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URBAN SURFACES
TEST REPORT

SCOPE OF WORK
ASTM E90 AND ASTM E492 TESTING ON
URBAN SURFACES SOUND-TEC

REPORT NUMBER
H4383.01-303-11-R2

TEST DATE
08/10/17

ISSUE DATE **REVISED**
08/16/17 1/23/2020

RECORD RETENTION END
08/10/21

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13

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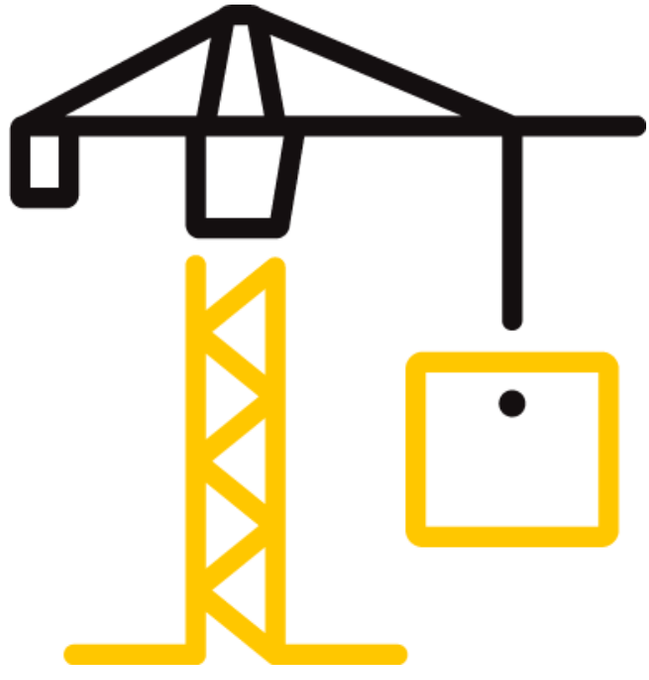

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Lake Forest, California 92630

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Facsimile: 717-764-4129
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TEST REPORT FOR URBAN SURFACES

Report No.: H4383.01-303-11-R2
Date: 08/16/17

REPORT ISSUED TO

URBAN SURFACES
1121 Olympic Drive
Corona, California 92881

SECTION 1

SCOPE

Intertek Building & Construction (B&C) was contracted by to perform testing in accordance with ASTM E90 AND ASTM E492 on Urban Surfaces Sound-tec. Results obtained are tested values and were secured by using the designated test method(s). Testing was conducted in the VT test chambers at Intertek B&C located in Lake Forest, California.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

SECTION 2

SUMMARY OF TEST RESULTS

DATA FILE NO.	H4383.01
SERIES/MODEL:	Urban Surfaces Sound-tec
STC	60
IIC	54

COMPLETED BY:	Marco Santa Rosa	**COMPLETED BY:**	Leeland S. Hoover
TITLE:	Technician II - Acoustical Testing	**TITLE:**	Technician I - Acoustical Testing
SIGNATURE:	Digitally Signed by: Marco Santa-Rosa	**SIGNATURE:**	Digitally Signed by: Leeland Hoover
DATE:	1/23/2020	**DATE:**	1/23/2020

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SECTION 3
TEST METHOD(S)

The specimen was evaluated in accordance with the following:

ASTM E90-09 (2016), *Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions*

ASTM E413-16, *Classification for Rating Sound Insulation*

ASTM E1332-16, *Standard Classification for Rating Outdoor-Indoor Sound Attenuation.*

ASTM E492-09(2016)e1, *Standard Test Method for Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine*

ASTM E989-06 (2012), *Classification for Determination of Impact Insulation Class (IIC)*

ASTM E2235-04 (2012), *Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods*

SECTION 4
MATERIAL SOURCE/INSTALLATION

The full test specimen was assembled on the day of testing by B&C. All materials provided by the client were installed on an existing B&C assembly (Dimensional Lumber - 2x10) utilizing B&C-supplied materials. The assembly was installed in a steel test frame which was installed into the opening between the source and receive rooms in the test chamber. The test frame was isolated from the structure with dense neoprene gasket.

The total weight of the floor/ceiling assembly was 1020.2 kg. B&C 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.

