



E6534.02-113-11-R0
ACOUSTICAL PERFORMANCE TEST REPORT
ASTM E 90, ASTM E 492, ASTM E 2179

Rendered to

ECORE INTERNATIONAL

Series/Model: 63.5 mm UltraTile® on Concrete Slab

Specimen Type: Concrete Slab - 152 mm

Overall Size: 3023 mm by 3632 mm

STC	51
IIC	58
ΔIIC	26

Test Specimen Identification:

Floor Topping: 63.5 mm Ecore UltraTile® Rubber Tile Flooring

Floor Slab: 152 mm Concrete Slab

Reference should be made to Intertek-ATI Report E6534.02-113-11 for complete test specimen description. This page alone is not a complete report.



Acoustical Performance Test Report

ECORE INTERNATIONAL
715 Fountain Avenue
Lancaster, Pennsylvania 17601

Report E6534.02-113-11
Test Date 03/25/15
Report Date 04/03/15

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 twenty 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 twenty 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	18.6°C	Average Temperature	17.1°C
Average Relative Humidity	45%	Average Relative Humidity	42%

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
Rubber Tile Flooring	609.6 by 609.6	63.5	ECORE UltraTile®	10.98 m ²	34.42 kg/m ²
	<i>Note: Loose laid</i>				
Concrete Slab	3023 by 3632	152.0	N/A	10.98 m ²	366.18 kg/m 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 4398.6 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.

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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	04/03/15	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	64340	04/14
Receive Room Microphone	PCB Piezotronics	378B20	63744	04/14
Receive Room Microphone	PCB Piezotronics	378B20	63745	04/14
Receive Room Microphone	PCB Piezotronics	378B20	63746	04/14
Receive Room Microphone	PCB Piezotronics	378B20	63747	04/14
Receive Room Environmental Indicator	Comet	T7510	63810 63811	09/14 09/14
Source Room Microphone	PCB Piezotronics	378B20	63738	04/14
Source Room Microphone	PCB Piezotronics	378B20	63739	04/14
Source Room Microphone	PCB Piezotronics	378B20	63748	04/14
Source Room Microphone	PCB Piezotronics	378B20	63742	04/14
Source Room Microphone	PCB Piezotronics	378B20	63741	04/14
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	158.86 m ³
VT Source Room Volume	190 m ³



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AIRBORNE SOUND TRANSMISSION LOSS
ASTM E 90

Test Date	03/25/15
Data File No.	E6534.02
Client	ECORE International
Description	63.5 mm ECORE UltraTile® Rubber Tile Flooring, 152 mm 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
80	50.8	15.4	107	67	40	4.10	-
100	41.5	14.1	106	66	40	2.00	-
125	34.9	10.5	105	68	38	1.00	0
160	30.1	10.7	105	70	36	1.70	2
200	29.0	12.3	103	70	33	1.60	8
250	24.4	12.2	103	60	43	1.50	1
315	23.3	10.1	103	56	48	0.70	0
400	21.6	9.0	103	52	52	0.60	0
500	23.4	8.4	102	46	59	0.50	0
630	22.8	7.9	104	44	63	0.60	0
800	22.3	8.1	103	41	65	0.50	0
1000	23.4	8.0	103	40	66	0.40	0
1250	30.4	7.9	104	39	67	0.70	0
1600	21.1	8.1	103	38	68	0.30	0
2000	14.3	9.2	103	38	67	0.50	0
2500	9.7	10.5	102	37	67	0.60	0
3150	8.7	11.8	102	33	70	0.60	0
4000	7.0	13.7	102	29	73	0.60	0
5000	5.8	16.9	102	26	75	0.70	-
6300	5.9	22.2	96	15	79	0.60	-
8000	6.1	30.2	96	11	81	1.10	-
10000	6.3	38.2	91	6	81	0.90	-

