F2605.01-113-11-R0
ACOUSTICAL PERFORMANCE TEST REPORT
ASTM E 90, ASTM E 492, ASTM E 2179

Rendered to

FABRICUSHION LTD.

Series/Model: Luxury Vinyl Plank over 1.5 mm Fabricushion Ltd. Acoustical Underlayment

Specimen Type: Concrete Slab - 152 mm

Overall Size: 3023 mm by 3632 mm

STC	**50**
IIC	**54**
ΔIIC	**25**

Test Specimen Identification:
Floor Topping: 5.07 mm CULBRES KRC356 Hillspore Oak Luxury Plank Tile
Floor Underlayment: 1.5 mm Fabricushion Ltd. Acoustical Underlayment
Floor Slab: 152 mm Concrete Slab

Reference should be made to Intertek-ATI Report F2605.01-113-11 for complete test specimen description. This page alone is not a complete report.

Acoustical Performance Test Report

FABRICUSHION LTD.
259 Steelcase Road West
Markham, Ontario L3R 2P6
CANADA

Report	F2605.01-113-11
Test Date	11/05/15
Report Date	11/17/15

Project Scope

Architectural Testing, Inc., a subsidiary of Intertek (Intertek-ATI), was contracted to conduct airborne sound transmission loss, impact sound transmission, and delta impact sound transmission tests. The complete test data is included as attachments to this report. The client provided the test specimen. The specimen was constructed on the date of testing.

Test Methods

The acoustical tests were conducted in accordance with the following standards. The equipment listed in the attachments meets the requirements of the following standards.

ASTM E 90-09, Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions
ASTM E 413-10, Classification for Rating Sound Insulation
ASTM E 492-09, Standard Test Method for Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine
ASTM E 2179-03 (2009), Standard Test Method for Laboratory Measurement of the Effectiveness of Floor Coverings in Reducing Impact Sound Transmission Through Concrete
ASTM E 989-06 (2012), Classification for Determination of Impact Insulation Class (IIC)
ASTM E 2235-04 (2012) Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods

Test Procedure

All testing was conducted in the VT test chambers at Intertek-ATI located in York, Pennsylvania. The microphones were calibrated before conducting the tests.

The airborne transmission loss test was conducted in accordance with the ASTM E 90 test method using the single direction method. Two background noise sound pressure level and five sound absorption measurements were conducted at each of five microphone positions. Four sound pressure level measurements were made simultaneously in both rooms, at each of five microphone positions.

Test Procedure (Continued)

The impact sound transmission test was conducted in accordance with the ASTM E 492 test method. Two background noise sound pressure level, two sound pressure level measurements with the tapping machine operating at each position specified by ASTM E 492, and five sound absorption measurements were conducted at each of five microphone positions.

The delta impact insulation test was conducted in accordance with ASTM E 2179 test method. In addition to the impact sound transmission test, two sound pressure level measurements with the tapping machine operating at each position specified by ASTM E 492 with only the concrete slab installed.

The air temperature and relative humidity conditions were monitored and recorded during all measurements.

Test Conditions

Source Room		Receive Room	
Average Temperature	20.1°C	Average Temperature	20.4°C
Average Relative Humidity	64%	Average Relative Humidity	60%

Test Calculations

The STC (Sound Transmission Class), IIC (Impact Insulation Class), and ΔIIC (Delta Impact Insulation Class) ratings were calculated in accordance with ASTM E 413, ASTM E 989, and ASTM E 2179, respectively.

Test Specimen Materials and Installation Details

Material	Dimensions (mm)	Thickness (mm)	Manufacturer and Series	Quantity	Average Weight
Luxury Plank Tile	3023 by 3632	5.1	CULBRES KRC356 Hillspore Oak	10.98 m²	9.42 kg/m²
	Note: Loose laid				
Acoustical Underlayment	3023 by 3632	1.5	Fabricushion Ltd.	10.98 m²	0.51 kg/m²
	Note: Loose laid				
Concrete Slab	3023 by 3632	152.0	N/A	10.98 m²	366.18 kg/m²
	Note: The concrete slab was installed in a test frame flush to the source room.				

Comments

The total weight of the floor/ceiling assembly was 4129.8 kg. Intertek-ATI will store samples of the test specimen for four years. Photographs of the test specimen are included in the attachments. A drawing of the test specimen is included in the attachments.

