



G0665.10-113-11-R0
ACOUSTICAL PERFORMANCE TEST REPORT
ASTM E 90 AND ASTM E 492

Rendered to

PROTECTO WRAP COMPANY

Series/Model: Protecto Wrap Whispermat LVT

Specimen Type: 152 mm Concrete Slab with Drop Ceiling

Overall Size: 3023 mm by 3632 mm

STC 63
IIC 67

Test Specimen Identification:

Floor Topping: 12.1 mm KRAUS ALACANTI KPLA10001 Charleston Hickory Laminated Wood

Floor Underlayment: 1.8 mm Protecto Wrap Whispermat LVT

Floor Slab: 152 mm Concrete Slab

Main Beams: 43 mm Armstrong HD8906 Drywall Main Beam

Cross Tees: 37.3 mm Armstrong XL8945P Cross Tee

Insulation: 88.9 mm Johns Manville Kraft Faced R-13 Fiberglass Insulation

Ceiling: 15.9 mm National Gypsum Gold Bond® Fire-Shield® Type X Gypsum Panel

Reference should be made to Intertek-ATI Report G0665.10-113-11 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

Report G0665.10-113-11
Test Date 07/11/16
Report Date 05/10/18

Project Scope

This report is a reissue of the original Report No. G0665.02-113-11 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 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	21.6°C	Average Temperature	22.4°C
Average Relative Humidity	51%	Average Relative Humidity	61%

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
Laminated Wood	3023 by 3623	12.1	KRAUS ALACANTI KPLA10001 Charleston Hickory	10.98 m ²	10.09 kg/m ²
	<i>Note: Loose laid</i>				
Whispermat LVT	914 by 3048	1.8	Protecto Wrap	10.98 m ²	0.76 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>				
Drywall Main Beam	38.1 by 2870	43.0	Armstrong HD8906	10.9 lin m	0.45 kg/m
	<i>Note: Twelve gauge hanger wires were attached to the bottom side of the concrete at twelve locations and then to the main beams. The hanger wire was twisted around itself a minimum of three times within 76 mm creating a 305 mm plenum. The measured steel thickness was 0.5 mm.</i>				
Cross Tee	38.3 by 1219	37.3	Armstrong XL8945P	27.2 lin m	0.45 kg/m
	<i>Note: Inserted into the main beams on 607 mm centers. The measured steel thickness was 0.5 mm.</i>				
Fiberglass Insulation	2962 by 584	88.9	Johns Manville Kraft Faced R-13	10.98 m ²	1.33 kg/m ²
	<i>Note: Loose laid onto the ceiling grid system</i>				

Test Specimen Materials and Installation Details (Continued)

Material	Dimensions (mm)	Thickness (mm)	Manufacturer and Series	Quantity	Average Weight
Gypsum Panel	3023 by 1219	15.9	National Gypsum Gold Bond® Fire-Shield® Type X	10.56 m ²	11.23 kg/m ²
	<i>Note: Fastened with fine thread drywall screws on 305 mm centers</i>				

Comments

The total weight of the floor/ceiling assembly was 4290.1 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 G0665.02-113-11.

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.

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

FOR INTERTEK-ATI:



Digitally Signed by Cody Snyder

Cody R. Snyder
Technician I - Acoustical Testing



Digitally Signed by Jordan Strybos

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	05/10/18	N/A	Original Report Issue - Reissue of Report No. G0665.02-113-11 in the name of Protecto Wrap Company.

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	155.77 m ³
VT Source Room Volume	190 m ³

AIRBORNE SOUND TRANSMISSION LOSS

ASTM E 90

Test Date	07/11/16
Data File No.	G0665.02
Client	Protecto Wrap Company
Description	12.1 mm KRAUS ALACANTI KPLA10001 Charleston Hickory Laminated Wood, 1.8 mm Protecto Wrap Whispermat LVT, 152 mm Concrete Slab, 43 mm Armstrong HD8906 Drywall Main Beam, 37.3 mm Armstrong XL8945P Cross Tee, 88.9 mm Johns Manville Kraft Faced R-13 Fiberglass Insulation, 15.9 mm National Gypsum Gold Bond® Fire-Shield® Type X Gypsum Panel
Specimen Area	10.98 m ²
Technician	Cody R. Snyder

