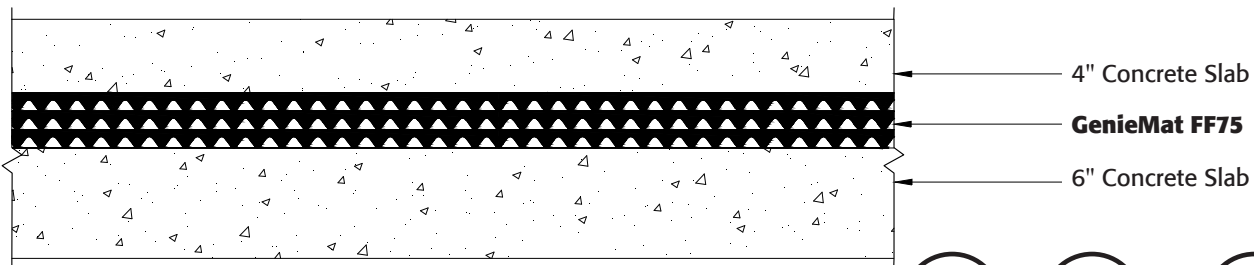
| | | |
|------------|------------|----------------|
| 70 STC | 65 IIC | 16 Hz |
| F943-41992 | F536-41779 | F _n |

4" Concrete Topping on GenieMat FF50 on 6" Structural Slab



| | | |
|------------|------------|----------------|
| 72 STC | 67 IIC | 12 Hz |
| F920-41970 | F539-41780 | F _n |

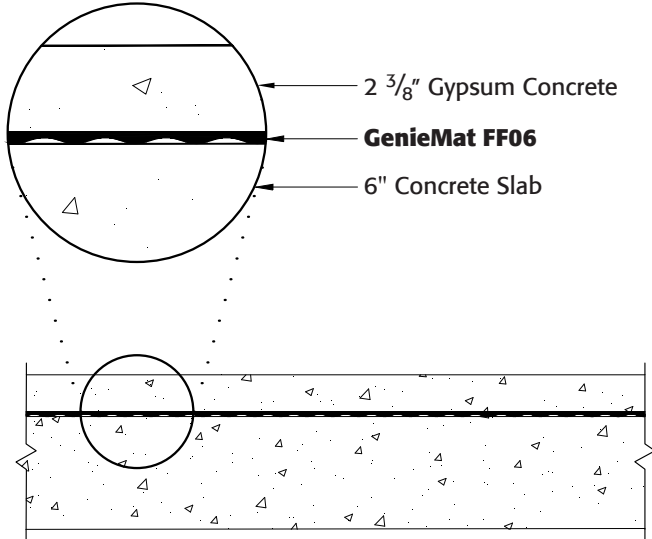
4" Concrete Topping on GenieMat FF75 on 6" Structural Slab



