

STC SOUND CONTROL ACOUSTICAL PERFORMANCE TEST REPORT

SCOPE OF WORK

ASTM E90 AND ASTM E492 TESTING ON SHAW EXPO LUXURY VINYL TILE OVER ADVANTECH® SUBFLOOR WITH STC SOUND CONTROL ACOUSTIC SLEEPER PADS

SPECIMEN TYPE

Open Web Truss - 457 mm (18")

REPORT NUMBER

J1124.03-113-11-R0

TEST DATE

12/17/18

ISSUE DATE

12/31/18

RECORD RETENTION END

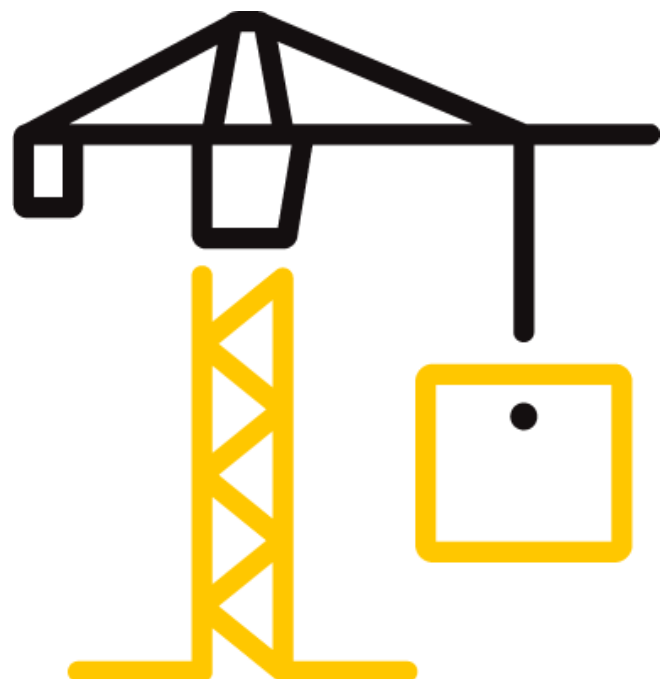
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ATI 00629 (03/21/18)
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TEST REPORT FOR STC SOUND CONTROL

Report No.: J1124.03-113-11-R0

Date: 12/31/18

REPORT ISSUED TO

STC SOUND CONTROL

1200 Northland Avenue
Buffalo, New York 14215

SECTION 1

SCOPE

Intertek Building & Construction (B&C) was contracted by STC Sound Control to perform testing in accordance with ASTM E90 AND ASTM E492 on Shaw Expo Luxury Vinyl Tile over AdvanTech® Subfloor with STC Sound Control Acoustic Sleeper Pads. 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 York, Pennsylvania.

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.	J1124.03
SERIES/MODEL:	Shaw Expo Luxury Vinyl Tile over AdvanTech® Subfloor with STC Sound Control Acoustic Sleeper Pads
STC	59
IIC	54

COMPLETED BY: Cody R. Snyder
Technician I - Acoustical
TITLE: Testing
SIGNATURE:
DATE: 12/31/18

COMPLETED BY: Jordan Strybos
Engineer, Team Lead -
TITLE: Acoustical Testing
SIGNATURE:
DATE: 12/31/18

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SECTION 3

TEST METHODS

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 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 (Open Web Truss - 457 mm (18")) 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 538.4 kg / 1187.1 lbs. B&C will store samples of the test specimen for four years. Photographs of the test specimen are included in the report. A drawing of the test specimen is included in the report.

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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EQUIPMENT**

INSTRUMENT	MANUFACTURER	MODEL	DESCRIPTION	ASSET #	CAL DATE
Data Acquisition Unit	National Instruments	PXI-4462	Data Acquisition Card	INT00977	08/18 *
Data Acquisition Unit	National Instruments	PXI-4462	Data Acquisition Card	65124	05/18 *
Data Acquisition Unit	National Instruments	PXI-4462	Data Acquisition Card	63763-1	06/18 *
Microphone Calibrator	Norsonic	Nor1251	Acoustical Calibrator	65105	06/18
Receive Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	65617	06/18
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	63744	06/18
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	63745	06/18
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	63746	12/17
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	63747	07/18
Receive Room Environmental Indicator	Comet	T7510	Temperature and Humidity Transmitter	63810	10/18
				63811	10/18
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	INT01009	02/18
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	63739	04/18
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	63740	04/18
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	63742	03/18
Source Room Microphone	PCB Electronics	378C20	Microphone and Preamplifier	63741	04/18
Source Room Environmental Indicator	Comet	T7510	Temperature and Humidity Transmitter	63812	10/18
Tapping Machine	Norsonic	Nor277	Tapping Machine	INT00936	12/18

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

VT RECEIVE ROOM VOLUME	155.77 m ³ (5500.85 ft ³)
VT SOURCE ROOM VOLUME	190 m ³ (6709.79 ft ³)

**SECTION 6
LIST OF OFFICIAL OBSERVERS**

NAME	COMPANY
Cody R. Snyder	Intertek B&C
Jordan Strybos	Intertek B&C

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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 average temperature and humidity of both the source and received rooms are listed in Sections 10 and 11. The maximum and minimum temperatures and humidities of the receive room from the duration of the test are listed in Sections 12 and 13.

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. Two 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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SECTION 9

TEST SPECIMEN DESCRIPTION

MATERIAL	Dimensions (mm/inch)	Thickness (mm/inch)	MANUFACTURER AND SERIES	QUANTITY	AVERAGE WEIGHT
Luxury Vinyl Tile	1219 by 152.4 48 by 6	2 / 0.08	Shaw Expo	10.98 m ² 118.19 ft ²	3.47 kg/m ² 0.71 lb/ft ²
	Note: A sheet of 2 mil polyethylene plastic was adhered to the subfloor with Sprayway Fast Tack 85 spray adhesive. The floor topping was adhered to the sheeting with Shaw 200 TPS adhesive, which was spread using a 0.79 mm by 1.59 mm by 0.79 mm (0.03" by 0.06" by 0.03") trowel. Adhesive was allowed to cure per manufacturer's specifications.				
Wood Subfloor	2438 by 1219 96 by 48	18.3 / 0.72	Huber Engineered Woods AdvanTech®	10.98 m ² 118.19 ft ²	12.4 kg/m ² 2.54 lb/ft ²
	Note: Loose Laid with sleeper pads Installed				
Isolation Pad	38.1 by 38.1 1.5 by 1.5	6.4 / 0.25	STC Sound Control Acoustic Sleeper Pad	52 pads 52 pads	0.01 kg/pad 0.02 lb/pad
	Note: Installed to the subfloor panels on 610 mm (24") centers at joints, perimeter and field with 203 mm (8") centers at square edges				
Oriented Strand Board Sheathing	1219 by 2438 48 by 96	11.9 / 0.47	N/A	10.98 m ² 118.19 ft ²	7.6 kg/m ² 1.56 lb/ft ²
	Note: Adhered to the floor trusses with Loctite PL 400 Subfloor adhesive. Fastened with 9D nails on 203 mm (8") centers along perimeter and 305 mm (12") centers along trusses.				
Fiberglass Insulation	520.7 by 3023 20.5 by 119	88.9 / 3.5	Johns Manville Unfaced R-13	10.98 m ² 118.19 ft ²	1.32 kg/m ² 0.27 lb/ft ²
	Note: Installed in the cavity between trusses, draped over the ceiling channels				
Open Web Truss	88.9 by 2934 3.5 by 115.5	457.2 / 18	York PB Truss L/360	7 trusses	19.1 kg/truss 42 lb/truss
	Note: Installed on 610 mm (24") centers using JUS414 hanger brackets.				
Resilient Channel	68.6 by 3454 2.7 by 136	12.7 / 0.5	ClarkDietrich RC Deluxe™	27.6 lin m 90.55 lin ft	0.33 kg/m 0.22 lb/ft
	Note: Installed on 406 mm (16") centers perpendicular to the trusses. The measured thickness of the metal was 0.7 mm (0.03").				
Gypsum Panel	1219 by 3023 48 by 119	15.9 / 0.63	USG SHEETROCK® Brand FIRECODE® Type X	10.98 m ² 118.19 ft ²	11.23 kg/m ² 2.3 lb/ft ²
	Note: Fastened to the channels on 305 mm (12") centers with 25.4 mm (1") Type S bugle head screws. The seams of the gypsum panels were sealed with Pecora AC-20 FTR caulk and covered with pressure sensitive tape.				

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SECTION 10

TEST RESULTS - AIRBORNE SOUND TRANSMISSION LOSS



TEST DATE	12/17/2018				
DATA FILE NO.	J1124.03				
CLIENT	STC Sound Control				
DESCRIPTION	2 mm (0.08") Shaw Expo Luxury Vinyl Tile, 18.3 mm (0.72") Huber Engineered Woods AdvanTech® Wood Subfloor, 6.4 mm (0.25") STC Sound Control Acoustic Sleeper Pad Isolation Pad, 11.91 mm (0.47") Oriented Strand Board Sheathing, 88.9 mm (3.5") Johns Manville Unfaced R-13 Fiberglass Insulation, 457.2 mm (18") York PB Truss L/360 Open Web Truss, 12.7 mm (0.5") ClarkDietrich RC Deluxe™ Resilient Channel, 15.9 mm (0.63") USG SHEETROCK® Brand FIRECODE® Type X Gypsum Panel				
SPECIMEN AREA	10.98 m ²	Receive Temp.	20°C (68°F)	Source Temp.	22.1°C (71.8°F)
TECHNICIAN	SJA	Receive Humidity	57%	Source Humidity	57%

FREQ (Hz)	BACKGROUND SPL (dB)	ABSORPTION m ²	SOURCE SPL (dB)	RECEIVE SPL (dB)	SPECIMEN TL (dB)	95% CONFIDENCE LIMIT	NUMBER OF DEFICIENCIES
50	44.7	30.1	101	68	29	2.7	-
63	39.5	25.2	102	68	32	4.7	-
80	37.8	16.4	110	70	40	4.2	-
100	30.4	12.2	107	71	36	2.7	-
125	28.0	11.0	106	68	39	1.4	4
160	26.6	10.5	107	67	42	0.7	4
200	26.7	10.3	104	59	47	1.1	2
250	26.9	10.9	103	56	49	0.9	3
315	24.4	9.7	107	57	51	0.9	4
400	22.5	8.3	105	55	52	0.5	6
500	23.9	7.8	106	53	55	0.7	4
630	24.5	7.3	106	49	60	0.6	0
800	24.8	7.4	106	46	62	0.4	0
1000	26.7	7.5	105	44	63	0.4	0
1250	24.7	7.5	105	43	65	0.4	0
1600	23.8	7.8	105	43	64	0.3	0
2000	24.0	8.6	104	43	64	0.6	0
2500	16.9	9.5	102	39	65	0.3	0
3150	22.3	10.3	103	34	71	0.5	0
4000	19.4	11.4	104	32	73	0.7	0
5000	11.8	13.2	104	29	76	0.7	-
6300	8.5	16.0	97	20	77	0.6	-
8000	8.1	20.8	97	16	80	1.1	-
10000	7.3	20.8	92	11	80	0.9	-
STC Rating	59	<i>(Sound Transmission Class)</i>			Sum of Deficiencies	27	

- 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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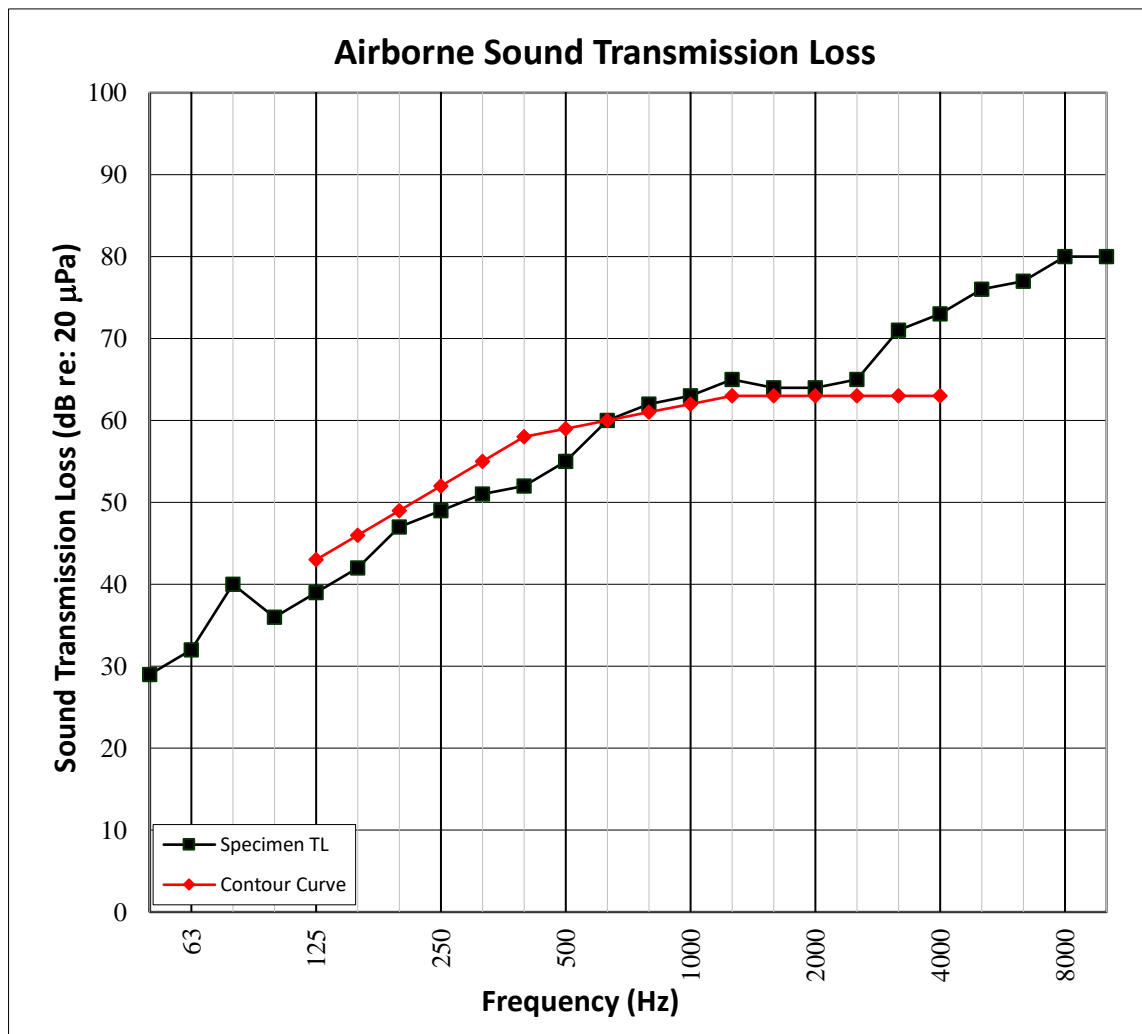
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SECTION 11

TEST RESULTS - AIRBORNE SOUND TRANSMISSION LOSS GRAPH



TEST DATE	12/17/2018				
DATA FILE NO.	J1124.03				
CLIENT	STC Sound Control				
DESCRIPTION	2 mm (0.08") Shaw Expo Luxury Vinyl Tile, 18.3 mm (0.72") Huber Engineered Woods AdvanTech® Wood Subfloor, 6.4 mm (0.25") STC Sound Control Acoustic Sleeper Pad Isolation Pad, 11.91 mm (0.47") Oriented Strand Board Sheathing, 88.9 mm (3.5") Johns Manville Unfaced R-13 Fiberglass Insulation, 457.2 mm (18") York PB Truss L/360 Open Web Truss, 12.7 mm (0.5") ClarkDietrich RC Deluxe™ Resilient Channel, 15.9 mm (0.63") USG SHEETROCK® Brand FIRECODE® Type X Gypsum Panel				
SPECIMEN AREA	10.98 m ²	Receive Temp.	20°C (68°F)	Source Temp.	22.1°C (71.8°F)
TECHNICIAN	SJA	Receive Humidity	57%	Source Humidity	57%



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SECTION 12

TEST RESULTS - IMPACT SOUND TRANSMISSION



TEST DATE	12/17/2018				
DATA FILE NO.	J1124.03				
CLIENT	STC Sound Control				
DESCRIPTION	2 mm (0.08") Shaw Expo Luxury Vinyl Tile, 18.3 mm (0.72") Huber Engineered Woods AdvanTech® Wood Subfloor, 6.4 mm (0.25") STC Sound Control Acoustic Sleeper Pad Isolation Pad, 11.91 mm (0.47") Oriented Strand Board Sheathing, 88.9 mm (3.5") Johns Manville Unfaced R-13 Fiberglass Insulation, 457.2 mm (18") York PB Truss L/360 Open Web Truss, 12.7 mm (0.5") ClarkDietrich RC Deluxe™ Resilient Channel, 15.9 mm (0.63") USG SHEETROCK® Brand FIRECODE® Type X Gypsum Panel				
SPECIMEN AREA	10.98 m ²	Maximum Temp.	20.1°C (68.1°F)	Minimum Temp.	19.8°C (67.6°F)
TECHNICIAN	SJA	Max. Humidity	57%	Min. Humidity	56%

FREQ (Hz)	BACKGROUND SPL (dB)	ABSORPTION m ²	NORMALIZED IMPACT SPL (dB)	95% CONFIDENCE LIMIT	NUMBER OF DEFICIENCIES
50	43.7	34.3	66	1.9	-
63	39.3	25.9	65	2.0	-
80	41.7	17.1	68	2.0	-
100	33.9	13.2	63	1.7	5
125	30.6	11.6	64	1.4	6
160	28.9	10.3	63	1.1	5
200	24.6	10.2	61	0.5	3
250	26.6	10.7	60	0.6	2
315	25.4	9.7	60	0.4	2
400	22.2	8.5	59	0.5	2
500	23.6	8.0	56	0.3	0
630	24.4	7.4	52	0.3	0
800	26.2	7.6	48	0.2	0
1000	29.2	7.5	45	0.3	0
1250	28.8	7.5	40	0.4	0
1600	29.0	7.7	37	0.8	0
2000	28.4	8.7	34	1.1	0
2500	20.1	9.5	27	1.0	0
3150	25.4	10.3	17	0.5	0
4000	21.2	11.4	12	0.3	-
5000	15.0	13.2	9	0.4	-
6300	10.8	16.1	8	0.4	-
8000	10.6	20.8	9	0.7	-
10000	9.7	20.8	9	0.7	-
IIC Rating	54	<i>(Impact Insulation Class)</i>		Sum of Deficiencies	25

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

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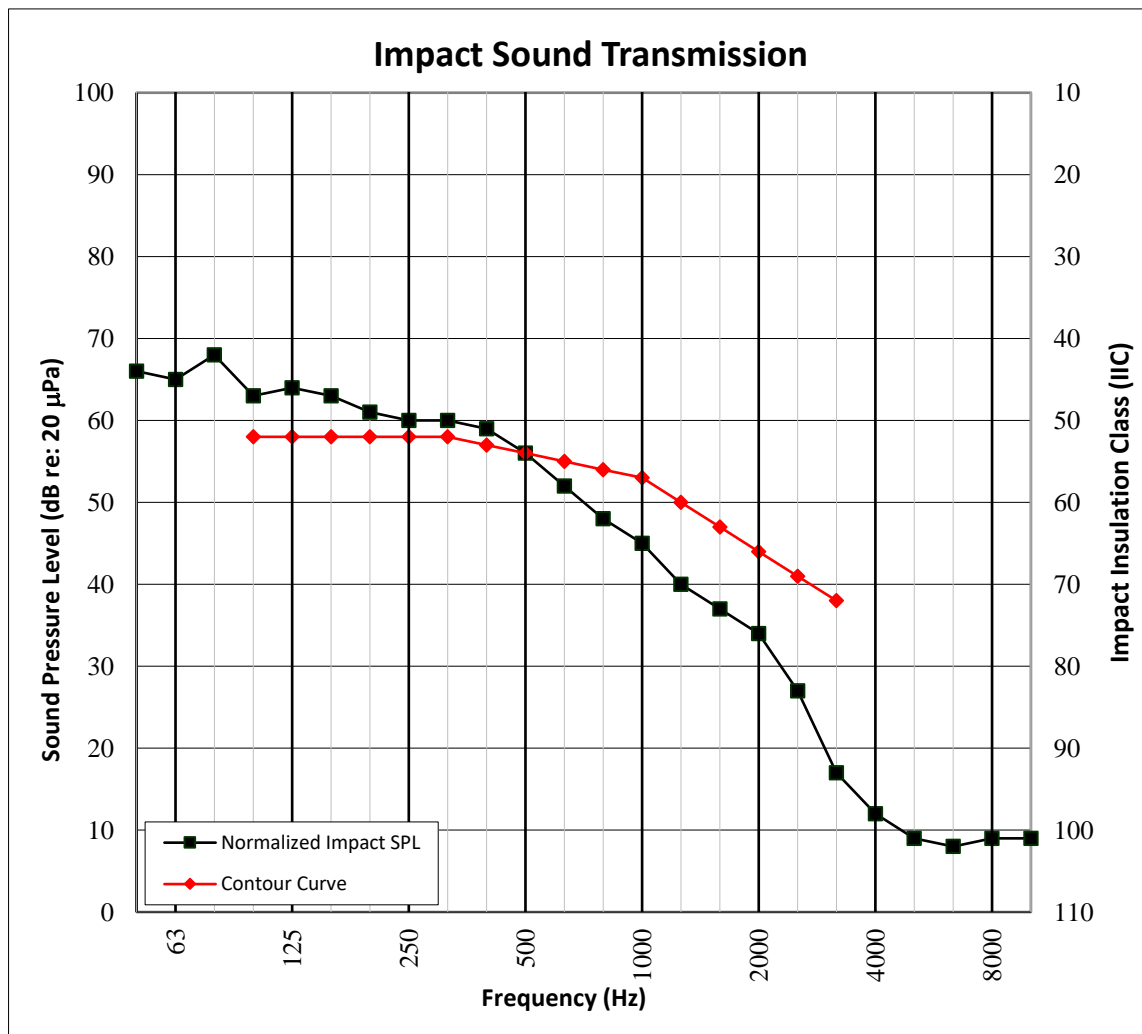
Date: 12/31/18

SECTION 13

TEST RESULTS - IMPACT SOUND TRANSMISSION GRAPH



TEST DATE	12/17/2018				
DATA FILE NO.	J1124.03				
CLIENT	STC Sound Control				
DESCRIPTION	2 mm (0.08") Shaw Expo Luxury Vinyl Tile, 18.3 mm (0.72") Huber Engineered Woods AdvanTech® Wood Subfloor, 6.4 mm (0.25") STC Sound Control Acoustic Sleeper Pad Isolation Pad, 11.91 mm (0.47") Oriented Strand Board Sheathing, 88.9 mm (3.5") Johns Manville Unfaced R-13 Fiberglass Insulation, 457.2 mm (18") York PB Truss L/360 Open Web Truss, 12.7 mm (0.5") ClarkDietrich RC Deluxe™ Resilient Channel, 15.9 mm (0.63") USG SHEETROCK® Brand FIRECODE® Type X Gypsum Panel				
SPECIMEN AREA	10.98 m ²	Maximum Temp.	20.1°C (68.1°F)	Minimum Temp.	19.8°C (67.6°F)
TECHNICIAN	SJA	Max. