



**F2624.01-113-11-R0**  
**ACOUSTICAL PERFORMANCE TEST REPORT**  
**ASTM E 90 AND ASTM E 492**

**Rendered to**

**PROTECTO WRAP COMPANY**

**Series/Model: Whisper Mat Underlayment with Everbond Adhesive**

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

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

**STC     52**  
**IIC     51**

**Test Specimen Identification:**

Floor Topping: 12.7 mm Millstead PF9545 Hardwood Flooring

Floor Underlayment: 2.07 mm Protecto Wrap Whisper Mat HW Underlayment

Floor Slab: 152 mm Concrete Slab

Reference should be made to Intertek-ATI Report F2624.01-113-11 for complete test specimen description. This page alone is not a complete report.



## Acoustical Performance Test Report

PROTECTO WRAP COMPANY  
1995 South Cherokee Street  
Denver, Colorado 80223

**Report** F2624.01-113-11  
**Test Date** 11/05/15  
**Report Date** 11/20/15

### Project Scope

Architectural Testing, Inc., a subsidiary of Intertek (Intertek-ATI), was contracted to conduct airborne sound transmission loss and 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 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	19.8°C	Average Temperature	20.4°C
Average Relative Humidity	58%	Average Relative Humidity	60%

**Test Calculations**

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

**Test Specimen Materials and Installation Details**

Material	Dimensions (mm)	Thickness (mm)	Manufacturer and Series	Quantity	Average Weight
Hardwood Flooring	Varied by 127	12.7	Millstead PF9545	10.98 m <sup>2</sup>	8.21 kg/m <sup>2</sup>
	<i>Note: Adhered to the underlayment per manufacturer's specifications with Bruce Everbond adhesive</i>				
Underlayment	3023 by 914.4	2.1	Protecto Wrap Whisper Mat HW	10.98 m <sup>2</sup>	0.98 kg/m <sup>2</sup>
	<i>Note: Adhered with a peel and stick adhesive backing</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 4121.6 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.

**This report may not be reproduced, except in full, without the written approval of Intertek-ATI.**

FOR INTERTEK-ATI:

---

Eric A. Thompson  
Technician II - Acoustical Testing

---

Jordan Strybos  
Project Manager - Acoustical Testing

Attachments (7 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	11/20/15	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 m <sup>3</sup>
VT Source Room Volume	190 m <sup>3</sup>



F2624.01-113-11-R0



**AIRBORNE SOUND TRANSMISSION LOSS**  
ASTM E 90

<b>Test Date</b>	11/05/15
<b>Data File No.</b>	F2624.01
<b>Client</b>	Protecto Wrap Company
<b>Description</b>	12.7 mm Millstead PF9545 Hardwood Flooring, 2.07 mm Protecto Wrap Whisper Mat HW Underlayment, 152 mm Concrete Slab
<b>Specimen Area</b>	10.98 m <sup>2</sup>
<b>Technician</b>	Eric A. Thompson

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	58.3	15.2	108	68	40	3.40	-
100	37.7	12.2	106	68	38	2.00	-
125	34.5	9.7	106	72	35	2.50	1
160	29.6	9.6	107	71	38	1.40	1
200	25.6	11.6	105	70	35	1.30	7
250	28.5	11.4	104	63	42	1.10	3
315	25.2	10.2	106	63	44	0.70	4
400	23.0	9.0	104	61	45	0.90	6
500	25.7	8.3	104	57	49	0.60	3
630	25.6	7.8	106	56	51	0.60	2
800	26.9	8.0	105	53	54	0.30	0
1000	26.8	8.0	105	50	57	0.40	0
1250	30.0	8.1	105	47	60	0.50	0
1600	21.8	8.0	105	45	62	0.40	0
2000	16.9	8.5	105	42	65	0.40	0
2500	14.0	9.2	103	38	67	0.40	0
3150	13.9	10.1	104	35	70	0.50	0
4000	12.1	11.2	105	33	72	0.50	0
5000	9.6	12.9	104	30	74	0.60	-
6300	8.6	16.9	98	19	78	0.90	-
8000	7.4	22.0	98	15	81	1.10	-
10000	7.4	27.5	92	9	81	1.30	-

