



**G0665.12-113-11-R1**  
**ACOUSTICAL PERFORMANCE TEST REPORT**  
**ASTM E 90, ASTM E 492, ASTM E 2179**

**Rendered to**

**PROTECTO WRAP COMPANY**

**Series/Model: Protecto Wrap Whispermat LVT**

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

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

<b>STC</b>	<b>51</b>
<b>IIC</b>	<b>57</b>
<b>ΔIIC</b>	<b>27</b>

**Test Specimen Identification:**

Floor Topping: 4 mm Luxury Vinyl Plank

Floor Underlayment: 1.8 mm Protecto Wrap Whispermat LVT

Floor Slab: 152 mm Concrete Slab

Reference should be made to Intertek-ATI Report G0665.12-113-11 for complete test specimen description. This page alone is not a complete report.



## Acoustical Performance Test Report

PROTECTO WRAP COMPANY  
1955 South Cherokee Street  
Denver, Colorado 80223

<b>Report</b>	G0665.12-113-11
<b>Test Date</b>	07/11/16
<b>Report Date</b>	05/10/18
<b>Revision Date</b>	05/23/18

### Project Scope

This report is a reissue of the original Report No. G0665.04-113-11 and is rendered to Protecto Wrap Company through written authorization. A summary of the results is listed in the Test Results section, and the complete test data is included as attachments to this report. The original client provided the test specimen.

### 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(2016)e1, Standard Test Method for Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine

ASTM E 2179-03(2016), Standard Test Method for Laboratory Measurement of the Effectiveness of Floor Coverings in Reducing Impact Sound Transmission Through Concrete Floors

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

**Test Conditions**

Source Room		Receive Room	
Average Temperature	22.1°C	Average Temperature	22.4°C
Average Relative Humidity	58%	Average Relative Humidity	61%

**Test Calculations**

The STC (Sound Transmission Class), IIC (Impact Insulation Class), and  $\Delta$ IIC (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 Vinyl Plank	914.4 by 152.4	4.0	N/A	10.98 m <sup>2</sup>	7.52 kg/m <sup>2</sup>
	<i>Note: Installed with releasable self-adhesive</i>				
Whispermat LVT	914 by 3048	1.8	Protecto Wrap	10.98 m <sup>2</sup>	0.76 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 4111.6 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.

This report is reissued in the name of Protecto Wrap Company through written authorization from the original report holder. The original Report No. is G0665.04-113-11.

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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Cody R. Snyder  
Technician I - Acoustical Testing

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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**

<b><u>Revision</u></b>	<b><u>Date</u></b>	<b><u>Page(s)</u></b>	<b><u>Description</u></b>
R0	05/10/18	N/A	Original Report Issue - Reissue of Report No. G0665.04-113-11 in the name of Protecto Wrap Company.
R1	05/23/18	All pages	ASTM E2179 data added

## Attachments

### Instrumentation

Instrument	Manufacturer	Model	ATI Number	Date of Calibration
Data Acquisition Unit	National Instruments	PXI-1033	65124	06/16 *
Microphone Calibrator	Norsonic	1251	INT00127	01/16
Receive Room Microphone	PCB Piezotronics	378B20	63748	06/16
Receive Room Microphone	PCB Piezotronics	378B20	63744	06/16
Receive Room Microphone	PCB Piezotronics	378B20	63745	06/16
Receive Room Microphone	PCB Piezotronics	378C20	65617	06/16
Receive Room Microphone	PCB Piezotronics	378B20	63747	06/16
Receive Room Environmental Indicator	Comet	T7510	63810	10/15
			63811	10/15
Source Room Microphone	PCB Piezotronics	378B20	63738	05/16
Source Room Microphone	PCB Piezotronics	378B20	63739	05/16
Source Room Microphone	PCB Piezotronics	378B20	63740	05/16
Source Room Microphone	PCB Piezotronics	378B20	63742	05/16
Source Room Microphone	Scantek	378B20	63741	05/16
Source Room Environmental Indicator	Comet	T7510	63812	11/15
Tapping Machine	Look Line s.r.l.	EM50 (TM50)	65351	02/16

\* 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>	07/11/16
<b>Data File No.</b>	G0665.04
<b>Client</b>	Protecto Wrap Company
<b>Description</b>	4 mm Luxury Vinyl Plank, 1.8 mm Protecto Wrap Whispermat LVT, 152 mm Concrete Slab
<b>Specimen Area</b>	10.98 m <sup>2</sup>
<b>Technician</b>	Cody R. Snyder