| | | |
|------------|------------|----------------|
| 73 STC | 69 IIC | 10 Hz |
| F921-41970 | F540-41780 | F _n |

GENIEMAT® FF ACOUSTICAL TEST DATA

2 3/8" Gypsum on GenieMat FF06

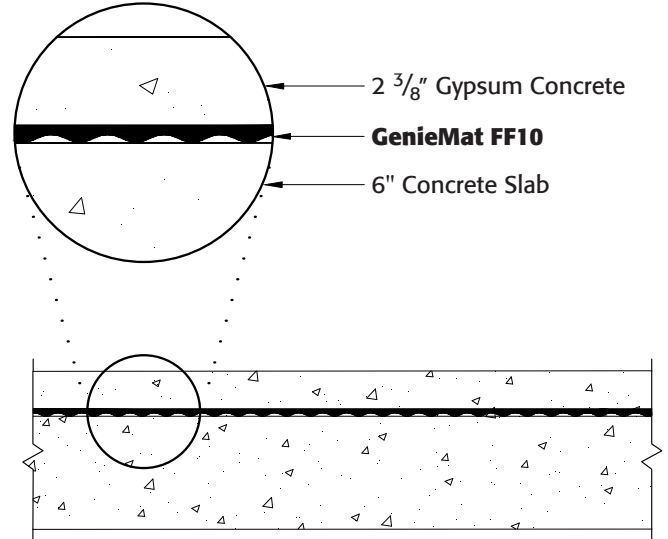


59
STC

58
IIC

F289-41701 F290-41701

2 3/8" Gypsum on GenieMat FF10

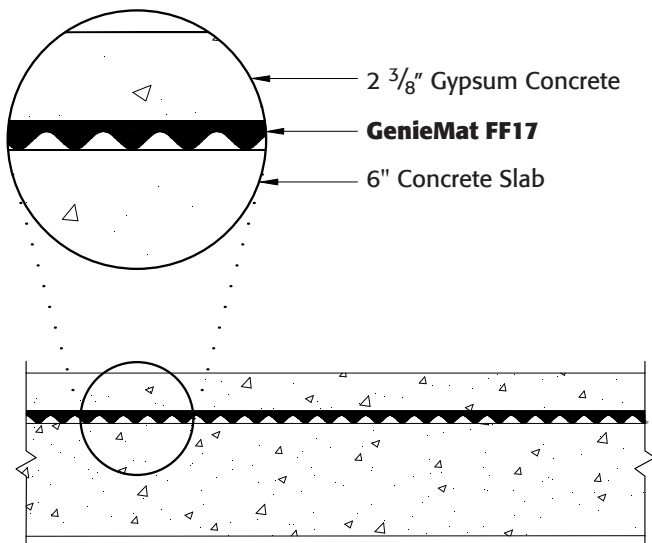


59
STC

59
IIC

F292-41702 F291-41702

2 3/8" Gypsum on GenieMat FF17

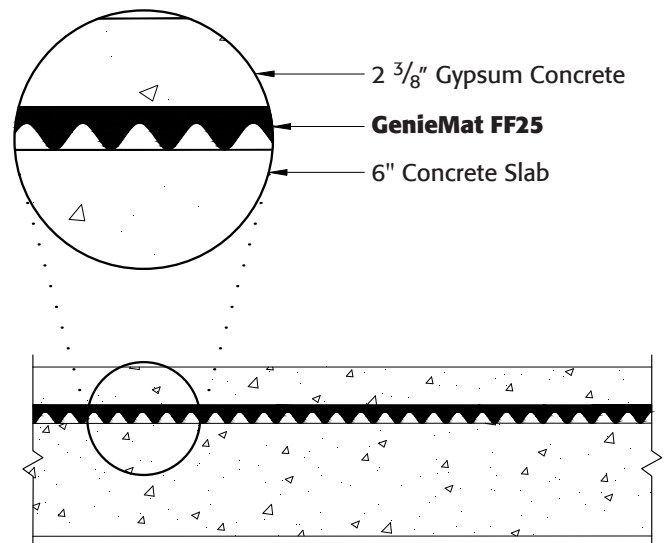


60
STC

61
IIC

F293-41702 F294-41702

2 3/8" Gypsum on GenieMat FF25



61
STC

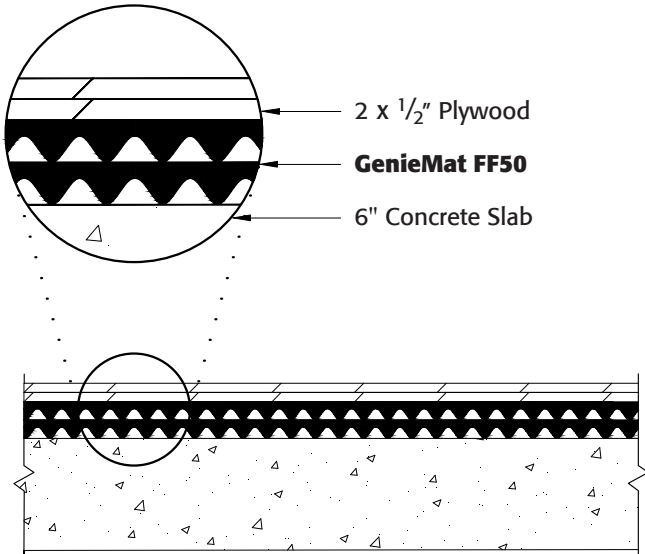
63
IIC

F296-41702 F295-41702

GENIEMAT® FF ACOUSTICAL TEST DATA

6" CONCRETE SLAB WITH PLYWOOD TOPPING

