



**E6534.01-113-11-R0**  
**ACOUSTICAL PERFORMANCE TEST REPORT**  
**ASTM E 90, ASTM E 492, ASTM E 2179**

**Rendered to**

**ECORE INTERNATIONAL**

**Series/Model: 25.4 mm UltraTile® on Concrete Slab**

**Specimen Type: Concrete Slab - 152 mm**

**Overall Size: 3023 mm by 3632 mm**

<b>STC</b>	<b>52</b>
<b>IIC</b>	<b>56</b>
<b>ΔIIC</b>	<b>27</b>

**Test Specimen Identification:**

Floor Topping: 25.4 mm Ecore UltraTile® Rubber Tile Flooring

Floor Slab: 152 mm Concrete Slab

Reference should be made to Intertek-ATI Report E6534.01-113-11 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** E6534.01-113-11  
**Test Date** 03/25/15  
**Report Date** 04/02/15

### 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	19.8°C	Average Temperature	18.3°C
Average Relative Humidity	36%	Average Relative Humidity	38%

**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	25.4	ECORE UltraTile®	10.98 m <sup>2</sup>	19.41 kg/m <sup>2</sup>
	<i>Note: Loose laid</i>				
Concrete Slab	3023 by 3632	152.0	N/A	10.98 m <sup>2</sup>	366.18 kg/m <sup>2</sup>
	<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 4233.8 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.

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FOR INTERTEK-ATI:

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Jordan Strybos  
Project Manager - Acoustical Testing

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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	04/02/15	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 <sup>3</sup>
VT Source Room Volume	190 m <sup>3</sup>



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**AIRBORNE SOUND TRANSMISSION LOSS**  
ASTM E 90

<b>Test Date</b>	03/25/15
<b>Data File No.</b>	E6534.01
<b>Client</b>	ECORE International
<b>Description</b>	25.4 mm ECORE UltraTile® Rubber Tile Flooring, 152 mm Concrete Slab
<b>Specimen Area</b>	10.98 m <sup>2</sup>
<b>Technician</b>	Jordan Strybos

Freq (Hz)	Background SPL (dB)	Absorption (m <sup>2</sup> )	Source SPL (dB)	Receive SPL (dB)	Specimen TL (dB)	95% Confidence Limit	Number of Deficiencies
80	53.6	16.3	107	67	40	4.30	-
100	41.3	14.8	107	66	41	2.30	-
125	37.1	10.6	106	68	39	1.20	0
160	32.7	11.0	107	71	37	1.40	2
200	29.4	11.9	104	70	34	1.90	8
250	26.8	11.7	104	62	41	1.40	4
315	24.7	10.6	103	59	44	0.40	4
400	21.8	9.1	102	55	48	0.70	3
500	23.9	8.2	103	49	55	0.50	0
630	23.9	7.9	104	47	60	0.60	0
800	24.1	7.9	104	44	62	0.60	0
1000	24.5	7.9	103	41	64	0.50	0
1250	25.9	7.9	104	41	66	0.80	0
1600	19.6	8.1	104	40	66	0.30	0
2000	12.7	9.3	103	38	67	0.50	0
2500	8.3	10.4	103	38	67	0.60	0
3150	6.4	11.8	103	33	70	0.60	0
4000	6.4	13.7	103	30	73	0.60	0
5000	5.8	16.9	103	27	74	0.70	-
6300	5.9	22.3	96	17	78	0.70	-
8000	6.2	29.9	96	12	80	1.00	-
10000	6.3	37.7	90	7	79	0.90	-

