GYMNASIUM FLOORS DATASHEET
04

# Technical Guidance
## Suspended Floors for Gymnasium Applications

**Figure 1**
Damaged infill blocks

**A suspended floor being used to support a gymnasium needs not only to be designed to withstand a higher imposed load but also to be robust enough to sustain the impact loads from gymnasium equipment.**

BS EN 1992-1-1 defines the imposed load for a gymnasium as 5.0kN/m$^2$ which is significantly higher than 1.5kN/m$^2$ used for domestic loading. In addition to the higher load there is a recommendation to design the floor to have a minimum Natural Frequency of 8.4Hz if the floor is subject to rhythmic activity.

Consideration should be given to the finishes applied to the floor as these need to be robust enough to withstand the impact loads from any free weights that might be available within the gymnasium. Figure 1 shows that whilst the prestressed beams are able to support the imposed load and withstand the impact load from free weights being dropped from waist height the aggregate infill blocks are not.

To withstand the impact loads it is recommended that a reinforced concrete topping is used over the floor. The addition of reinforcement will greatly increase the robustness of the floor over an unreinforced sand: cement screed.



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