



E8741.01-113-11-R0
ACOUSTICAL PERFORMANCE TEST REPORT
ASTM E 90, ASTM E 492, ASTM E 2179

Rendered to

PLITEQ INC.

Series/Model: 305 mm (12") Square Ceramic Tile on Pliteq GenieMat™ RST12 Rubber Underlayment

Specimen Type: Concrete Slab - 203 mm (8")

Overall Size: 3023 mm by 3632 mm (119" by 143")

STC	57
IIC	55
ΔIIC	22

Test Specimen Identification:

Floor Topping: 8 mm (0.31") Daltile Ceramic Tile

Floor Underlayment: 12 mm (0.47") Pliteq GenieMat™ RST12 Rubber Underlayment

Floor Slab: 203.2 mm (8") Concrete Slab

Reference should be made to Intertek-ATI Report E8741.01-113-11 for complete test specimen description. This page alone is not a complete report.



Acoustical Performance Test Report

PLITEQ INC.
1370 Don Mills Road Unit 300
Toronto, Ontario M3B 3N7
CANADA

Report E8741.01-113-11
Test Date 06/15/15
Report Date 06/19/15

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.

Test Procedure (Continued)

Four sound pressure level measurements were made simultaneously in both rooms, at each of five microphone positions.

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	21.4°C (70.6°F)	Average Temperature	20.6°C (69.1°F)
Average Relative Humidity	60%	Average Relative Humidity	57%

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/inch)	Thickness (mm/inch)	Manufacturer and Series	Quantity	Average Weight
Ceramic Tile	304.8 by 304.8 12 by 12	8 / 0.31	Daltile	10.98 m ² 118.19 ft ²	15.87 kg/m ² 3.25 lb/ft ²
	<i>Note: Laticrete Permacolor grout was placed into the 6.35 mm (1/4") joints between the ceramic tile and wiped clean. The ceramic tile was placed with light pressure onto a bed of Laticrete 254 Platinum mortar on the underlayment. The mortar was set using a 4.76 mm (3/16") V-notch trowel. The mortar was allowed to cure per manufacturer's specifications. The grout was allowed to cure for 1 hour before testing.</i>				
Rubber Underlayment	3023 by 1219 119 by 48	12 / 0.47	Pliteq GenieMat™ RST12	10.98 m ² 118.19 ft ²	11.77 kg/m ² 2.41 lb/ft ²
	<i>Note: Seams taped with pressure-sensitive tape.</i>				
Concrete Slab	3023 by 3632 119 by 143	203.2 / 8	N/A	10.98 m ² 118.19 ft ²	488.24 kg/m ² 100 lb/ft ²
	<i>Note: The concrete slab was installed in a test frame flush to the source room.</i>				

Comments

The total weight of the floor/ceiling assembly was 5664.4 kg / 12487.9 lbs. 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.

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FOR INTERTEK-ATI:

Jordan Strybos
Project Manager - Acoustical Testing

Bradlay D. Hunt
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

<u>Revision</u>	<u>Date</u>	<u>Page(s)</u>	<u>Description</u>
R0	06/19/15	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	06/14
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 63811	09/14
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	09/14
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	158.34 m ³ (5591.89 ft ³)
VT Source Room Volume	190 m ³ (6709.79 ft ³)



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AIRBORNE SOUND TRANSMISSION LOSS
ASTM E 90

Test Date	06/15/15
Data File No.	E8741.01A
Client	Pliteq Inc.
Description	8 mm (0.31") Daltile Ceramic Tile, 12 mm (0.47") Pliteq GenieMat™ RST12 Rubber Underlayment, 203.2mm (8") Concrete Slab
Specimen Area	10.98 m ²
Technician	Jordan Strybos