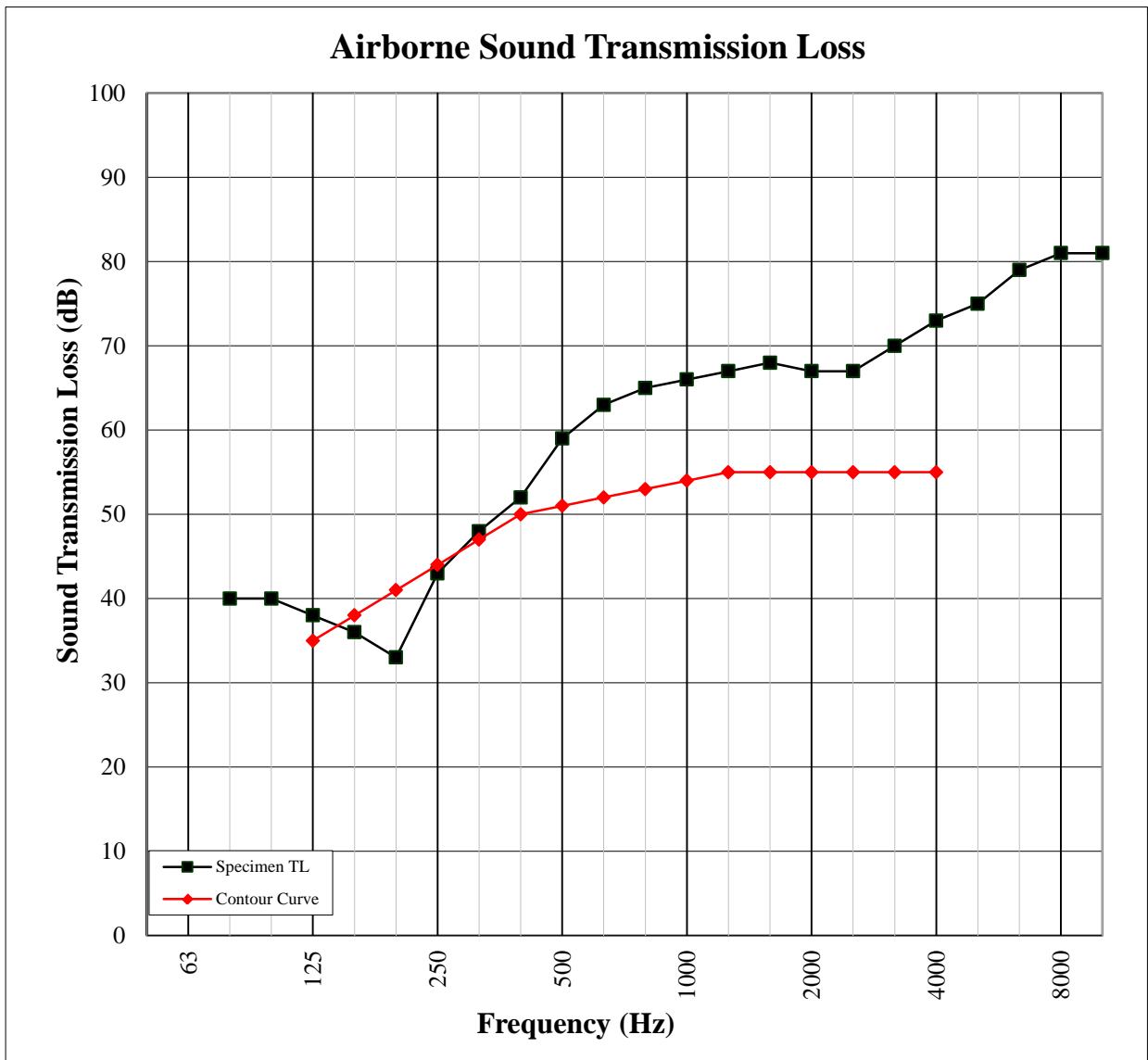
STC Rating **51** (*Sound Transmission Class*)

Deficiencies **11** (*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

AIRBORNE SOUND TRANSMISSION LOSS
ASTM E 90

Test Date	03/25/15
Data File No.	E6534.02
Client	ECORE International
Description	63.5 mm Ecore UltraTile® Rubber Tile Flooring, 152 mm Concrete Slab
Specimen Area	10.98 m ²
Technician	Jordan Strybos