2 Layers of Plywood on GenieMat FF50

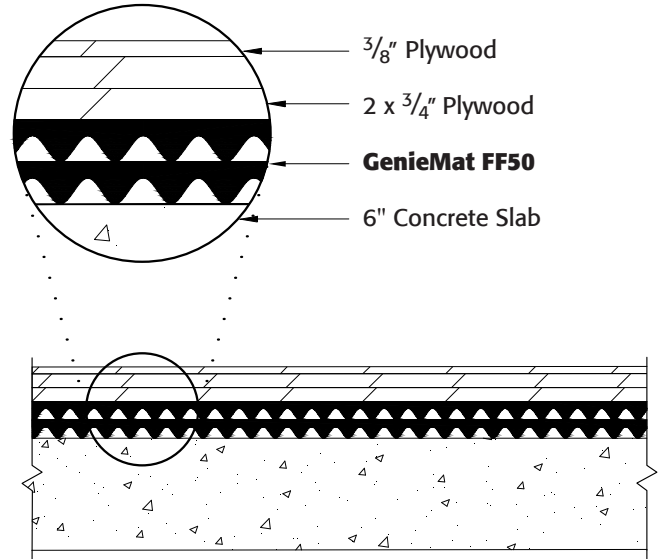


59
STC

56
IIC

B3498.13

3 Layers of Plywood on GenieMat FF50



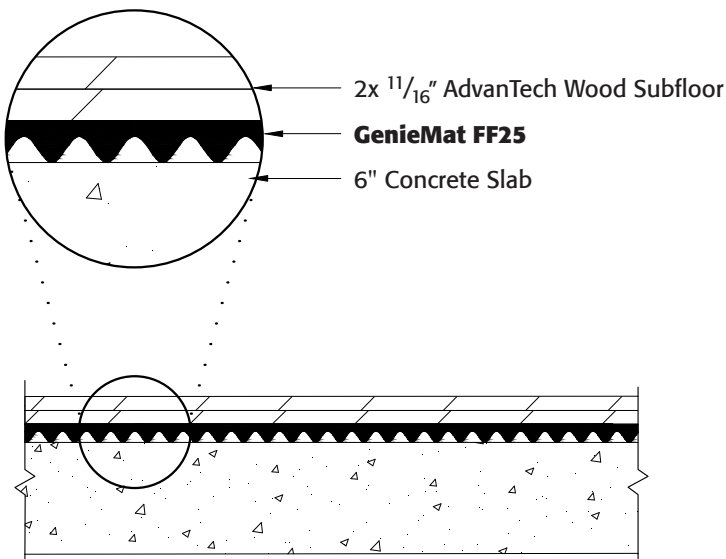
59
STC

58
IIC

5014148

7014204

2 Layers of AdvanTech® on GenieMat FF25

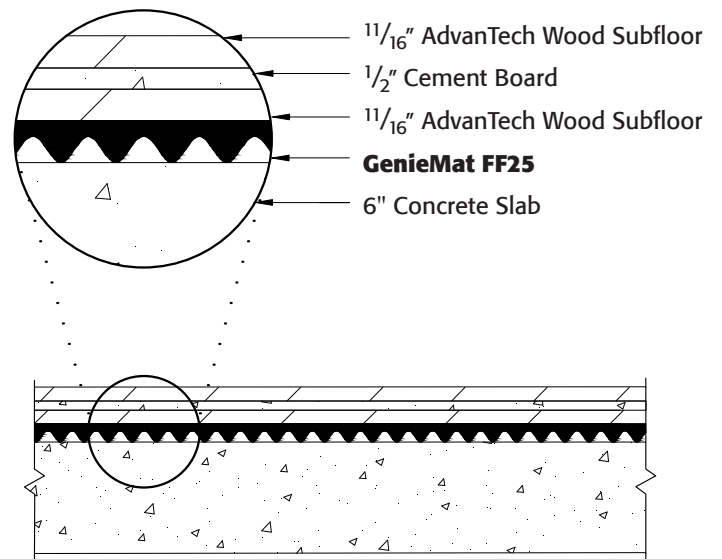


56
STC

56
IIC

G2953.04

2" AdvanTech Cement Board Raft on GenieMat FF25



58
STC

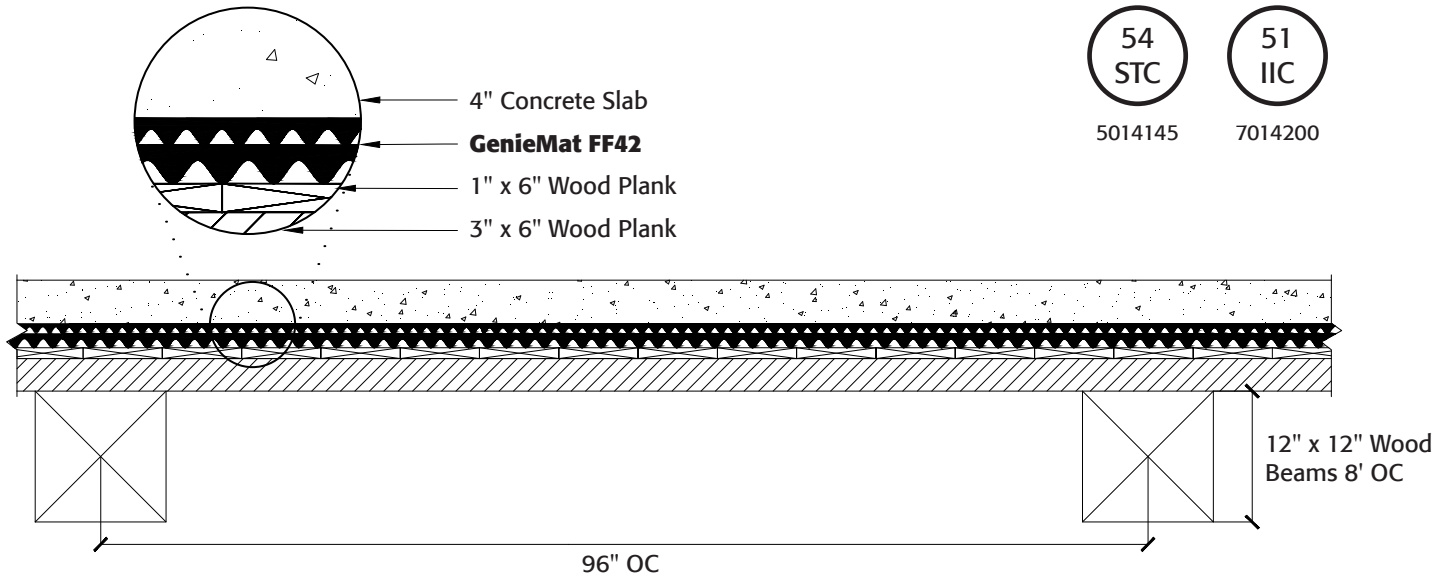
59
IIC

G2953.05

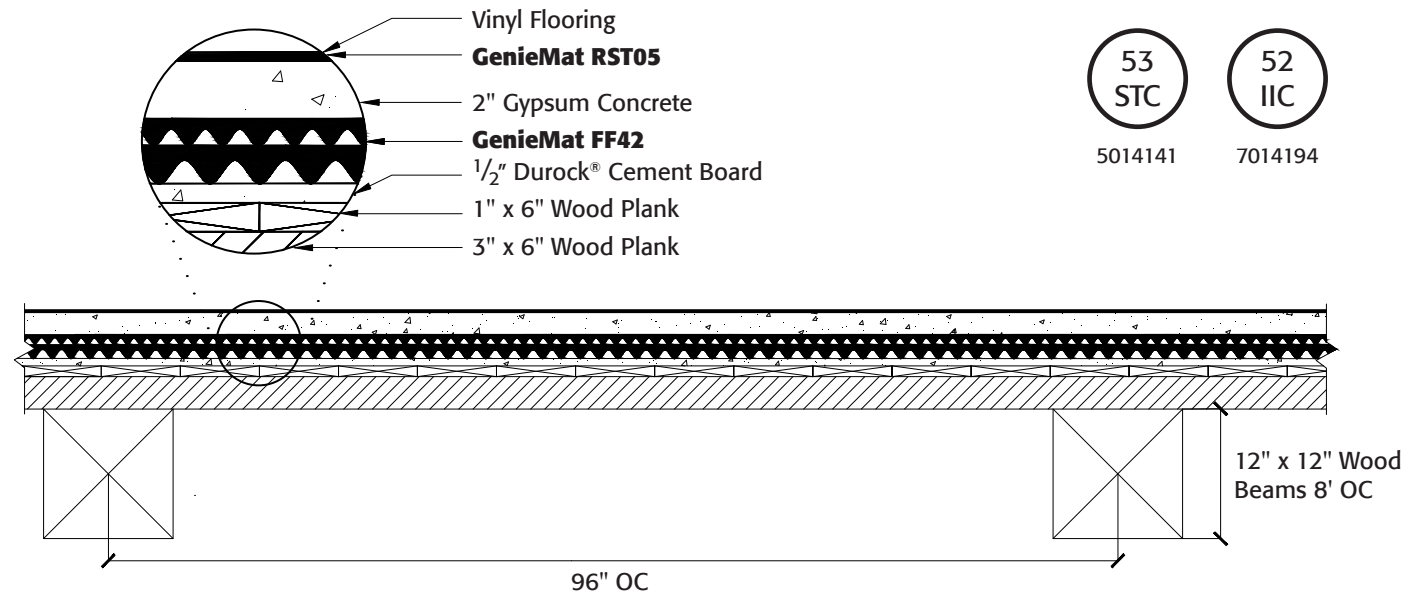
GENIE[®]MAT[®] FF ACOUSTICAL TEST DATA

HEAVY TIMBER ASSEMBLIES

4" Concrete Over GenieMat FF42



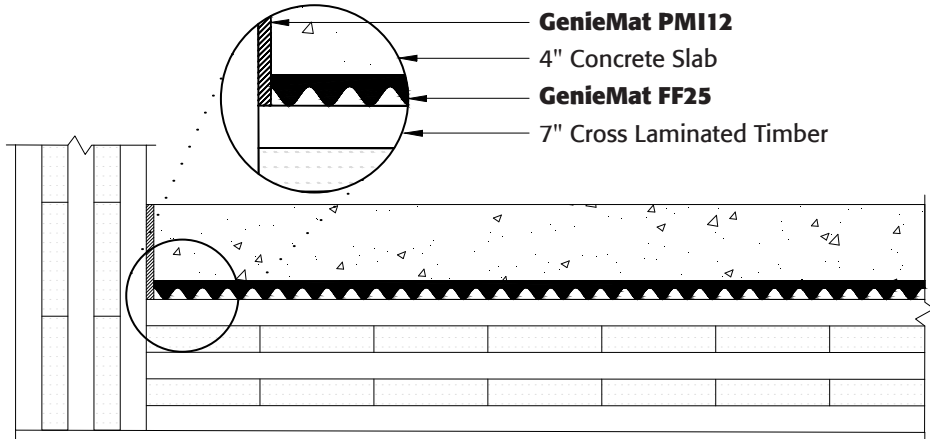
2" Gypsum Concrete Over GenieMat FF42 Over 1/2" Cement Board