Freq (Hz)	Background SPL (dB)	Absorption (m ²)	Source SPL (dB)	Receive SPL (dB)	Specimen TL (dB)	95% Confidence Limit	Number of Deficiencies
50	42.8	25.3	102	63	37	4.50	-
63	49.3	29.7	101	62	36	2.90	-
80	57.7	17.7	109	65	43	3.30	-
100	43.7	12.0	111	71	41	2.40	-
125	40.5	9.6	112	73	41	1.70	0
160	36.5	8.7	112	76	38	1.70	6
200	29.4	11.2	108	70	39	1.50	8
250	28.6	10.5	107	64	43	0.80	7
315	27.9	10.0	111	65	48	0.90	5
400	26.1	8.6	107	56	53	0.40	3
500	23.1	8.0	105	49	59	0.40	0
630	22.1	7.8	107	46	63	0.30	0
800	24.1	7.9	106	46	63	0.30	0
1000	22.4	7.8	106	45	64	0.40	0
1250	21.8	7.8	106	42	67	0.30	0
1600	17.5	8.1	106	43	66	0.30	0
2000	10.8	9.1	106	42	66	0.40	0
2500	8.0	9.6	105	41	67	0.30	0
3150	6.7	10.3	105	37	68	0.50	0
4000	5.4	11.8	105	33	72	0.40	0
5000	5.5	13.6	104	30	74	0.50	-
6300	6.0	17.1	99	20	78	0.70	-
8000	6.3	22.5	98	16	80	0.90	-
10000	6.5	28.0	94	9	82	0.70	-

STC Rating **57** (*Sound Transmission Class*)

Deficiencies **29** (*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

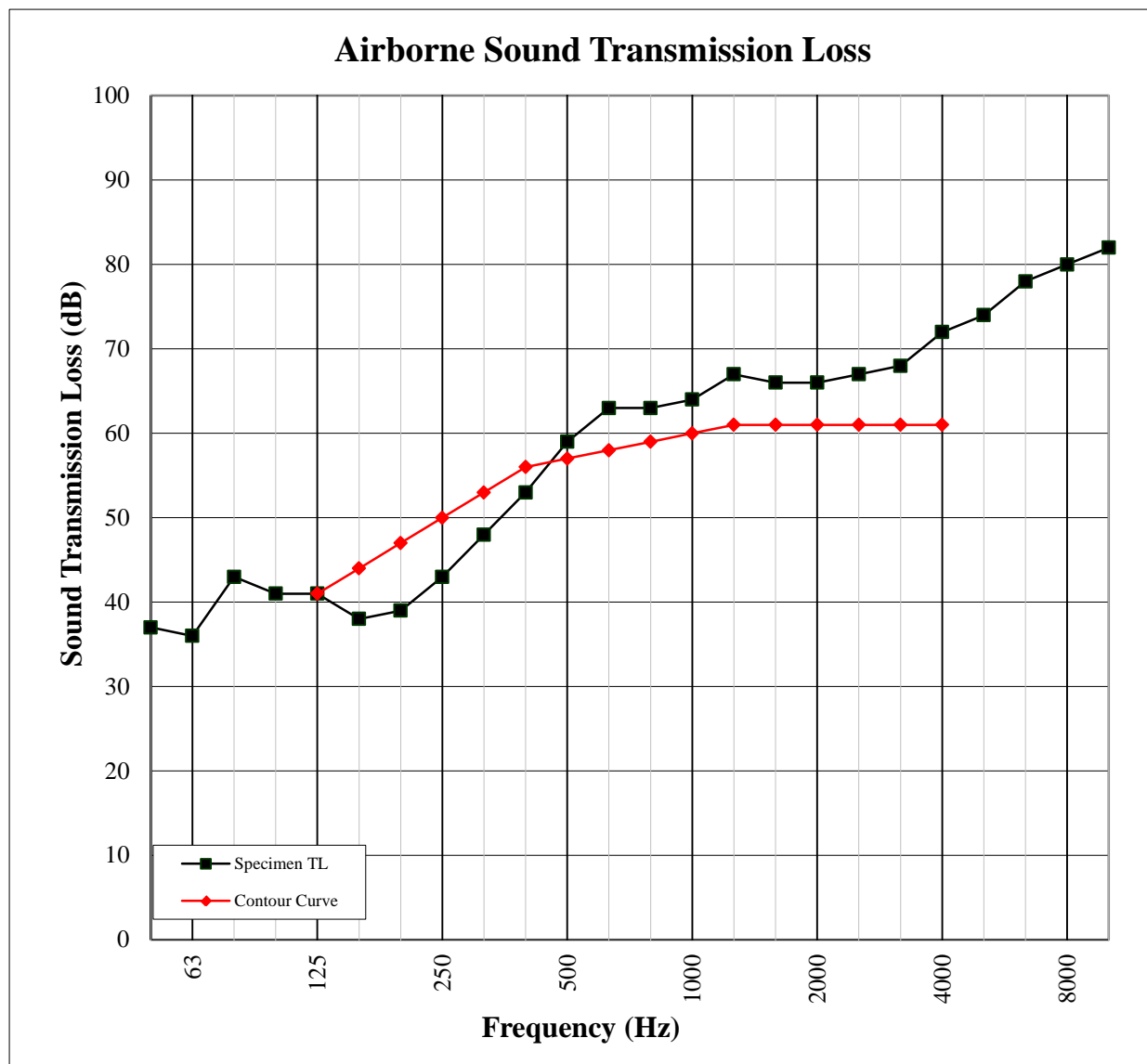


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AIRBORNE SOUND TRANSMISSION LOSS ASTM E 90