**STC Rating**      **52**      (*Sound Transmission Class*)

**Deficiencies**      **21**      (*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

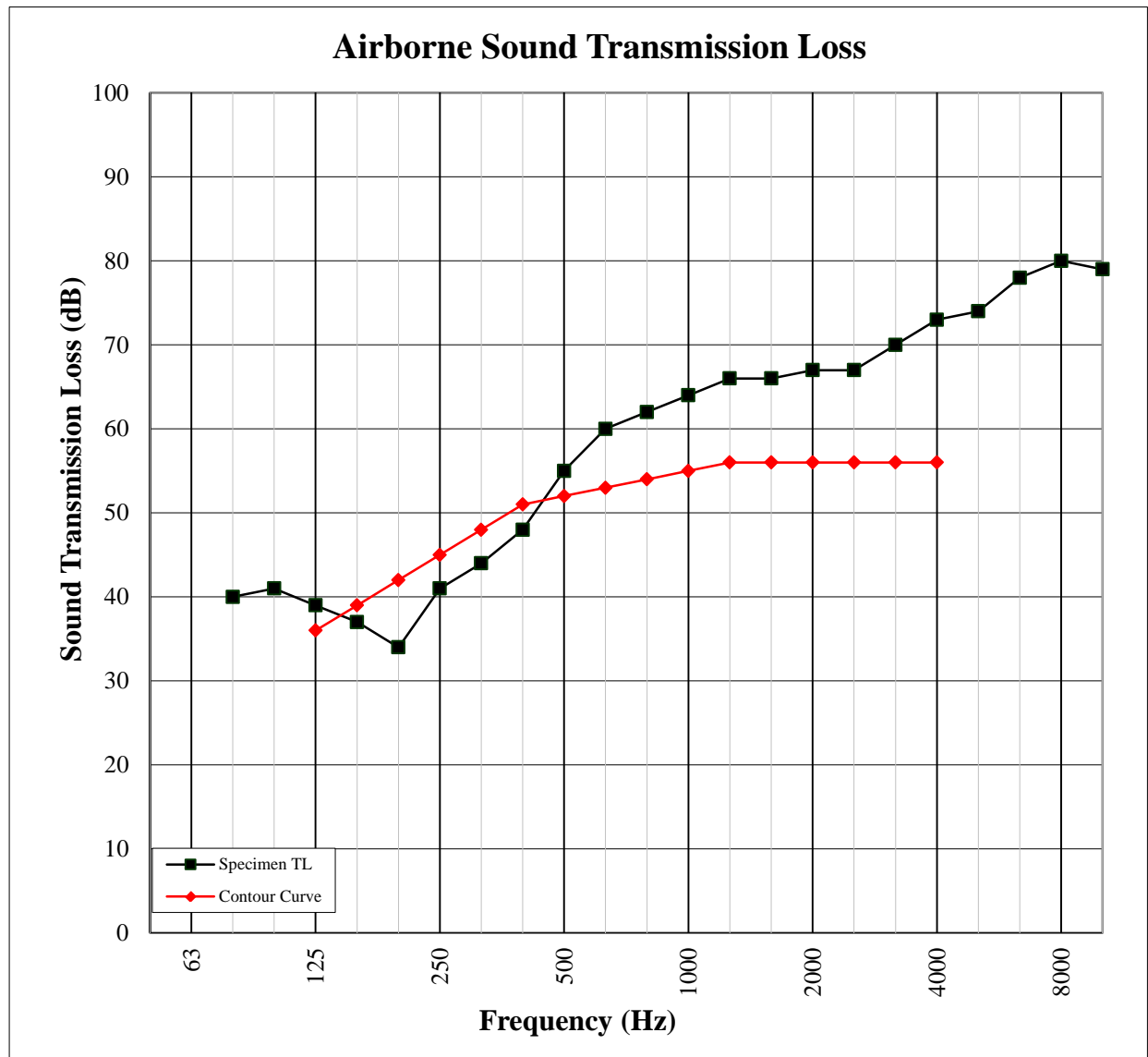


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### AIRBORNE SOUND TRANSMISSION LOSS ASTM E 90

<b>Test Date</b>	03/25/15
<b>Data File No.</b>	E6534.01
<b>Client</b>	ECORE International
<b>Description</b>	25.4 mm Ecore UltraTile® Rubber Tile Flooring, 152 mm Concrete Slab
<b>Specimen Area</b>	10.98 m <sup>2</sup>
<b>Technician</b>	Jordan Strybos







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**IMPACT SOUND TRANSMISSION**  
ASTM E 492

<b>Test Date</b>	03/25/15
<b>Data File No.</b>	E6534.01
<b>Client</b>	ECORE International
<b>Description</b>	25.4 mm E CORE UltraTile® Rubber Tile Flooring, 152 mm Concrete Slab
<b>Specimen Area</b>	10.98 m <sup>2</sup>
<b>Technician</b>	Jordan Strybos

