

# Audiology Facility Test Report

Project: A Hospital  
Reference: 24322  
Date: 06/05/2009



## Introduction

Following completion of the Audiology facility at this project, commissioning tests have been carried out to assess compliance with the specified requirements.

## Test Methodology

Measurements were made of the airborne sound insulation, reverberation time, ambient noise (including services noise), and impact sound insulation for each of the audiology rooms.

Airborne sound insulation tests were carried out in accordance with BS EN ISO 140-4:1998, using two loudspeaker positions (located to generate as diffuse a field as possible), and five microphone positions per loudspeaker position. Single-figure ratings were calculated in accordance with BS EN ISO 717-1:1997.

Reverberation times were determined from an average of at least six sets of measurements (three microphone positions for each of two loudspeaker positions).

Ambient noise levels were measured in unoccupied but fully furnished rooms, with mechanical services systems operating at normal settings. Measurements were taken at 1.2m above floor level, at a roughly central position in each room.

Impact (flanking) noise levels were measured using a regulation tapping machine located in a single position on the carpeted floor outside the room. A minimum of four evenly-distributed measurement positions were used within the room, and the results averaged.

The following instrumentation was used in the course of the tests described above:

- B&K 2206 Sound Level Analyser
- B&K 4189 0.5" microphone
- B&K 4231 calibrator
- JBL 10G2 active loudspeaker
- Crest 1131 graphic equaliser
- B&K 3207 tapping machine

All instruments carry current calibration certificates (where applicable); copies can be provided on request.

## Results

Results of the tests are presented in the following format:

- Summary sheet for each room, indicating compliance or otherwise
- Several sheets per room with raw data from analyser and associated calculations

## Notes

Measurements below 8dB at 2kHz and above can be affected by the noise floor of the sound level analyser. This influences some reported results for both ambient noise and impact noise (i.e. sets a minimum level that can be measured).

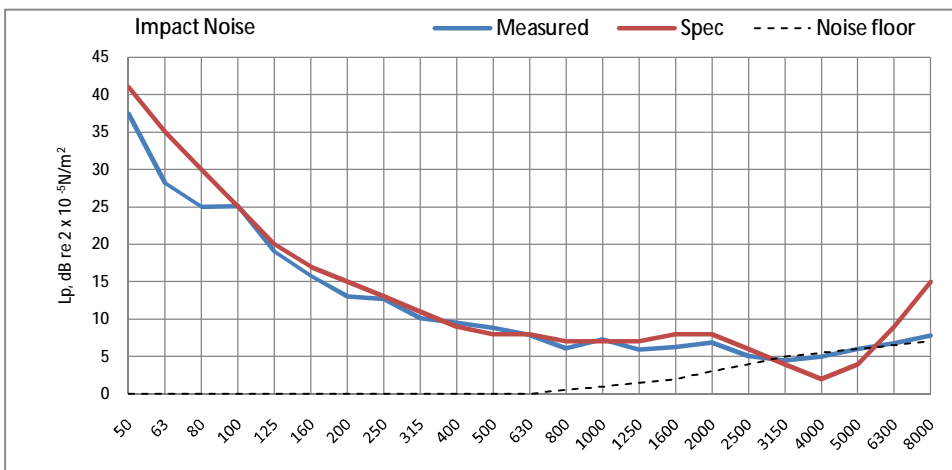
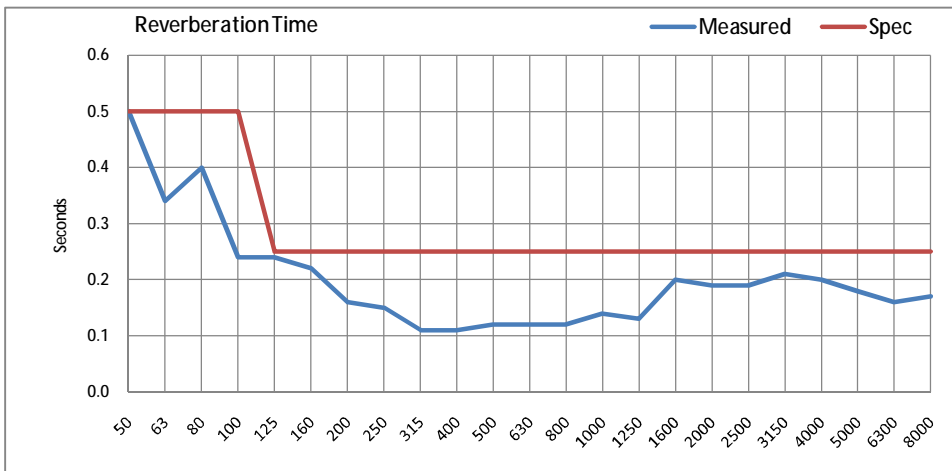
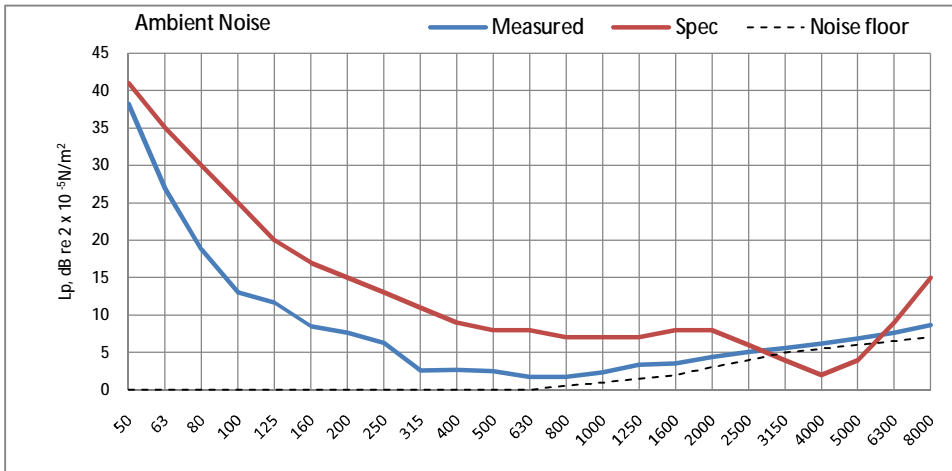
Annex D of BS EN ISO 140-4:1998 states that low-frequency measurements (including reverberation time) can be unreliable in rooms with small volumes. This potentially affects some reported results for all tests below about 160Hz.

**Audiology Facility Test Report Summary**

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Ref: 24322

Project: A Hospital  
 Room: Audiology Room 1  
 Design Level: 0dBHL



**Sound Insulation**

From	R' <sub>w</sub>	Privacy Factor
Corridor	64	82
Control Room	65	83
Audiology Room 2	73	91

Pass	Fail
√	