GABRIELS HEARNE FARRELL

FIELD FLOOR IMPACT SOUND ISOLATION

BUILT IT ECO ACOUSTIC TESTING
13 CARRINGTON ST, PALMYRA APARTMENTS

17th December 2019

For

BUILDITECO

Unit 8 / 49 Prindiville Drive
WANGARA WA 6065

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CONTENTS PAGE

1. INTRODUCTION 2
2. IMPACT ISOLATION RATING SYSTEMS 2
3. TEST SET-UP AND PROCEDURE 2
3.1 TEST METHOD 2
3.2 BUILDING 2
3.3 SOURCE ROOM 3
3.4 RECEIVING ROOM 3
3.5 FLOOR TESTED 3
3.6 NOISE SOURCE 3
3.7 NOISE LEVEL MEASUREMENTS 4
3.8 ABSORPTION IN RECEIVING ROOM 4
4. RESULTS 4
4.1 RESULTS OF MEASUREMENTS 4
5. CONCLUSION 5

ATTACHMENTS

- APPENDIX A - Background Information on Impact Isolation Tests
- APPENDIX B - Testing Data Sheets (x9)
- APPENDIX C - Comparison Graphs (x4)

Report Version	Author	Notes	Date
Initial Report	Michael Ferguson		17th December 2019

1. INTRODUCTION

Gabriels Hearne Farrell Pty Ltd were engaged by Buildit Eco to measure the field impact isolation performance of a range of flooring samples of the installed lightweight panel system. The testing was undertaken in the apartments at 13 Carrington St, Palmyra. The samples tested were located in the Sitting area and Bedroom 2 of Unit 4, with the receiver room being the Kitchen / Living area of Unit 5.

The testing was undertaken on Thursday afternoon 5th December, 2019.

2. IMPACT ISOLATION RATING SYSTEMS

Floor impact noise is rated in terms of the noise levels received in the room directly below the floor being impacted. **The International Standard ISO 717-2** rates the resultant noise level produced in the room under the floor in terms of the $L'_{nT,w}$. **The lower the $L'_{nT,w}$ the lower the noise level of impact heard within the room**.

As the reverberation time in the room can vary in a room depending of the level of soft furnishings, the International Standard allows for the 'standardisation' to a 0.5 second reverberation time in all frequencies. In practice it is found that most furnished rooms have a 0.5 second reverberation time irrespective of volume. This is an appropriate reporting measure, which to some extent, takes out the variance of room volume and absorption in the receiving rooms. The Impact Sound insulation determined by the measurements is therefore reported as the "Weighted Standardised Impact Sound Pressure Level ($L'_{nT,w}$).

The Building Code of Australia (BCA) establishes a criteria for impact noise transmission in new apartment buildings in terms of the L_{nTw} of not greater than 62 dB, however a value lower than this is typically aimed for as the Building Code requirements are should only be seen as a bare minimum performance. In the past we have recommended a minimum of L_{nTw} of not greater than 55 dB is aimed for, however this does depend upon the 'status' of the apartment in which the flooring is being installed.

3. TEST SET-UP AND PROCEDURE

3.1 Test Method

The testing was based on the requirements of:

- ISO 140-7: *"Acoustics – Measurement of sound insulation in building and of building elements; Part 7: Field measurement of impact sound insulation of floors"*.
- ISO 717-2: *"Acoustics – Rating of sound insulation in Buildings and of Building elements; Part 2: Impact Sound Insulation"*.

3.2 Building

The apartments are located in a complex currently under construction. The basic construction is a lightweight flooring system with either the 53mm Supafloor panel in the main living areas, or the 18mm Supaboard panel in the bathroom areas. All of the samples tested in this report were located on the 53mm Supafloor product. Our understanding is the following construction:

53mm Supafloor:

- 10mm High Strength Supaboard
- 37mm M Grade Termite treated EPS core
- 6mm Supaboard

Below these panel systems the flooring was timber joists and plasterboard ceilings. The walls were of a combination lightweight construction in some areas, with masonry walls in other areas where required.

The general layout of the units are an 'L' shape when viewed in Section. Therefore there are some rooms above different Sole-Occupancy Units, whereas some areas are only located over the same unit. Testing was only undertaken to a separate SOU where flanking noise was well controlled.

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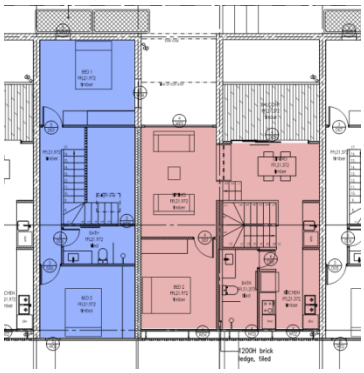
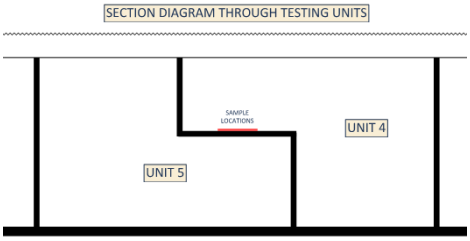
3.3 Source Room

The source room is rectangular shaped room split in approximately half by a wall. This walls and door separates the Sitting Area and Bedroom 2 of Unit 4. The source room also extended out over the living area, however this living area was located completely above the same unit, see floor plan / diagram below:

Ground Floor



First Floor



Section Diagram

The room was bare at the time of testing with no floor coverings down expect for the sample areas tested. Windows and doors were closed such that flanking sound transmission to the receiver room was controlled.

3.4 Receiving Room

The receiver room below was approximately 8.2m x 5.5m x 2.7m. The receiver room was also bare with no floor finishes during the measurements undertaken. Some construction equipment / materials were within the room.

It should be noted that there was a party wall located adjacent to the samples, separating the source / sample room from the receiver room. This wall did not appear to influence the testing results.

3.5 Floor Tested

The floor tested was 9 different samples of various types with and without acoustic underlays. The materials and construction including adhesives used on each sample can be seen in Section 4.1 of this report.

The bare flooring panel in both the sitting area and the adjacent bedroom was tested for comparative purposes. It should be noted that due to the proximity to walls on the ground floor it is expected that the bare floor tested below the bedroom will perform slightly worse. When comparing samples tested in this room we would expect similar difference if these sample were tested in the sitting area. this is explained in more detail in the conclusion.

We were advised all adhesives used were laid at least 3 days prior to the testing being conducted, allowing time for adhesives used to adequately cure as applicable.

The floor / ceiling construction below the test area was as follows:

- 53mm Supafloor panel
- 240mm timber smart joist with R4.0 fibreglass insulation in cavity space
- 70mm resilient mounts to underside of joist
- 1 x 16mm fire rated plasterboard ceiling

3.6 Noise Source

A Norwegian Electronics NOR211 Tapping Machine was used to generate impact noise. The Tapping machine was checked and adjusted to ensure the 40mm drop height for the hammers of the tapping machine to the floor was maintained and that the machine was level.

The tapping machine was set up at two different positions on each of the samples tested, as well as three additional positions on the adjacent bare floor. The machine was orientated at a 45 degree angle to the walls (i.e. diagonally across each test location). The source was rotated 90 degrees for each test location.

3.7 Noise Level Measurements

Noise level measurements were taken with a NATA calibrated *Brüel & Kjær* 2270 Investigator Sound Level Meter (certificate can be supplied if requested). The meter was field calibrated prior to and after measurements with no significant drift noted.

One third octave band sound pressure level measurements (L_{Aeq}) were taken as a general sweep of the area below the tapping machine, with the source at the approximate centre of the sweep area. Measurements were not taken closer than 1.2 metres to perimeter walls.

Background noise levels were measured in the receiving room. Where the impact sound levels are within 10dB of the background noise levels, a correction for background noise must be made in accordance with ISO 140-7. This was only required in the tested carpet sample due to the high performance of the flooring system.

3.8 Absorption in the Receiving Room

The absorption in the receiving room was determined from the Reverberation Times (RT). The RT's were measured in 1/3 octave bands from an impulse noise source using the *Brüel & Kjær* 2270. Four different positions around the room were measured.

4. RESULTS

4.1 Results of Measurements

The results of the measurements are set out in Table 1.

