



Making your world a quieter place



FITNESS & GYM
ISOLATED FLOATING FLOORS
THE NEXT GENERATION

Why CDM?

CDM has been engineering and installing fitness isolation solutions since the early 1970s. Our continuous investment in R&D and years of real-world experience has yielded a greater understanding of the driving forces behind structure-borne noise from fitness activities and how to isolate them effectively.

Today, gyms and sports facilities are more accessible than ever, often located next door or in the same buildings where we work and live. Without addressing noise and vibration from exercise activities (such as booming low frequency sound from weight impacts, thumping bass from aerobic class music, and the percussive noise from cardio and strength equipment) it can become a significant noise nuisance affecting well-being and health.

From conception to completion, we at CDM pride ourselves in being a full-service solution provider that designs, manufactures, and delivers market leading noise and vibration isolation products that help make your world a quieter place.



CDM-GYM Systems

Fitness & Gym Isolated Floating Floors

The need to access fitness as part of our daily routine has resulted in gyms and fitness studios being integrated into many multi-purpose residential and commercial buildings. Fitness activities generate a high level of structure-borne vibration and airborne noise, particularly at low frequencies, which are not covered by existing acoustic standards and test devices. Left unaddressed it can be incredibly difficult to facilitate basic acoustic comfort levels making it incredibly difficult for fitness facility users and building occupants to co-exist.

Careful selection of the final flooring is a crucial decision when designing the fitness facility in order to avoid generation of significant noise nuisance. When in use, these floors experience the full impact force of weight-drop equipment, treadmills, and strength equipment, and therefore the final floor finish must always be a primary design consideration for the effective control of noise and vibration.

CDM-GYM dry and lightweight floating floor solutions are specially designed to effectively and safely manage impact energy. These systems are a perfect solution for existing buildings where the extra weight and height of a concrete floor is not feasible, and where rebound is to be limited to guarantee user safety.

Every fitness facility is different and within the same facility there are usually different zones of activity (free-weights, cardio, aerobic, etc.) which generate different levels of noise and vibration. The CDM-GYM range addresses all these different zones to guarantee the best acoustical performance.

Main Benefits



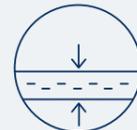
Easy installation



Quick to install



Lightweight



Limited extra height



Easy to dismantle and reinstall



Long-lasting



Noise reduction



Protection of substrate



Compatible with different gym activities



Compatible with different impact energies



Final floor options

CDM-GYM Systems

Typical Floating Floor Construction

1 FLOOR COVERING

2 IMPACT ABSORPTION LAYER

Historically, the floor finish in a gym has been primarily aesthetic in purpose, however it is now recognized that when combined with the right impact absorption layer it can play an important role in mitigating structure-borne noise. Soft floor covering and impact absorption layers work together to extend the time of contact and reduce the peak impact force and the sound generated.