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	38.9	14.8	109	67	42	3.70	-
100	35.5	12.4	107	67	40	1.60	-
125	37.1	9.4	106	70	38	1.10	0
160	26.9	8.5	107	72	37	1.90	1
200	24.6	11.1	104	72	33	2.20	8
250	24.2	10.9	104	64	40	1.00	4
315	23.9	9.7	105	62	44	0.60	3
400	19.1	8.0	104	61	44	0.20	6
500	22.8	7.5	104	57	49	0.40	2
630	18.6	7.2	104	53	53	0.40	0
800	17.7	7.0	105	49	59	0.40	0
1000	15.3	6.9	104	44	63	0.40	0
1250	9.4	7.0	104	42	66	0.20	0
1600	6.1	7.0	104	40	67	0.20	0
2000	4.2	7.7	104	38	68	0.30	0
2500	4.1	8.7	102	36	68	0.30	0
3150	4.0	9.6	103	34	70	0.40	0
4000	4.6	11.0	104	33	72	0.50	0
5000	5.2	12.9	104	32	72	0.50	-
6300	5.8	16.7	97	27	69	0.70	-
8000	6.2	22.0	97	20	75	0.80	-
10000	6.4	26.7	92	11	79	0.70	-

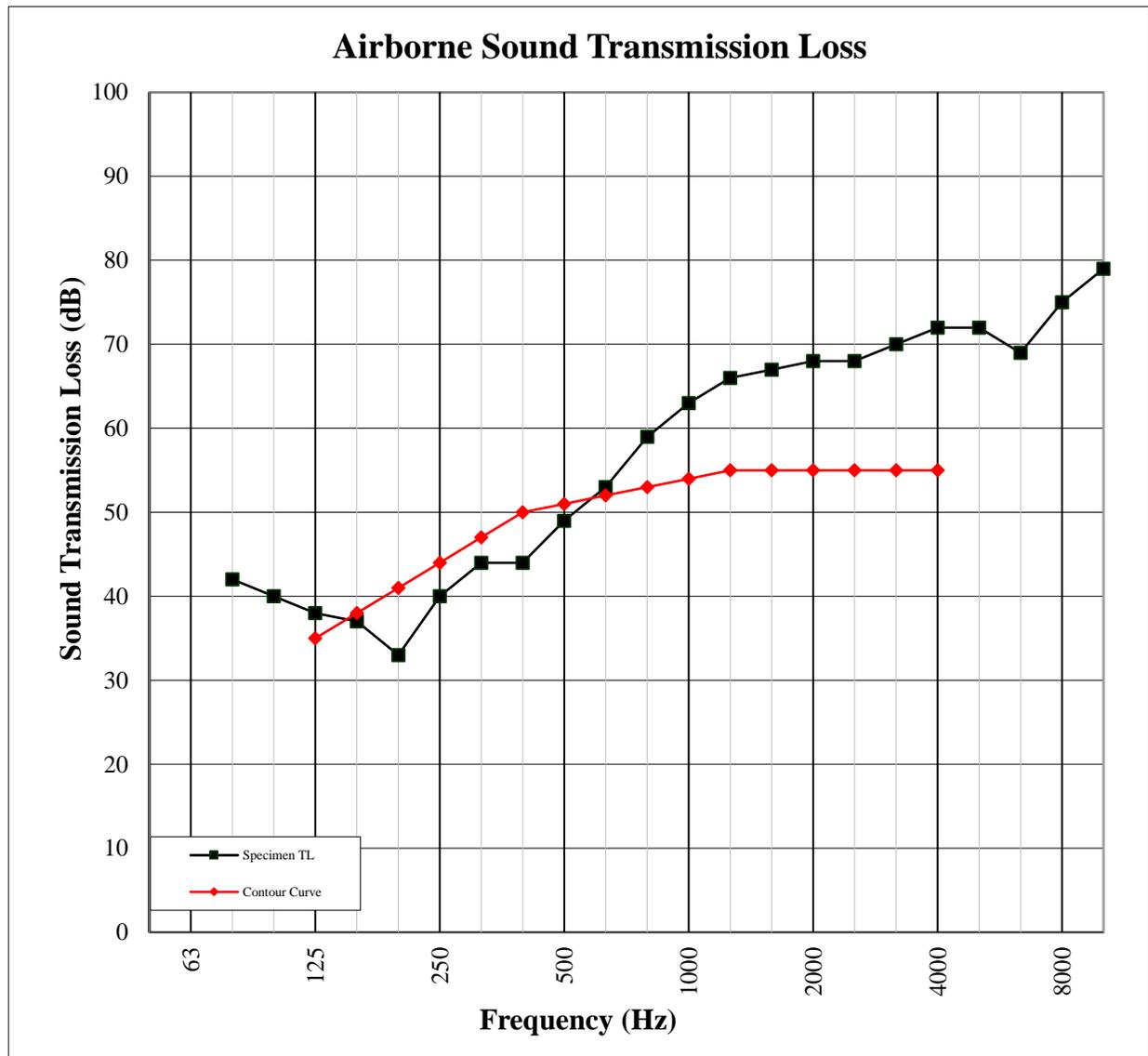
**STC Rating**      **51**      (*Sound Transmission Class*)