B&C 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 B&C for the entire test record retention period.

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SECTION 5
EQUIPMENT

INSTRUMENT	MANUFACTURER	MODEL	ASSET NUMBER	DATE OF CALIBRATION
Data Acquisition Unit	National Instruments	PXI-4462	INT00392	10/16 *
Microphone Calibrator	Norsonic	1251	INT00289	07/17
Receive Room Microphone	PCB Piezotronics	378C20	INT00229	03/17
Receive Room Microphone	PCB Piezotronics	378B20	INT00230	03/17
Receive Room Microphone	PCB Piezotronics	378B20	INT00231	03/17
Receive Room Microphone	PCB Piezotronics	378B20	INT00232	03/17
Receive Room Microphone	PCB Piezotronics	378B20	INT00233	03/17
Receive Room Environmental Indicator	Comet	T7510	INT00299	10/16
Source Room Microphone	PCB Piezotronics	378B20	INT00234	03/17
Source Room Microphone	PCB Piezotronics	378B20	INT00235	03/17
Source Room Microphone	PCB Piezotronics	378B20	INT00236	03/17
Source Room Microphone	PCB Piezotronics	378B20	INT00237	03/17
Source Room Microphone	PCB Electronics	378B20	INT00238	03/17
Source Room Environmental Indicator	Comet	T7510	INT00300	10/16
Tapping Machine	Look Line s.r.l.	EM50 (TM50)	INT00225	07/17

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

VT RECEIVE ROOM VOLUME	182.66 m^3
VT SOURCE ROOM VOLUME	129.4 m^3

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Lake Forest, California 92630

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Facsimile: 717-764-4129
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SECTION 6
LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Bradlay Hunt	Intertek B&C
Leeland S. Hoover	Intertek B&C

SECTION 7
TEST PROCEDURE

The microphones were calibrated before conducting the tests. The air temperature and relative humidity conditions were monitored and recorded during all measurements.

The airborne transmission loss test was conducted in accordance with the ASTM E90 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.

The impact sound transmission test was conducted in accordance with the ASTM E492 test method. Two background noise sound pressure level, two sound pressure level measurements with the tapping machine operating at each position specified by ASTM E492, and five sound absorption measurements were conducted at each of five microphone positions.

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

SECTION 8
TEST CALCULATIONS

The STC (Sound Transmission Class) and IIC (Impact Insulation Class) ratings were calculated in accordance with ASTM E413 and ASTM E989, respectively.

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TEST REPORT FOR URBAN SURFACES

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SECTION 9

TEST SPECIMEN DESCRIPTION

MATERIAL	DIMENSIONS (mm)	THICKNESS (mm)	MANUFACTURER AND SERIES	QUANTITY	AVERAGE WEIGHT
Luxury Vinyl Tile	1219.2 by 177.8	6.0	Urban Surfaces Sound-tec	11.15 m²	9.57 kg/m²
	Note: Loose laid				
Gypsum Concrete	3023 by 3632	38.1	Hacker Industries, Inc. FIRM-FILL® Brand	10.98 m²	48.82 kg/m²
	Note: Loose laid				
Plywood	1219 by 2438	18.8	N/A	10.98 m²	10.25 kg/m²
	Note: Loose laid				
Fiberglass Insulation	2940 by 406	88.9	CertainTeed R-13	10.98 m²	1.03 kg/m²
	Note: Loose laid				
2x10 Dimensional Lumber	2940 by 38.1	235.0	N/A	26.5 lin m	4.3 kg/m
	Note: Loose laid				
Resilient Channel	68.6 by 3454.4	12.7	ClarkDietrich RC Deluxe™	27.6 lin m	0.33 kg/m
	Note: Loose laid				
Gypsum Panel	1219 by 3023	15.9	USG SHEETROCK® Brand FIRECODE® C Core	10.98 m²	11.9 kg/m²
	Note: Loose laid				

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TEST REPORT FOR URBAN SURFACES

