

APPLICATION BROCHURE REGUPOL SONUSFIT





THE NEED FOR ACOUSTICS IN GYMS

In mixed-use buildings, different utilization concepts are combined. Gyms provide a safe, functional, and comfortable workout environment. The more amenities and equipment, the more attractive the gym. To ensure the peaceful coexistence of the gym with other areas, an efficient soundproofing solution which reduces low-frequency noise is required.

Requirements for noise reduction are particularly complex due to different training methods and noise sources. Also, there is not a standard test method for acoustical measurements under conditions similar to those in gyms. So how do you evaluate acoustics for gyms?



SPECIAL CHALLENGES

The main problem is the lack of applicable test standards. The tapping machine offers a standardized measurement procedure, but it doesn't accurately represent gym noise. The Japanese rubber ball test is also standardized and provides low-frequency excitation, but doesn't use enough mass to simulate the energy input from weights.

Initial measurements with noise sources commonly found in gyms, such as dumbbells, barbells, and kettlebells, showed clear limitations in the reproducibility of the measurements. This can be attributed to the geometry of the test specimens. When dumbbells or barbells are dropped, they rarely hit the ground with both sides simultaneously. This doesn't occur with kettlebells. However, the base of most kettlebells is flat, which causes the edge to hit the ground at different angles. This generates different signals, which decreases accuracy and reproducibility.

OUR APPROACH

In order to ensure the reproducibility of measurements and comprehensively represent the most diverse noise sources, we first constructed a dropping machine that can lift various weights up to 200 kg at a height of two meters. The drop height is measured from the top of the floor to the bottom of the weight. By using steel balls with masses of 30 kg and 75 kg, it was possible to optimize the reproducibility to a sufficiently accurate level. Small deviations of about 1 dB occur in both the laboratory and the gym.

With this application-oriented and reproducible measurement process, **REGUPOL** is able to carry out numerous in-house tests. A wide variety of systems for fitness applications can be compared accurately. Elastic damping layers were combined in such a way that noise and risk of injury remained low. These are the results of the symbiosis of different expertises of **REGUPOL**: The **sonusfit** range combines decades of experience in the field of acoustics with equal experience in the field of fitness flooring. Thus, in addition to the clear goal of developing acoustically effective flooring systems, the focus has always been functionality.



OUR SOLUTIONS:

SPORTS FUNCTIONALITY AND QUIETNESS

WITHOUT COMPROMISE

The portfolio of the **REGUPOL sonusfit** range combines functionality with highly efficient sound insulation.

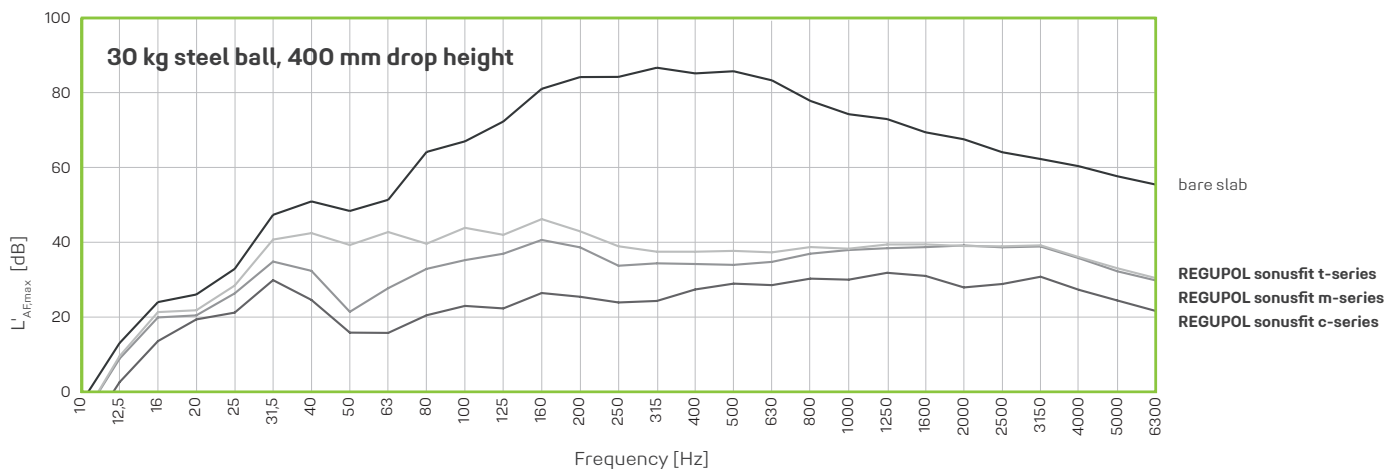
This is achieved by combining damping elastomers with **REGUPOL aktiv**, a long-proven surface for fitness applications.

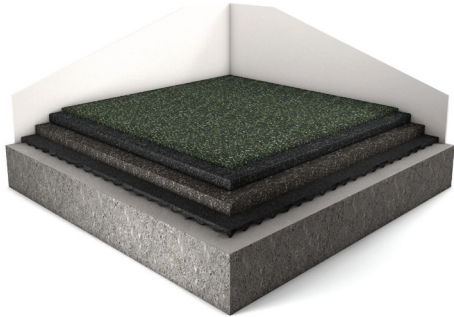
The impact on the subfloor from dropped weights is considerably reduced by the **REGUPOL sonusfit** systems. Simultaneously, the **sonusfit** safely allows for a wide range of exercises.

REGUPOL sonusfit at a glance

- Integrated fitness floor covering for gyms
- Perfect combination of acoustics and sport functionality
- Flexible design for various sound protection levels
- For retrofitting and new buildings
- Customized solutions possible

REGUPOL sonusfit compared



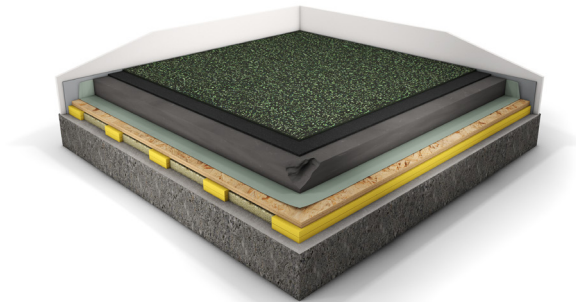


REGUPOL sonusfit m-series

The **REGUPOL sonusfit m-series** includes multi-layer systems. Elastomers with different damping and elastic properties are combined. **REGUPOL aktiv** is used as the top layer. This combination reduces structure-borne noise effectively, even without the use of a mass-spring system. Depending on the system, various stiffening layers are integrated in order to avoid impairing the stability of the athletes. The individual layers are laid on the subfloor or screed and glued together.

REGUPOL sonusfit c-series

The **REGUPOL sonusfit c-series** provides maximum flexibility regarding the acoustical design of the floor construction. The solutions can be adapted to the building project and designed to the desired target frequency. Both mass-spring systems with wet screed and dry screed can be implemented. This reflects the most effective method of isolating noise in gyms. In combination with the corresponding **REGUPOL sonusfit m-series** surface systems, the energy which the elastically supported screed has to bear is reduced, thus protecting the screed. Simultaneously, the functionality of the flooring is sustained.





REGUPOL America LLC

11 Ritter Way
Lebanon, PA 17042
phone +1 800 537 8737
info@REGUPOL.com

REGUPOL BSW GmbH

REGUPOL Australia Pty. Ltd.

REGUPOL Acoustics Middle East FZE

REGUPOL Schweiz AG

REGUPOL Zebra Athletics LLC

BSW Shanghai CO. LTD.

REGUPOL.us

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