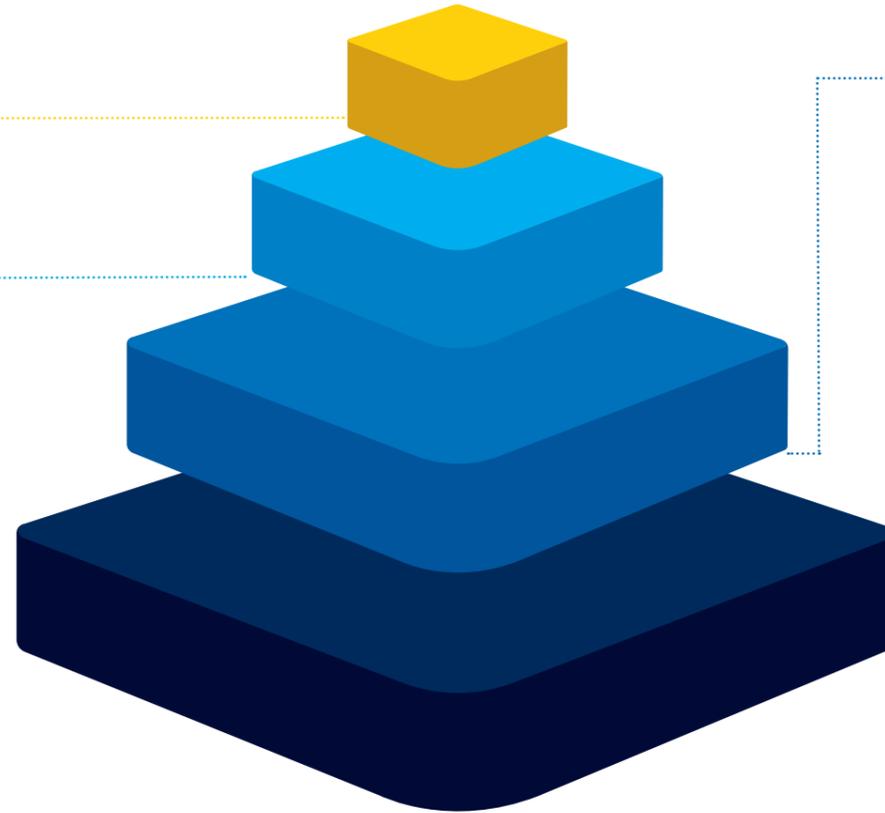
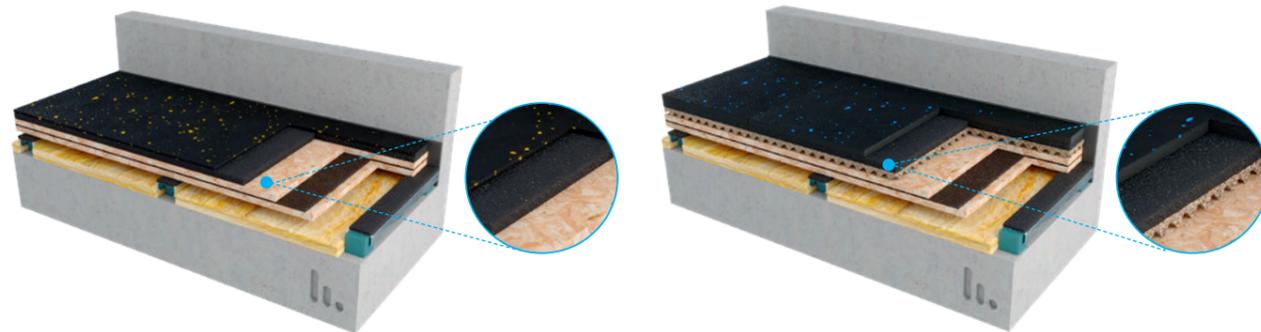
All CDM-GYM standard systems can be configured using different types of impact absorption layers, called **GYMPACT**. The different standard GYMPACT solutions, engineered to provide the best solution for each gym activity, are:

GYMPACT20 & GYMPACT45

The continuous mats GYMPACT20 and GYMPACT45 are compatible with most available floor coverings, allowing freedom of choice of the final flooring, and can also be combined with CDM's finish flooring rolls and tiles.

CDM-GYM with GYMPACT20

CDM-GYM with GYMPACT45



3 LOAD DISTRIBUTION LAYER

Loads (including impacts) are distributed to the supporting structural floor via rigid lightweight panels. To reduce noise and vibration radiation from impacts, low radiation efficiency and panel strength must be balanced. Wood-based panels exhibit the optimal balance of these two characteristics. When these panels are combined with **CDM-DAMP**, a thin constrained damping layer (CLD) a highly efficient load distribution system with low noise and vibration radiation is achieved.

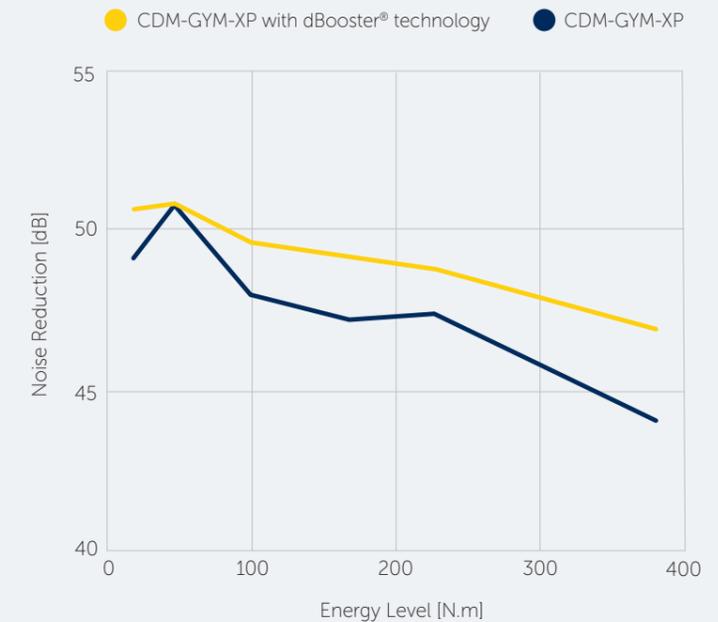
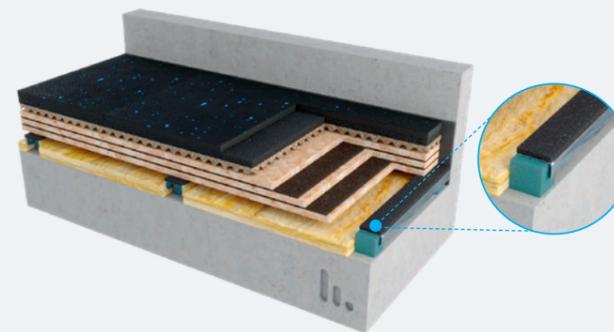
4 RESILIENT SUPPORT