Test	Source Room	Receiver Room	Details	L_{nTw}
01	Sitting Area	Living Room	Carpet on Underlay	**27 dB**
02	Sitting Area	Living Room	Timber glued to 3mm Acoustimat (glued to panel)	**57 dB**
03	Bedroom 2	Living Room	Timber floating on 3mm Acoustimat (glued to panel)	**56 dB***
04	Sitting Area	Living Room	Timber floating on Woodpeckers underlay	**54 dB**
05	Sitting Area	Living Room	Jazz vinyl flooring	**57 dB**
06	Bedroom 2	Living Room	Jazz vinyl floating on 3mm Acoustimat (glued to panel)	**58 dB***
07	Sitting Area	Living Room	10mm tile glued to 3mm Acoustimat (glued to panel)	**57 dB**
08	Sitting Area	Living Room	10mm tile glued to 5mm Acoustimat (glued to panel)	**57 dB**
09	Bedroom 2	Living Room	5mm vinyl tiles glued to 3mm Acoustimat (glued to panel)	**58 dB***
10	Sitting Area	Living Room	Bare panel	**58 dB**
11	Bedroom 2	Living Room	Bare panel	**59 dB**

TABLE 1: Summary of Test Results

*These values can likely be reduced by 1 dB due to the difference measured on the bare floors in each of these rooms.

The relevant Field Impact Sound Insulation Data Sheets (1 page) are attached to and forms part of this report. If reproduced, the report must be reproduced in full.

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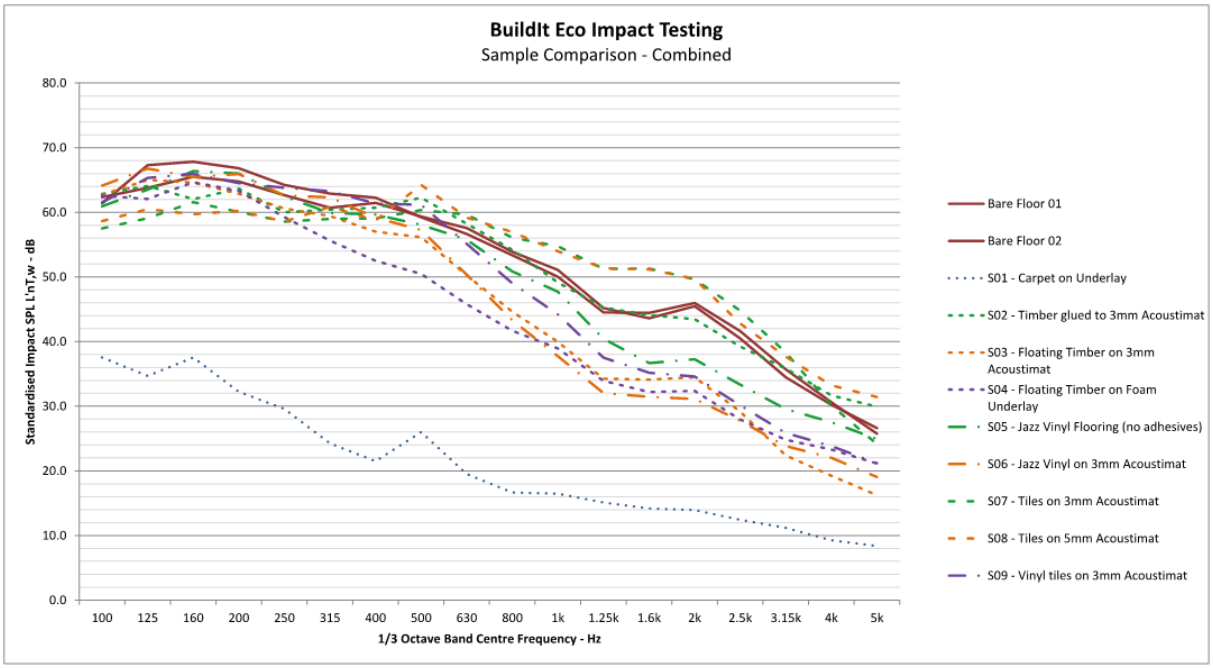
5. CONCLUSION

The results of the testing undertaken are showing similar L'_{nTw} for all samples, except for the carpet on underlay sample which performed significantly better. All of the samples tested meet the minimum requirements for the Building Code of Australia with an L'_{nTw} of no greater than 62.

It should be noted that whilst all samples tested achieved similar L'_{nTw} values, the audible differences between the samples tested were quite noticeable. The similarity in results is largely to do with the L'_{nTw} calculation method and the inherent properties and performance of lightweight flooring systems. The audible differences in the Standardised Impact SPL between the samples can be seen in the graph below:



Graph 01 - Standardised Sound Pressure Level Comparison

The test results as set out on the Data Sheets are the results of measurements at specific locations within the building. The field impact noise performance of any specific construction will vary between buildings, and to some extent between floors in the same building. The resulting performance of floor systems is dependent on many variables including; thickness, type and spacing of floor construction and structure, floor material strength, connection to adjoining structure, distance between load bearing walls, alignment of walls, ceiling and ceiling suspension system, ceiling insulation etc. Unlike airborne noise transmission, structure borne noise transmission in buildings cannot be accurately predicted. It is therefore important to note, that the results of field tests in one building cannot be assumed to be achieved in another building.

If you have any queries regarding this information please call the undersigned on 9474 5966.

Regards,

Michael Ferguson
Associate Director *B.IntArch(Hons) M.A.A.S.*

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APPENDIX A

BACKGROUND INFORMATION ON IMPACT ISOLATION TESTS

A1. Criteria

The Building Code of Australia has established a criteria of a maximum L_{nTw} + $\mathbf{C_I}$ of 62 dB. As the $\mathbf{C_I}$ is an anomaly, it is recommended that L_{nTw} of 62 is taken as the criteria.

The BCA establishes minimum performance standards. The Association of Australian Acoustic Consultants (AAAC) established performance in terms of a 6 star rating. The standards established in their document are:

★★	L'_{nTw} 65 dB
★★★	L'_{nTw} 55 dB
★★★★	L'_{nTw} 50 dB
★★★★★	L'_{nTw} 45 dB
★★★★★★	L'_{nTw} 40 dB

It should be noted that carpet will generally achieve an L_{nTw} below 40 dB

A2. Performance of Impact Isolation Systems in the Field

The impact noise level of a floor covering plus acoustic underlay compared to the performance of the bare floor surface is a useful indicator of the reduction in impact noise provided by a particular acoustic underlay product. Over a number of tests, this may be able to provide an indicator of the expected performance. Of greater value is the field testing of various acoustic underlays on the same site; this provides good comparative performance between acoustic underlays.

A field test on a specific project is therefore the most reliable method of identifying the expected performance for a particular acoustic underlay in a particular building.

A3. Loudness Versus Decibels

The following Table is an approximation of human sensitivity to changes in sound pressure level. Although the ear registers change in sound pressure, it is transferred to the brain where it is recorded by its loudness. This makes hearing quite individualised. The perceived loudness is also dependant on the frequency content of the sound. The Table should be seen as a useful approximation to keep in perspective the impact of changes in sound level.

1 dB difference	Almost imperceptible
2 dB difference	Just perceptible
3 dB difference	Noticeable
5 dB difference	Clearly Noticeable
10 dB difference	Twice (or half) as loud

With floor impact isolation underlays, there is usually a discernible change in frequency response with a small change in the L'_{nTw}.

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13 December 2019

FIELD IMPACT SOUND INSULATION
DATA SHEET

Project No: 19-086
Project: BuilditEco Acoustic Testing
Client: BuilditEco
Task: Sample Impact Testing
Details: Carpet on Underlay

Tested / Evaluated: AS/ISO 140-7 & 717-2

Meas. Date: 5-Dec-19
Tapping Machine: NE Nor 211
Receiving Room Volume: 122 m3
No. of Source posn: 2
Mic. posn: 2 sweeps
RT meas: 4 Imp.
SLM: B&K 2270

