



H2484.01-303-11-R0
ACOUSTICAL PERFORMANCE TEST REPORT
ASTM E 90 AND ASTM E 492

Rendered to

URBAN SURFACES

Series/Model: Urban Surfaces Soundtec

Specimen Type: 152 mm Concrete Slab with Drop Ceiling

Overall Size: 3048 mm by 3658 mm

STC	61
IIC	66

Test Specimen Identification:

Floor Topping: 6 mm Urban Surfaces Soundtec Luxury Vinyl Tile

Floor Slab: 152.4 mm 5000 PSI Concrete Slab

Main Beams: 43 mm Chicago Metallic 650.00C Drywall Main Beam

Cross Tees: 36 mm Chicago Metallic 664.00C Cross Tee

Insulation: 88.9 mm Knauf with ECOSE R-13 faced Glass mineral wool Insulation

Ceiling: 15.9 mm USG SHEETROCK® Brand FIRECODE® C core Gypsum Panel

Reference should be made to Intertek-ATI Report H2484.01-303-11 for complete test specimen description. This page alone is not a complete report.



Acoustical Performance Test Report

URBAN SURFACES
1121 Olympic Drive
Corona, California 92881

Report	H2484.01-303-11
Test Date	06/21/17
Report Date	07/20/17

Project Scope

Architectural Testing, Inc., an Intertek company (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 full test specimen was assembled on the day of testing by Intertek-ATI. All materials provided by the client were installed on an existing Intertek-ATI assembly (152 mm Concrete Slab with Drop Ceiling) utilizing Intertek-ATI-supplied materials.

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 (2016), 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 Lake Forest, California. 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	
Minimum Temperature	22.9°C	Minimum Temperature	23.4°C
Maximum Temperature	23.1°C	Maximum Temperature	23.8°C
Minimum Relative Humidity	49%	Minimum Relative Humidity	51%
Maximum Relative Humidity	50%	Maximum Relative Humidity	51%

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
Luxury Vinyl Tile	1219.2 by 177.8	6.0	Urban Surfaces Soundtec	11.15 m ²	9.57 kg/m ²
	<i>Note: Loose laid</i>				
Concrete Slab	3023 by 3632	152.4	5000 PSI	10.98 m ²	366.18 kg/m ²
	<i>Note: Installed in a test frame flush to the source room. Mats of #5 reinforcing bars were placed 25.4 mm from both the top and bottom of the slab, with bars spaced on 305 mm centers in both directions.</i>				
Drywall Main Beam	38.1 by 2870	43.0	Chicago Metallic 650.00C	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 is 0.5 mm.</i>				
Cross Tee	38.3 by 1219	36.0	Chicago Metallic 664.00C	27.2 lin m	0.45 kg/m
	<i>Note: Inserted into the main beams on 610 mm centers. The measured steel thickness is 0.5 mm.</i>				

Test Specimen Materials and Installation Details (Continued)

Material	Dimensions (mm)	Thickness (mm)	Manufacturer and Series	Quantity	Average Weight
Glass mineral wool Insulation	2962 by 584	88.9	Knauf with ECOSE R-13 faced	11.15 m ²	1.33 kg/m ²
	<i>Note: Loose laid onto the ceiling grid system</i>				
Gypsum Panel	1219 by 3023	15.9	USG SHEETROCK® Brand FIRECODE® C core	10.56 m ²	11.23 kg/m ²
	<i>Note: Fastened with 25.4 mm fine thread drywall screws on 305 mm centers. Seams and perimeter sealed with Pecora AC-20® Acoustical Sealant and covered with pressure-sensitive tape.</i>				

Comments

The total weight of the floor/ceiling assembly was 4277.9 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.

Detailed test procedures, data for flanking limit tests, repeatability measurements, and reference specimen tests are available upon request.

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:

Leeland S. Hoover
Technician I - Acoustical Testing

Bradlay D. Hunt
Laboratory Manager - Acoustical Testing

Attachments (7 pages): This report is complete only when all attachments listed are included.