The CDM-GYM range is available with **full surface** or **discrete** resilient supports. Discrete resilient supports offer better noise reduction at low frequencies; achieving natural frequencies as low as 8Hz.

The Next Generation: dBooster® Technology

Our patented dBooster® technology decouples the load distribution layer from the resilient supports with minimal contact area.

Tests show that isolation efficiency improves for all CDM-GYM systems and that it makes the gym floor less dependent on the impact energy level applied to the system.



Acoustic Design

Gym Areas



Gym Areas / Gym Activities

CDM-GYM-SP
GYMPACT20

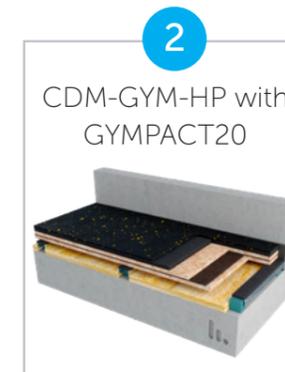
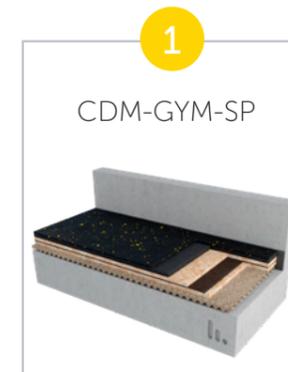
CDM-GYM-HP
GYMPACT20

CDM-GYM-HP
GYMPACT45

CDM-GYM-XP
GYMPACT45

| | | | | |
|----------------------------------|--|-----|----|-----|
| Stretch Zone | ●●● | ●● | ● | ● |
| Group Classroom, Spinning Studio | ●● | ●●● | ● | ● |
| Cardio Zone | ●● | ●●● | ● | ● |
| Strength Zone | ● | ●●● | ● | ● |
| Functional Zone | ● | ●●● | ●● | ●● |
| Free Weight Zone | Residential Gyms (impact energy <600 N.m) | ● | ● | ●●● |
| | Commercial Gyms (impact energy ≤1000 N.m) | ● | ● | ●● |

Most suitable CDM-GYM solution for the following areas:





CDM-GYM-XP with GYMPACT45

Free-weight areas are the most critical areas to address because of the extensive use of barbells and dumbbells which generate significant levels of impact and, in addition to the noise nuisance they cause, can damage the structural floor.

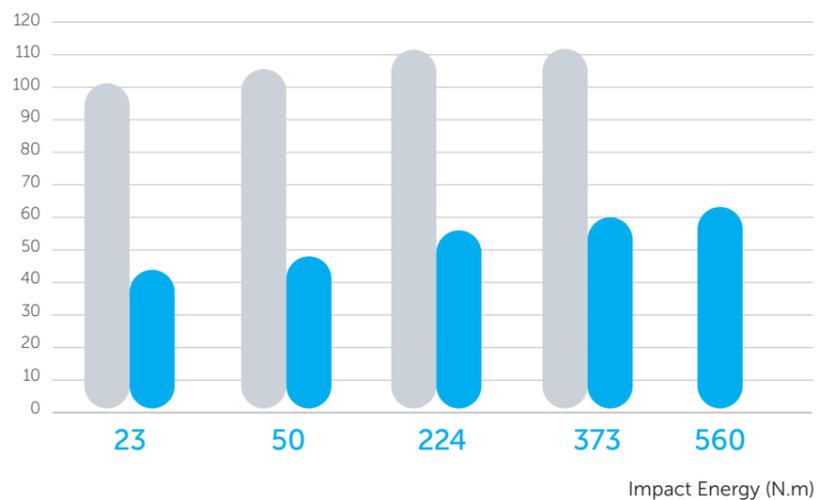
CDM-GYM-XP with GYMPACT45 is designed as an “Extreme Performance” discrete isolator floating floor system specifically intended for use in free-weight areas. The system offers superior structural resistance and acoustical performance and can withstand and absorb the energy from very high impacts. CDM-GYM-XP is engineered to reduce noise, dampen vibration and minimize bounce thereby reducing the risk of injuries.