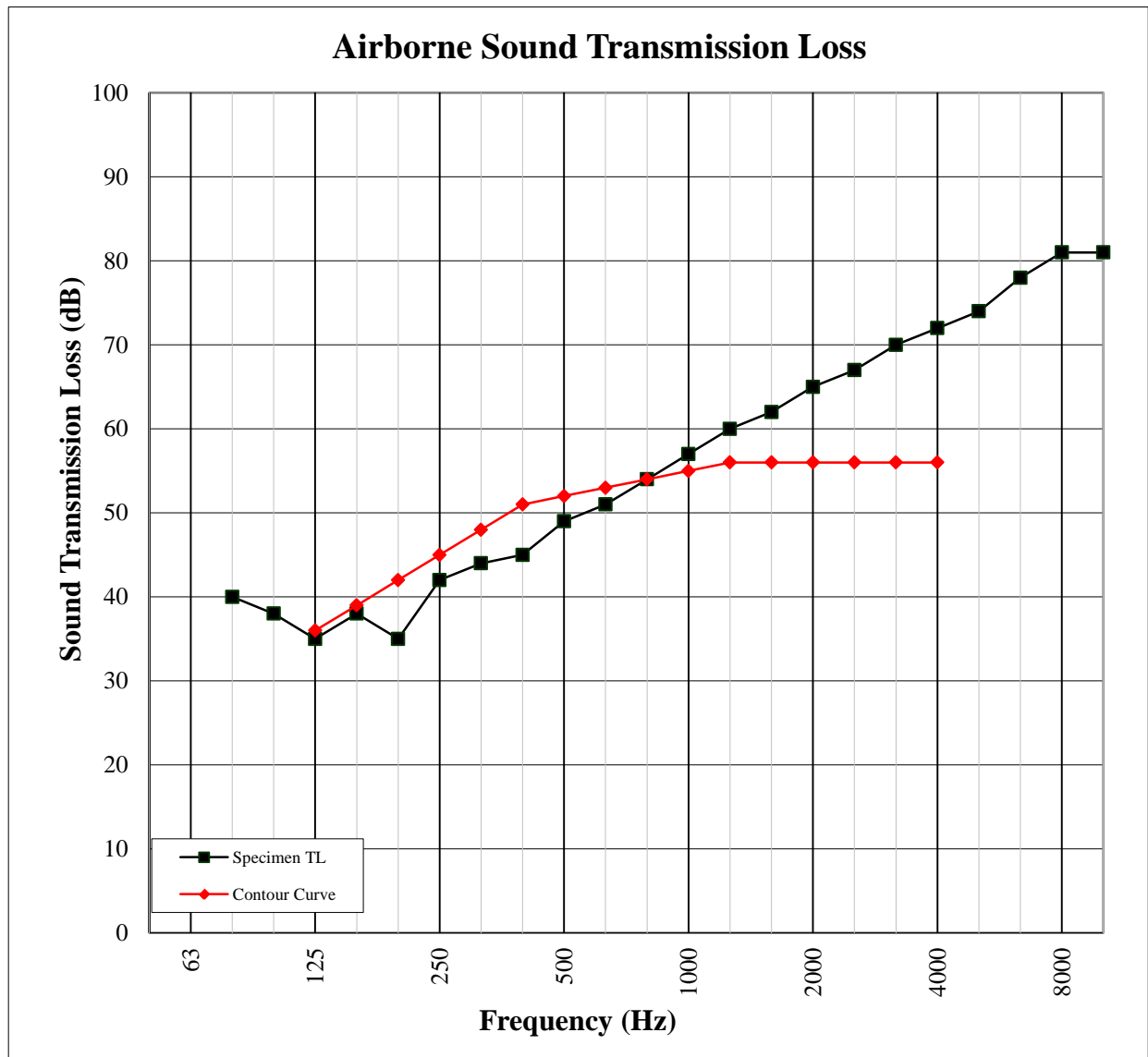
**STC Rating**      **52**      (*Sound Transmission Class*)

**Deficiencies**      **27**      (*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>	11/05/15
<b>Data File No.</b>	F2624.01
<b>Client</b>	Protecto Wrap Company
<b>Description</b>	12.7 mm Millstead PF9545 Hardwood Flooring, 2.07 mm Protecto Wrap Whisper Mat HW Underlayment, 152 mm Concrete Slab
<b>Specimen Area</b>	10.98 m <sup>2</sup>
<b>Technician</b>	Eric A. Thompson







F2624.01-113-11-R0



**IMPACT SOUND TRANSMISSION**  
ASTM E 492

<b>Test Date</b>	11/05/15
<b>Data File No.</b>	F2624.01
<b>Client</b>	Protecto Wrap Company
<b>Description</b>	12.7 mm Millstead PF9545 Hardwood Flooring, 2.07 mm Protecto Wrap Whisper Mat HW Underlayment, 152 mm Concrete Slab
<b>Specimen Area</b>	10.98 m <sup>2</sup>
<b>Technician</b>	Eric A. Thompson

<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	62.7	15.3	54	2.0	-
100	46.6	12.2	56	1.8	0
125	44.7	8.7	61	4.6	0
160	41.7	9.8	64	2.1	3
200	40.1	11.0	69	2.4	8
250	37.0	11.3	66	0.8	5
315	35.0	10.4	63	0.9	2
400	33.5	9.0	65	0.3	5
500	33.5	8.3	62	1.1	3
630	33.2	7.8	60	0.8	2
800	33.0	8.0	55	0.8	0
1000	33.4	8.1	53	0.5	0
1250	34.0	8.1	49	0.8	0
1600	31.3	8.1	46	0.4	0
2000	26.2	8.6	43	0.8	0
2500	23.1	9.2	37	1.1	0
3150	22.6	10.1	29	0.9	0
4000	21.3	11.2	23	1.3	-
5000	19.9	13.0	16	1.8	-
6300	18.9	16.6	11	1.6	-
8000	16.6	21.9	10	1.0	-
10000	14.9	27.6	10	0.8	-

