

IMPACT NOISE INSULATION - FIELD TEST REPORT SUMMARY

Report Reference:	MB460-01F02 (r0) Impact Field Test - Timber.docx		
Date of Test:	11th August 2014		
Form of Construction:	1 sq. m sample of: -Engineered timber adhered with Stauf One-step SMP960 -200mm concrete slab -No ceiling (exposed soffit)		
Building:	Station Hotel, 96-102 Greville Street, Prahran		
Source Room:	Apartment No: U203	Occupancy Type:	Kitchen / Living
Receiver Room:	Apartment No: U103	Occupancy Type:	Kitchen / Living
Measured Weighted Standardised Sound Pressure Level	$L'_{nT,w} (C_i)$		57 (-4) dB
Measured Weighted Standardised Sound Pressure Level plus Spectrum Adaptation Term	$L'_{nT,w} + C_i$		53 dB
Impact Sound Insulation Requirement	$L'_{nT,w} + C_i$		62 or less
Compliance with NCC Part F5 Impact Sound Insulation Requirement			Yes

Measurements conducted in general accordance with International Standard ISO 140-7 "Field Measurements of Impact Sound Insulation of Floors", impact noise ratings determined in accordance with Australian/International Standard AS/ISO 717-2 "Impact Sound Insulation. Measurements and procedures documented in this report have been carried out in accordance with the Renzo Tonin & Associates Quality Assurance System. This quality system is based on AS/NZS ISO 9001:1994




Testing Engineer	Checked By
Darren Tardio	Andrew Lloyd

Standardized Impact Sound Pressure Level according to ISO 140-7

Field measurements of impact sound insulation of floors

Client: Figurehead Construction

Date of test: 11/08/2014

Description and identification of the building construction and test arrangement:

1 sq. m sample of:

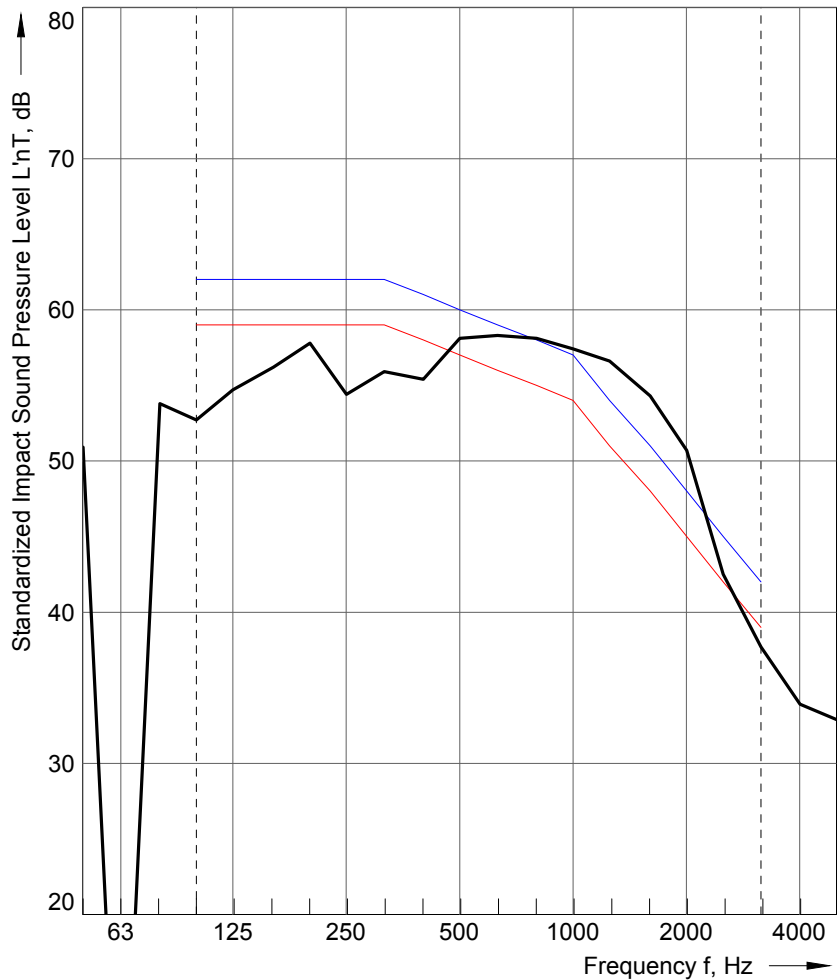
- Engineered timber adhered with Stauf One-step SMP960
- 200mm concrete slab
- No ceiling (exposed soffit)

Receiving room volume V: 65.00 m³

----- Frequency range according to the
 _____ curve of reference values (ISO 717-2)

Frequency f Hz	L'nT 1/3 Octave dB
50	50.9 B
63	0.0
80	53.8
100	52.7
125	54.7 B
160	56.2
200	57.8
250	54.4 B
315	55.9
400	55.4
500	58.1
630	58.3
800	58.1
1000	57.4
1250	56.6
1600	54.3
2000	50.7
2500	42.5 B
3150	37.7 B
4000	33.9 B
5000	32.9 B

B: L'nT =< value shown



Rating according to ISO 717-2

$$L'_{nT,w}(C_i) = 57 (-4) \text{ dB}$$

$$C_{i,50-2500} = \text{N/A dB}$$

Evaluation based on field measurement results obtained in one-third-octave bands by an engineering method

No. of test report: MB460-01F02

Name of test institute: Renzo Tonin & Associates

Date: 12/08/2014

Signature: D. Tardio

APPENDIX A Impact Test Methodology

A.1 Introduction

There is no procedure specified in the NCC or in Australian Standards for the testing of floor and ceiling systems. In the absence of such provisions the testing procedure adopted is derived from the following Standards:

- International Standard ISO 140-7 "Field measurements of impact sound insulation of floors";
- International Standard ISO 717-2 "Impact sound insulation".

A.2 Test Procedure

Tests were conducted according to the following procedure:

- A tapping machine was placed in two different positions distributed on the floor sample in general accordance with ISO Standards indicated above;
- While this tapping machine was operating, noise levels were recorded in six positions in the receiving room for each of the two tapping machine positions using a B&K2250 sound level meter. The measured noise level was filtered simultaneously in all one-third octave frequency bands in real time. These values were recorded and subsequently statistically analysed to determine the average sound pressure levels for each room and to indicate the precision of the measurements;
- The reverberation time of the receiving room was measured in accordance with ISO 354.

A.3 Instrumentation and Analysis

The sound level meter has been calibrated to Australian Standards by a certified NATA laboratory. Further to this, a calibration was conducted prior to and subsequent to the measurements using a Bruel & Kjaer Type 4231 Acoustic calibrator. The sound level meter conforms to a Type 1 instrument as defined in AS1259 - 1990 "Sound Level Meters".

The impact isolation of the specimen was then calculated using the following relationship:

- $L'n = Li + 10 \log (A/Ao)$
- $L'nT = Li - 10 \log (T/To)$

Where:

- Li = Impact Sound Pressure Level receiver room dB
- A = Measured equivalent absorption area of the receiving room metric Sabines (m²)
- Ao = Reference equivalent absorption area (10m²) metric Sabines (m²)

- T = Measured reverberation time of the receiving room (sec)
- T_0 = Reference reverberation time (0.5 sec)

The Weighted Normalised Impact Sound Pressure Level $L'_{n,w}$, the Weighted Standardised Impact Sound Pressure Level $L'_{nT,w}$ and the adaptation term CI were determined in accordance with ISO 717-2.

A.4 Precision

Measurements were conducted in accordance with procedures outlined on the summary page of this report.