GENIEMAT® FF ACOUSTICAL TEST DATA

CROSS LAMINATED TIMBER ASSEMBLIES

7" Cross Laminated Timber with 4" Concrete Topping on GenieMat FF25

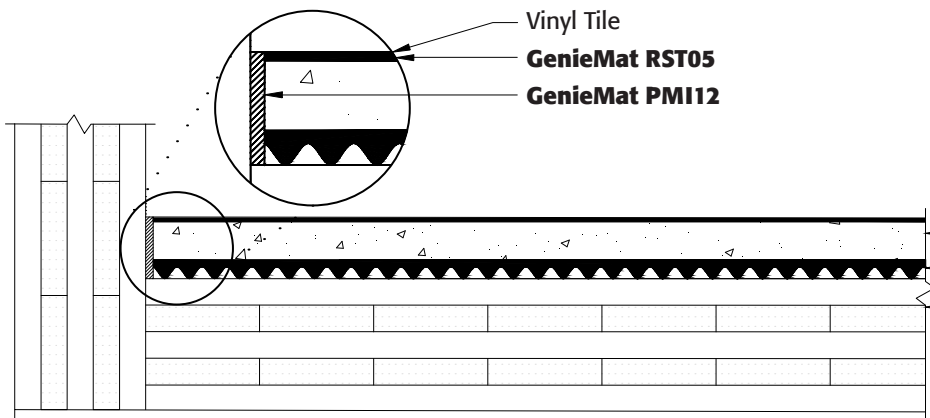


57
STC

50
IIC

F5500.08

7" Cross Laminated Timber with 2" Gypsum Concrete Topping on GenieMat FF25

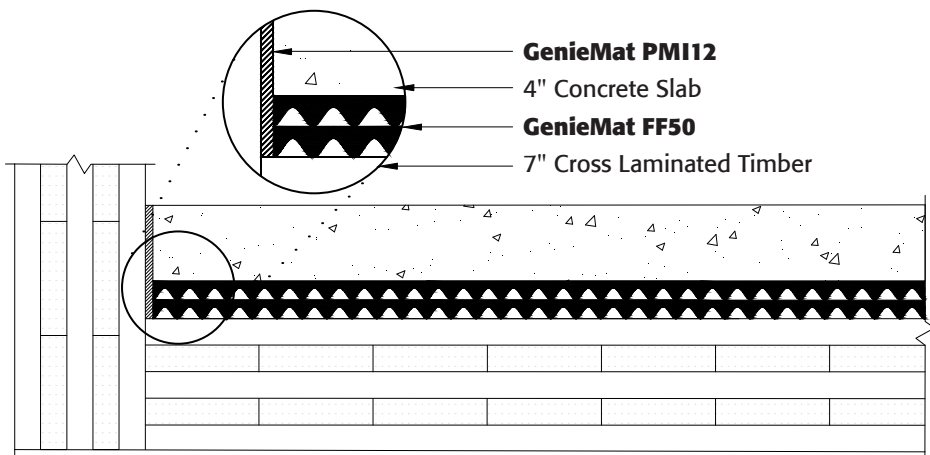


53
STC

51
IIC

F6279.14

7" Cross Laminated Timber with 4" Concrete Topping on GenieMat FF50



59
STC

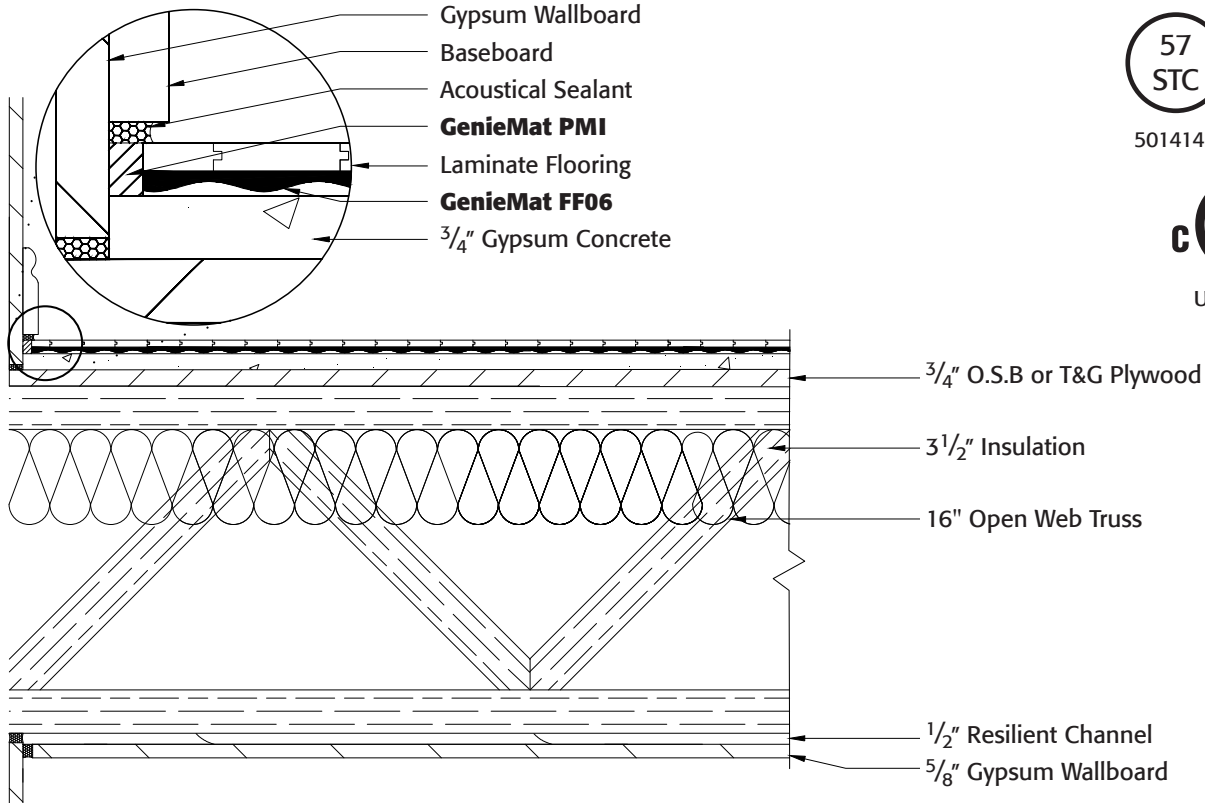
54
IIC

F5500.10

GENIEMAT[®] FF ACOUSTICAL TEST DATA

LIGHTWEIGHT WOOD FRAME ASSEMBLIES

16" Open Web Truss with Floating Wood Floor on GenieMat FF06



57
STC

5014142

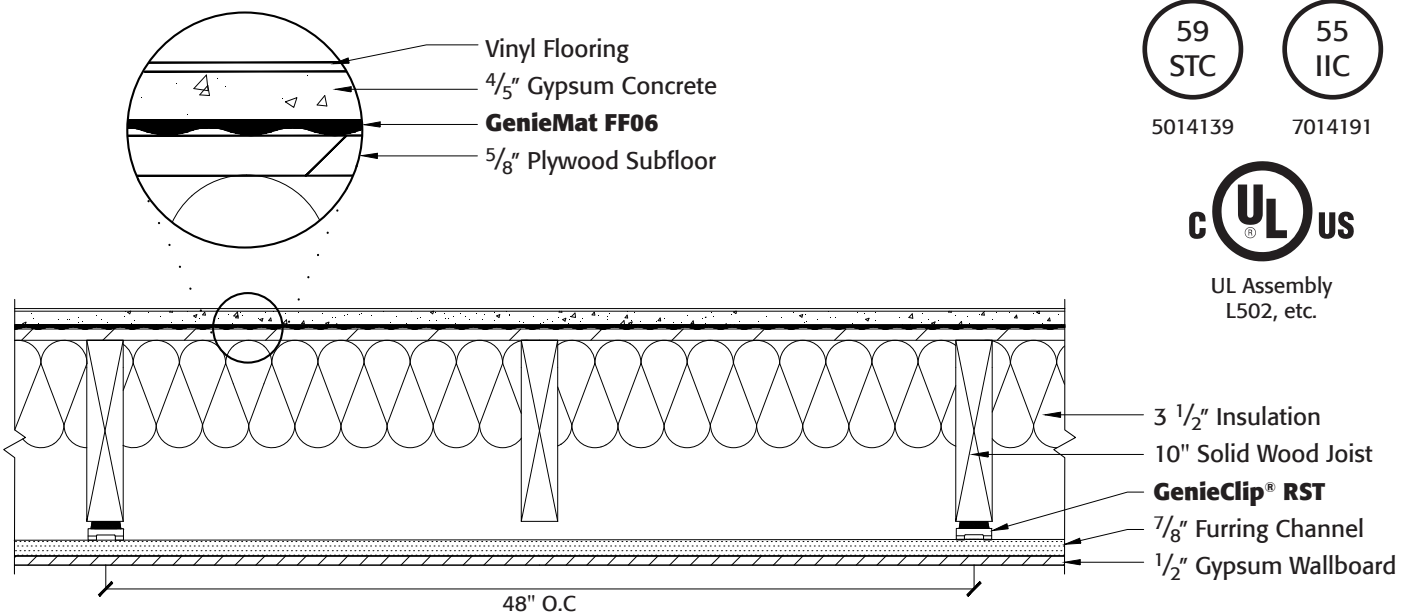
53
IIC

7014195



UL Assembly
L546, etc.

2 x 10 Wood Joist with 4/5" Gypsum Concrete Topping on GenieMat FF06



59
STC

5014139

55
IIC

7014191

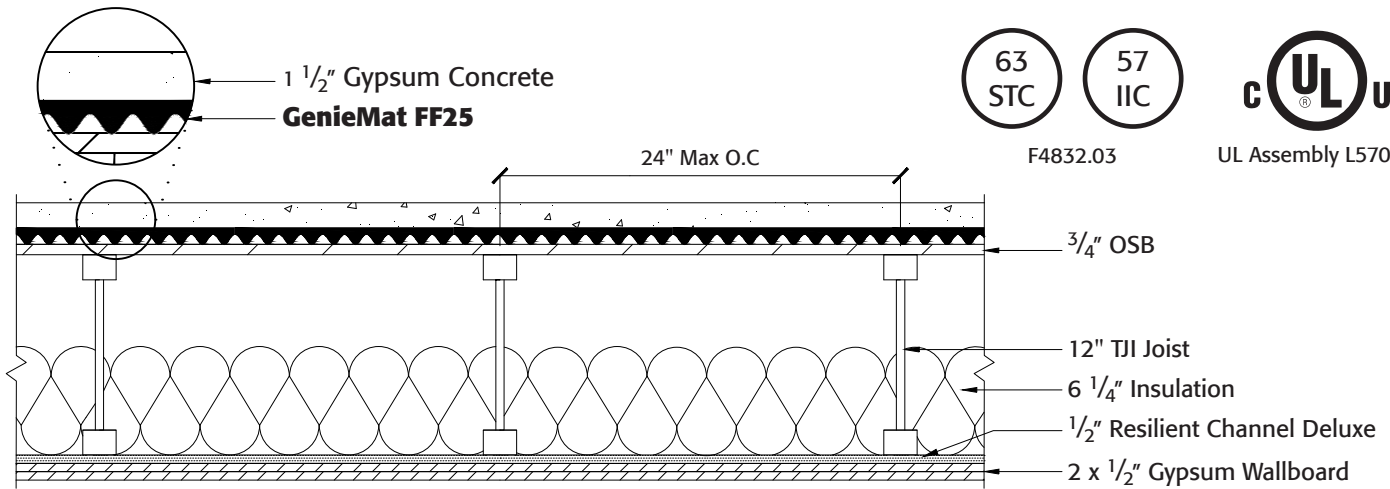


UL Assembly
L502, etc.