Intertek-ATI will service this report for the entire test record retention period. Test records, such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation, will be retained by Intertek-ATI for the entire test record retention period. The test record retention period ends four years after the test date.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. It is the exclusive property of the client so named herein and relates only to the specimen tested. This report is intended to help in the client's quality assurance program, but it does not represent a continuous or exhaustive evaluation of the specimen tested or of other products or materials that were not evaluated. The statements and data provided herein do not constitute approval, disapproval, certification, or acceptance of performance or materials.

FOR INTERTEK-ATI:

Digitally Signed by: Eric Thompson

Eric A. Thompson
Technician II - Acoustical Testing

Digitally Signed by: Jordan Strybos

Jordan Strybos
Project Manager - Acoustical Testing

Attachments (9 Pages): This report is complete only when all attachments are included.

** Stated by Client/Manufacturer*
N/A - Non Applicable

Revision Log

Revision	Date	Page(s)	Description
R0	11/17/15	N/A	Original Report Issue

Attachments

Instrumentation

Instrument	Manufacturer	Model	ATI Number	Date of Calibration
Data Acquisition Unit	National Instruments	PXI-1033	63763	06/14 *
Microphone Calibrator	Norsonic	1251	Y002919	07/15
Receive Room Microphone	PCB Piezotronics	378B20	63748	05/15
Receive Room Microphone	PCB Piezotronics	378B20	63744	05/15
Receive Room Microphone	PCB Piezotronics	378B20	63745	05/15
Receive Room Microphone	PCB Piezotronics	378B20	63746	05/15
Receive Room Microphone	PCB Piezotronics	378B20	63747	05/15
Receive Room Environmental Indicator	Comet	T7510	63810	10/15
			63811	10/15
Source Room Microphone	PCB Piezotronics	378B20	63738	04/15
Source Room Microphone	PCB Piezotronics	378B20	63739	04/15
Source Room Microphone	PCB Piezotronics	378B20	63740	04/15
Source Room Microphone	PCB Piezotronics	378B20	63742	04/15
Source Room Microphone	PCB Piezotronics	378B20	63741	04/15
Source Room Environmental Indicator	Comet	T7510	63812	10/15
Tapping Machine	Look Line s.r.l.	EM50 (TM50)	65351	11/14

** The calibration frequency for this equipment is every two years per the manufacturer's recommendation.*

Test Chambers

VT Receive Room Volume	158.86 m³
VT Source Room Volume	190 m³

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AIRBORNE SOUND TRANSMISSION LOSS

ASTM E 90

Test Date	11/05/15
Data File No.	F2605.01
Client	Fabricushion Ltd.
Description	5.07 mm CULBRES KRC356 Hillspore Oak Luxury Plank Tile, 1.5 mm Fabricushion Ltd. Acoustical Underlayment, 152 mm Concrete Slab
Specimen Area	10.98 m²
Technician	Eric A. Thompson

Freq (Hz)	**Background SPL** (dB)	**Absorption** (m²)	**Source SPL** (dB)	**Receive SPL** (dB)	**Specimen TL** (dB)	**95% Confidence Limit**	**Number of Deficiencies**
80	60.1	15.2	108	68	40	3.10	-
100	42.1	11.7	106	68	39	2.10	-
125	37.0	9.1	105	72	35	2.60	0
160	30.2	9.5	107	71	37	1.30	0
200	26.1	10.9	105	72	33	1.40	7
250	31.3	11.1	104	63	40	1.10	3
315	23.6	9.7	106	64	42	0.60	4
400	21.3	8.8	103	63	41	0.50	8
500	23.7	8.3	103	57	48	0.40	2
630	21.8	7.9	105	54	53	0.40	0
800	21.6	8.0	105	48	59	0.40	0
1000	22.1	8.0	105	45	63	0.30	0
1250	23.7	7.9	105	44	63	0.50	0
1600	17.6	7.9	105	42	66	0.30	0
2000	10.5	8.5	105	39	68	0.40	0
2500	7.7	9.2	103	37	68	0.30	0
3150	6.4	10.1	104	35	70	0.40	0
4000	5.8	11.4	105	33	72	0.40	0
5000	5.9	12.9	104	30	74	0.60	-
6300	6.2	16.6	98	20	78	0.80	-
8000	6.6	21.3	98	16	80	0.90	-
10000	6.7	26.8	92	8	82	0.90	-