Freq (Hz)	Background SPL (dB)	Absorption (m ²)	Source SPL (dB)	Receive SPL (dB)	Specimen TL (dB)	95% Confidence Limit	Number of Deficiencies
80	39.7	17.1	109	66	42	3.80	-
100	31.4	11.7	107	67	41	1.40	-
125	32.4	9.3	106	66	42	1.20	5
160	28.5	8.7	107	65	45	1.40	5
200	26.5	10.4	104	57	48	1.10	5
250	24.4	10.3	104	55	50	1.00	6
315	23.0	9.5	105	54	53	0.80	6
400	19.4	8.3	104	50	57	0.70	5
500	26.5	7.3	105	45	63	0.30	0
630	19.3	7.2	105	43	66	0.40	0
800	18.8	6.9	105	41	68	0.50	0
1000	16.3	7.0	104	40	68	0.30	0
1250	12.5	7.1	105	40	68	0.30	0
1600	10.1	7.2	105	38	70	0.40	0
2000	5.6	8.0	104	37	69	0.30	0
2500	5.3	8.8	102	36	69	0.30	0
3150	4.2	9.6	103	33	71	0.40	0
4000	4.7	11.0	104	32	72	0.40	0
5000	5.3	12.7	104	31	72	0.50	-
6300	5.8	16.3	97	27	69	0.80	-
8000	6.2	21.2	96	19	76	0.80	-
10000	6.4	27.2	91	10	79	0.60	-

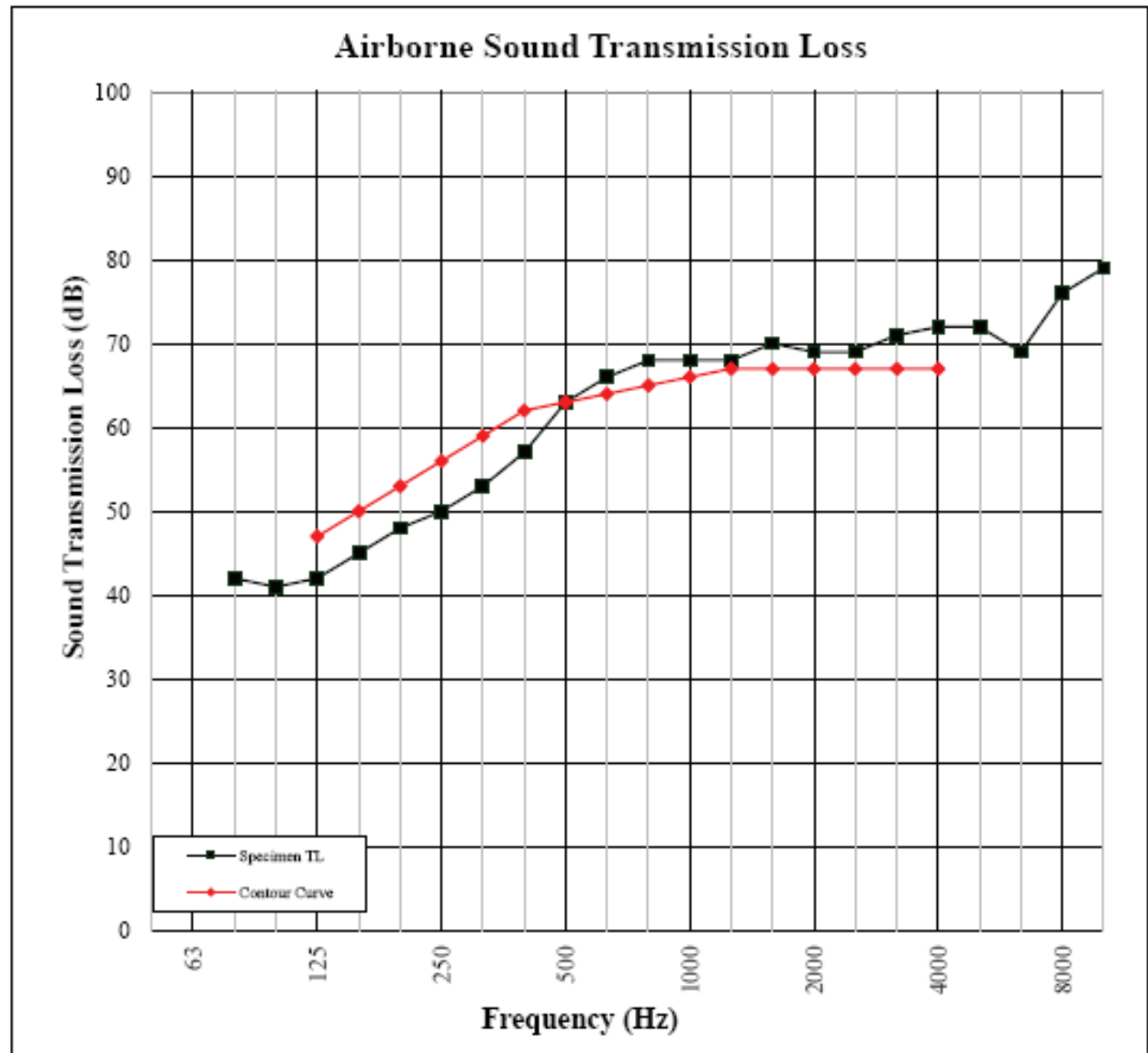
STC Rating **63** *(Sound Transmission Class)*

Deficiencies **32** *(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	07/11/16
Data File No.	G0665.02
Client	Protecto Wrap Company
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Specimen Area	10.98 m ²
Technician	Cody R. Snyder





G0665.10-113-11-R0



IMPACT SOUND TRANSMISSION
ASTM E 492

Test Date	07/11/16
Data File No.	G0665.02
Client	Protecto Wrap Company
Description	12.1 mm KRAUS ALACANTI KPLA10001 Charleston Hickory Laminated Wood, 1.8 mm Protecto Wrap Whispermat LVT, 152 mm Concrete Slab, 43 mm Armstrong HD8906 Drywall Main Beam, 37.3 mm Armstrong XL8945P Cross Tee, 88.9 mm Johns Manville Kraft Faced R-13 Fiberglass Insulation, 15.9 mm National Gypsum Gold Bond® Fire-Shield® Type X Gypsum Panel
Specimen Area	10.98 m ²
Technician	Cody R. Snyder

Freq (Hz)	Background SPL (dB)	Absorption (m ²)	Normalized Impact SPL (dB)	95% Confidence Limit	Number of Deficiencies
80	35.2	16.7	48	3.1	-
100	33.7	12.1	49	1.8	4
125	33.5	9.6	47	1.2	2
160	27.4	8.3	47	0.6	2
200	25.3	10.6	50	1.3	5
250	23.5	9.5	52	1.1	7
315	21.4	9.4	50	0.9	5
400	18.2	8.0	47	0.6	3
500	25.8	7.3	40	1.4	0
630	18.7	7.1	36	0.4	0
800	18.9	6.9	33	0.3	0
1000	16.3	7.2	29	0.6	0
1250	12.0	7.1	26	0.5	0
1600	8.7	7.2	22	0.4	0
2000	4.9	7.9	22	0.4	0
2500	4.8	8.9	18	0.4	0
3150	4.1	9.6	14	0.3	0
4000	4.6	11.0	9	0.3	-
5000	5.2	12.7	6	0.5	-
6300	5.8	16.5	7	0.7	-
8000	6.2	21.0	8	0.7	-
10000	6.4	26.4	9	0.8	-