**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

**AIRBORNE SOUND TRANSMISSION LOSS**  
ASTM E 90

<b>Test Date</b>	07/11/16
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<b>Description</b>	4 mm Luxury Vinyl Plank, 1.8 mm Protecto Wrap Whispermat LVT, 152 mm Concrete Slab
<b>Specimen Area</b>	10.98 m <sup>2</sup>
<b>Technician</b>	Cody R. Snyder





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**IMPACT SOUND TRANSMISSION**  
ASTM E 492

<b>Test Date</b>	07/11/16
<b>Data File No.</b>	G0665.04
<b>Client</b>	Protecto Wrap Company
<b>Description</b>	4 mm Luxury Vinyl Plank, 1.8 mm Protecto Wrap Whispermat LVT, 152 mm Concrete Slab
<b>Specimen Area</b>	10.98 m <sup>2</sup>
<b>Technician</b>	Cody R. Snyder

<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	37.6	15.9	53	2.8	-
100	32.8	12.6	54	3.1	0
125	38.1	9.6	54	1.8	0
160	25.8	8.9	56	1.2	1
200	21.6	10.9	63	2.5	8
250	22.0	10.3	60	0.8	5
315	21.5	9.2	56	1.2	1
400	17.1	7.9	52	0.4	0
500	22.4	7.4	46	0.9	0
630	19.2	7.3	42	0.5	0
800	18.7	7.0	40	0.9	0
1000	15.3	6.9	36	1.2	0
1250	9.7	7.0	29	0.6	0
1600	6.9	7.1	25	0.5	0
2000	5.7	7.7	19	0.6	0
2500	5.1	8.7	14	1.0	0
3150	4.7	9.6	7	0.6	0
4000	5.4	11.0	5	0.5	-
5000	5.9	12.9	5	0.5	-
6300	6.6	16.5	6	0.6	-
8000	7.0	22.1	8	0.7	-
10000	7.1	26.6	9	0.8	-

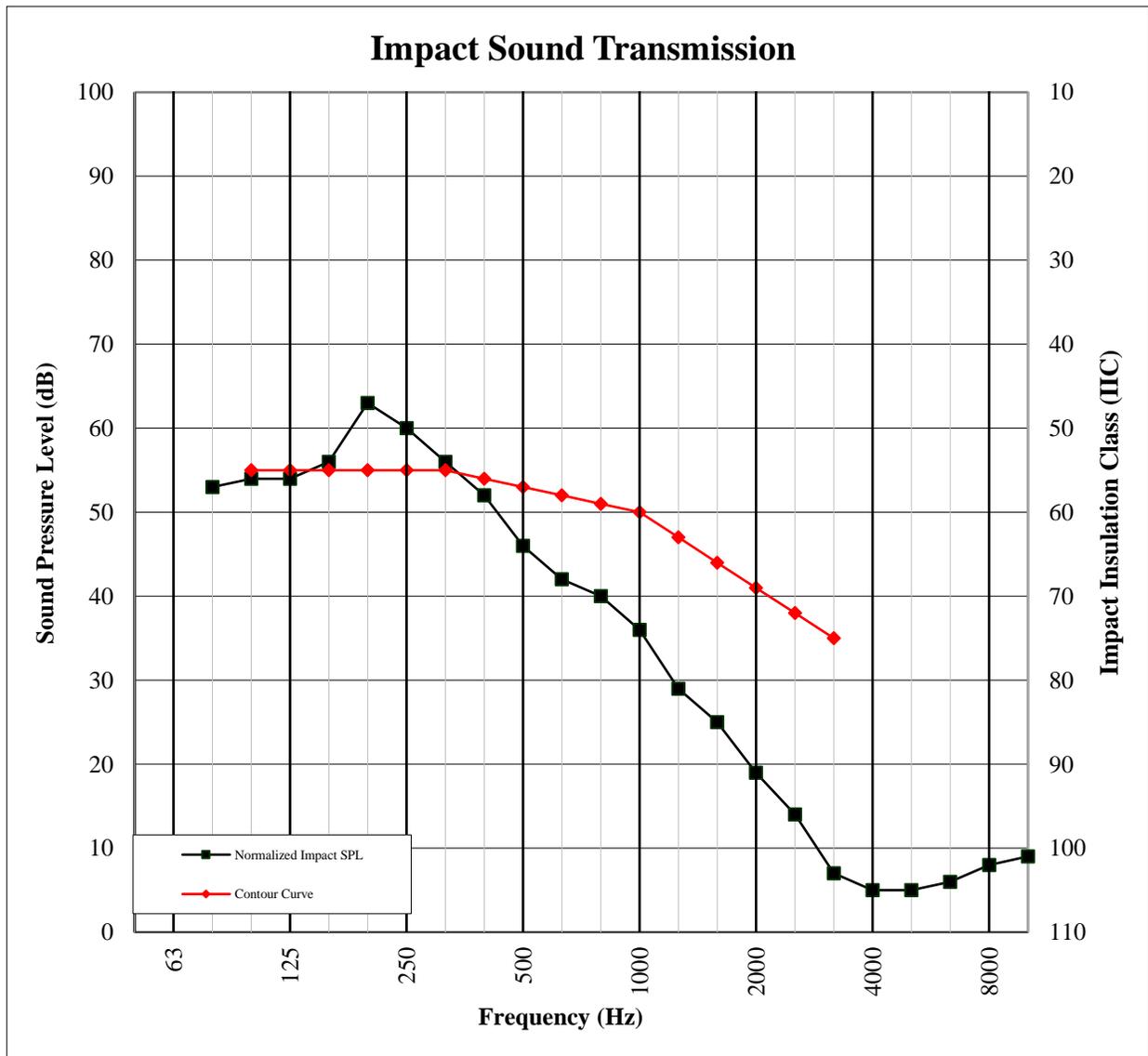
**IIC Rating**      **57**      *(Impact Insulation Class)*