- Instrumentation (1)
- Airborne Sound Transmission Loss Data (2)
- Impact Sound Transmission Data (2)
- Photographs (1)
- Drawings (1)

** Stated by Client/Manufacturer*

N/A - Non Applicable



Revision Log

<u>Revision</u>	<u>Date</u>	<u>Page(s)</u>	<u>Description</u>
R0	07/20/17	N/A	Original Report Issue

Attachments

Instrumentation

Instrument	Manufacturer	Model	ATI Number	Date of Calibration
Data Acquisition Unit	National Instruments	PXI-4462	INT00392	10/16 *
Microphone Calibrator	Norsonic	1251	INT00288	06/17
Receive Room Microphone	PCB Piezotronics	378B20	INT00239	03/17
Receive Room Microphone	PCB Piezotronics	378B20	INT00240	03/17
Receive Room Microphone	PCB Piezotronics	378B20	INT00241	03/17
Receive Room Microphone	PCB Piezotronics	378C20	INT00242	03/17
Receive Room Microphone	PCB Piezotronics	378B20	INT00243	03/17
Receive Room Environmental Indicator	Comet	T7510	INT00299	10/16
Source Room Microphone	PCB Piezotronics	378B20	INT00244	03/17
Source Room Microphone	PCB Piezotronics	378B20	INT00245	03/17
Source Room Microphone	PCB Piezotronics	378B20	INT00246	03/17
Source Room Microphone	PCB Piezotronics	378B20	INT00247	03/17
Source Room Microphone	PCB Piezotronics	378B20	INT00228	03/17
Source Room Environmental Indicator	Comet	T7510	INT00300	10/16
Tapping Machine	Look Line s.r.l.	EM50 (TM50)	INT00224	07/16

* The calibration frequency for this equipment is every two years per the manufacturer's recommendation.

Test Chambers

VT Receive Room Volume	180.6 m ³
VT Source Room Volume	129.4 m ³



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**AIRBORNE SOUND TRANSMISSION LOSS**

ASTM E 90

Test Date	06/21/17
Data File No.	H2484.01
Client	Urban Surfaces
Description	6 mm Urban Surfaces Soundtec Luxury Vinyl Tile, 152.4 mm 5000 PSI Concrete Slab, 43 mm Chicago Metallic 650.00C Drywall Main Beam, 36 mm Chicago Metallic 664.00C Cross Tee, 88.9 mm Knauf with ECOSE R-13 faced Glass mineral wool Insulation, 15.9 mm USG SHEETROCK® Brand FIRECODE® C core Gypsum Panel
Specimen Area	11.15 m ²
Technician	Leeland S. Hoover