Test Date	06/15/15
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Specimen Area	10.98 m ²
Technician	Jordan Strybos





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IMPACT SOUND TRANSMISSION
ASTM E 492

Test Date	06/15/15
Data File No.	E8741.01A
Client	Pliteq Inc.
Description	8 mm (0.31") Daltile Ceramic Tile, 12 mm (0.47") Pliteq GenieMat™ RST12 Rubber Underlayment, 203.2mm (8") Concrete Slab
Specimen Area	10.98 m ²
Technician	Jordan Strybos

Freq (Hz)	Background SPL (dB)	Absorption (m ²)	Normalized Impact SPL (dB)	95% Confidence Limit	Number of Deficiencies
50	44.1	24.7	50	2.7	-
63	50.6	27.4	54	2.5	-
80	59.1	16.1	59	5.2	-
100	44.5	12.0	52	2.6	0
125	40.6	9.1	54	1.0	0
160	35.6	8.7	58	1.9	1
200	29.4	10.7	62	2.2	5
250	28.5	10.1	64	0.7	7
315	27.7	9.8	61	1.4	4
400	26.0	8.5	61	0.8	5
500	23.2	8.0	57	1.2	2
630	22.5	7.8	56	1.0	2
800	24.3	7.9	53	0.5	0
1000	22.1	7.8	49	1.3	0
1250	22.5	8.0	45	1.5	0
1600	18.0	8.0	41	0.6	0
2000	11.8	9.1	37	0.9	0
2500	9.2	9.6	31	0.9	0
3150	7.7	10.3	24	0.7	0
4000	6.4	11.9	18	1.1	-
5000	6.1	13.5	14	1.5	-
6300	6.3	17.1	11	1.1	-
8000	6.4	22.7	10	0.7	-
10000	6.5	28.2	11	0.9	-

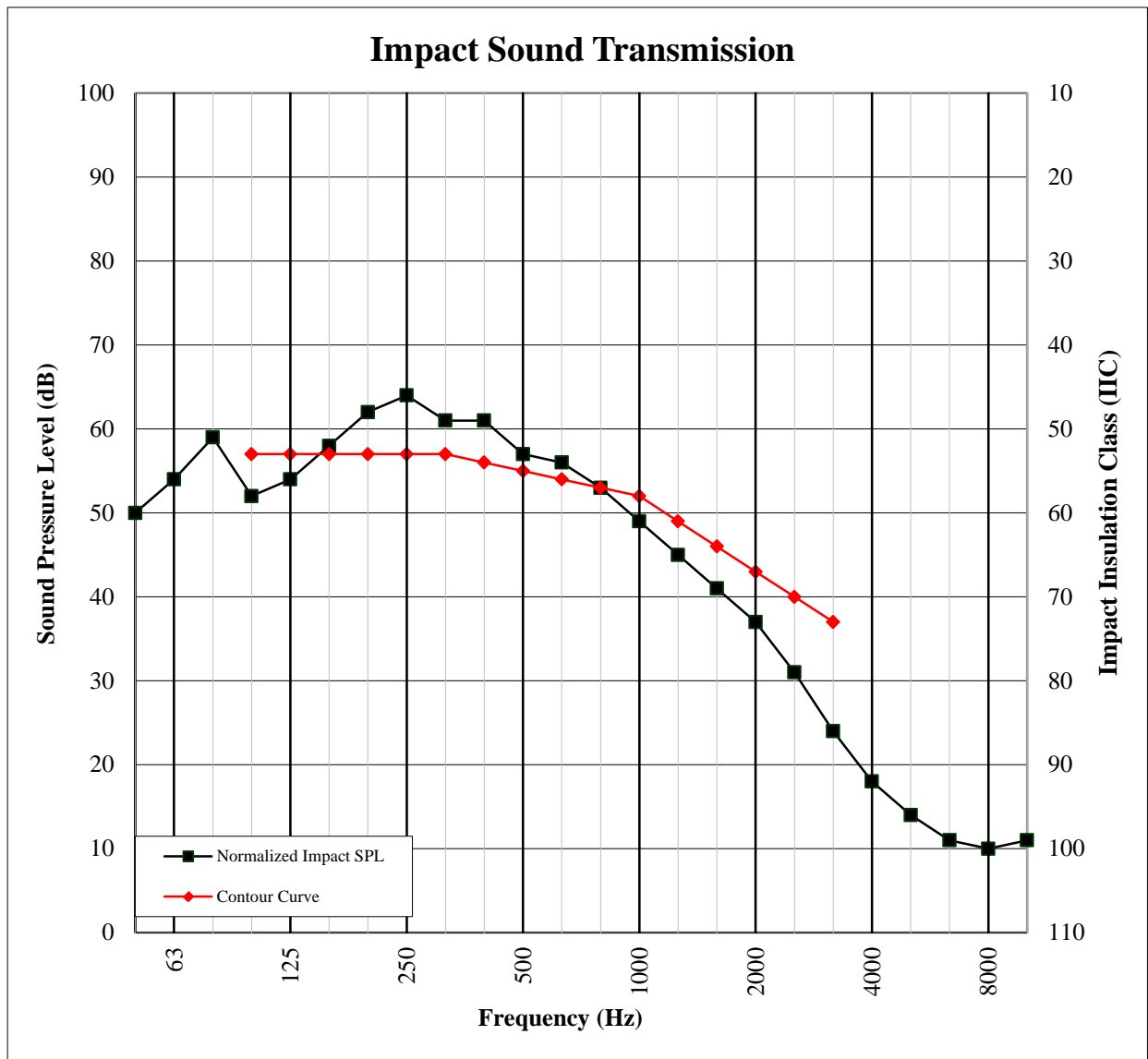
IIC Rating **55** *(Impact Insulation Class)*