STC Rating **50** *(Sound Transmission Class)*

Deficiencies 24 *(Sum of Deficiencies)*

Notes: *1) Receive Room levels less than 5 dB above the Background levels are highlighted in yellow.*
2) Specimen TL levels listed in red indicate the lower limit of the transmission loss.
3) Specimen TL levels listed in green indicate that there has been a filler wall correction applied

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AIRBORNE SOUND TRANSMISSION LOSS

ASTM E 90

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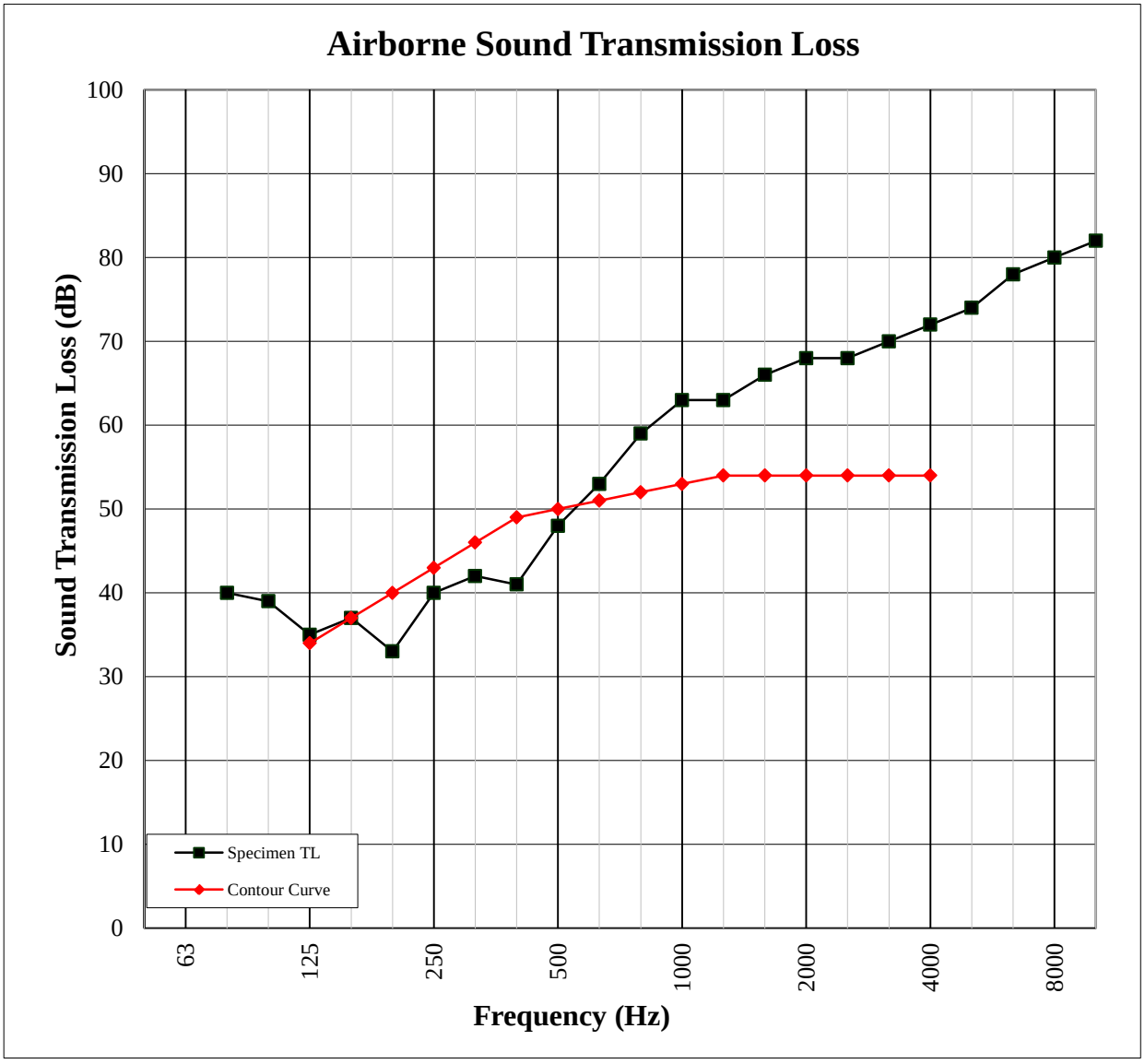