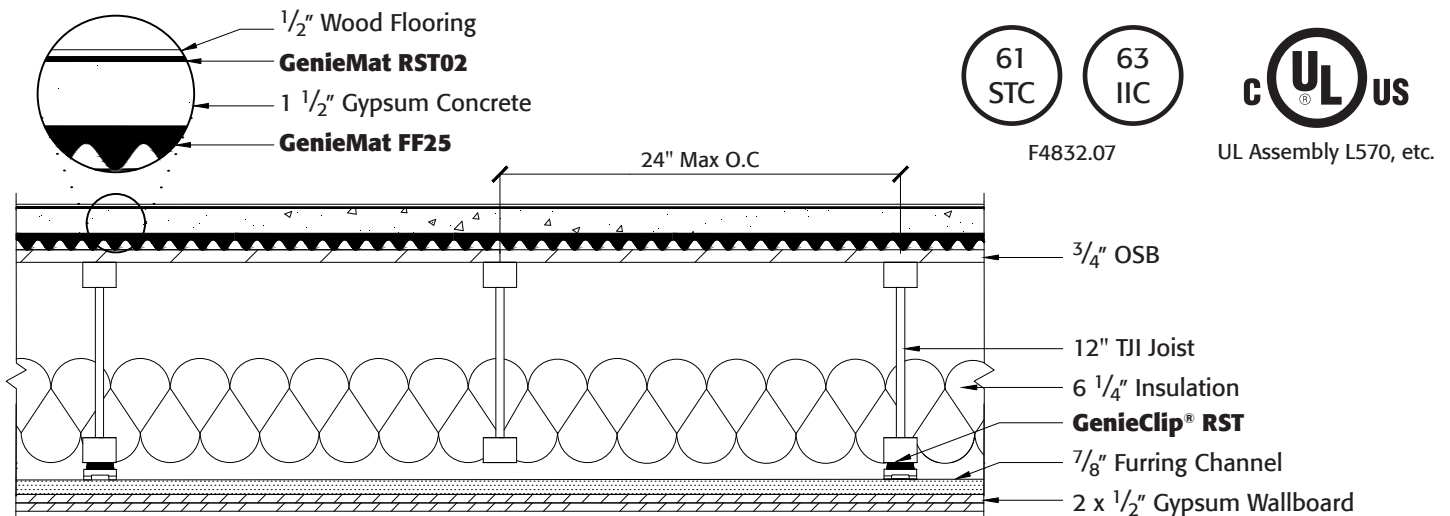
GENIEMAT® FF ACOUSTICAL TEST DATA

12" ENGINEERED JOIST WOOD FRAME ASSEMBLIES

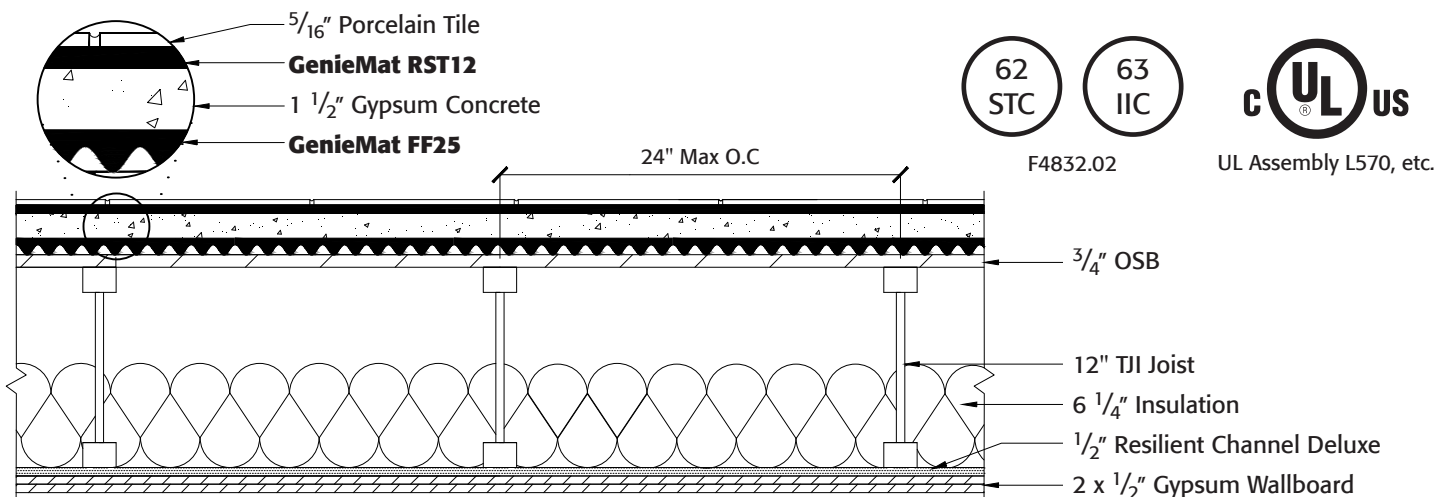
1 1/2" Gypsum Concrete Topping on GenieMat FF25



Wood Flooring on GenieMat RST02 on 1 1/2" Gypsum Concrete Topping on GenieMat FF25



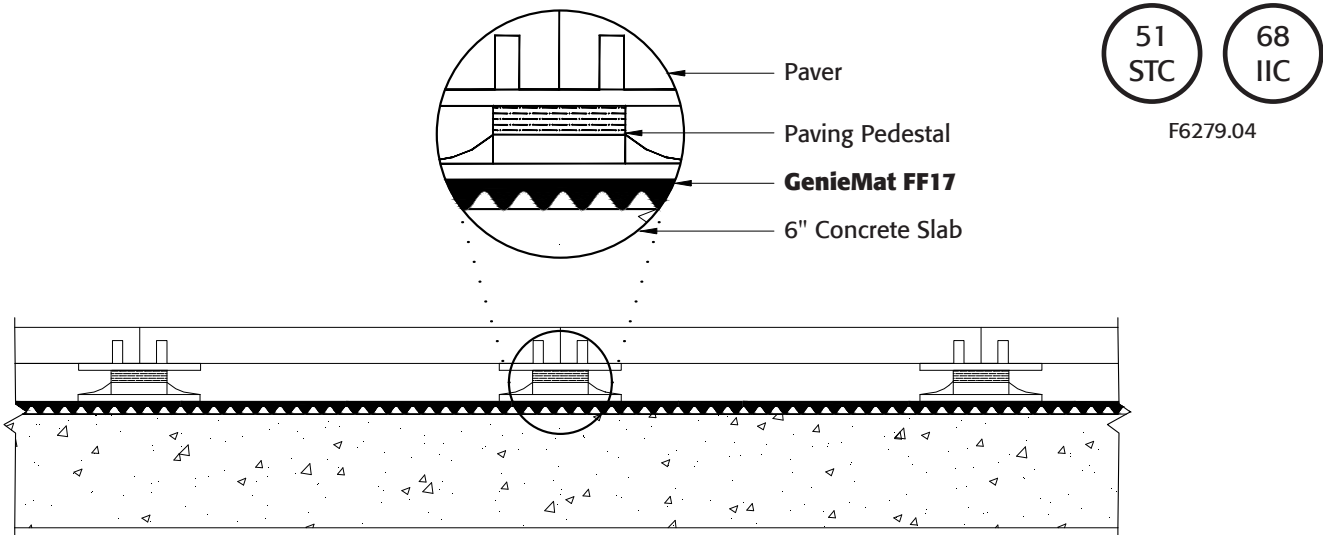
Tile Floor on GenieMat RST12 with 1 1/2" Gypsum Concrete Topping on GenieMat FF25