19(4) dB $L_{n,w}(C_i)$
(calculated according to ISO 717-2, based on ASTM measurement)*
CDM-GYM-XP with GYMPACT45 and dBooster® technology

* Over 200 mm concrete slab and with 9,5 mm rubber sports floor.

Drop Weight Tests Overall Noise Level

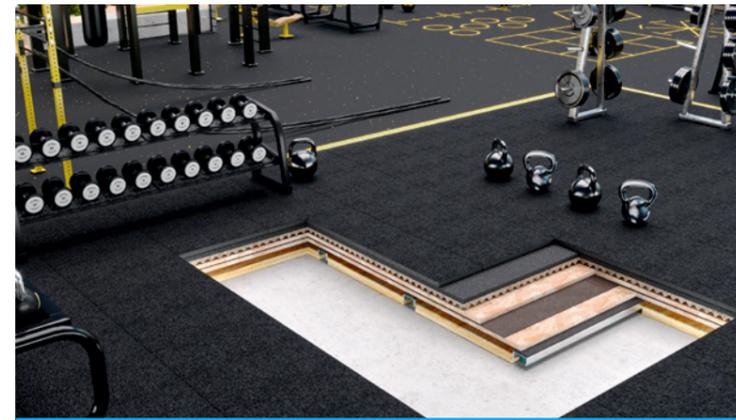
$L_{A,F,MAX}$ (dBA ref 20µPa)



● Bare Slab (200 mm)
● CDM-GYM-XP with dBooster® and GYMPACT45



** Please check the products compatibility prior to installation with both CDM and the floor manufacturer.



CDM-GYM-HP with GYMPACT45

Even though heavy weights such as kettlebells and dumbbells are lighter than most barbells, their use in free training areas can be a particular nuisance, producing vibrations that affect other areas of the building.

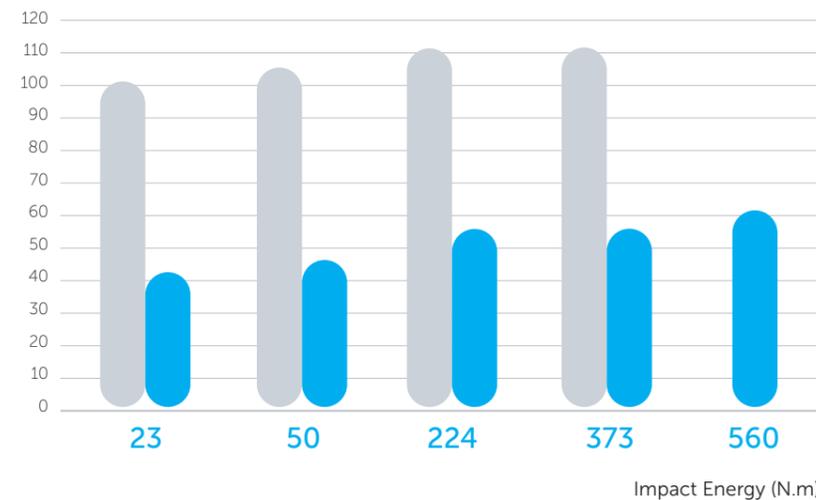
CDM-GYM-HP is a “High Performance” discrete isolator floating floor system that is performance-engineered to control vibrations, minimize low-frequency impact noise, and reduce the transmission of audible structure-borne sound. When configured with GYMPACT45, it offers high mechanical resistance and acoustical performance.

20(3) dB $L_{n,w}(C_i)$
(calculated according to ISO 717-2, based on ASTM measurement)*
CDM-GYM-HP with GYMPACT45 and dBooster® technology

* Over 200 mm concrete slab and with 9,5 mm rubber sports floor.

Drop Weight Tests Overall Noise Level

$L_{A,F,MAX}$ (dBA ref 20µPa)



● Bare Slab (200 mm)
● CDM-GYM-HP with dBooster® and GYMPACT45



** Please check the products compatibility prior to installation with both CDM and the floor manufacturer.



CDM-GYM-HP with GYMPACT20

One of the most common sources of noise in a gym is the strength area where the percussive sound of dropping weights is continuous source of noise nuisance. Less obvious sources of low frequency noise are group fitness, spin studios, treadmills and functional fitness area activities.