<b>Freq</b> (Hz)	<b>Background SPL</b> (dB)	<b>Absorption</b> (m <sup>2</sup> )	<b>Normalized Impact SPL</b> (dB)	<b>95% Confidence Limit</b>	<b>Number of Deficiencies</b>
80	50.9	17.8	58	2.9	-
100	43.7	13.5	56	1.5	0
125	40.8	10.3	57	1.5	1
160	33.4	10.3	59	2.2	3
200	28.1	12.7	64	2.3	8
250	26.5	11.8	56	0.7	0
315	24.2	10.1	51	1.1	0
400	21.6	9.4	48	0.5	0
500	25.1	8.3	44	1.3	0
630	24.4	7.8	40	0.6	0
800	24.9	8.0	36	0.8	0
1000	24.9	7.9	28	0.5	0
1250	23.5	8.0	23	0.4	0
1600	19.8	8.1	20	0.2	0
2000	12.5	9.2	13	0.3	0
2500	7.9	10.4	9	0.5	0
3150	6.2	11.8	7	0.2	0
4000	6.1	13.7	6	0.5	-
5000	5.6	17.1	6	0.5	-
6300	5.9	22.1	7	0.7	-
8000	6.2	30.1	9	0.9	-
10000	6.3	38.9	10	0.9	-

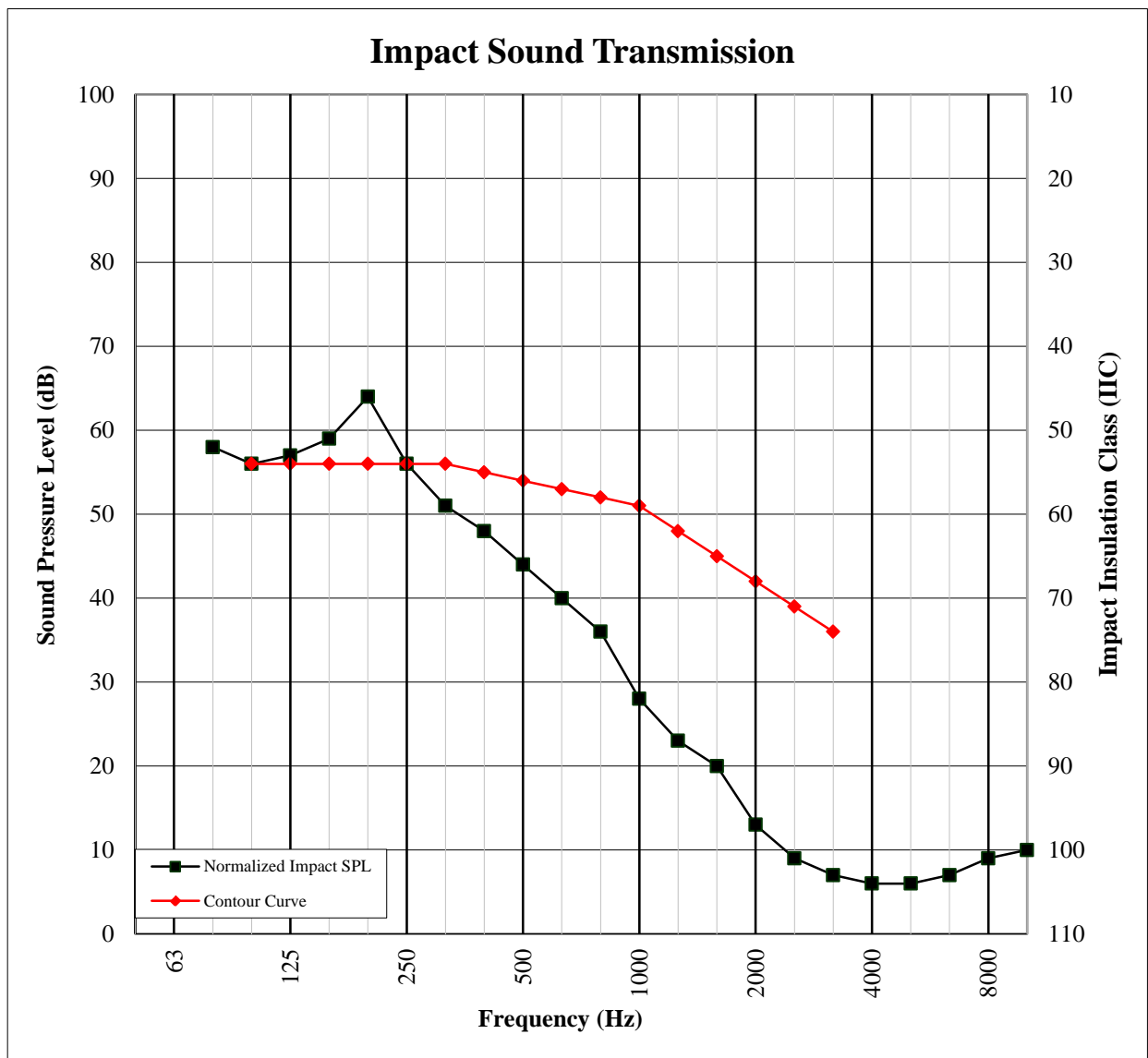
**IIC Rating**      **56**      *(Impact Insulation Class)*

**Deficiencies**      **12**      *(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

<b>Test Date</b>	03/25/15
<b>Data File No.</b>	E6534.01
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<b>Description</b>	25.4 mm ECORE UltraTile® Rubber Tile Flooring, 152 mm Concrete Slab
<b>Specimen Area</b>	10.98 m <sup>2</sup>
<b>Technician</b>	Jordan Strybos





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**DELTA IMPACT INSULATION**  
ASTM E 2179

<b>Test Date</b>	03/25/15
<b>Data File No.</b>	E6534.01
<b>Client</b>	ECORE International
<b>Description</b>	25.4 mm Ecore UltraTile® Rubber Tile Flooring, 152 mm Concrete Slab
<b>Specimen Area</b>	10.98 m <sup>2</sup>
<b>Technician</b>	Jordan Strybos

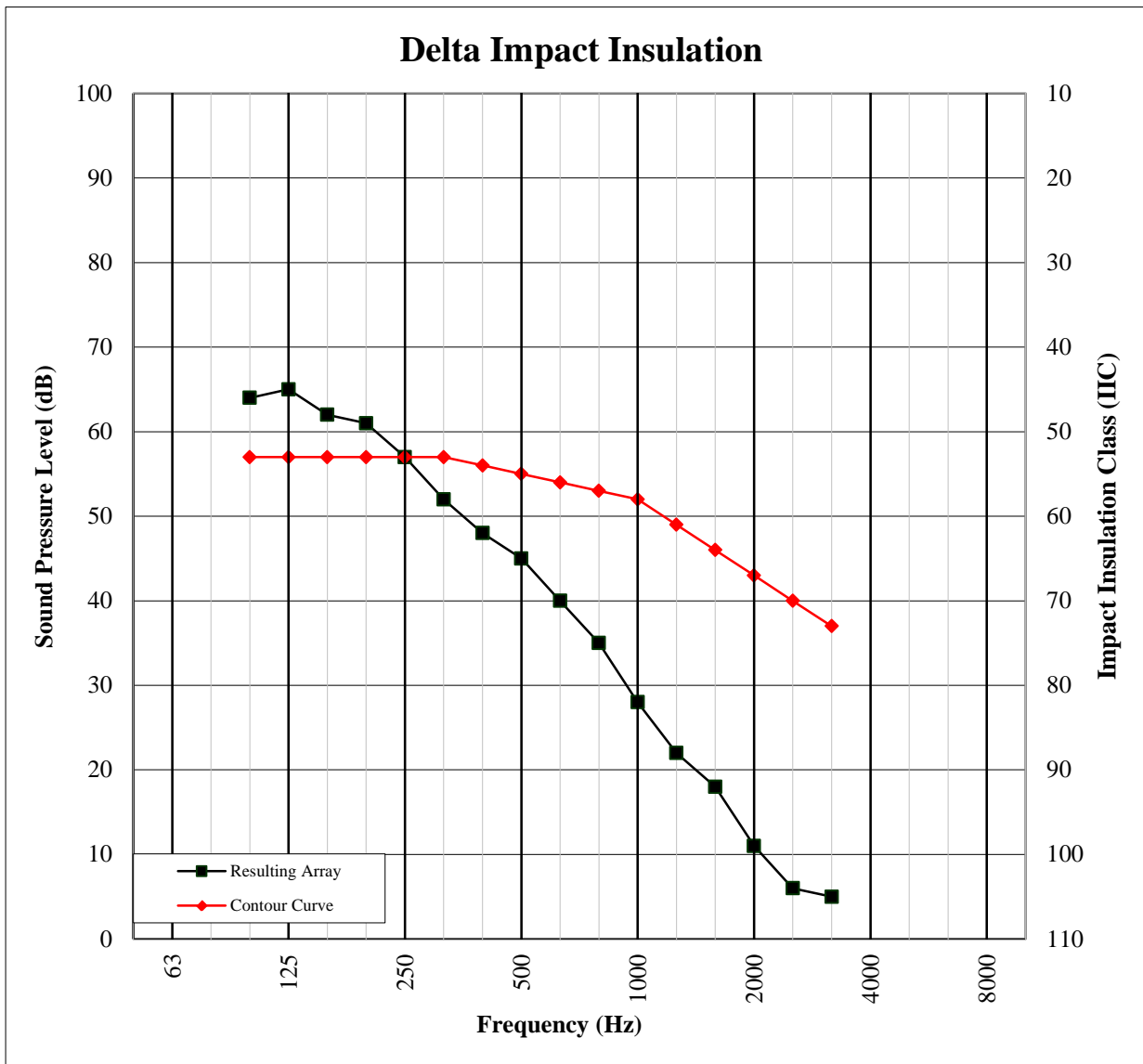
Freq (Hz)	Bkgrd SPL (dB)	Absorption (Square Meters)	Normalized Impact SPL BARE (dB)	95% Conf Limit	Normalized Impact SPL SPEC (dB)	95% Conf Limit	Resulting Array L <sub>ref,c</sub>	No. of Defici- encies
100	43.7	13.5	59.5	0.7	56.3	0.9	64	7
125	40.8	10.3	59.6	1.1	57.1	1.0	65	8
160	33.4	10.3	65.3	1.1	59.2	0.8	62	5
200	28.1	12.7	72.2	2.2	64.3	1.7	61	4
250	26.5	11.8	68.2	2.0	56.3	0.8	57	0
315	24.2	10.1	68.7	2.3	51.1	1.6	52	0
400	21.6	9.4	70.1	1.2	48.1	1.2	48	0
500	25.1	8.3	69.9	1.4	44.0	0.9	45	0
630	24.4	7.8	71.1	1.7	40.0	2.5	40	0
800	24.9	8.0	72.9	3.1	36.3	1.6	35	0
1000	24.9	7.9	72.6	1.3	28.2	0.5	28	0
1250	23.5	8.0	73.5	0.7	23.2	0.3	22	0
1600	19.8	8.1	73.8	1.5	19.6	1.2	18	0
2000	12.5	9.2	74.3	1.9	13.1	0.7	11	0
2500	7.9	10.4	74.8	1.3	9.1	0.6	6	0
3150	6.2	11.8	73.9	1.8	7.1	0.4	5	0

**ΔIIC Rating**     27     *(Delta Impact Insulation Class)*  
**Deficiencies**     24     *(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

<b>Test Date</b>	03/25/15
<b>Data File No.</b>	E6534.01
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<b>Description</b>	25.4 mm ECORE UltraTile® Rubber Tile Flooring, 152 mm Concrete Slab
<b>Specimen Area</b>	10.98 m <sup>2</sup>
<b>Technician</b>	Jordan Strybos



**Photographs**

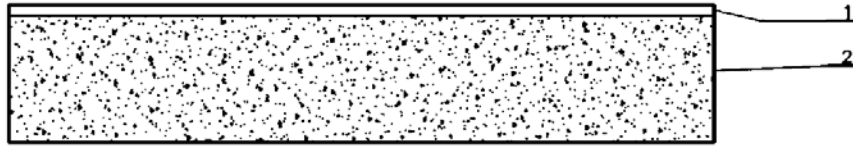


**Close-Up of Test Specimen**



**Receive Room View of Test Specimen Installation**

**Drawing**



1-Floor Topping

2-Concrete Slab