

Addendum Report

Unit B, Aberfan Shopping Centre, Port Talbot, SA13 1PB

Client: ET Planning Limited
Project: Unit B, Aberfan Shopping Centre, Port Talbot
Reference: 250805-R006A
Report date: December 3, 2025
Author: Rob Cant MIOA MEnvSc
Checked By: Tommy Burn BSc (Hons) MIOA

ACA Acoustics Limited's has undertaken an assessment of the potential noise impact of a proposed fitness gym (report reference 250805-R001A), which has been submitted to Neath Port Talbot Borough Council in support of planning application reference P2025/0664. Following comments by C. Banks, an Environmental Health Officer at Neath Port Talbot Borough Council, an addendum report was submitted providing additional information (report reference 250805-R005).

C. Banks has raised further questions and clarifications in response to the addendum report. This addendum report has been prepared in response to provide the information requested.

Impact Sound Transmission to adjoining Receptors

The Environmental Health Officer has noted

"I maintain that previous objection based on insufficient information being provided in the addendum report. The original submitted acoustic report (report ref: 250805-R001A) provided sound insulation test results to evidence the noise tests undertaken. The addendum report has not. This is insufficient and leads to speculation whether the test results are robust as this does not allow for analysis or assessment."

Results of the impact sound insulation tests are included in a table in the addendum report. This is the same format as the results that were included in our original report (Table 7).

It is considered that the EHO is confusing the graphical results for the airborne sound insulation tests, included in Appendix A of our original report. These are formatted in accordance with ISO 16283-1 and ISO 717-1. There is no equivalent British or International standard for heavy-impact weight drop tests. As the EHO's comments did not relate to airborne sound transmission then these tests have not been repeated and remain as our original report.

The methodology set out in ProPG: Gym Acoustic Guidance (ProPG: GAG) requires sound levels to be measured in the receiving room in terms of a fine time history through the weight drops. An example of a weight drop test on a single 10mm thick layer of 'top layer' gym flooring is shown below for reference.

Head Office
12 Sheep Street
Highworth
Wiltshire
SN6 7AA

London
3 Shortlands
Hammersmith
London
W6 8DA

Manchester
Colony
5 Piccadilly Place
Manchester
M1 3BR

Birmingham
11 Brindley Place
Brunswick Square
Birmingham
B1 2LP

Email: info@aca-acoustics.co.uk

Website: www.aca-acoustics.co.uk

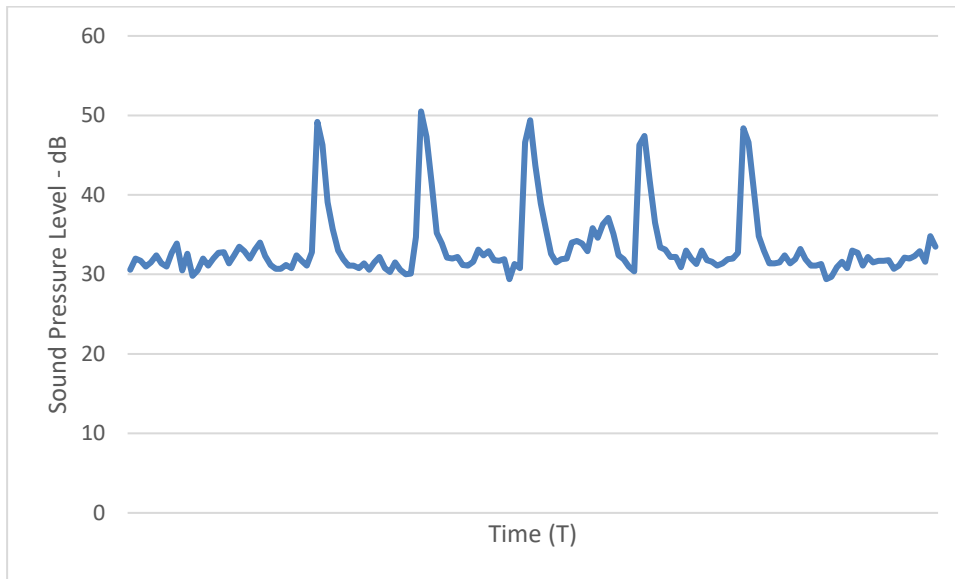
Tel: 01793 766 324

Tel: 0203 609 8733

Tel: 0161 327 1681

Tel: 0121 769 3422

Registered in England & Wales No: 08228154



One-third octave band sound levels are then taken for the peaks of the weight drops. These are corrected for background sound levels and then plotted against the reference G Curves, taken from ProPG: GAG. The G Curves are provided in 5dB increments, and the results rounded up to the next highest G Curve value. This means that a result with the measured level in just one one-third octave band value exceeding the G20 reference curve by 1dB would be reported as G25, for example.

The highest of these calculated G Curve values for the individual test is taken to be the result for that test sample. This value is reported in the table included in our reports for the relevant test position and flooring configuration.

Tests are repeated with different configuration of flooring build-ups until the measurement results achieve the required criteria.