Deficiencies **26** *(Sum of Deficiencies)*

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

IMPACT SOUND TRANSMISSION
ASTM E 492

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Specimen Area	10.98 m ²
Technician	Jordan Strybos





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DELTA IMPACT INSULATION
ASTM E 2179

Test Date	06/15/15
Data File No.	E8741.01A
Client	Pliteq Inc.
Description	8 mm (0.31") Daltile Ceramic Tile, 12 mm (0.47") Pliteq GenieMat™ RST12 Rubber Underlayment, 203.2mm (8") Concrete Slab
Specimen Area	10.98 m ²
Technician	Jordan Strybos

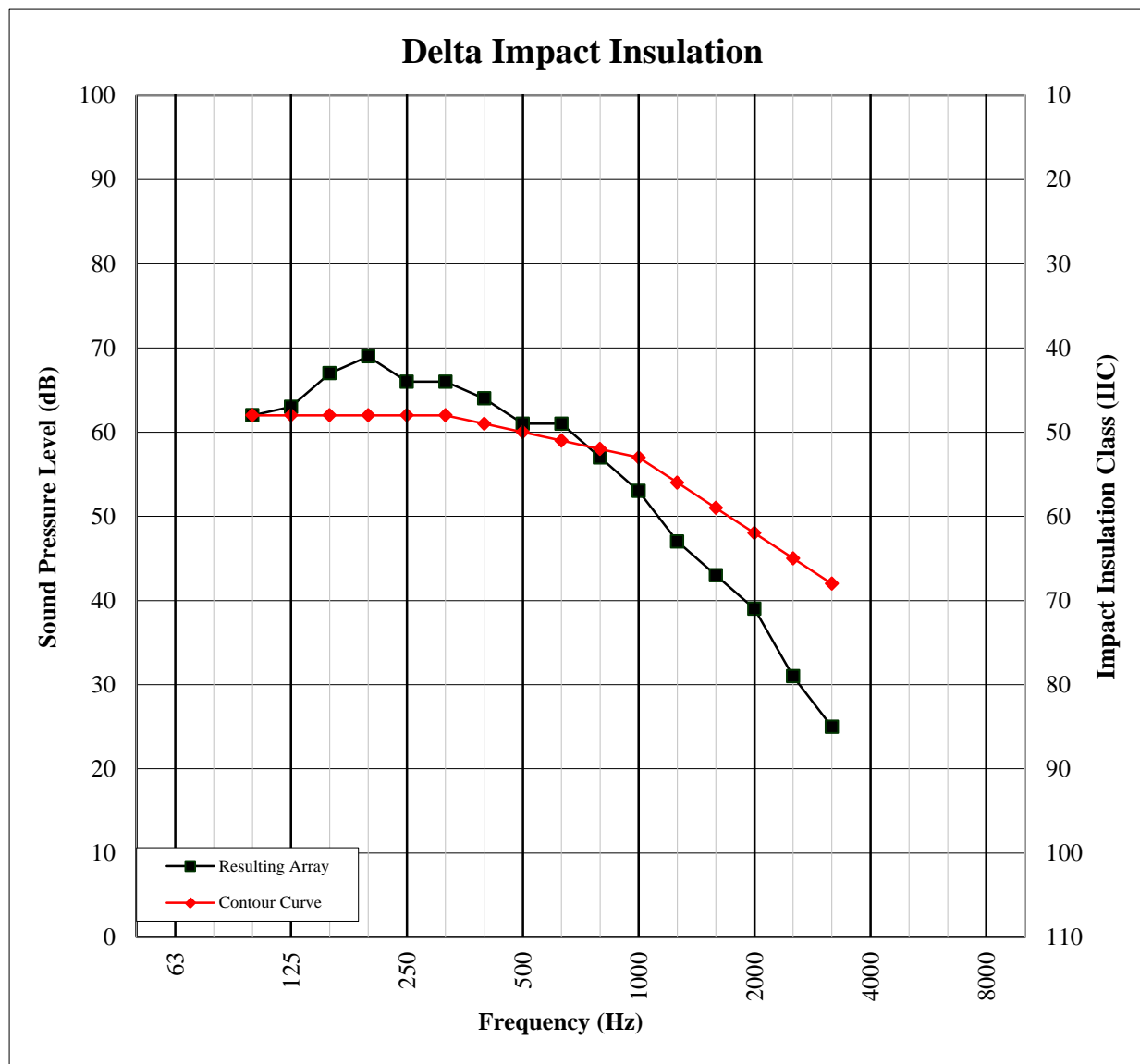
Freq (Hz)	Bkgrd SPL (dB)	Absorption (Square Meters)	Normalized Impact SPL BARE (dB)	95% Conf Limit	Normalized Impact SPL SPEC (dB)	95% Conf Limit	Resulting Array L _{ref,c}	No. of Deficiencies
100	44.5	12.0	56.8	1.0	51.6	1.4	62	0
125	40.6	9.1	58.5	1.3	53.8	0.9	63	1
160	35.6	8.7	58.6	0.6	57.8	0.3	67	5
200	29.4	10.7	62.2	1.5	62.4	2.4	69	7