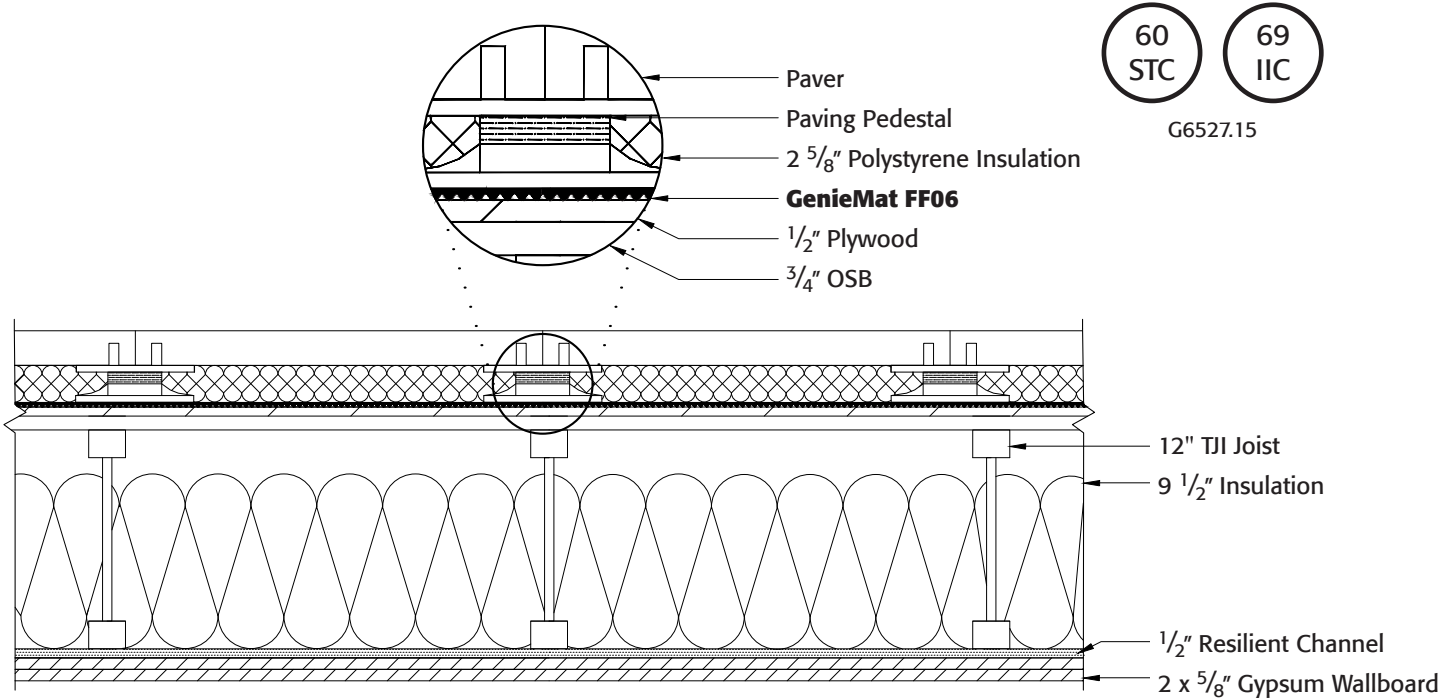
GENIEMAT® FF ACOUSTICAL TEST DATA

ROOFTOP AND DECK ASSEMBLIES

Stone Pavers and Adjustable Pedestals on GenieMat FF17



Stone Pavers and Adjustable Pedestals on GenieMat FF06



GENIEMAT[®] FF70

Modular Panelized Floating Floor Systems

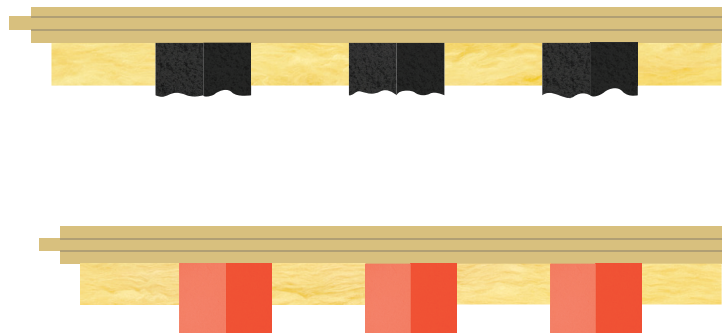
OVERVIEW

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 designers and installers this level of performance and adaptability.

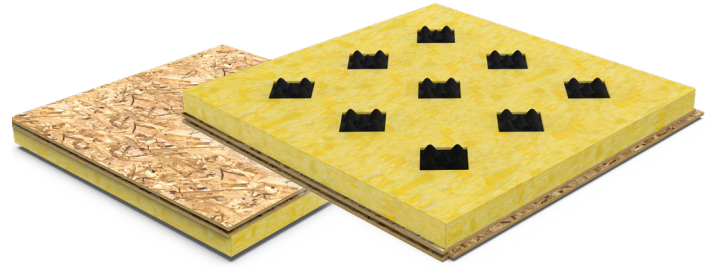


FEATURES AND BENEFITS

- Low natural frequency at low loads
- 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 2' x 2' (610 x 610mm)
- Tongue and groove edge design lets you quickly and easily fit panels into place
- Sturdy 5/8" engineered wood formwork
- Installed over wood or concrete subfloors
- No specialized installers required

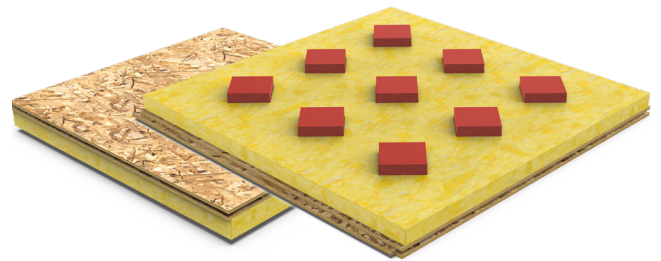
GENIEMAT® FF709R

- Panels are made with 2" thick profiled isolation pads embedded in a layer of acoustical insulation
- Natural frequency down to 10 Hz
- Subfloor contact area reduced by 99%
- Δ IIC 35 (ASTM E2179)



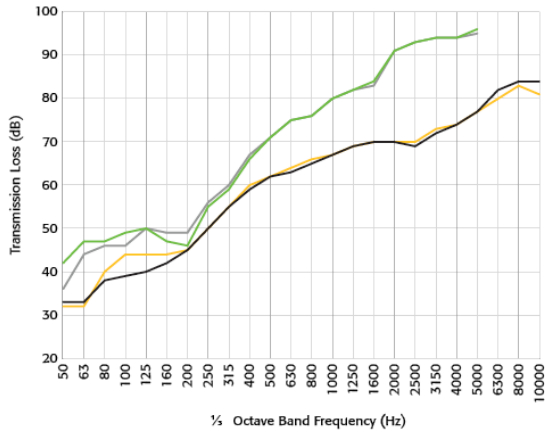
GENIEMAT FF70LDM

- Panels are made with 2" thick Low Dynamic Modulous proprietary Pliteq elastomer embedded in a layer of acoustical insulation
- Natural frequency down to 6 Hz
- Subfloor contact area with the floor is reduced by 96%
- Δ IIC 44 (ASTM E2179)



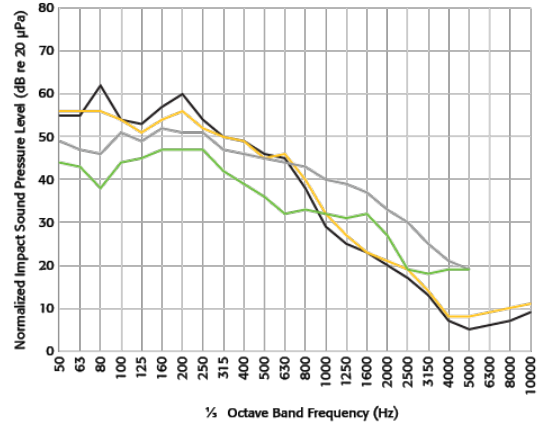
DESIGN PARAMETERS OF GENIEMAT FF70 SYSTEMS

Airborne Sound Transmission Lightweight vs Heavyweight Topping



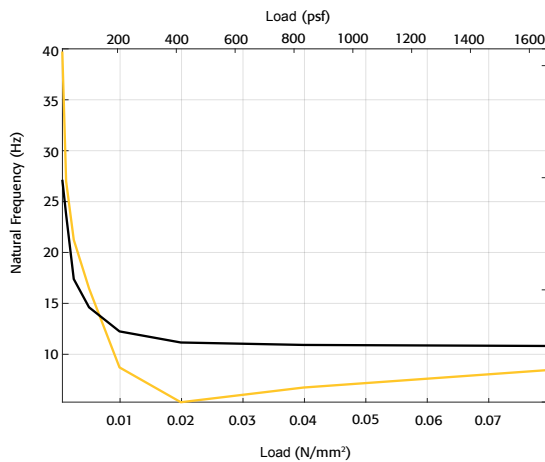
- Plywood - 3/4", GenieMat FF70 - 2 3/4", Concrete Slab - 6", STC 62
- Plywood - 3/4", GenieMat FF70LDM - 2 3/4", Concrete Slab - 6", STC 63
- Concrete Topping - 100mm, GenieMat FF70 - 2 3/4", Concrete Slab - 5.9", STC 67
- Concrete Topping - 100mm, GenieMat FF70LDM - 2 3/4", Concrete Slab - 5.9", STC 64