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IMPACT SOUND TRANSMISSION
ASTM E 492

Test Date	03/25/15
Data File No.	E6534.02
Client	ECORE International
Description	63.5 mm ECORE UltraTile® Rubber Tile Flooring, 152 mm 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
80	49.2	16.5	54	2.8	-
100	41.7	14.0	55	3.3	1
125	34.3	10.9	58	2.8	4
160	30.6	10.8	61	1.8	7
200	30.4	12.3	62	2.9	8
250	26.8	11.9	56	0.8	2
315	23.3	10.7	46	0.3	0
400	20.8	9.2	40	0.5	0
500	22.8	8.1	35	1.2	0
630	22.7	7.8	33	0.7	0
800	20.2	7.9	31	1.0	0
1000	22.5	7.9	25	0.4	0
1250	32.3	7.9	23	0.3	0
1600	21.9	8.1	22	0.2	0
2000	12.1	9.3	17	0.3	0
2500	8.6	10.4	14	0.9	0
3150	6.8	11.8	10	0.3	0
4000	5.7	13.8	7	0.3	-
5000	5.7	17.1	6	0.5	-
6300	5.9	22.0	7	0.7	-
8000	6.2	29.9	9	0.9	-
10000	6.3	38.7	10	0.9	-

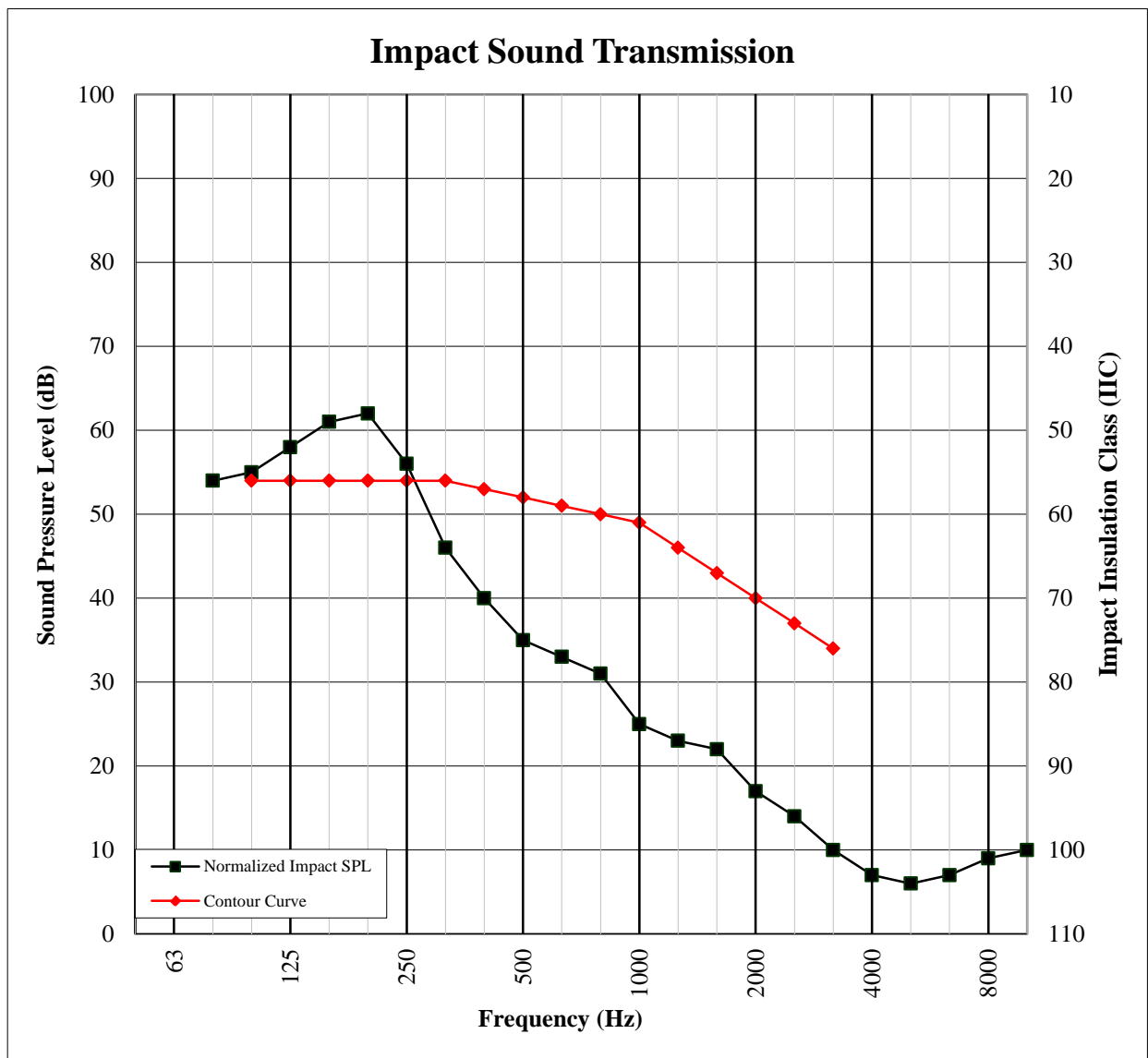
IIC Rating **58** (*Impact Insulation Class*)