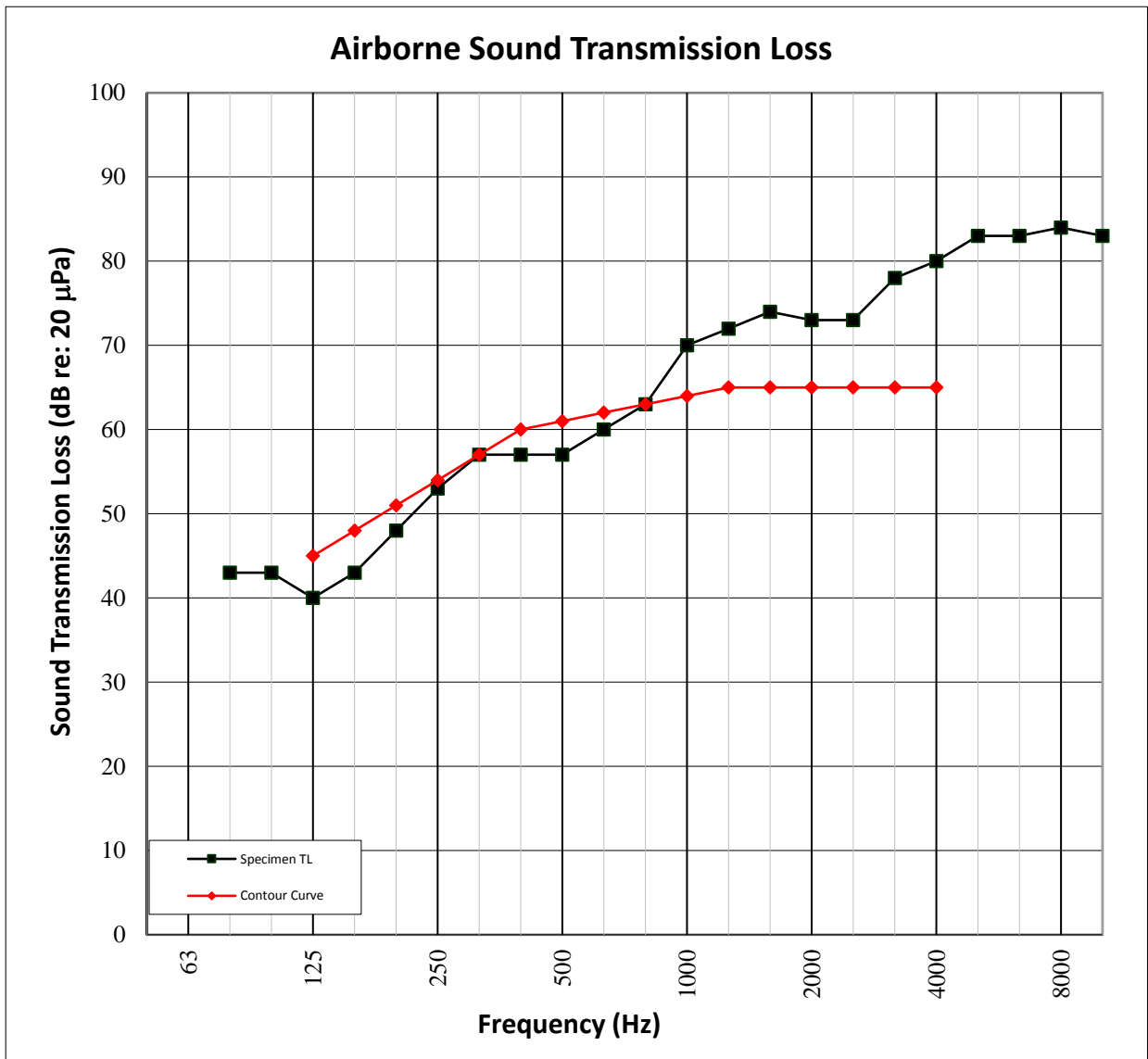
Freq (Hz)	Background SPL (dB)	Absorption (m ²)	Source SPL (dB)	Receive SPL (dB)	Specimen TL (dB)	95% Confidence Limit	Number of Deficiencies
80	25.0	6.5	101	60	43	2.60	-
100	27.1	6.2	103	63	43	3.10	-
125	34.2	5.3	102	65	40	1.10	5
160	24.3	5.4	100	61	43	1.40	5
200	16.0	6.1	101	55	48	0.80	3
250	15.6	6.0	98	48	53	0.70	1
315	12.4	7.2	102	47	57	1.00	0
400	9.6	7.3	102	47	57	0.90	3
500	10.2	6.3	100	46	57	0.60	4
630	5.9	6.1	96	38	60	0.40	2
800	5.7	6.4	95	35	63	0.50	0
1000	5.8	6.1	96	29	70	0.30	0
1250	4.4	6.4	98	29	72	0.50	0
1600	3.1	6.8	98	27	74	0.30	0
2000	3.4	7.5	99	28	73	0.30	0
2500	3.8	8.5	100	28	73	0.20	0
3150	4.4	9.1	100	23	78	0.40	0
4000	4.7	10.2	99	19	80	0.20	0
5000	5.2	12.3	96	12	83	0.40	-
6300	5.7	15.3	95	11	83	0.50	-
8000	6.1	19.8	95	8	84	0.40	-
10000	6.3	24.7	94	7	83	0.50	-