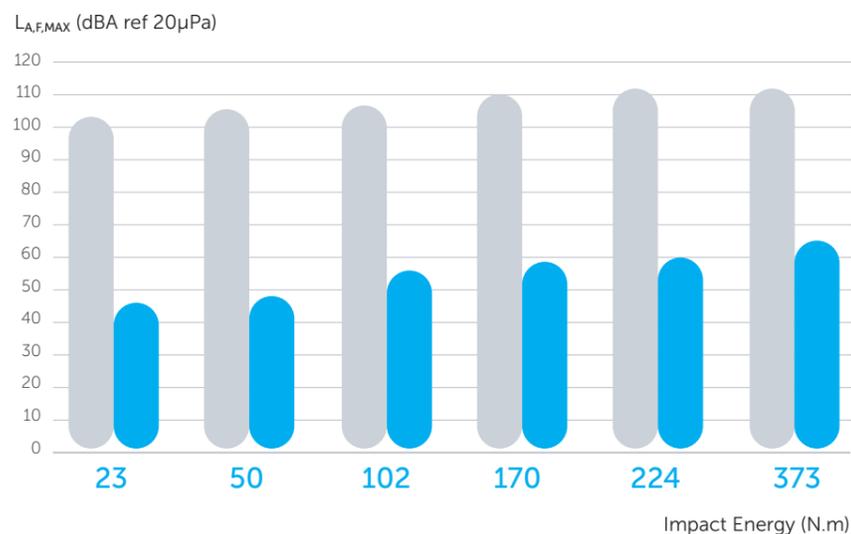
CDM-GYM-HP is a discrete "High Performance" floating floor system that decouples the building's floor construction, keeping workouts inside the gym and out of the building structure.

CDM-GYM-HP with GYMPACT20 is compatible with most conventional floor coverings.

29(3) dB
 $L_{n,w}(C_i)$
 (calculated according to ISO 717-2, based on ASTM measurement)*
 CDM-GYM-HP with GYMPACT20 and dBooster® technology

* Over 200 mm concrete slab and with 9,5 mm rubber sports floor.

Drop Weight Tests Overall Noise Level

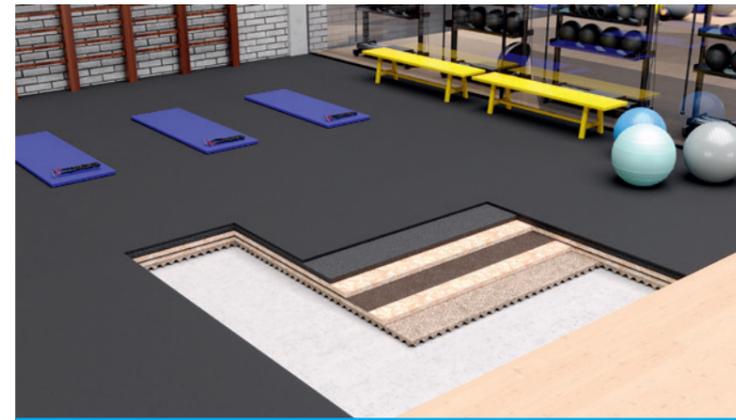


● Bare Slab (200 mm)
 ● CDM-GYM-HP with dBooster® and GYMPACT20

- Build-up height \pm 120 mm excluding floor covering.**
- Suitable for areas with medium impact energy and low frequency.



** Please check the products compatibility prior to installation with both CDM and the floor manufacturer.



CDM-GYM-SP with GYMPACT20

Low-intensity impact related sounds often associated with spin classes and even gym balls bouncing on the floor in the heavily frequented stretch zone can be very obtrusive.