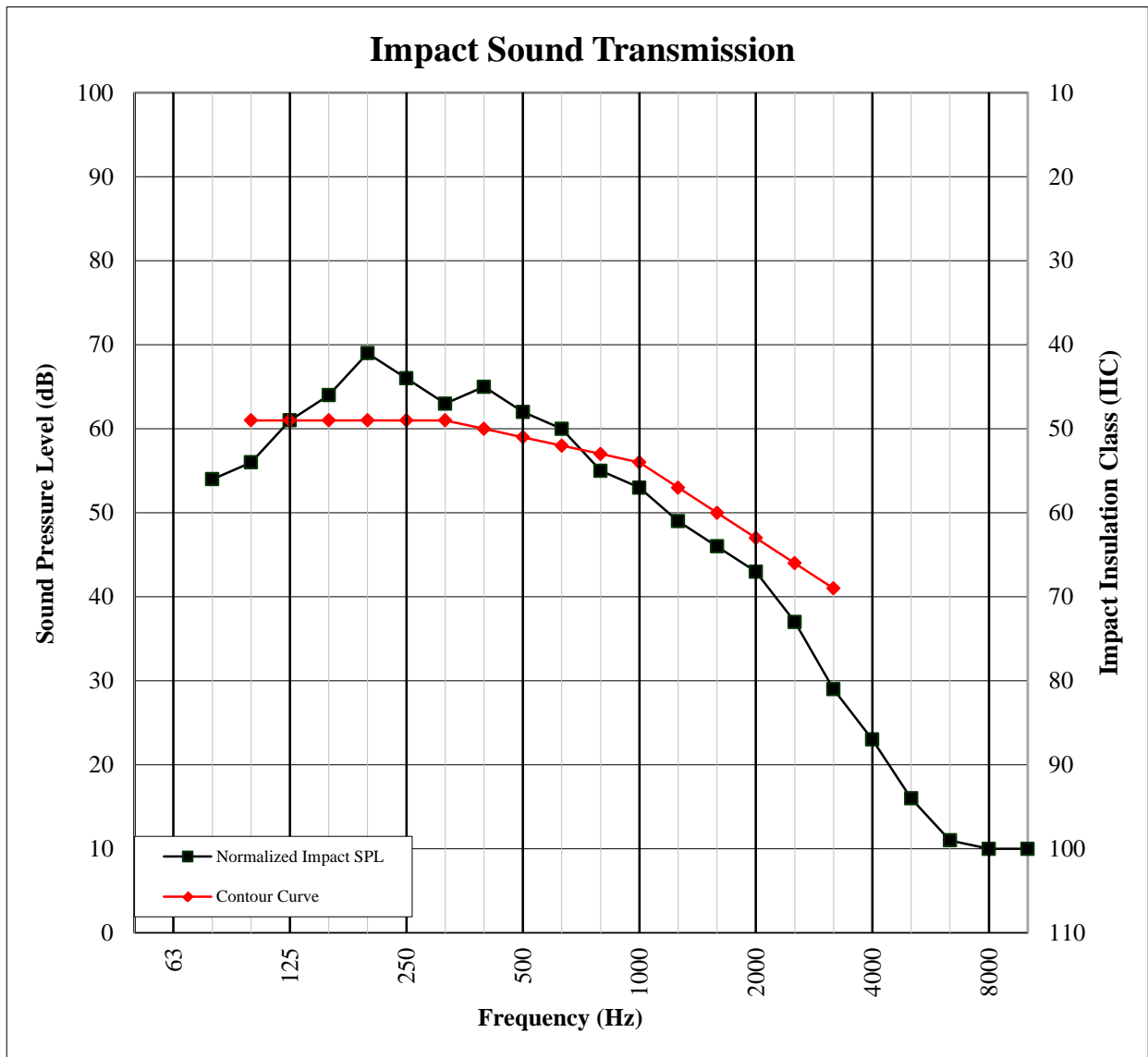
**IIC Rating**      **51**      *(Impact Insulation Class)*

**Deficiencies**      **28**      *(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>	11/05/15
<b>Data File No.</b>	F2624.01
<b>Client</b>	Protecto Wrap Company
<b>Description</b>	12.7 mm Millstead PF9545 Hardwood Flooring, 2.07 mm Protecto Wrap Whisper Mat HW Underlayment, 152 mm Concrete Slab
<b>Specimen Area</b>	10.98 m <sup>2</sup>
<b>Technician</b>	Eric A. Thompson



**Photographs**

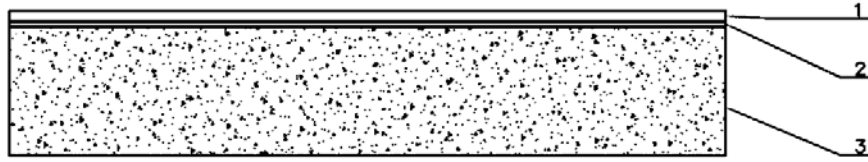


**Source Room View of Test Specimen Installation**



**Receive Room View of Test Specimen Installation**

**Drawing**



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