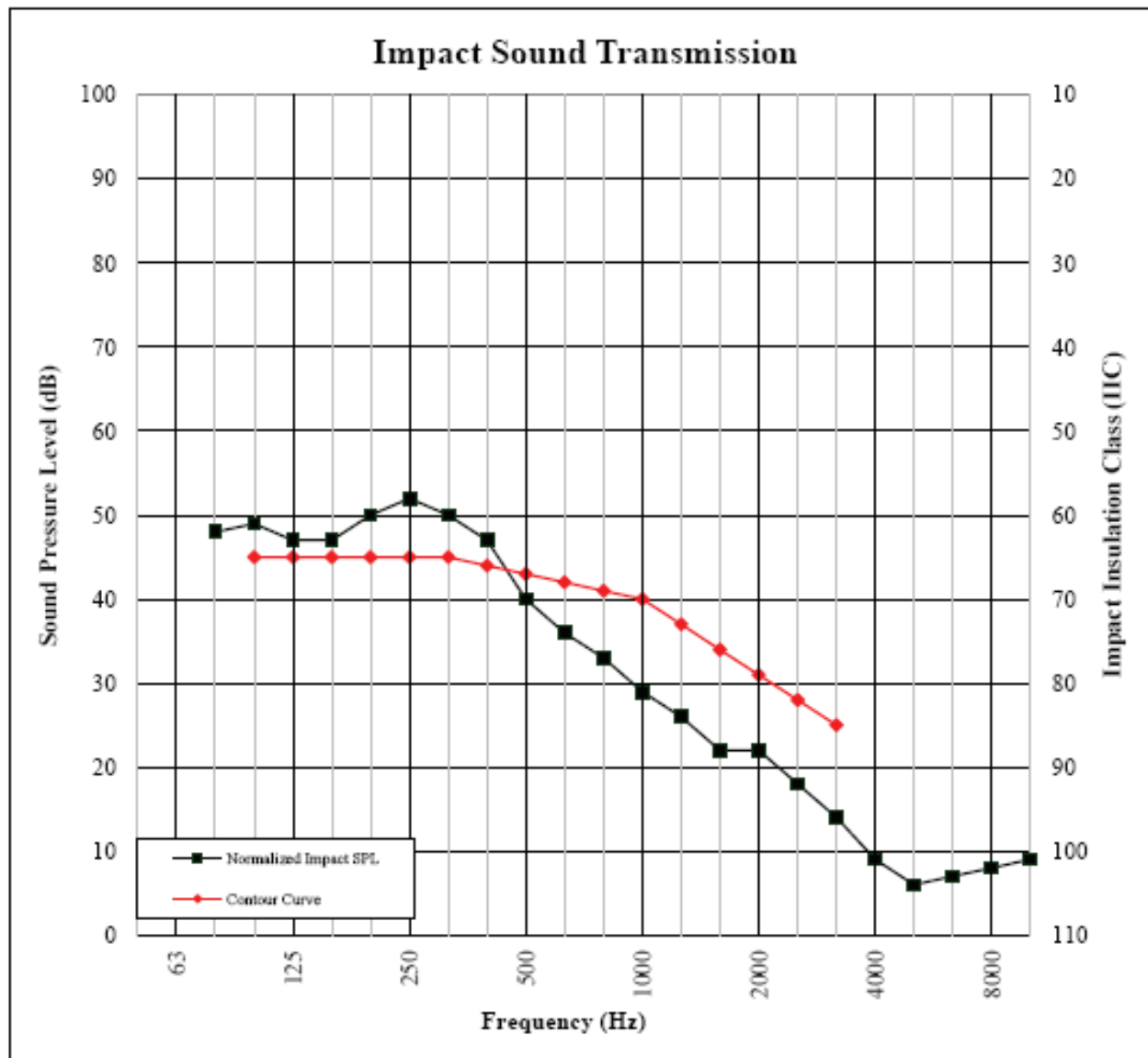
IIC Rating **67** *(Impact Insulation Class)*

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

Test Date	07/11/16
Data File No.	G0665.02
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Specimen Area	10.98 m ²
Technician	Cody R. Snyder



Photographs

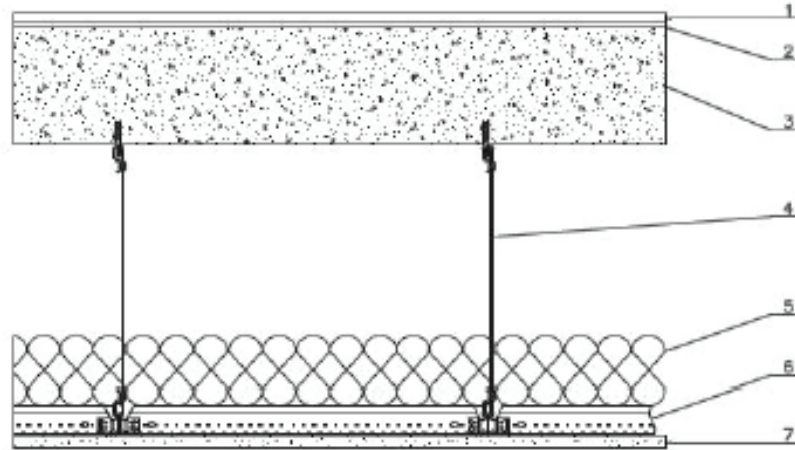


Source Room View of Test Specimen Installation



Receive Room View of Test Specimen Installation

Drawing



- 1-Floor Topping
- 2-Underlayment
- 3-Concrete Slab
- 4-Hanger Wire
- 5-Insulation
- 6-Ceiling Grid
- 7-Ceiling