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IMPACT SOUND TRANSMISSION

ASTM E 492

Test Date	11/05/15
Data File No.	F2605.01
Client	Fabricushion Ltd.
Description	5.07 mm CULBRES KRC356 Hillspore Oak Luxury Plank Tile, 1.5 mm Fabricushion Ltd. Acoustical Underlayment, 152 mm Concrete Slab
Specimen Area	10.98 m²
Technician	Eric A. Thompson

Freq (Hz)	**Background SPL** (dB)	**Absorption** (m²)	**Normalized Impact SPL** (dB)	**95% Confidence Limit**	**Number of Deficiencies**
80	61.2	15.6	63	2.9	-
100	43.1	11.7	55	3.4	0
125	37.8	9.2	59	3.3	1
160	32.1	9.5	62	0.7	4
200	25.9	11.2	66	0.6	8
250	31.4	11.4	64	1.7	6
315	24.2	9.8	59	1.0	1
400	22.0	8.9	59	1.3	2
500	22.4	8.4	55	0.4	0
630	21.3	7.9	53	0.6	0
800	21.1	7.8	47	0.5	0
1000	21.4	7.9	42	1.0	0
1250	25.8	7.9	38	0.3	0
1600	17.8	8.0	34	1.1	0
2000	10.9	8.5	30	0.8	0
2500	7.8	9.1	24	1.1	0
3150	8.2	10.0	20	1.3	0
4000	6.3	11.3	15	1.4	-
5000	5.8	13.1	10	1.4	-
6300	6.1	16.5	8	1.1	-
8000	6.5	21.4	9	0.7	-
10000	6.6	26.5	9	0.7	-

IIC Rating **54** *(Impact Insulation Class)*

Deficiencies 22 *(Sum of Deficiencies)*

Note: *Receive Room levels less than 5 dB above the Background levels are highlighted in yellow.*

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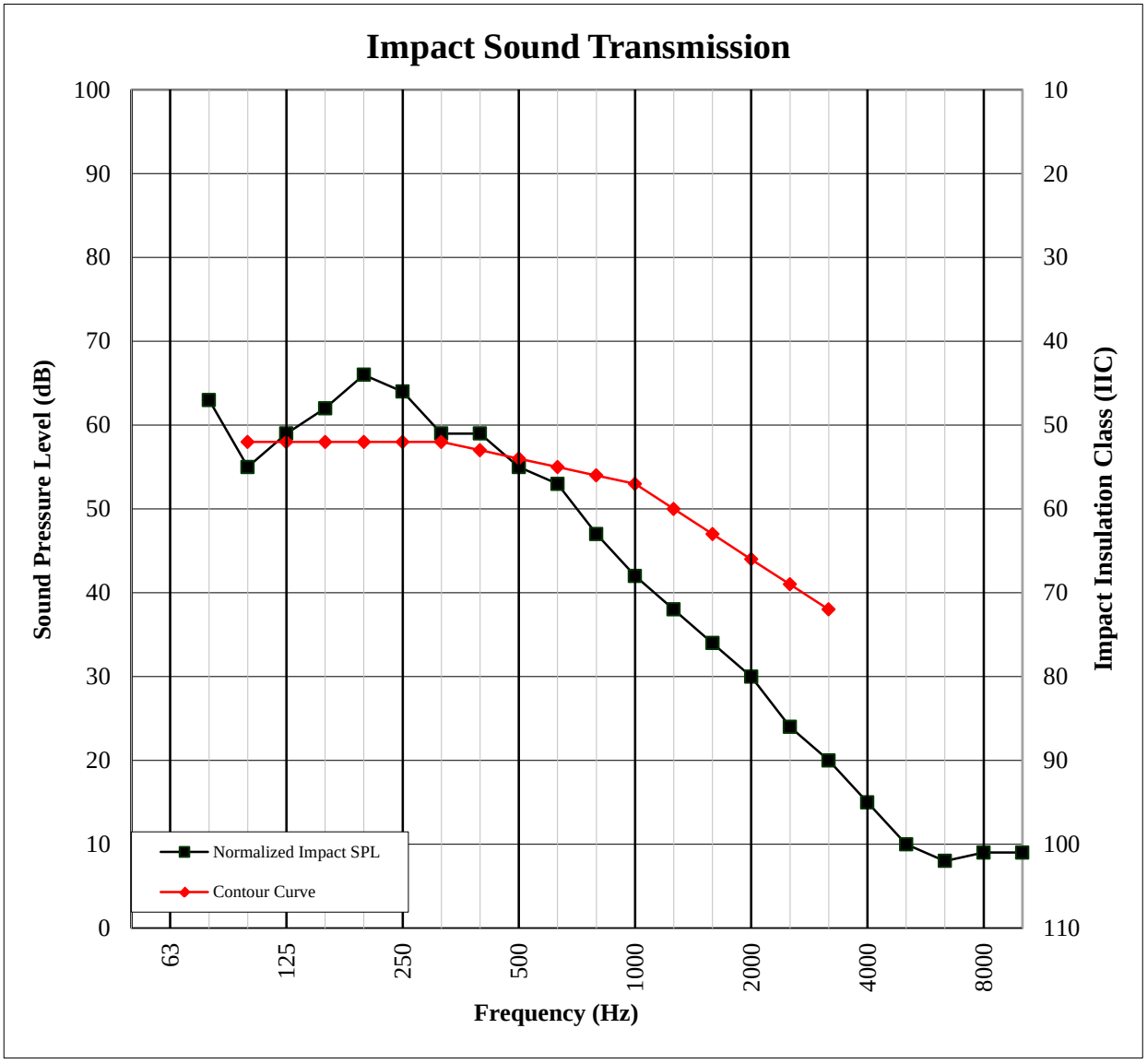
IMPACT SOUND TRANSMISSION