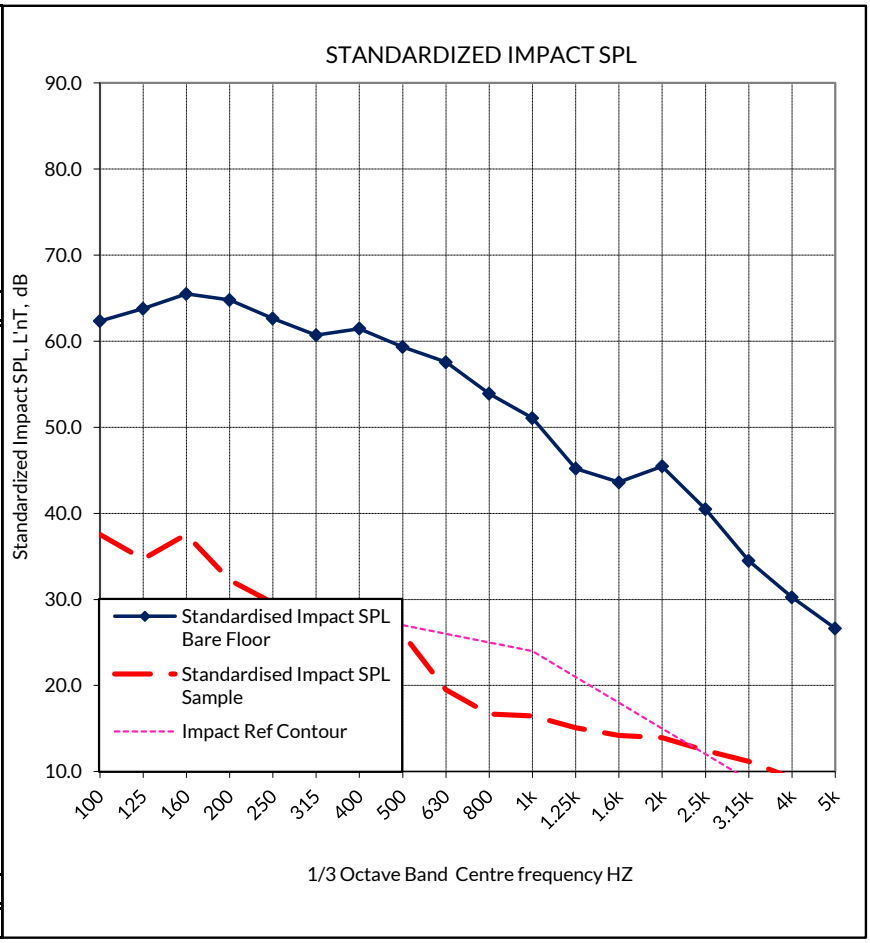
Description of Specimen:

Carpet sample
Underlay

53mm Supafloor Panel Flooring
240mm timber smart joist - R4.0 insulation in cavity
70mm resilient mounts
1 x 16mm firerated flush plasterboard

	Carpet on Underlay	Bare Floor
Weighted Standardized Impact SPL	**L'nT,w 27**	**58**
Results standardized to a RT of 0.5 seconds	C_I 1	-1

Centre Frequency		Standardised Impact SPL Bare Floor	Standardised Impact SPL Sample	Impact Ref Contour	Deficiencies
Hz			dB	dB	dB
100		62.3	37.5	29	8.5
125		63.8	34.7	29	5.7
160		65.5	37.6	29	8.6
200		64.8	32.2	29	3.2
250		62.7	29.6	29	0.6
315		60.7	24.2	29	
400	<	61.5	21.5	28	
500		59.3	26.0	**27**	
630	<	57.6	19.5	26	
800	<	53.9	16.7	25	
1k	<	51.1	16.5	24	
1.25k	<	45.2	15.1	21	
1.6k	<	43.6	14.2	18	
2k	<	45.5	13.9	15	
2.5k	<	40.5	12.4	12	0.4
3.15k	<	34.5	11.2	9	2.2
4k		30.2	9.3		
5k		26.6	8.4		
					Total
L'nT,w			27		29.2



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FIELD IMPACT SOUND INSULATION
DATA SHEET

Project No: 19-086
Project: BuilditEco Acoustic Testing
Client: BuilditEco
Task: Sample Impact Testing
Details: Timber on 3mm Acoustimat

Tested / Evaluated: AS/ISO 140-7 & 717-2

Meas. Date: 5-Dec-19
Tapping Machine: NE Nor 211
Receiving Room Volume: 122 m3
No. of Source posn: 2
Mic. posn: 2 sweeps
RT meas: 4 Imp.
SLM: B&K 2270

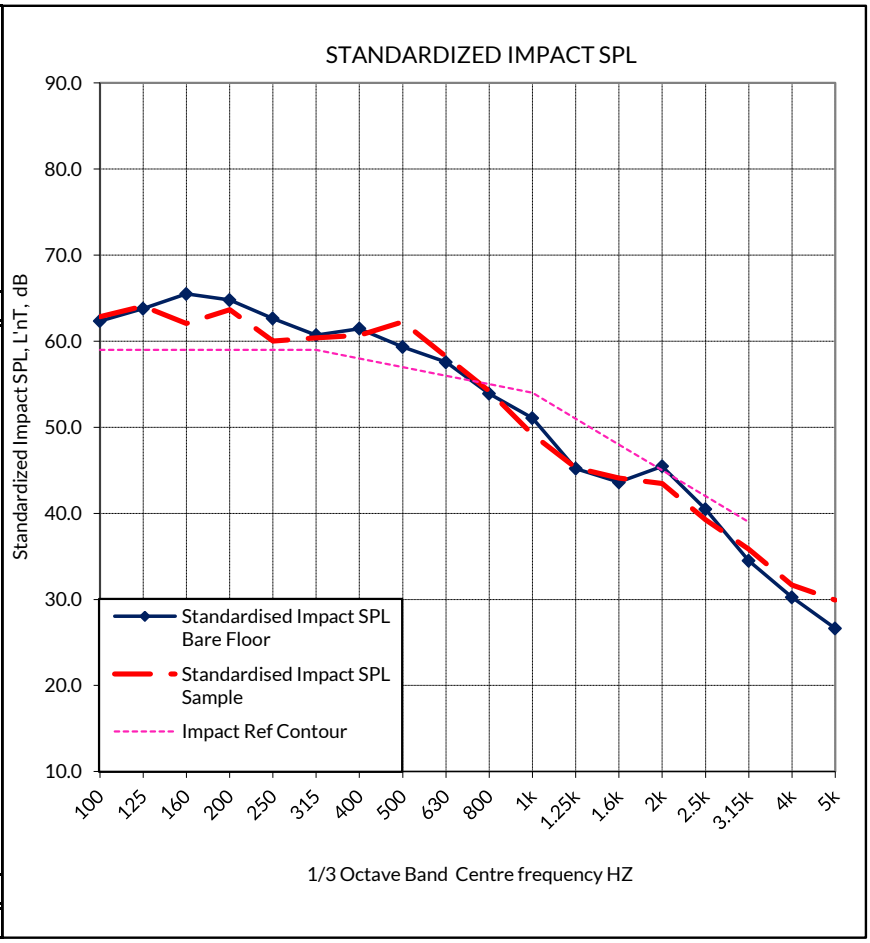
Description of Specimen:

Engineered Timber Floor Boards
Adhesive - 10mm notched trowel
3mm Acoustimat underlay
Adhesive - 10mm notched trowel

53mm Supafloor Panel Flooring
240mm timber smart joist - R4.0 insulation in cavity
70mm resilient mounts
1 x 16mm firerated flush plasterboard

	Timber on 3mm Acoustimat	Bare Floor
Weighted Standardized Impact SPL	**L'nT,w 57**	**58**
Results standardized to a RT of 0.5 seconds	C_I 0	-1

Centre Frequency	Standardised Impact SPL Bare Floor	Standardised Impact SPL Sample	Impact Ref Contour	Deficiencies
Hz		dB	dB	dB
100	62.3	62.9	59	3.9
125	63.8	64.1	59	5.1
160	65.5	62.0	59	3.0
200	64.8	63.7	59	4.7
250	62.7	60.0	59	1.0
315	60.7	60.4	59	1.4
400	61.5	60.7	58	2.7
500	59.3	62.3	**57**	5.3
630	57.6	58.2	56	2.2
800	53.9	54.2	55	
1k	51.1	49.2	54	
1.25k	45.2	45.3	51	
1.6k	43.6	44.1	48	
2k	45.5	43.5	45	
2.5k	40.5	39.2	42	
3.15k	34.5	35.9	39	
4k	30.2	31.7		
5k	26.6	29.9		
				Total
L'nT,w		57		29.3



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13 December 2019

FIELD IMPACT SOUND INSULATION
DATA SHEET

Project No: 19-086
Project: BuilditEco Acoustic Testing
Client: BuilditEco
Task: Sample Impact Testing
Details: Floating Timber on 3mm A-mat

Tested / Evaluated: AS/ISO 140-7 & 717-2

Meas. Date: 5-Dec-19
Tapping Machine: NE Nor 211
Receiving Room Volume: 122 m3
No. of Source posn: 2
Mic. posn: 2 sweeps
RT meas: 4 Imp.
SLM: B&K 2270