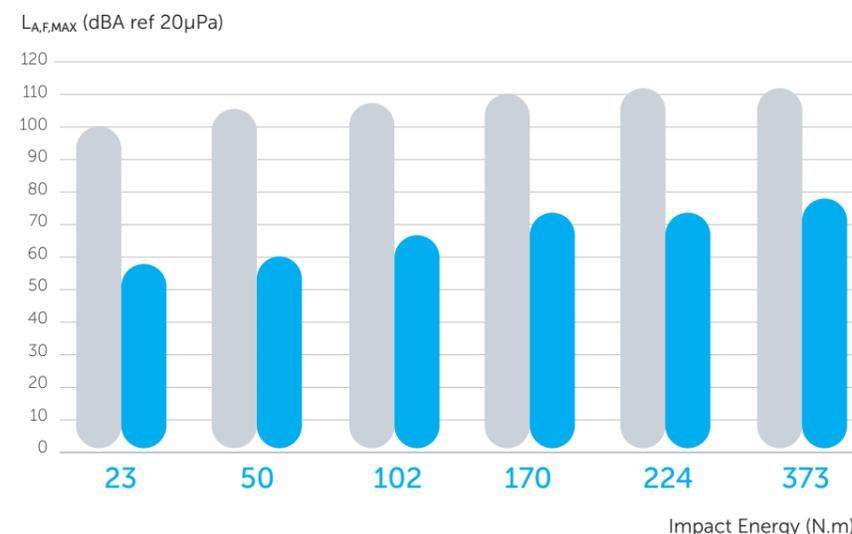
CDM-GYM-SP is our "Standard Performance" gym system. It is a continuous support floating floor that provides great performances in the reduction of low-impact sound while offering a high level of comfort for any type of training.

CDM-GYM-SP is compatible with most conventional floor coverings and so selection of the final flooring can be made independent on the acoustic solution.

36(2) dB
 $L_{n,w}(C_i)$
 (calculated according to ISO 717-2, based on ASTM measurement)*
 CDM-GYM-SP with GYMPACT20

* Over 200 mm concrete slab and with 9,5 mm rubber sports floor.

Drop Weight Tests Overall Noise Level



● Bare Slab (200 mm)
 ● CDM-GYM-SP with GYMPACT20

- Build-up height \pm 85 mm excluding floor covering.**
- Ideally suited for areas with restricted additional floor build-up.



** Please check the products compatibility prior to installation with both CDM and the floor manufacturer.

Complementary Products

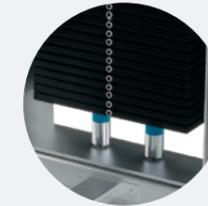
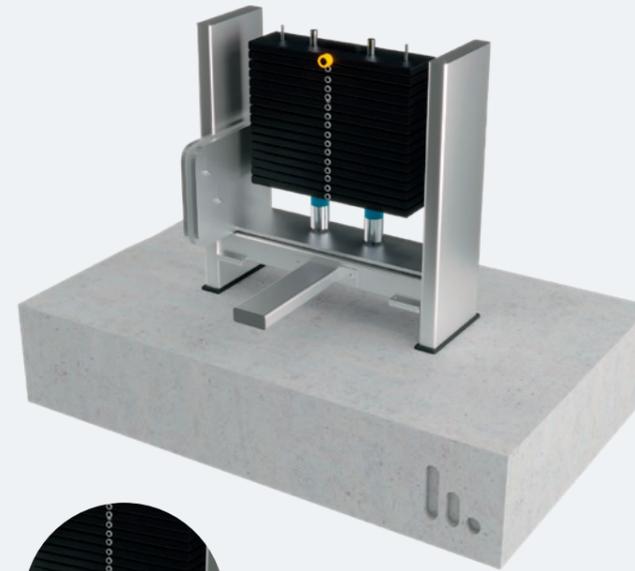
For applications that cannot install a flooring-based solution, CDM has designed specialized items to provide solutions for fitness equipment, such as:



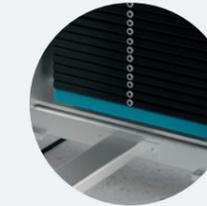
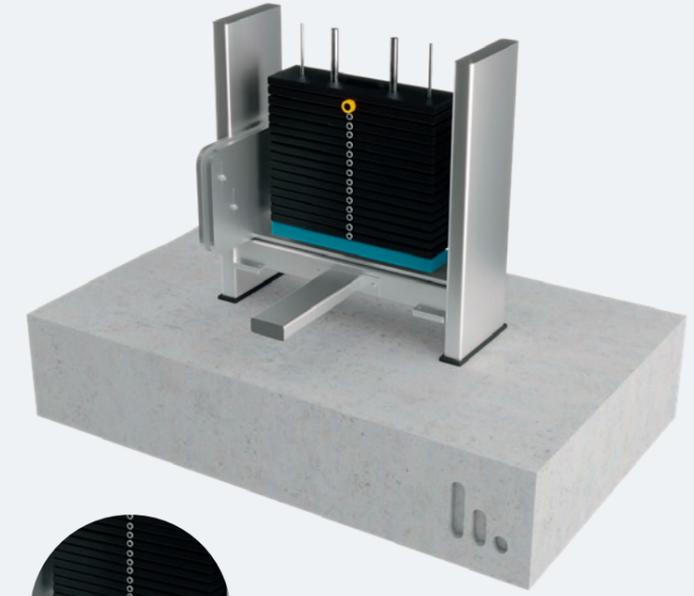
CDM-Treadbase
Custom-engineered
Treadmill Inertia Bases