Impact Sound Transmission Lightweight vs Heavyweight Topping



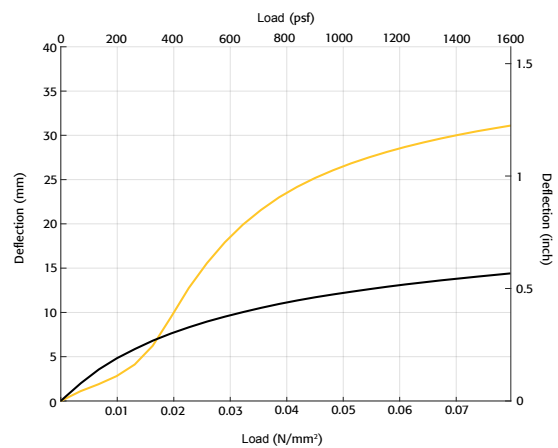
- Plywood - 3/4", GenieMat FF70 - 2 3/4", Concrete Slab - 6", IIC 60, LIIC 63, HIIC 70
- Plywood - 3/4", GenieMat FF70LDM - 2 3/4", Concrete Slab - 6", IIC 64, LIIC 68, HIIC 69
- Concrete Topping - 100mm, GenieMat FF70 - 2 3/4", Concrete Slab - 5.9", IIC 65, LIIC 85, HIIC 67
- Concrete Topping - 100mm, GenieMat FF70LDM - 2 3/4", Concrete Slab - 5.9", IIC 71, LIIC 96, HIIC 75

System Natural Frequency vs. Load



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

Deflection vs. Load



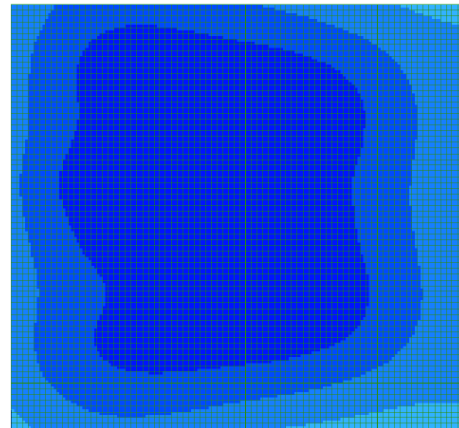
- GenieMat FF709R - Point Isolator
- GenieMat FF70LDM - Point Isolator

GENIEMAT® FF70 PANELIZED SYSTEMS FOR BASKETBALL COURT ISOLATION

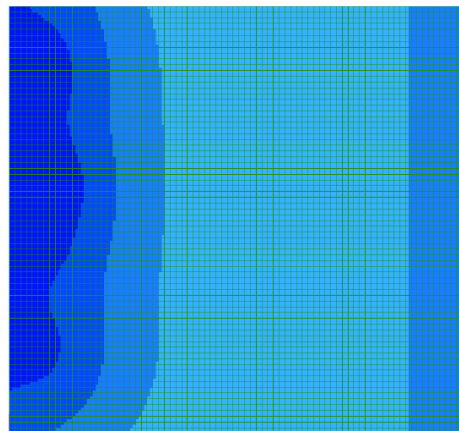
HOW TO MANAGE ACOUSTIC AND ATHLETIC PERFORMANCE

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).

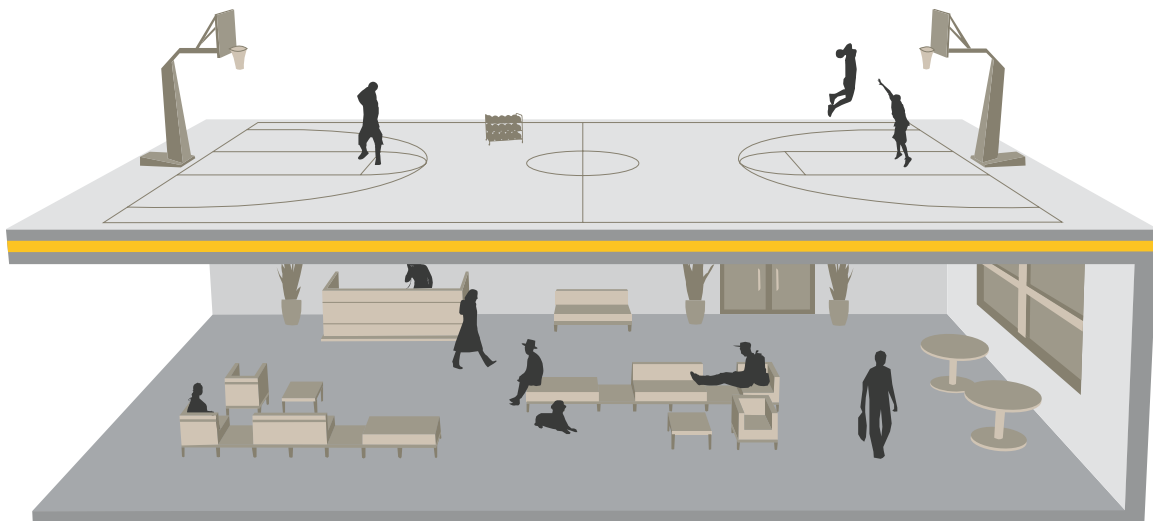
Using a heavy/soft impact ball for laboratory testing and analysis using finite element analysis (FEA), **GenieMat FF70** and **GenieMat FF70LDM** have been proven to effectively mitigate noise and vibration in numerous college, university, and professional sports applications.



Bleacher Open



Bleacher Closed



FINITE ELEMENT ANALYSIS (FEA)

WHAT IS FEA?

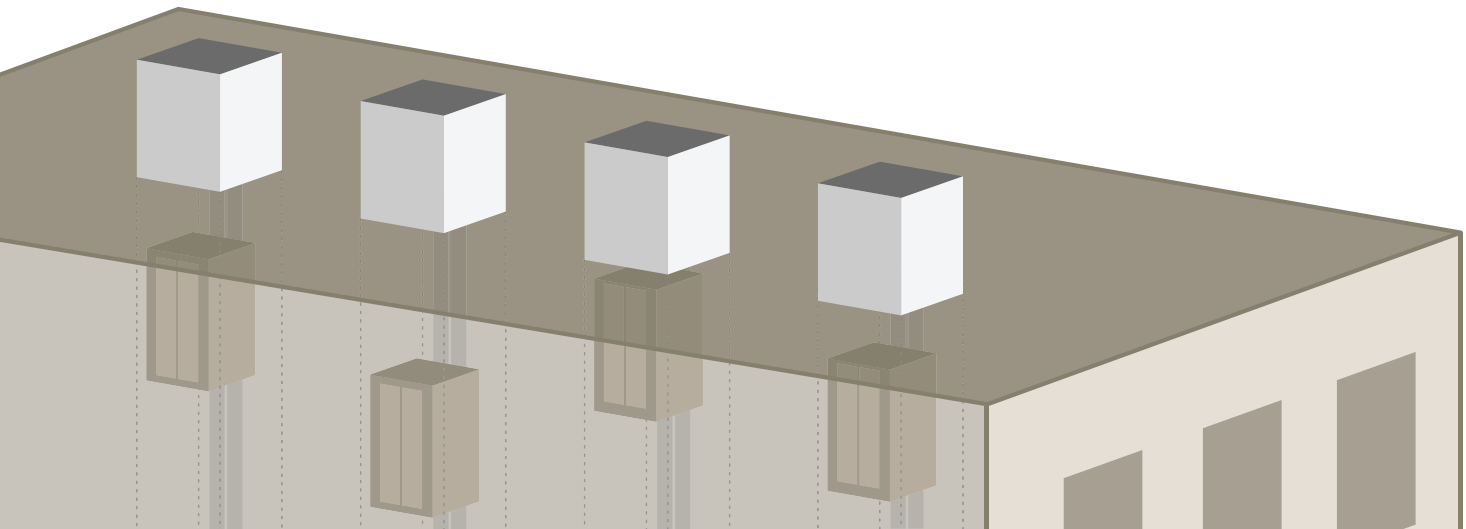
Finite Element Analysis (FEA) is a system to break complex structures into very small parts (finite elements) that can then be more easily modeled and assessed. FEA is done in such a way as to tie all these elements together so the larger motion of the complete structure can be seen and assessed.