**Deficiencies**      **15**      *(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>	07/11/16
<b>Data File No.</b>	G0665.04
<b>Client</b>	Protecto Wrap Company
<b>Description</b>	4 mm Luxury Vinyl Plank, 1.8 mm Protecto Wrap Whispermat LVT, 152 mm Concrete Slab
<b>Specimen Area</b>	10.98 m <sup>2</sup>
<b>Technician</b>	Cody R. Snyder





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**DELTA IMPACT INSULATION**  
ASTM E 2179

<b>Test Date</b>	07/11/16
<b>Data File No.</b>	G0665.04
<b>Client</b>	Foam Solutions Inc
<b>Description</b>	4 mm Luxury Vinyl Plank, 1.8 mm Protecto Wrap Whispermat LVT, 152 mm Concrete Slab
<b>Specimen Area</b>	10.98 m <sup>2</sup>
<b>Technician</b>	Cody R. Snyder

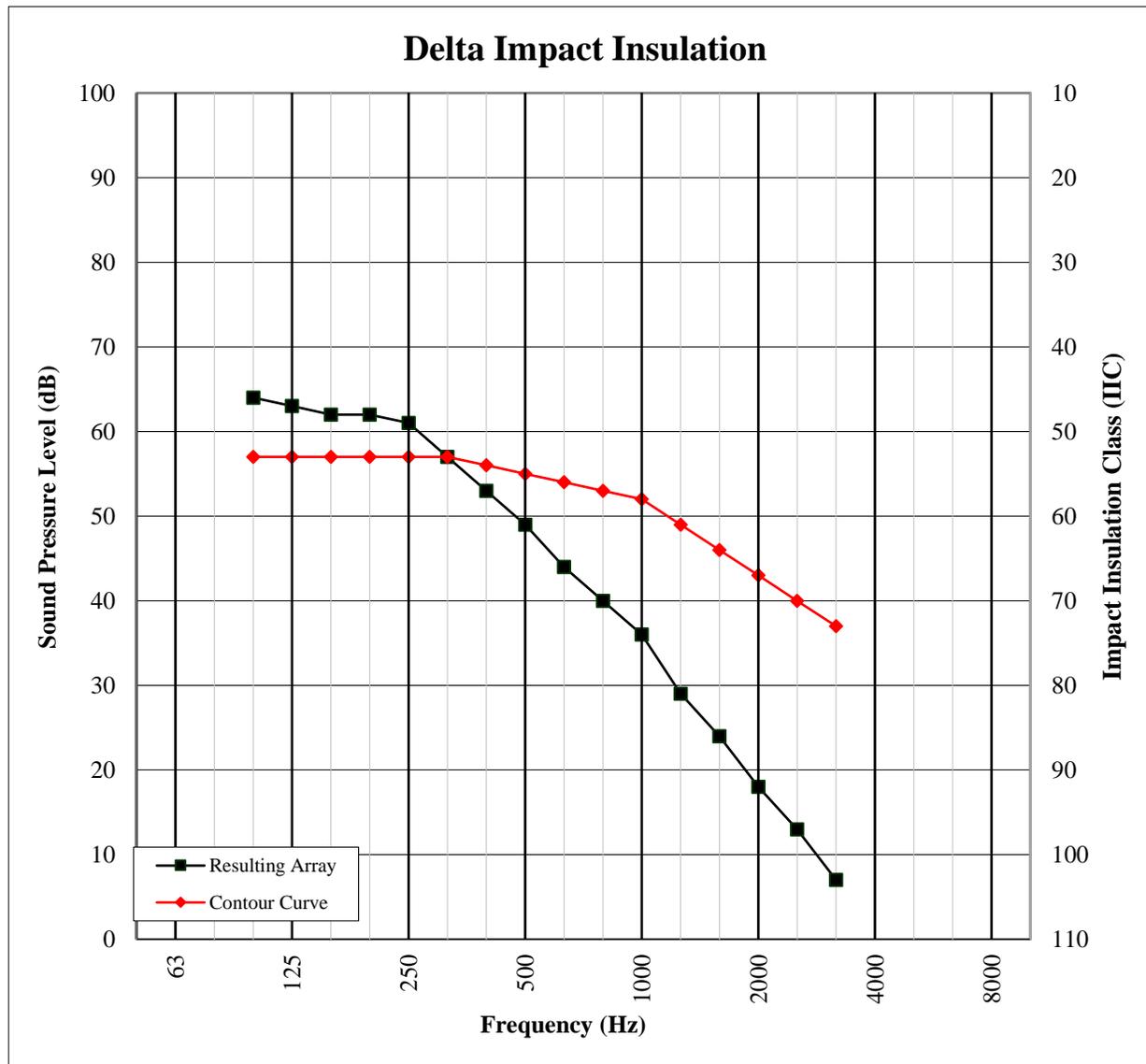
Freq (Hz)	Bkgrd SPL (dB)	Absorption (Square Meters)	Normalized Impact SPL BARE (dB)	95% Conf Limit	Normalized Impact SPL SPEC (dB)	95% Conf Limit	Resulting Array L <sub>ref,c</sub>	No. of Defici- encies
100	32.8	12.6	56.8	0.7	53.6	1.0	64	7
125	38.1	9.6	57.7	1.3	53.5	0.3	63	6
160	25.8	8.9	62.2	1.7	56.5	1.9	62	5
200	21.6	10.9	70.3	1.3	63.5	2.0	62	5
250	22.0	10.3	68.0	2.3	59.7	2.2	61	4
315	21.5	9.2	68.1	2.7	55.6	1.9	57	0
400	17.1	7.9	69.1	1.3	52.2	0.8	53	0
500	22.4	7.4	67.6	1.5	45.6	1.6	49	0
630	19.2	7.3	69.7	1.8	42.3	2.2	44	0
800	18.7	7.0	71.4	2.0	40.3	0.8	40	0
1000	15.3	6.9	71.5	2.6	35.8	0.3	36	0
1250	9.7	7.0	71.9	3.2	29.3	0.8	29	0
1600	6.9	7.1	72.6	3.3	24.9	1.0	24	0
2000	5.7	7.7	73.3	3.3	19.1	0.6	18	0
2500	5.1	8.7	73.0	3.0	13.7	1.0	13	0
3150	4.7	9.6	72.5	2.3	7.3	0.3	7	0

**ΔIIC Rating**     27     *(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

<b>Test Date</b>	07/11/16
<b>Data File No.</b>	G0665.04
<b>Client</b>	Foam Solutions Inc
<b>Description</b>	4 mm Luxury Vinyl Plank, 1.8 mm Protecto Wrap Whispermat LVT, 152 mm Concrete Slab
<b>Specimen Area</b>	10.98 m <sup>2</sup>
<b>Technician</b>	Cody R. Snyder



**Photographs**

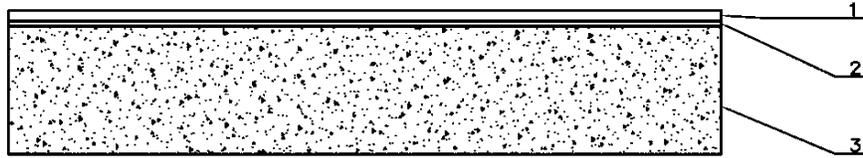


**Source Room View of Test Specimen Installation**



**Receive Room View of Test Specimen Installation**

**Drawing**



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