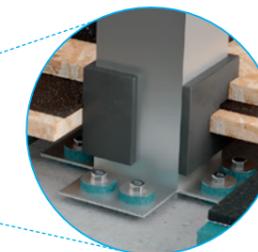
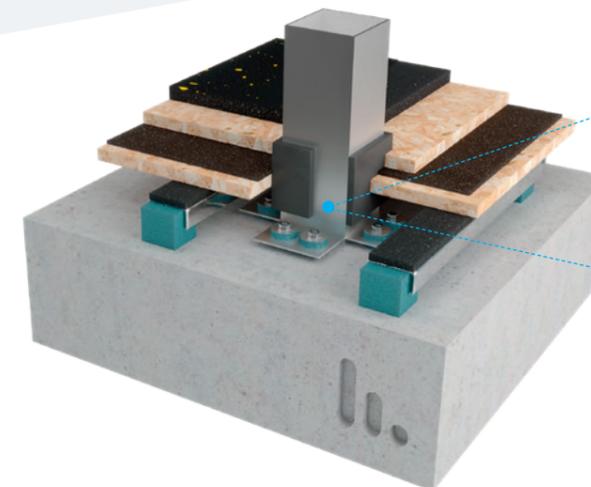
CDM-Treadpad
Isolation Pads for
Fitness Equipment



CDM-Stackrings
Impact Dampers for
Weight Machines (washers)



CDM-Stackpad
Impact Dampers for
Weight Machines (pads)



CDM-FIX
An engineered elastic restraint can be used to provide a permanent decoupled stabilized fixing for the gym equipment to the structural floor.

Alternative Floor Systems

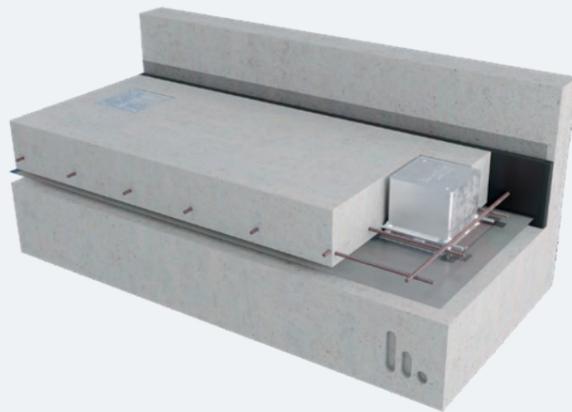
We have designed various robust concrete spring and elastomeric floor systems for locations where even higher levels of performance are needed (acoustical or mechanical resistance) such as Olympic weightlifting facilities or basketball courts.

For more information please take a look at our brochure on high-performance floating floors, contact your local representative or visit our website.



CDM-QuietDECK

High-performance acoustic floating floor deck system using dovetailed metal decking for shuttering and reinforcing concrete or screed floors of limited thickness.



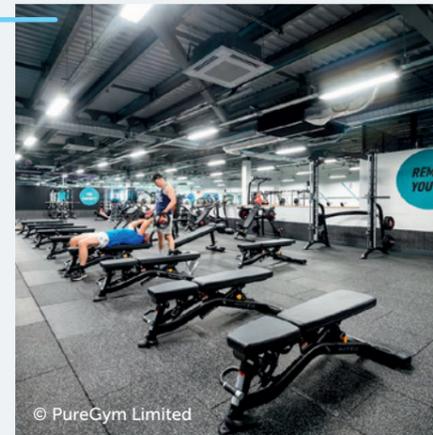
CDM-MONT

Isolated floating floor system using reinforced steel boxes cast into concrete and jacked up after the concrete has cured, to provide the required void depth. Available with springs or elastomeric bearings for enhanced damping.