STC Rating **61** *(Sound Transmission Class)*Deficiencies 23 *(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 are potentially limited by the laboratory flanking limit.
 - 2) Specimen TL levels listed in blue 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

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Specimen Area	11.15 m ²
Technician	Leeland S. Hoover





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IMPACT SOUND TRANSMISSION
ASTM E 492

Test Date	06/21/17
Data File No.	H2484.01
Client	Urban Surfaces
Description	6 mm Urban Surfaces Soundtec Luxury Vinyl Tile, 152.4 mm 5000 PSI Concrete Slab, 43 mm Chicago Metallic 650.00C Drywall Main Beam, 36 mm Chicago Metallic 664.00C Cross Tee, 88.9 mm Knauf with ECOSE R-13 faced Glass mineral wool Insulation, 15.9 mm USG SHEETROCK® Brand FIRECODE® C core Gypsum Panel
Specimen Area	11.15 m ²
Technician	Leeland S. Hoover

Freq (Hz)	Background SPL (dB)	Absorption (m ²)	Normalized Impact SPL (dB)	95% Confidence Limit	Number of Deficiencies
80	26.4	6.6	55	1.8	-
100	25.5	6.2	54	1.8	8
125	34.5	5.4	51	0.8	5
	26.3	5.4	54	1.6	8
200	16.2	5.8	50	0.7	4
250	15.6	6.0	47	0.8	1
315	12.6	7.0	51	0.9	5
400	8.8	7.2	46	0.4	1
500	9.0	6.5	43	0.4	0
630	5.4	6.1	37	0.2	0
800	5.6	6.5	37	0.2	0
1000	5.7	6.1	33	0.2	0
1250	4.3	6.5	29	0.3	0
1600	3.0	6.8	26	0.3	0
2000	3.4	7.5	25	0.2	0
2500	3.8	8.5	21	0.3	0
3150	4.4	9.1	17	0.2	0
4000	4.7	10.3	15	0.2	-
5000	5.2	12.4	15	0.3	-
6300	5.7	15.3	14	0.5	-
8000	6.1	20.1	17	0.5	-
10000	6.3	25.0	19	0.3	-