Report No.: H4383.01-303-11-R2
Date: 08/16/17

SECTION 10

TEST RESULTS - AIRBORNE SOUND TRANSMISSION LOSS

ACCREDITED Testing Laboratory

TEST DATE	8/10/2017				
DATA FILE NO.	H4383.01				
CLIENT	Urban Surfaces				
DESCRIPTION	6 mm Urban Surfaces Sound-tec Luxury Vinyl Tile, 38.1 mm Hacker Industries, Inc. FIRM-FILL® Brand Gypsum Concrete, 18.8 mm Plywood, 88.9 mm CertainTeed R-13 Fiberglass Insulation, 235 mm 2x10 Dimensional Lumber, 12.7 mm ClarkDietrich RC Deluxe™ Resilient Channel, 15.9 mm USG SHEETROCK® Brand FIRECODE® C Core Gypsum Panel				
SPECIMEN AREA	11.15 m²	**Receive Temp.**	21.9°C	**Source Temp.**	20.8°C
TECHNICIAN	MTSR	**Receive Humidity**	44%	**Source Humidity**	44%

FREQ (Hz)	BACKGROUND SPL (dB)	ABSORPTION m²	SOURCE SPL (dB)	RECEIVE SPL (dB)	SPECIMEN TL (dB)	95% CONFIDENCE LIMIT	NUMBER OF DEFICIENCIES
50	27.0	9.8	99.3	64.7	35.0	2.6	-
63	32.4	8.2	102.9	64.5	40.0	2.9	-
80	29.9	7.2	98.5	65.7	35.0	2.0	-
100	29.4	6.7	102.7	66.8	38.0	2.4	-
125	31.7	5.3	101.0	63.8	40.0	1.4	4
160	27.7	5.5	99.9	58.9	44.0	1.1	3
200	20.0	6.5	100.4	54.9	48.0	0.6	2
250	17.2	7.5	98.6	50.6	50.0	1.3	3
315	15.2	7.4	102.3	51.2	53.0	1.1	3
400	13.5	7.5	101.6	51.1	52.0	0.8	7
500	13.4	6.4	100.5	46.2	57.0	0.9	3
630	8.9	6.5	96.1	37.9	60.0	0.6	1
800	6.8	6.4	95.5	35.9	62.0	0.4	0
1000	8.3	6.3	96.3	34.0	65.0	0.5	0
1250	5.5	6.7	97.9	34.6	66.0	0.4	0
1600	4.6	7.0	98.7	32.4	68.0	0.7	0
2000	5.4	7.7	98.8	29.2	71.0	0.3	0
2500	6.3	8.7	99.5	26.2	74.0	0.4	0
3150	6.3	9.2	99.4	24.5	76.0	0.5	0
4000	5.5	10.5	98.5	22.4	76.0	0.5	0
5000	5.4	12.6	96.0	16.8	79.0	0.5	-
6300	5.8	15.4	94.5	14.5	79.0	0.6	-
8000	6.1	20.2	94.7	10.9	81.0	0.8	-
10000	6.4	25.7	94.4	8.4	82.0	0.9	-
STC Rating	**60**	*(Sound Transmission Class)*			**Sum of Deficiencies**		**26**

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.
3) Specimen TL levels listed in blue indicate the lower limit of the transmission loss.
4) Specimen TL levels listed in green indicate that there has been a filler wall correction applied