ASTM E 492

Test Date	11/05/15
Data File No.	F2605.01
Client	Fabricushion Ltd.
Description	5.07 mm CULBRES KRC356 Hillspore Oak Luxury Plank Tile, 1.5 mm Fabricushion Ltd. Acoustical Underlayment, 152 mm Concrete Slab
Specimen Area	10.98 m²
Technician	Eric A. Thompson



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DELTA IMPACT INSULATION

ASTM E 2179

Test Date	11/05/15
Data File No.	F2605.01
Client	Fabricushion Ltd.
Description	5.07 mm CULBRES KRC356 Hillspore Oak Luxury Plank Tile, 1.5 mm Fabricushion Ltd. Acoustical Underlayment, 152 mm Concrete Slab
Specimen Area	10.98 m²
Technician	Eric A. Thompson

Freq (Hz)	**Bkgrd SPL** (dB)	**Absorption** (Square Meters)	**Normalized Impact SPL** BARE (dB)	**95% Conf Limit**	**Normalized Impact SPL** SPEC (dB)	**95% Conf Limit**	**Resulting Array** $L_{ref,c}$	**No. of Defici-encies**
100	43.1	11.7	58.1	1.5	55.4	1.6	64	5
125	37.8	9.2	62.0	1.7	59.0	2.7	65	6
160	32.1	9.5	64.8	0.3	62.1	1.1	65	6
200	25.9	11.2	71.2	0.6	65.8	1.1	63	4
250	31.4	11.4	69.0	2.8	64.1	1.6	64	5
315	24.2	9.8	66.7	1.1	59.4	1.3	62	3
400	22.0	8.9	69.5	2.5	59.1	1.6	60	2
500	22.4	8.4	68.6	0.8	54.6	1.4	56	0
630	21.3	7.9	70.0	2.2	52.6	1.0	54	0
800	21.1	7.8	71.4	1.4	47.3	0.6	47	0
1000	21.4	7.9	73.0	0.8	42.5	1.4	41	0
1250	25.8	7.9	72.9	2.0	37.5	1.7	37	0
1600	17.8	8.0	74.0	3.8	34.4	1.2	32	0
2000	10.9	8.5	74.3	2.0	30.0	0.8	28	0
2500	7.8	9.1	74.1	2.4	23.9	0.3	22	0
3150	8.2	10.0	73.8	3.0	19.6	0.6	18	0

ΔIIC Rating **25** *(Delta Impact Insulation Class)*

Deficiencies 31 *(Sum of Deficiencies)*

Note: *Receive Room levels less than 5 dB above the Background levels are highlighted in yellow.*