The EHO moves on to discuss the type of acoustic flooring used for the tests, noting

“The original submitted acoustic report (report ref: 250805-R001A) provided details that recommended ‘that any areas where there is potential for heavy impacts (including free weights, slam balls, tractor tyres, pin-loaded resistance machines, etc.) are likely to require a jacked-up floating floor system with resilient layer above’ and that ‘It is recommended that a further test is conducted using a test rig of a jacked-up floor along with additional resilient layers’. There is no detail in the addendum report which states that the proposed noise mitigation is that which is recommended in the original report.”

The original tests were conducted using flooring provided by Pliteq – a resilient flooring system manufacturer. The lowest measured sound level due to the weight drop tests with their best-performing flooring system was G30, with a quiet – but audible – low ‘thud’ from the weight drop.

As this tests utilised Pliteq’s highest performing gym flooring configuration, the author considered that to achieve a higher level of isolation, a jacked-up floor would likely be required.

However, side-by-side testing with three different manufacturer's flooring on a recent different fitness gym development identified that a higher level of isolation/noise reduction could be achieved from an alternative manufacturer.

As such, Absolute Performance Limited were invited to assist in undertaking the repeat weight drop testing, requested by the EHO following submission of our original report.

Absolute Performance provided various configurations for the purposes of the tests, and it was determined that with their 70mm tile on two layers of 25mm dimpled rubber, noise from the weight drop was completely inaudible to the residential receptor location and did not exceed G20-G25 – the background sound level was G20-G25 and therefore it was not possible to determine the exact sound level from the weight drop other than to confirm it was below these levels. This therefore complies with the guideline criteria for a good standard of amenity to residential receptors set out in ProPG: GAG.

In conclusion, whilst the flooring tested during these repeat tests is not that proposed in our original report, it has been demonstrated by these tests that a jacked-up up floating floor system is not required and flooring from an alternative manufacturer has achieved a much greater improvement/lower levels of noise transmission compared to the flooring used in the original tests.

The EHO also includes comments on the test methodology used, commenting

"The impact sound transmission tests have been undertaken following the ProPG: Gym Acoustic Guidance methodology. The guidance or methodology is not disputed in principle however planning should strongly note that the method used within this assessment is with a consistent weight of an approved mass – in this case, a 23kg weight. In reality, and for practical reasons of operating a modern gym and for gym users, weights go far above 23kg. Free weights (both dumbbell and barbell weights, and other weights) and resistance machine weights often go up to (either singularly or combined) 80 or 100kg approximately. The mitigation proposed by the addendum report demonstrates that the 'ProPG: Gym Acoustic Guidance' noise criteria could be met but only with 23kg maximum weight as per the methodology used. Should weights significantly above 23kg be used, there is a relatively high risk of noise intrusion to the adjacent residential occupiers. This matter can be regulated either by an agreed planning condition limiting weights to 23kg (which I don't believe the proposed operator would be in agreement to as this is limiting to a modern-day gym use) or the applicant submits further tests and sound insulation and mitigation measures to a much higher weight which is practical to a modern gym use."

It is acknowledged that the results obtained for the test are only applicable for the specific weight used, however, from testing carried out by ACA Acoustics at a previous gym, we have determined that noise transmission from weight drops for a kettlebell are equivalent to the noise transmission for double the weight of a dumbbell or barbell. The reason for this is that a dumbbell/bar weight has half the total weight at either end. These impact the floor at fractionally different times, meaning that the resultant sound level at the receptor has two peaks fractionally apart, but to the same maximum sound level as a kettlebell of the same weight as one half of the dumbbell/bar weight.

This means that testing for a kettlebell at 23kg will be equivalent to the sound transmission for a dumbbell/bar weight of around 45-50kg. This is the heaviest dumbbell at most gyms and the tests therefore demonstrate that noise transmission from these will fully comply with the guideline criteria. It is also helpful to remember that with the flooring configuration used, weight drop noise was inaudible during the tests and therefore use of heavier weights may also comply with the guideline criteria using this same configuration.

The EHO references barbells and resistance machines. However, it is impractical to bring resistance machines or Olympic lifting weights for an assessment at planning stage. It is for this reason that ProPG provides the Method B assessment methodology, utilising a kettlebell of an approved mass to demonstrate that the site is suitable for gym development. Furthermore, while barbells can increase to greater weights, it is useful to consider that the weight is halved at either end of the bar, and comments relating to the dumbbells above are applicable.

The testing undertaken demonstrates that the Absolute Performance flooring configuration is suitable to achieve a good standard of amenity in adjoining residential receptors during the use of kettlebells/dumbbells and general gym activity. There are also specific isolation/noise mitigation measures applicable to resistance machines and heavy bar weights. Bar weights are to be provided as part of a 'Rack' system with dedicated lifting stations. These incorporate a timber platform providing a stable base for users to stand on, with rubber isolators either side where the weight is placed. These provide additional isolation for heavy bar weights. Similarly, for resistance machines there are additional isolators that fit to the machines themselves, such as from Pliteq ([GenieMat WSI Weight Stack Isolator Product Spec Guide](#)). This provides up to 99% isolation efficiency and 40dB reduction in sound transmission.

The lifting station platforms and isolators to the resistance machines would be designed, as appropriate, to ensure compliance with the recommended criteria.

Finally, we agree with the EHO comments relating to a planning conditions relating to internal noise levels in the spin/class studio and external mechanical plant.