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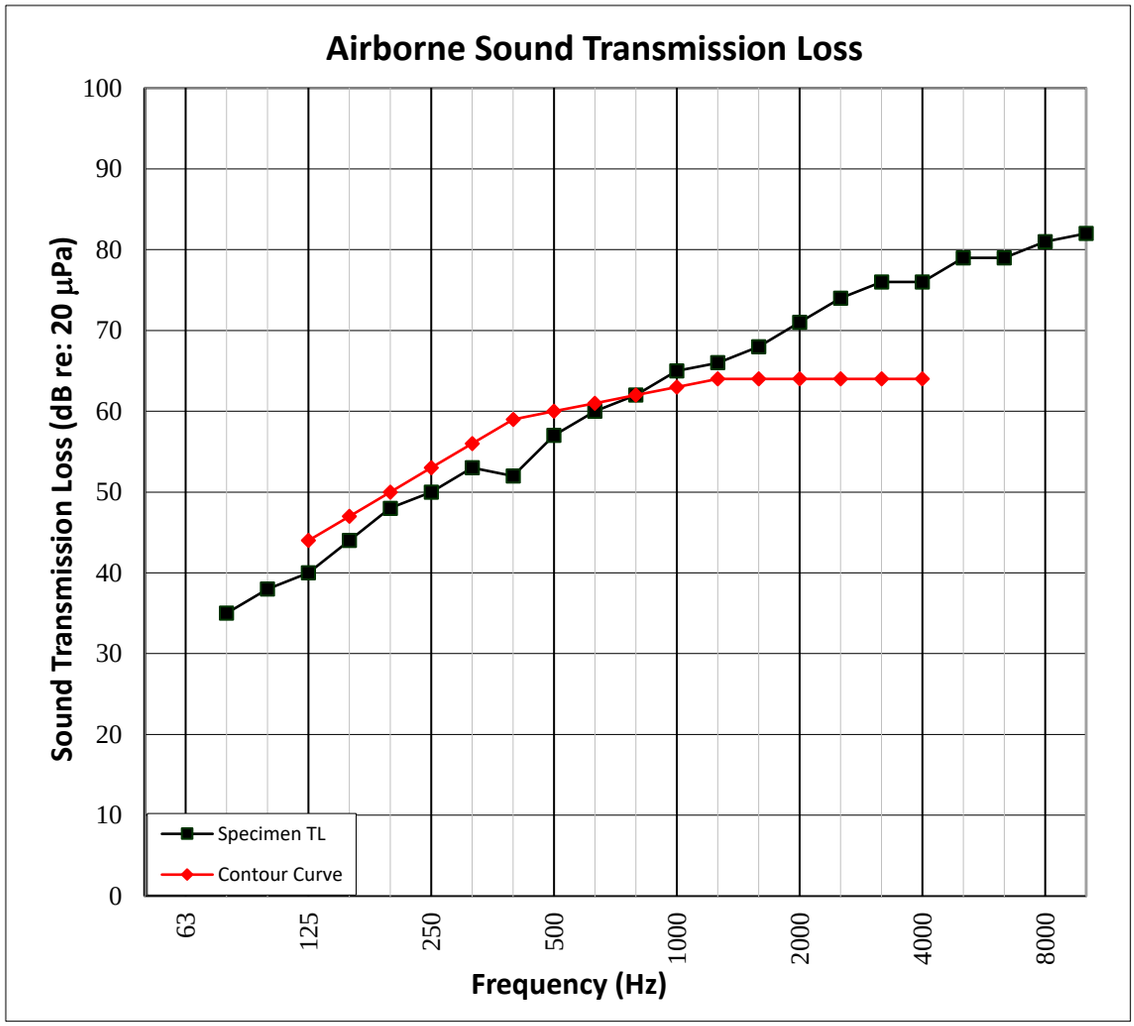
SECTION 11
TEST RESULTS - AIRBORNE SOUND TRANSMISSION LOSS GRAPH

ACCREDITED Testing Laboratory

TEST DATE	8/10/2017				
DATA FILE NO.	H4383.01				
CLIENT	Urban Surfaces				
DESCRIPTION	6 mm Urban Surfaces Sound-tec Luxury Vinyl Tile, 38.1 mm Hacker Industries, Inc. FIRM-FILL® Brand Gypsum Concrete, 18.8 mm Plywood, 88.9 mm CertainTeed R-13 Fiberglass Insulation, 235 mm 2x10 Dimensional Lumber, 12.7 mm ClarkDietrich RC Deluxe™ Resilient Channel, 15.9 mm USG SHEETROCK® Brand FIRECODE® C Core Gypsum Panel				
SPECIMEN AREA	11.15 m²	**Receive Temp.**	21.9°C	**Source Temp.**	20.8°C
TECHNICIAN	MTSR	**Receive Humidity**	44%	**Source Humidity**	44%



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TEST REPORT FOR URBAN SURFACES