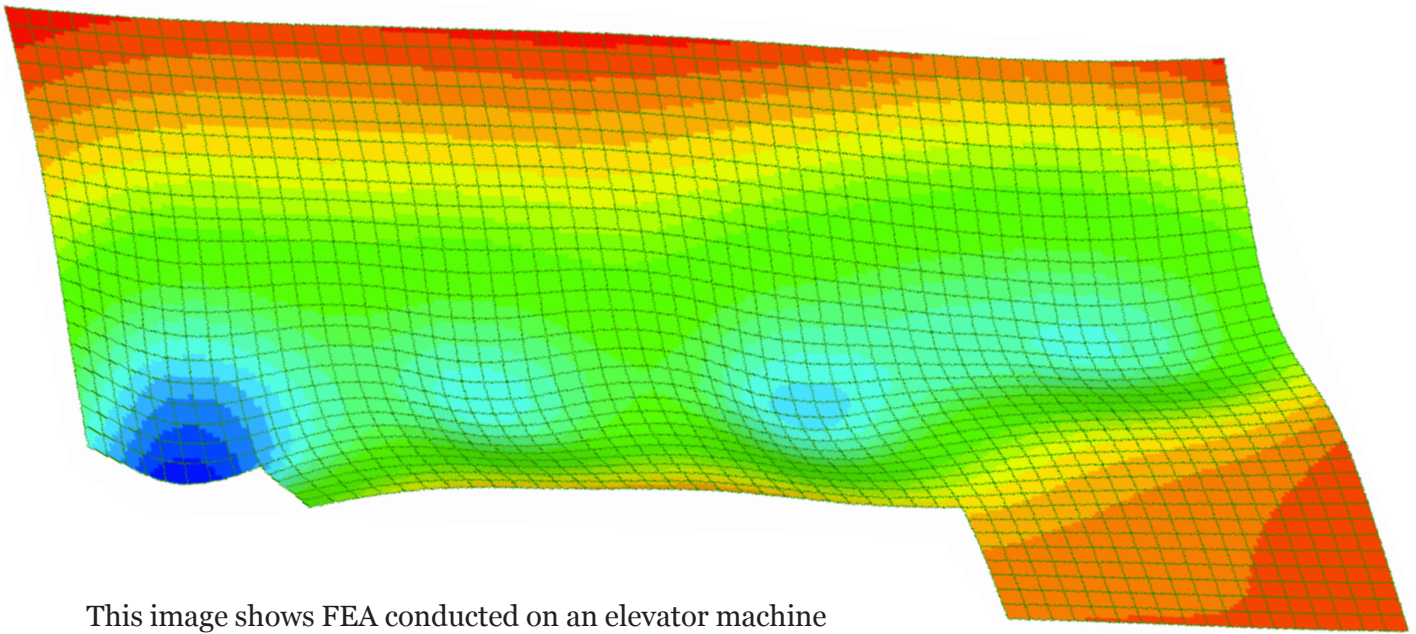
WHY IS FEA USEFUL WHEN DESIGNING YOUR FLOATING FLOOR?

While you may not realize 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 floating floor. The various colors 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 |
|-----------|-------------------------|---------------------|--|---------------------|--|
| | GenieMat FF70 | 2 3/4" (nom. 70 mm) | Panel: 23 1/4" wide, 23 1/4" long (nom. 0.6 m wide, 0.6 m long) | 12.8 lb (5.8 kg) | 3.8 ft ² (0.4 m ²) |
| | GenieMat FF70LDM | 2 3/4" (nom. 70 mm) | Panel: 23 1/4" wide, 23 1/4" long (nom. 0.6 m wide, 0.6 m long) | 11.8 lb (5.4 kg) | 3.8 ft ² (0.4 m ²) |

TEST RESULTS

| TEST REPORT | PRODUCT | FLOOR TOPPING | STRUCTURE | STC RATING (ASTM E90) | IIC RATING (ASTM E492) |
|--------------------|-------------------------|------------------|------------------|--------------------------|---------------------------|
| A1-008867.5 | GenieMat FF70LDM | 4" Concrete Slab | 6" Concrete Slab | 64 | 71 |
| A1-008867.4 | GenieMat FF70 | 4" Concrete Slab | 6" Concrete Slab | 67 | 65 |
| E5600.08-113-11-R0 | GenieMat FF70LDM | 3/4" Plywood | 6" Concrete Slab | 63 | 64 |
| E5600.01-113-11-R0 | GenieMat FF70 | 3/4" Plywood | 6" Concrete Slab | 62 | 60 |

TEST RESULTS

| TEST RESULTS | | | | | |
|------------------------|-----------------------|--|--|-----------------------|------------------------|
| TEST REPORT | PRODUCT | FLOOR TOPPING | STRUCTURE | STC RATING (ASTM E90) | IIC RATING (ASTM E492) |
| B3498.1 | None | None | 6" Concrete Slab | 53 | 29 |
| F935-41976, F541-41780 | GenieMat® FF17 | 4" Concrete Slab | 6" Concrete Slab | 70 | 61 |
| F943-41992, F536-41779 | GenieMat FF25 | 4" Concrete Slab | 6" Concrete Slab | 70 | 65 |
| F920-41970, F539-41780 | GenieMat FF50 | 4" Concrete Slab | 6" Concrete Slab | 72 | 67 |
| F921-41970, F540-41780 | GenieMat FF75 | 4" Concrete Slab | 6" Concrete Slab | 73 | 69 |
| e8117.02 | GenieMat FF70 | 4" Concrete Slab | 6" Concrete Slab | 64 | 64 |
| F289-41701, F290-41701 | GenieMat FF06 | 2 3/8" Lightweight Concrete | 5 1/2" Concrete Slab | 59 | 58 |
| F292-41702, F291-41702 | GenieMat FF10 | 2 3/8" Lightweight Concrete | 5 1/2" Concrete Slab | 59 | 59 |
| F293-41702, F294-41702 | GenieMat FF17 | 2 3/8" Lightweight Concrete | 5 1/2" Concrete Slab | 60 | 61 |
| F296-41702, F295-41702 | GenieMat FF25 | 2 3/8" Lightweight Concrete | 5 1/2" Concrete Slab | 61 | 63 |
| F297-41702, F298-41702 | GenieMat FF50 | 2 3/8" Lightweight Concrete | 5 1/2" Concrete Slab | 63 | 66 |
| F6279.04 | GenieMat FF17 | 1 3/4" Stone Pavers + 2" Adjustable Deck Supports | 6" Concrete Slab | 51 | 68 |
| g2953.02 | GenieMat FF25 | (2) 1/2" Cement Board | 6" Concrete Slab | 55 | 58 |
| g2953.04 | GenieMat FF25 | (2) 3/4" AdvanTech® Wood Subfloor | 6" Concrete Slab | 56 | 56 |
| 5014139, 7014190 | GenieMat FF06 | 3/4" Gypsum Concrete | 2x10 Wood Joist + GenieClip RST + 1/2" GWB | 59 | 52 |
| 5014142, 7014195 | GenieMat FF06 | Engineered Wood + 3/4" Gypsum Concrete + 3/4" Plywood | 16" Open Web Truss + 1/2" Resilient Channel + 5/8" GWB | 57 | 53 |
| g1707.11 | GenieMat FF06 | Vinyl + (2) 1/4" Cement Board + 3/4" OSB | 18" Open Web Truss + 1/2" Resilient Channel + 5/8" GWB | 61 | 65 |
| 5014049, 7014060 | None | None | Heavy Timber Floor | 29 | 24 |
| 5014082, 7014109 | None | 4" Concrete Slab | Heavy Timber Floor | 40 | 34 |
| 5014145, 7014200 | GenieMat FF42 | 4" Concrete Slab | Heavy Timber Floor | 54 | 51 |
| 7014194 | GenieMat FF42 | Vinyl + GenieMat RST05 + 2" Gypsum Concrete + 1/2" Cement Board | Heavy Timber Floor | 53 | 52 |
| F5500.08 | GenieMat FF25 | 4" Concrete Slab | 7" CLT | 57 | 50 |
| F6279.14 | GenieMat FF25 | Vinyl + GenieMat RST05 + 2" Gypsum Concrete | 7" CLT | 53 | 51 |
| g1707.05 | GenieMat FF23 | 4" Concrete Slab | 7" CLT | 56 | 52 |
| F5500.10 | GenieMat FF50 | 4" Concrete Slab | 7" CLT | 59 | 54 |

CONTACT US

For Your Project Specific Questions
T. 416.449.0049 | **E.** info@pliteq.com

© Pliteq Inc. 2021.

11.21 ^{®/™} Trademarks of Pliteq Inc. The information provided is accurate to the best of our knowledge at the time of issue. However, we reserve the right to make changes when necessary without further notification. Suggested application may need to be modified to conform with local building codes and conditions. We cannot accept responsibility for products that are not used, or installed, to our specifications. All listed dimensions are nominal.



www.pliteq.com