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DELTA IMPACT INSULATION

ASTM E 2179

Test Date	11/05/15
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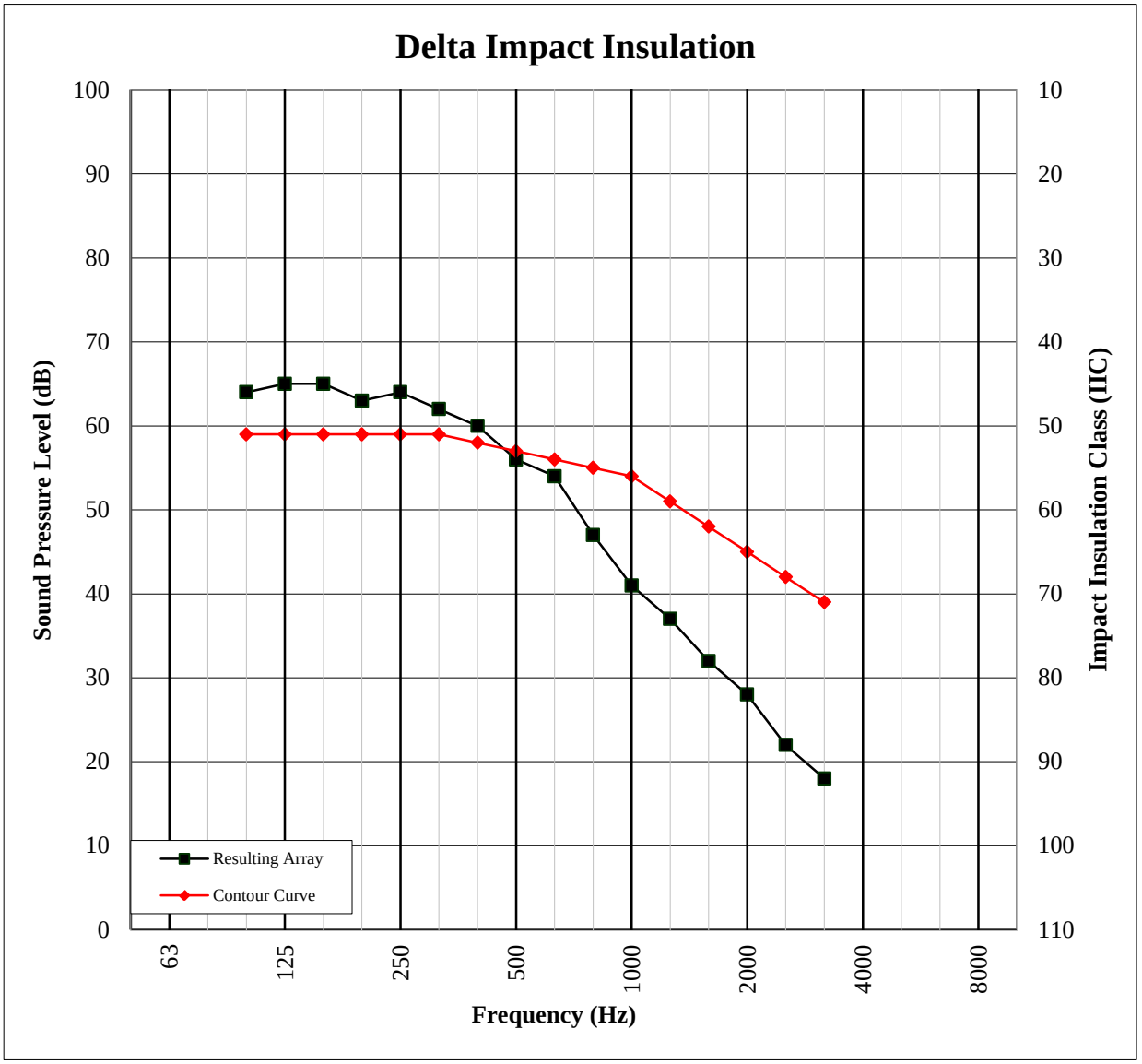
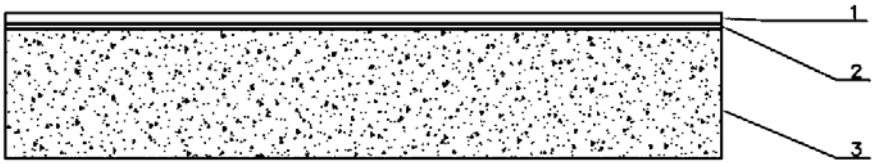


Photographs

Source Room View of Test Specimen Installation

Receive Room View of Test Specimen Installation

Drawing



1-Floor Topping
2-Underlayment
3-Concrete Slab