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Date: 08/16/17

SECTION 12

TEST RESULTS - IMPACT SOUND TRANSMISSION

ACCREDITED
Testing Laboratory

TEST DATE	8/10/2017				
DATA FILE NO.	H4383.01				
CLIENT	Urban Surfaces				
DESCRIPTION	6 mm Urban Surfaces Sound-tec Luxury Vinyl Tile, 38.1 mm Hacker Industries, Inc. FIRM-FILL® Brand Gypsum Concrete, 18.8 mm Plywood, 88.9 mm CertainTeed R-13 Fiberglass Insulation, 235 mm 2x10 Dimensional Lumber, 12.7 mm ClarkDietrich RC Deluxe™ Resilient Channel, 15.9 mm USG SHEETROCK® Brand FIRECODE® C Core Gypsum Panel				
SPECIMEN AREA	11.15 m²	**Maximum Temp.**	-17.8°C	**Minimum Temp.**	-17.8°C
TECHNICIAN	MTSR	**Max. Humidity**	0%	**Min. Humidity**	0%

FREQ (Hz)	**BACKGROUND SPL** (dB)	**ABSORPTION** m²	**NORMALIZED IMPACT SPL** (dB)	**95% CONFIDENCE LIMIT**	**NUMBER OF DEFICIENCIES**
50	26.6	10.06	71	1.70	-
63	32	8.53	66	1.80	-
80	29.3	7.61	66	1.60	-
100	27.9	7.44	65	2.00	7
125	30.7	5.19	64	1.60	6
160	26.9	5.47	61	0.90	3
200	19.6	6.37	62	0.90	4
250	16.5	7.07	63	0.90	5
315	14.7	7.10	62	0.60	4
400	12.9	7.46	58	0.40	1
500	12.6	6.44	53	0.30	0
630	7.9	6.42	48	0.30	0
800	6.3	6.46	43	0.30	0
1000	7.5	6.42	39	0.30	0
1250	5.1	6.75	36	0.20	0
1600	4	6.93	33	0.20	0
2000	4.2	7.69	34	0.20	0
2500	4.5	8.70	33	0.20	0
3150	5	9.24	28	0.30	0
4000	4.9	10.46	23	0.40	-
5000	5.2	12.58	16	0.60	-
6300	5.7	15.57	10	0.40	-
8000	6.1	20.03	8	0.40	-
10000	6.3	25.86	9	0.20	-
IIC Rating	**54**	*(Impact Insulation Class)*		**Sum of Deficiencies**	**30**

Notes: *Receive Room levels less than 5 dB above the Background levels are highlighted in yellow.*

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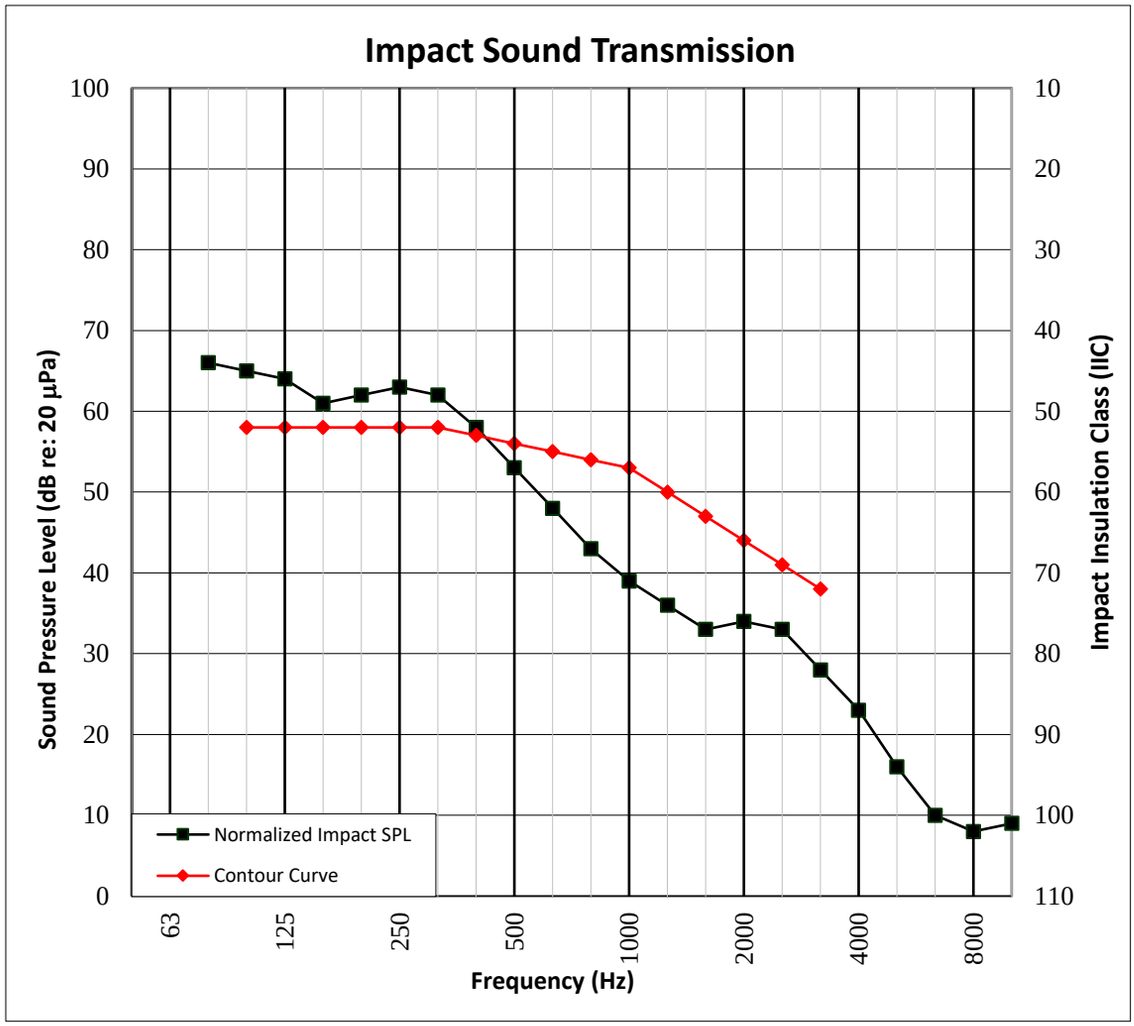
Date: 08/16/17