250	28.5	10.1	67.5	0.9	64.2	1.9	66	4
315	27.7	9.8	64.1	1.6	60.9	2.9	66	4
400	26.0	8.5	67.1	1.1	60.8	4.1	64	3
500	23.2	8.0	65.8	1.9	56.6	3.1	61	1
630	22.5	7.8	65.7	2.7	55.8	2.8	61	2
800	24.3	7.9	67.5	1.9	52.7	1.7	57	0
1000	22.1	7.8	68.1	1.6	49.5	1.6	53	0
1250	22.5	8.0	69.5	1.8	44.6	2.4	47	0
1600	18.0	8.0	70.0	1.6	40.7	0.7	43	0
2000	11.8	9.1	70.7	1.0	37.3	0.6	39	0
2500	9.2	9.6	71.2	2.0	30.5	0.5	31	0
3150	7.7	10.3	71.1	3.9	24.2	0.2	25	0

ΔIIC Rating 22 (*Delta Impact Insulation Class*)
Deficiencies 27 (*Sum of Deficiencies*)

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

DELTA IMPACT INSULATION
ASTM E 2179

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Specimen Area	10.98 m ²
Technician	Jordan Strybos



Photographs

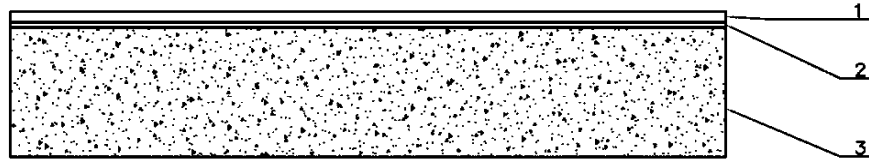


Source Room View of Test Specimen Installation



Receive Room View of Test Specimen Installation

Drawing



- 1-Floor Topping
- 2-Underlayment
- 3-Concrete Slab