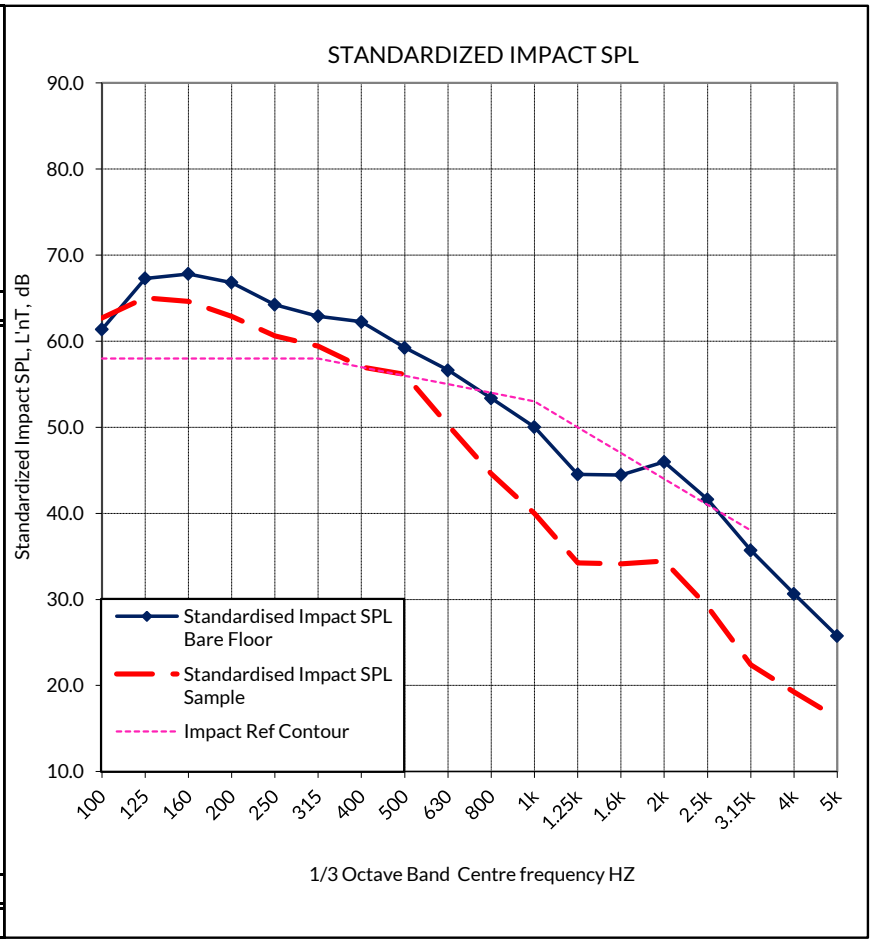
Description of Specimen:

Engineered Timber Floor Boards
No adhesives
3mm Acoustimat underlay
Adhesive - 10mm notched trowel

53mm Supafloor Panel Flooring
240mm timber smart joist - R4.0 insulation in cavity
70mm resilient mounts
1 x 16mm firerated flush plasterboard

	Floating Timber on 3mm A-mat	Bare Floor
Weighted Standardized Impact SPL	**L'nT,w 56**	**59**
Results standardized to a RT of 0.5 seconds	**C_I 0**	**0**

Centre Frequency	Standardised Impact SPL Bare Floor	Standardised Impact SPL Sample	Impact Ref Contour	Deficiencies
Hz		dB	dB	dB
100	61.4	62.7	58	4.7
125	67.3	65.0	58	7.0
160	67.8	64.6	58	6.6
200	66.8	62.9	58	4.9
250	64.3	60.6	58	2.6
315	62.9	59.4	58	1.4
400	62.3	57.0	57	0.0
500	59.2	56.2	**56**	0.2
630	56.6	50.3	55	
800	53.4	44.6	54	
1k	50.0	40.0	53	
1.25k	44.5	34.3	50	
1.6k	44.5	34.1	47	
2k	46.0	34.5	44	
2.5k	41.6	29.2	41	
3.15k	35.7	22.4	38	
4k	30.6	19.3		
5k	25.7	16.2		
				Total
L'nT,w		56		27.4



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FIELD IMPACT SOUND INSULATION
DATA SHEET

Project No: 19-086
Project: BuilditEco Acoustic Testing
Client: BuilditEco
Task: Sample Impact Testing
Details: Floating Timber on Underlay

Tested / Evaluated: AS/ISO 140-7 & 717-2

Meas. Date: 5-Dec-19
Tapping Machine: NE Nor 211
Receiving Room Volume: 122 m3
No. of Source posn: 2
Mic. posn: 2 sweeps
RT meas: 4 Imp.
SLM: B&K 2270

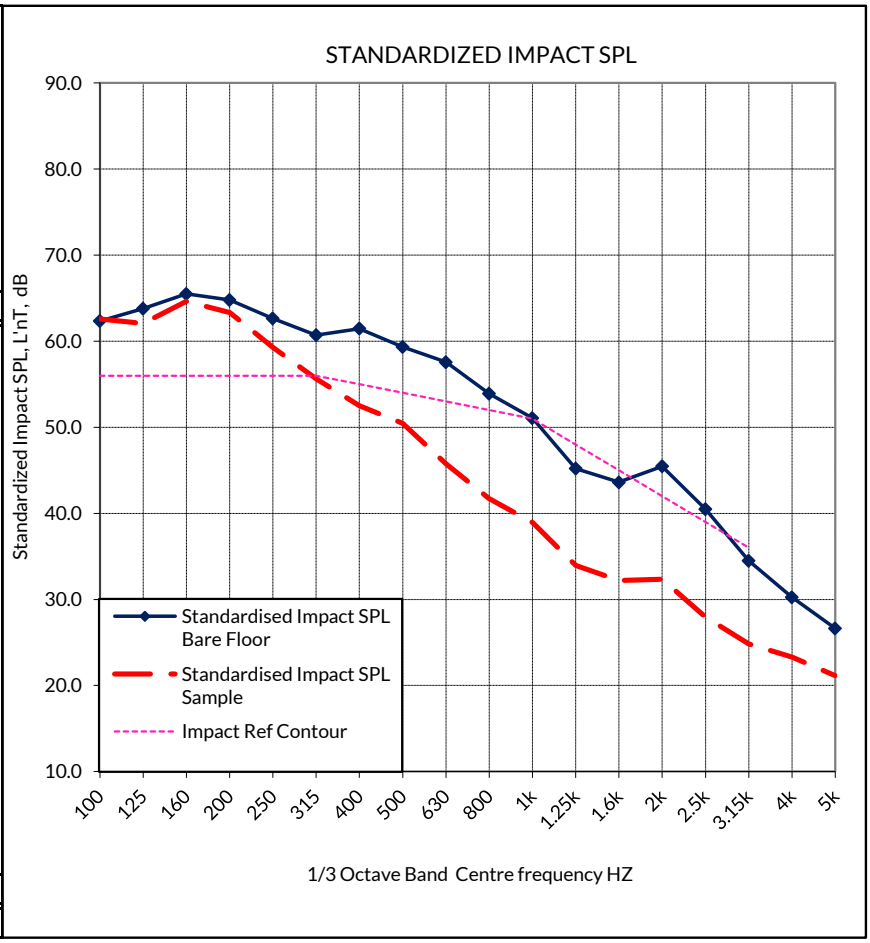
Description of Specimen:

Engineered Timber Floor Boards
No adhesives
Woodpeckers foam underlay
No adhesives

53mm Supafloor Panel Flooring
240mm timber smart joist - R4.0 insulation in cavity
70mm resilient mounts
1 x 16mm firerated flush plasterboard

	Floating Timber on Underlay	Bare Floor
Weighted Standardized Impact SPL	**L'nT,w 54**	**58**
Results standardized to a RT of 0.5 seconds	C_I 1	-1

Centre Frequency	Standardised Impact SPL Bare Floor	Standardised Impact SPL Sample	Impact Ref Contour	Deficiencies
Hz		dB	dB	dB
100	62.3	62.6	56	6.6
125	63.8	62.1	56	6.1
160	65.5	64.6	56	8.6
200	64.8	63.3	56	7.3
250	62.7	59.3	56	3.3
315	60.7	55.6	56	
400	61.5	52.5	55	
500	59.3	50.5	**54**	
630	57.6	45.8	53	
800	53.9	41.7	52	
1k	51.1	38.9	51	
1.25k	45.2	33.9	48	
1.6k	43.6	32.2	45	
2k	45.5	32.4	42	
2.5k	40.5	27.9	39	
3.15k	34.5	24.8	36	
4k	30.2	23.3		
5k	26.6	21.1		
				Total
L'nT,w		54		31.9



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13 December 2019

FIELD IMPACT SOUND INSULATION
DATA SHEET

Project No: 19-086
Project: BuilditEco Acoustic Testing
Client: BuilditEco
Task: Sample Impact Testing
Details: Jazz Flooring

Tested / Evaluated: AS/ISO 140-7 & 717-2

Meas. Date: 5-Dec-19
Tapping Machine: NE Nor 211
Receiving Room Volume: 122 m3
No. of Source posn: 2
Mic. posn: 2 sweeps
RT meas: 4 Imp.
SLM: B&K 2270