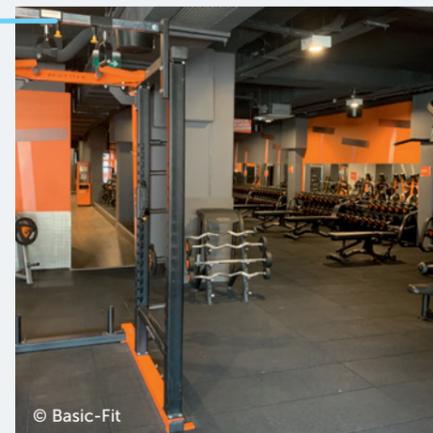
References

Individual solutions for gyms and fitness centers require flexibility in application, versatility in design and a sophisticated technology – these requirements have been met by our floating floor systems for more than 50 years. During that time, we have made many contributions to the intelligent design and soundproofing of gyms with our engineered products. Here we will present a selection of the most interesting tasks that we have carried out with well-known fitness brands and reputable acoustical consultants.

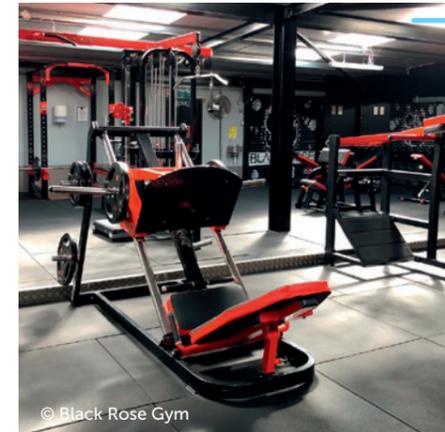
**Thorpe Park
PureGym**
Leeds
(UK)



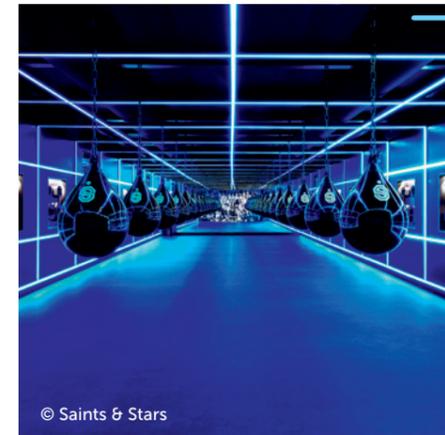
Basic-Fit
Aubervilliers
(FR)



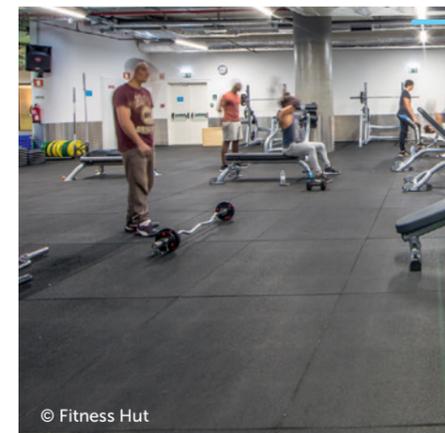
**Black Rose
Gym**
Dublin
(IE)



Saints & Stars
Amsterdam
(NL)



**Fitness Hut
Avenida de
Roma**
Lisbon
(PT)



**“ WE ARE WHAT WE
REPEATEDLY DO.
EXCELLENCE THEN
IS NOT AN ACT
BUT A HABIT.**

— ARISTOTLE



We have qualified engineers in noise and vibration based at different locations around the world – they are only a phone call away so why not contact them if you need help with your project. For general enquiries please contact our head office or visit our website.

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Delta-L B.V. | CDM Nederland

Delta-L is specialist op het gebied van geluidsisolatie en trillingsisolatie en ontwerpt, levert en monteert diverse systemen voor akoestische ontkoppelingen in de bouw en industrie.

Delta-L vertegenwoordigt CDM op de Nederlandse markt. CDM is opgericht in 1951 en is marktleider op het gebied van akoestische oplegsystemen voor de bouw en industrie en is actief in tientallen landen (30+ vestigingen wereldwijd).

Door onze expertise, jarenlange ervaring en grote database aan meetresultaten van zowel interne en externe laboratorium metingen als in situ metingen hebben we door de jaren heen een uitgebreid assortiment aan akoestische materialen ontwikkeld, welke we op een slimme manier verwerken in diverse akoestische systemen.

Tevens zijn wij hierdoor in staat u adequaat van dienst te zijn bij elke stap in het proces: analyse van het geluid of trilling probleem, het aanleveren van een akoestisch ontwerp, optimalisatie van het ontwerp, productie, levering en montage.

Er wordt continu gewerkt aan innovatie en optimalisatie van de akoestische systemen om uw wensen en eisen om te zetten in een deskundig advies op maat.

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