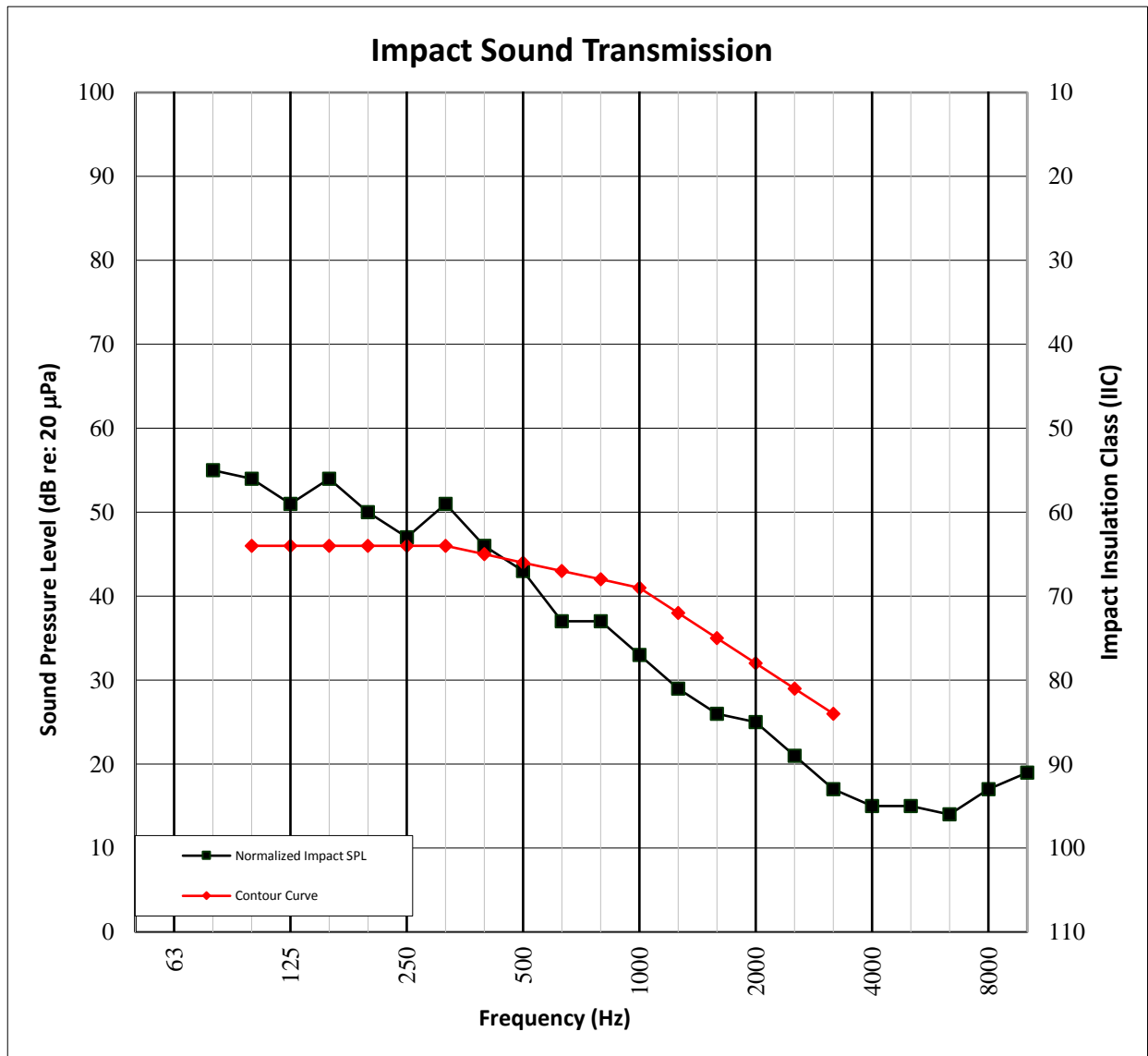
IIC Rating **66** *(Impact Insulation Class)*

Deficiencies **32** *(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

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Data File No.	H2484.01
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Specimen Area	11.15 m ²
Technician	Leeland S. Hoover



Photographs

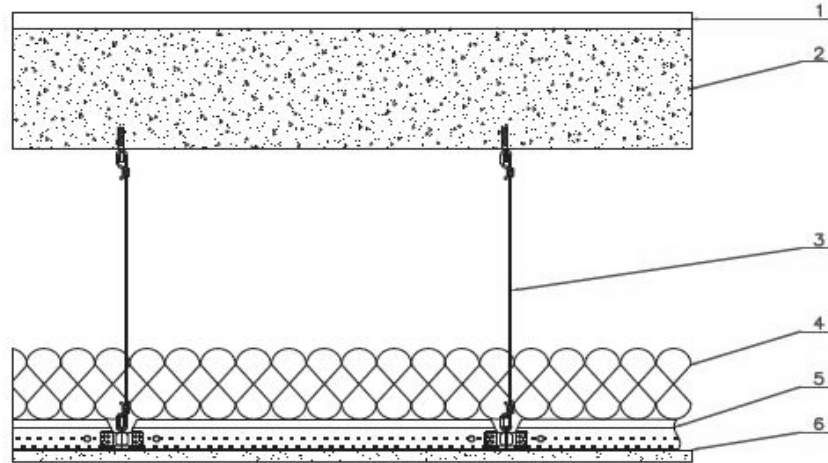


Source Room View of Test Specimen Installation



Receive Room View of Test Specimen Installation

Drawing



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