Deficiencies **22** (*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

Test Date	03/25/15
Data File No.	E6534.02
Client	ECORE International
Description	63.5 mm ECORE UltraTile® Rubber Tile Flooring, 152 mm Concrete Slab
Specimen Area	10.98 m ²
Technician	Jordan Strybos





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DELTA IMPACT INSULATION
ASTM E 2179

Test Date	03/25/15
Data File No.	E6534.02
Client	ECORE International
Description	63.5 mm Ecore UltraTile® Rubber Tile Flooring, 152 mm Concrete Slab
Specimen Area	10.98 m ²
Technician	Jordan Strybos

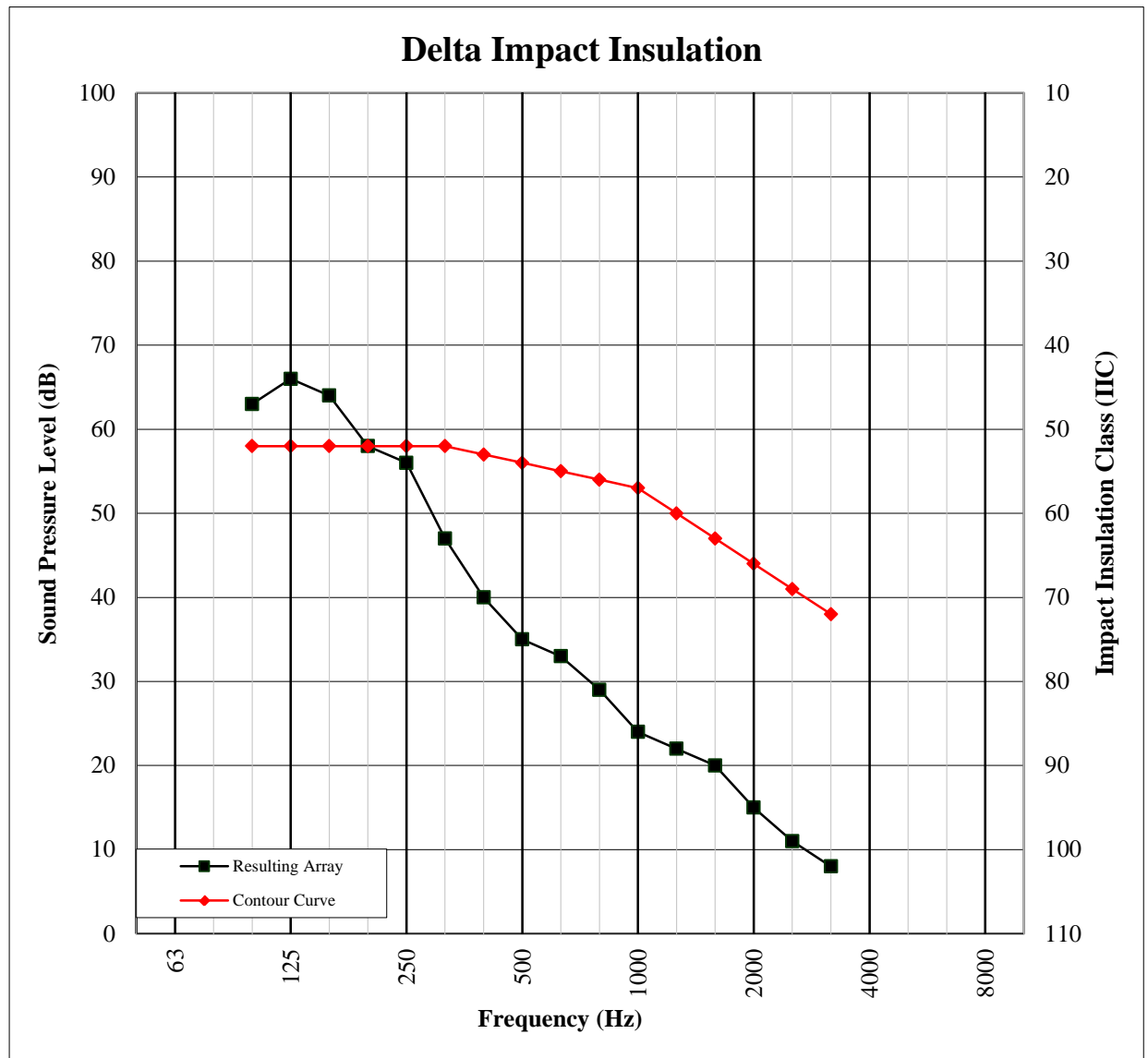
Freq (Hz)	Bkgrd SPL (dB)	Absorption (Square Meters)	Normalized Impact SPL BARE (dB)	95% Conf Limit	Normalized Impact SPL SPEC (dB)	95% Conf Limit	Resulting Array L _{ref,c}	No. of Defici- encies
100	41.7	14.0	59.6	1.4	55.2	0.9	63	5
125	34.3	10.9	59.8	0.4	58.2	1.0	66	8
160	30.6	10.8	65.5	1.5	61.3	0.8	64	6
200	30.4	12.3	72.1	1.9	61.9	1.7	58	0