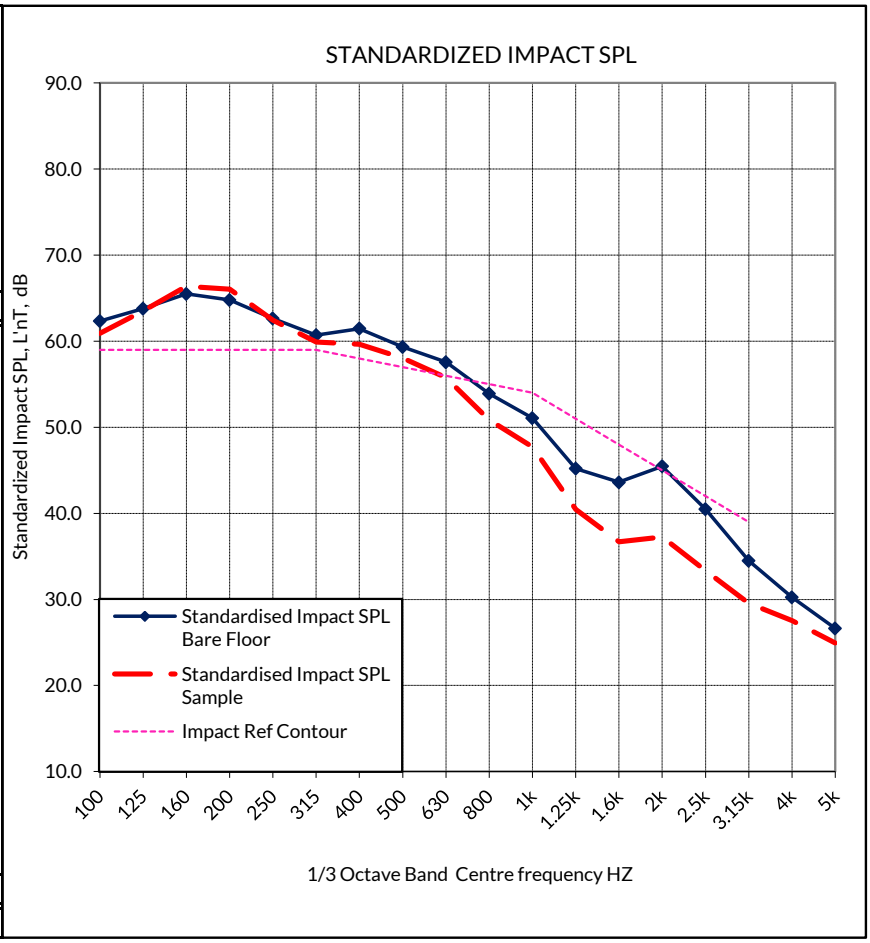
Description of Specimen:

Jazz Vinyl Flooring
No Adhesives

53mm Supafloor Panel Flooring
240mm timber smart joist - R4.0 insulation in cavity
70mm resilient mounts
1 x 16mm firerated flush plasterboard

	Jazz Flooring	Bare Floor
Weighted Standardized Impact SPL	**L'nT,w 57**	**58**
Results standardized to a RT of 0.5 seconds	C_I 0	-1

Centre Frequency	Standardised Impact SPL Bare Floor	Standardised Impact SPL Sample	Impact Ref Contour	Deficiencies
Hz		dB	dB	dB
100	62.3	60.9	59	1.9
125	63.8	63.5	59	4.5
160	65.5	66.4	59	7.4
200	64.8	66.0	59	7.0
250	62.7	62.4	59	3.4
315	60.7	59.9	59	0.9
400	61.5	59.6	58	1.6
500	59.3	58.1	**57**	1.1
630	57.6	55.8	56	
800	53.9	50.9	55	
1k	51.1	47.7	54	
1.25k	45.2	40.4	51	
1.6k	43.6	36.7	48	
2k	45.5	37.3	45	
2.5k	40.5	33.4	42	
3.15k	34.5	29.6	39	
4k	30.2	27.5		
5k	26.6	24.9		
				Total
L'nT,w		57		27.9



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Project No: 19-086
Project: BuilditEco Acoustic Testing
Client: BuilditEco
Task: Sample Impact Testing
Details: Jazz Flooring

Tested / Evaluated: AS/ISO 140-7 & 717-2

Meas. Date: 5-Dec-19
Tapping Machine: NE Nor 211
Receiving Room Volume: 122 m3
No. of Source posn: 2
Mic. posn: 2 sweeps
RT meas: 4 Imp.
SLM: B&K 2270

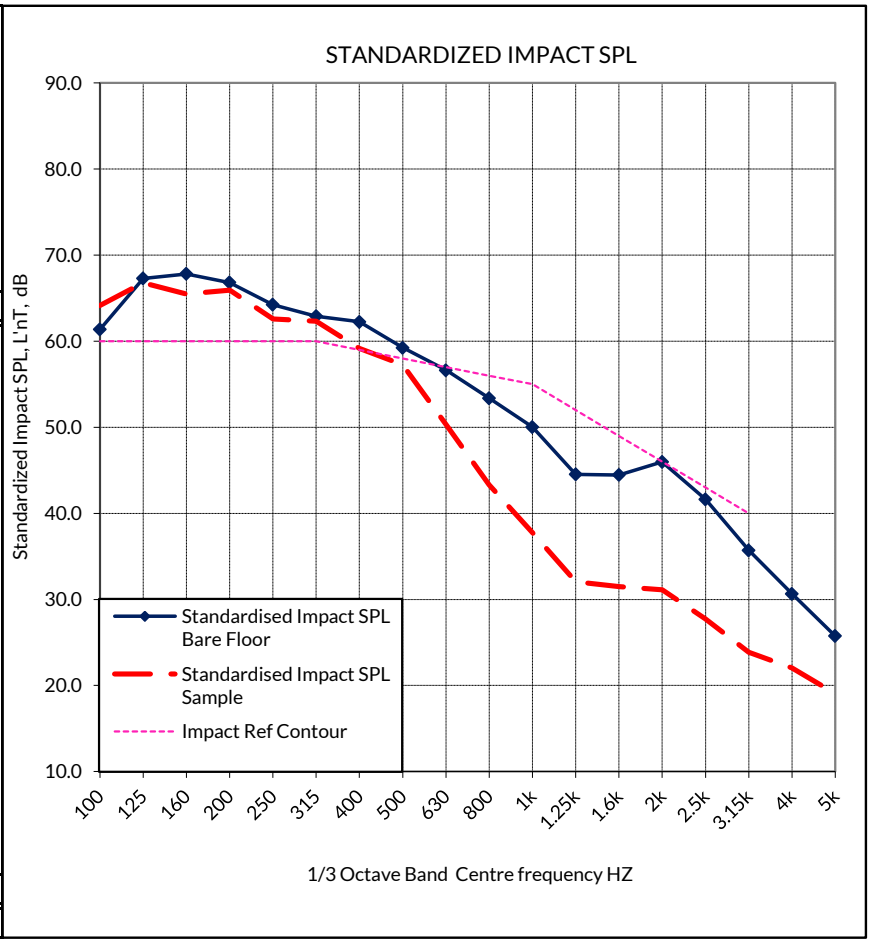
Description of Specimen:

Jazz Vinyl Flooring
No Adhesives
3mm Acoustimat underlay
Adhesive - 10mm notched trowel

53mm Supafloor Panel Flooring
240mm timber smart joist - R4.0 insulation in cavity
70mm resilient mounts
1 x 16mm firerated flush plasterboard

	Jazz Flooring	Bare Floor
Weighted Standardized Impact SPL	**L'nT,w 58**	**59**
Results standardized to a RT of 0.5 seconds	C_I 0	0

Centre Frequency	Standardised Impact SPL Bare Floor	Standardised Impact SPL Sample	Impact Ref Contour	Deficiencies
Hz		dB	dB	dB
100	61.4	64.1	60	4.1
125	67.3	66.8	60	6.8
160	67.8	65.5	60	5.5
200	66.8	65.9	60	5.9
250	64.3	62.6	60	2.6
315	62.9	62.3	60	2.3
400	62.3	59.2	59	0.2
500	59.2	57.3	**58**	
630	56.6	50.3	57	
800	53.4	43.3	56	
1k	50.0	37.7	55	
1.25k	44.5	32.0	52	
1.6k	44.5	31.5	49	
2k	46.0	31.1	46	
2.5k	41.6	27.7	43	
3.15k	35.7	23.8	40	
4k	30.6	22.0		
5k	25.7	19.1		
				Total
L'nT,w		58		27.4