SECTION 13

TEST RESULTS - IMPACT SOUND TRANSMISSION GRAPH

ACCREDITED Testing Laboratory

TEST DATE	8/10/2017				
DATA FILE NO.	H4383.01				
CLIENT	Urban Surfaces				
DESCRIPTION	6 mm Urban Surfaces Sound-tec Luxury Vinyl Tile, 38.1 mm Hacker Industries, Inc. FIRM-FILL® Brand Gypsum Concrete, 18.8 mm Plywood, 88.9 mm CertainTeed R-13 Fiberglass Insulation, 235 mm 2x10 Dimensional Lumber, 12.7 mm ClarkDietrich RC Deluxe™ Resilient Channel, 15.9 mm USG SHEETROCK® Brand FIRECODE® C Core Gypsum Panel				
SPECIMEN AREA	11.15 m²	**Maximum Temp.**	-17.8°C	**Minimum Temp.**	-17.8°C
TECHNICIAN	MTSR	**Max. Humidity**	0%	**Min. Humidity**	0%



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SECTION 14
PHOTOGRAPHS

Source Room View of Test Specimen Installation

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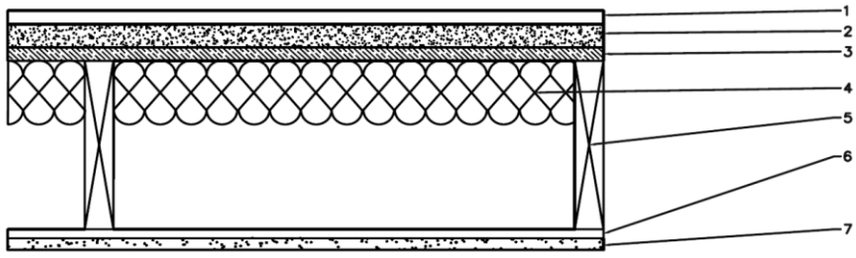
SECTION 15
DRAWING(S)



1-Floor Topping
2-Subfloor Topping
3-Subfloor
4-Insulation
5-Joist
6-Ceiling Isolation
7-Ceiling

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SECTION 16
REVISION LOG

REVISION #	DATE	PAGES	REVISION
.01 R0	08/06/17	N/A	Original Report Issue
R2	01/22/20	6	Corrected Gypsum Thickness