250	26.8	11.9	68.2	0.4	55.7	0.8	56	0
315	23.3	10.7	68.9	0.8	45.9	1.6	47	0
400	20.8	9.2	70.0	2.6	40.4	1.2	40	0
500	22.8	8.1	69.8	1.3	34.7	0.9	35	0
630	22.7	7.8	71.2	1.2	32.8	2.5	33	0
800	20.2	7.9	72.8	1.1	30.7	1.6	29	0
1000	22.5	7.9	72.6	2.4	25.0	0.5	24	0
1250	32.3	7.9	73.4	0.6	23.3	0.3	22	0
1600	21.9	8.1	73.8	0.9	22.0	1.2	20	0
2000	12.1	9.3	74.3	0.4	17.5	0.7	15	0
2500	8.6	10.4	74.7	1.3	13.7	0.6	11	0
3150	6.8	11.8	73.9	0.5	9.9	0.4	8	0

ΔIIC Rating **26** *(Delta Impact Insulation Class)*
Deficiencies **19** *(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

Test Date	03/25/15
Data File No.	E6534.02
Client	ECORE International
Description	63.5 mm ECORE UltraTile® Rubber Tile Flooring, 152 mm Concrete Slab
Specimen Area	10.98 m ²
Technician	Jordan Strybos



Photographs

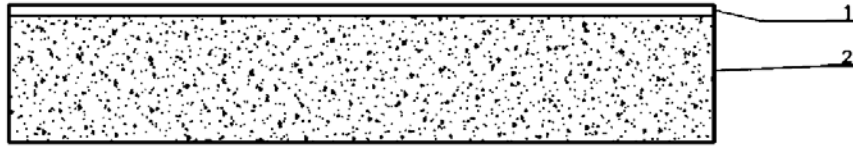


Close-Up of Test Specimen



Receive Room View of Test Specimen Installation

Drawing



- 1-Floor Topping
- 2-Concrete Slab