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13 December 2019

FIELD IMPACT SOUND INSULATION
DATA SHEET

Project No: 19-086
Project: BuilditEco Acoustic Testing
Client: BuilditEco
Task: Sample Impact Testing
Details: Tiles on 3mm A-mat

Tested / Evaluated: AS/ISO 140-7 & 717-2

Meas. Date: 5-Dec-19
Tapping Machine: NE Nor 211
Receiving Room Volume: 122 m3
No. of Source posn: 2
Mic. posn: 2 sweeps
RT meas: 4 Imp.
SLM: B&K 2270

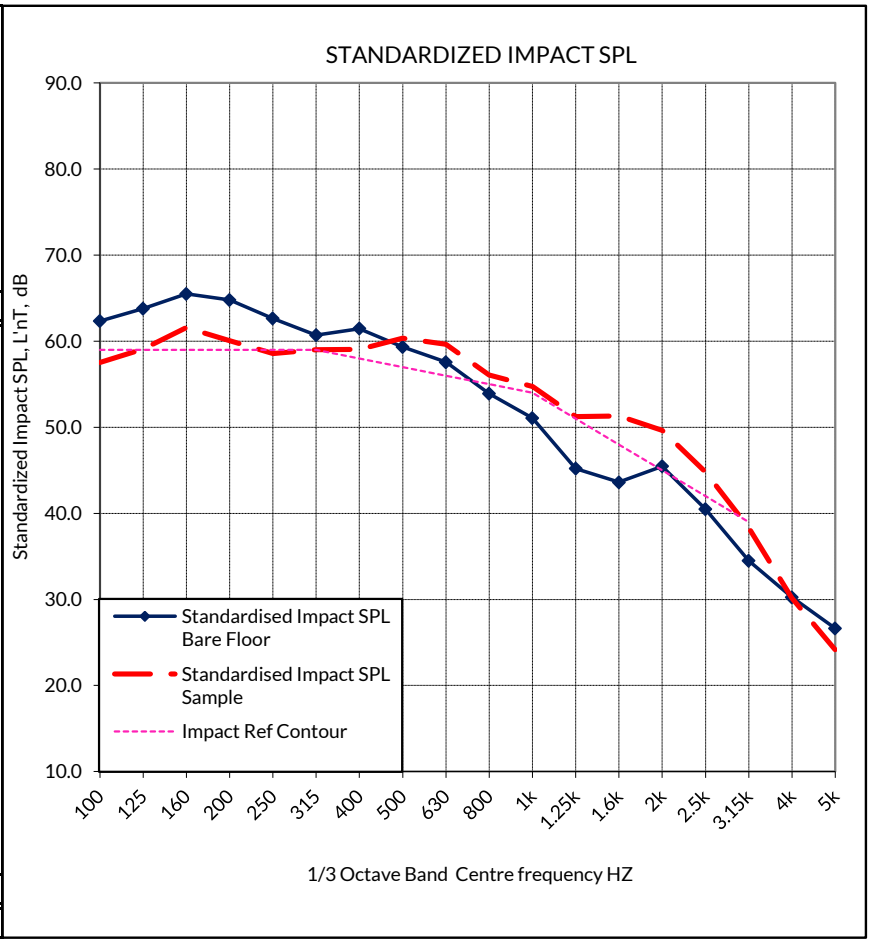
Description of Specimen:

10mm Cermaic Tiled
Adhesive - 10mm notched trowel
3mm Acoustimat underlay
Adhesive - 10mm notched trowel

53mm Supafloor Panel Flooring
240mm timber smart joist - R4.0 insulation in cavity
70mm resilient mounts
1 x 16mm firerated flush plasterboard

	Tiles on 3mm A-mat	Bare Floor
Weighted Standardized Impact SPL	**L'nT,w 57**	**58**
Results standardized to a RT of 0.5 seconds	C_I -2	-1

Centre Frequency	Standardised Impact SPL Bare Floor	Standardised Impact SPL Sample	Impact Ref Contour	Deficiencies
Hz		dB	dB	dB
100	62.3	57.5	59	
125	63.8	59.1	59	0.1
160	65.5	61.6	59	2.6
200	64.8	60.1	59	1.1
250	62.7	58.6	59	
315	60.7	59.0	59	
400	61.5	59.1	58	1.1
500	59.3	60.4	**57**	3.4
630	57.6	59.7	56	3.7
800	53.9	56.1	55	1.1
1k	51.1	54.8	54	0.8
1.25k	45.2	51.3	51	0.3
1.6k	43.6	51.3	48	3.3
2k	45.5	49.6	45	4.6
2.5k	40.5	44.8	42	2.8
3.15k	34.5	38.3	39	
4k	30.2	30.1		
5k	26.6	24.2		
				Total
L'nT,w		57		24.7



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FIELD IMPACT SOUND INSULATION
DATA SHEET

Project No: 19-086
Project: BuilditEco Acoustic Testing
Client: BuilditEco
Task: Sample Impact Testing
Details: Tiles on 5mm A-mat

Tested / Evaluated: AS/ISO 140-7 & 717-2

Meas. Date: 5-Dec-19
Tapping Machine: NE Nor 211
Receiving Room Volume: 122 m3
No. of Source posn: 2
Mic. posn: 2 sweeps
RT meas: 4 Imp.
SLM: B&K 2270

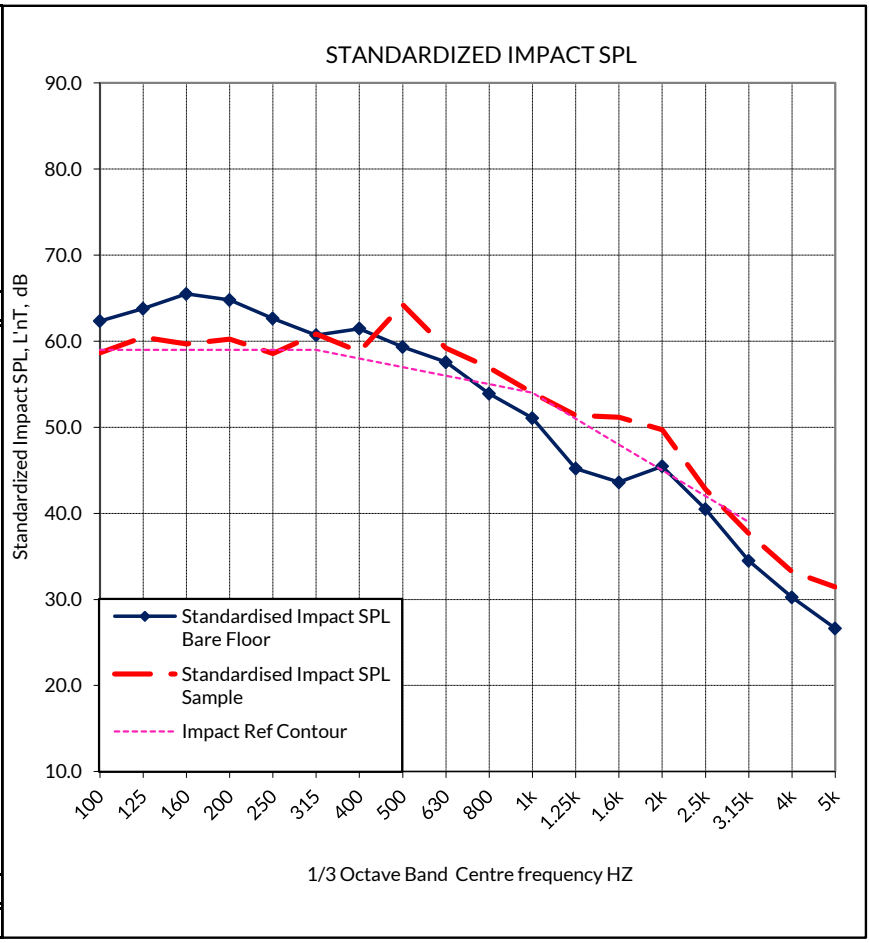
Description of Specimen:

10mm Cermaic Tiled
Adhesive - 10mm notched trowel
5mm Acoustimat underlay
Adhesive - 10mm notched trowel

53mm Supafloor Panel Flooring
240mm timber smart joist - R4.0 insulation in cavity
70mm resilient mounts
1 x 16mm firerated flush plasterboard

	Tiles on 5mm A-mat	Bare Floor
Weighted Standardized Impact SPL	**L'nT,w 57**	**58**
Results standardized to a RT of 0.5 seconds	C_I -2	-1

Centre Frequency	Standardised Impact SPL Bare Floor	Standardised Impact SPL Sample	Impact Ref Contour	Deficiencies
Hz		dB	dB	dB
100	62.3	58.6	59	
125	63.8	60.5	59	1.5
160	65.5	59.7	59	0.7
200	64.8	60.2	59	1.2
250	62.7	58.6	59	
315	60.7	60.8	59	1.8
400	61.5	58.8	58	0.8
500	59.3	64.2	**57**	7.2
630	57.6	59.2	56	3.2
800	53.9	56.9	55	1.9
1k	51.1	54.0	54	
1.25k	45.2	51.4	51	0.4
1.6k	43.6	51.2	48	3.2
2k	45.5	49.7	45	4.7
2.5k	40.5	42.8	42	0.8
3.15k	34.5	37.7	39	
4k	30.2	33.2		
5k	26.6	31.4		
				Total
L'nT,w		57		27.5



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FIELD IMPACT SOUND INSULATION
DATA SHEET

Project No: 19-086
Project: BuilditEco Acoustic Testing
Client: BuilditEco
Task: Sample Impact Testing
Details: Vinly on Acoustimat

Tested / Evaluated: AS/ISO 140-7 & 717-2

Meas. Date: 5-Dec-19
Tapping Machine: NE Nor 211
Receiving Room Volume: 122 m3
No. of Source posn: 2
Mic. posn: 2 sweeps
RT meas: 4 Imp.
SLM: B&K 2270

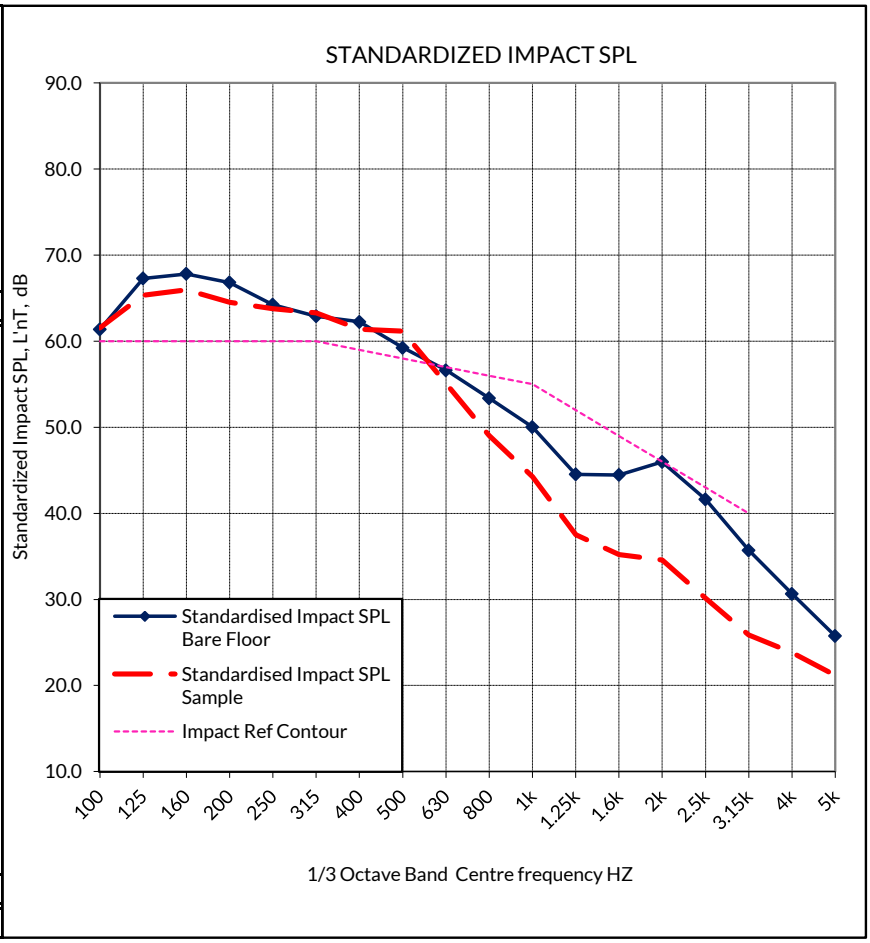
Description of Specimen:

5mm Vinyl tiles
Adhesive - 10mm notched trowel
3mm Acoustimat underlay
Adhesive - 10mm notched trowel

53mm Supafloor Panel Flooring
240mm timber smart joist - R4.0 insulation in cavity
70mm resilient mounts
1 x 16mm firerated flush plasterboard

	Vinly on Acoustimat	Bare Floor
Weighted Standardized Impact SPL	**L'nT,w 58**	**59**
Results standardized to a RT of 0.5 seconds	C_I 0	0

Centre Frequency	Standardised Impact SPL Bare Floor	Standardised Impact SPL Sample	Impact Ref Contour	Deficiencies
Hz		dB	dB	dB
100	61.4	61.6	60	1.6
125	67.3	65.3	60	5.3
160	67.8	66.0	60	6.0
200	66.8	64.5	60	4.5
250	64.3	63.8	60	3.8
315	62.9	63.3	60	3.3
400	62.3	61.4	59	2.4
500	59.2	61.2	**58**	3.2
630	56.6	55.1	57	
800	53.4	49.0	56	
1k	50.0	44.2	55	
1.25k	44.5	37.5	52	
1.6k	44.5	35.2	49	
2k	46.0	34.6	46	
2.5k	41.6	30.1	43	
3.15k	35.7	25.9	40	
4k	30.6	23.8		
5k	25.7	21.2		
				Total
L'nT,w		58		30.0



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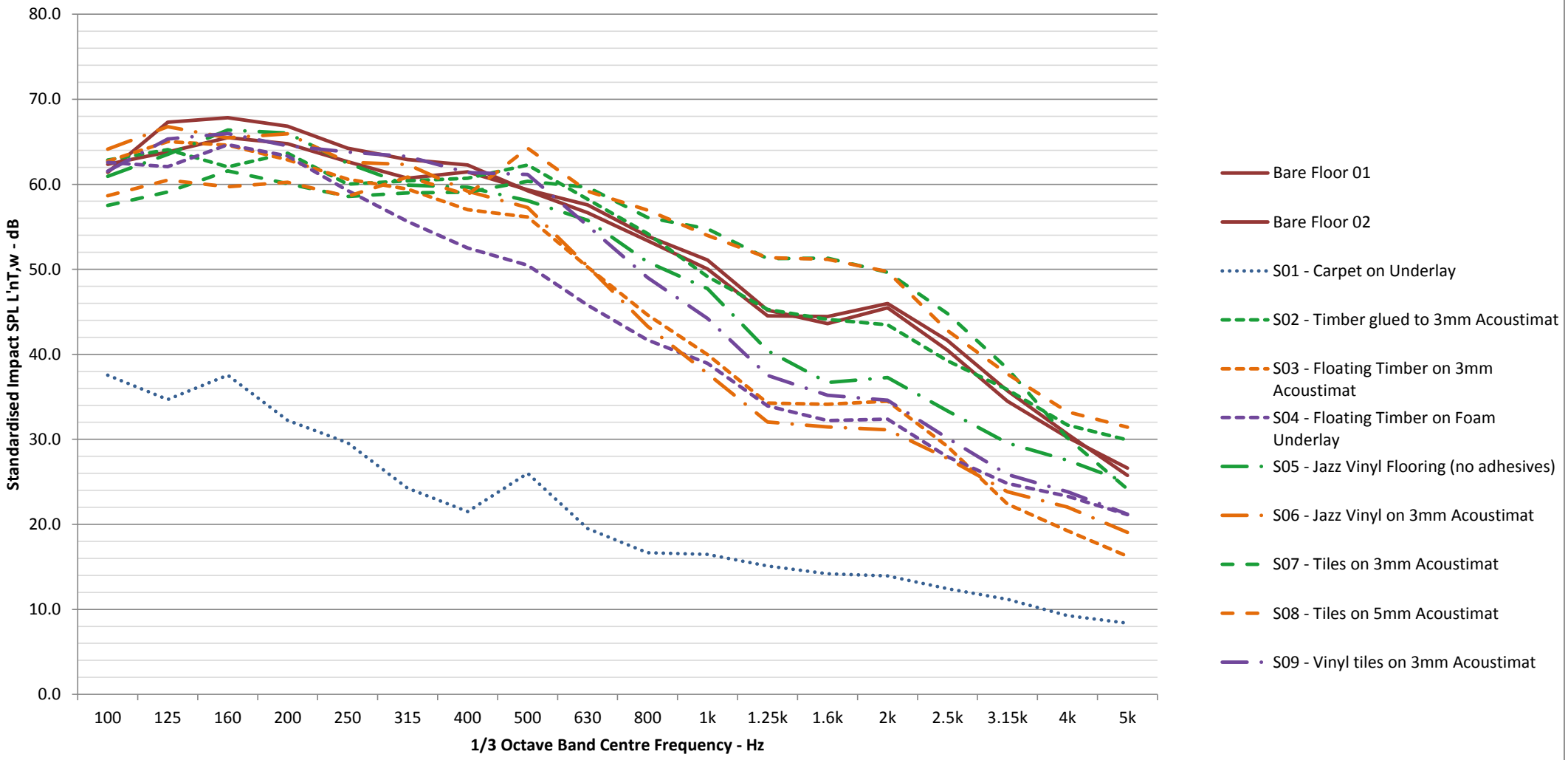
Sample Comparison - Combined



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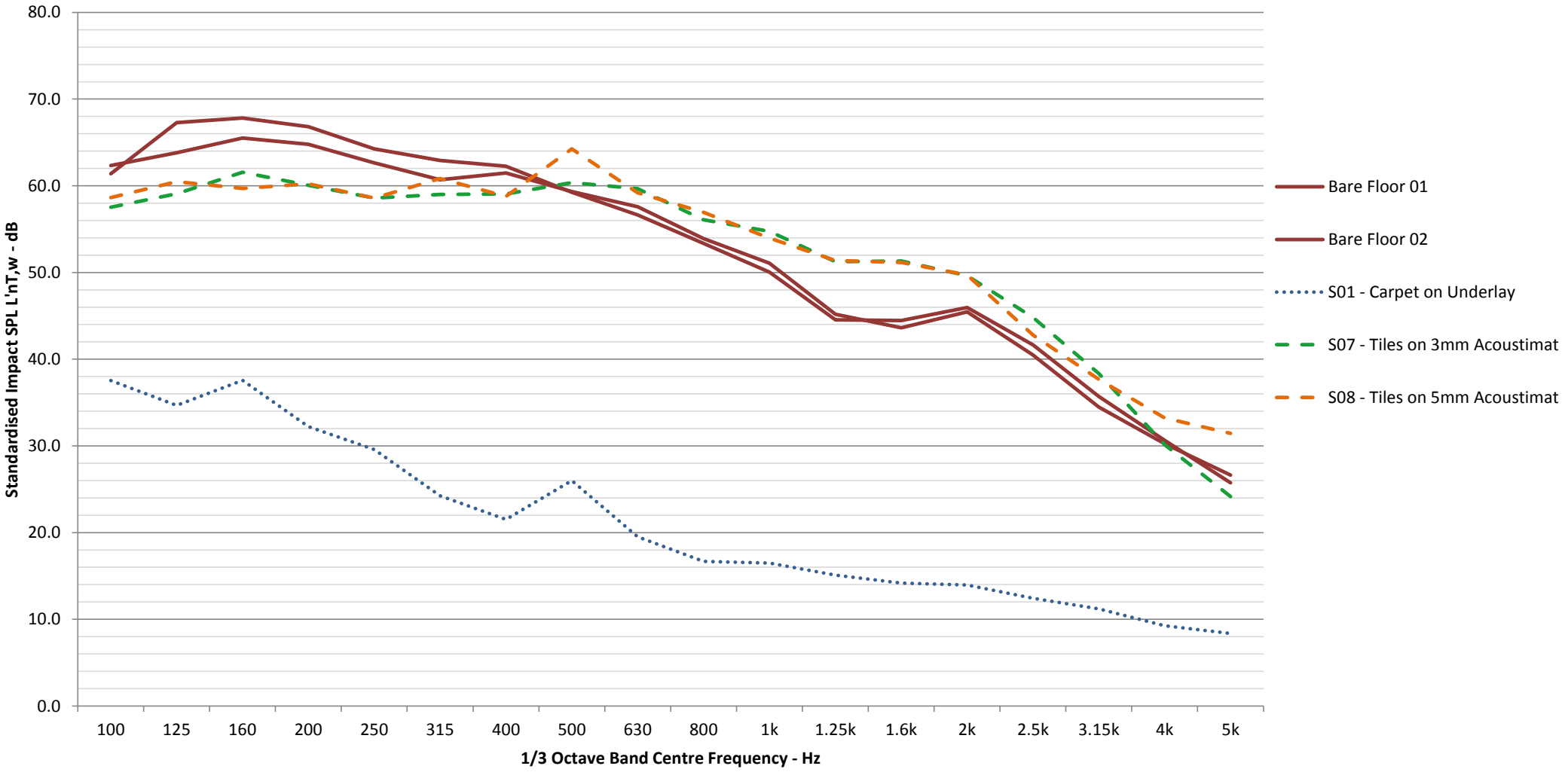
Sample Comparison - Carpet and Tiled Samples



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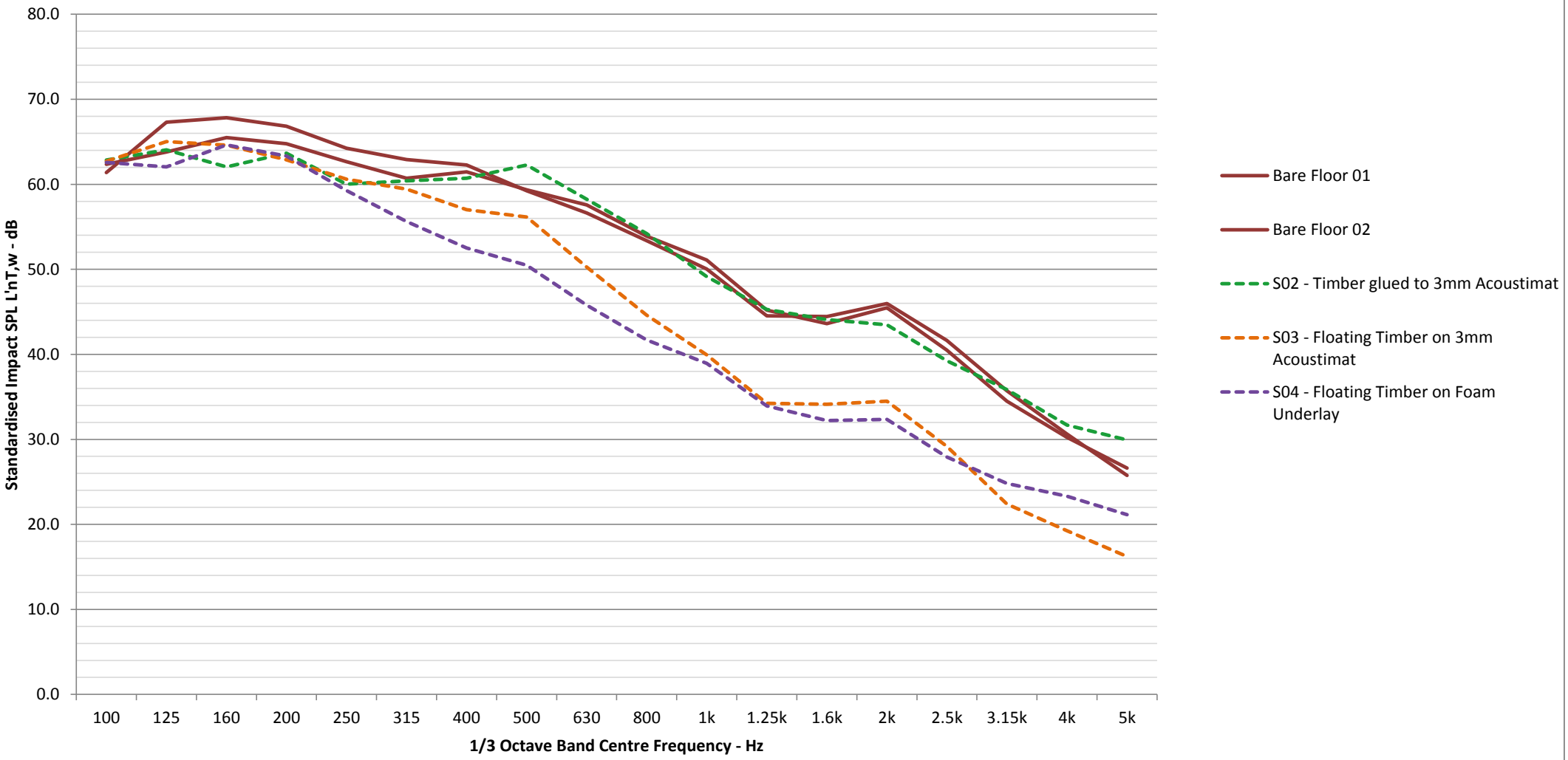
Sample Comparison - Timber Samples



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Sample Comparison - Vinyl Samples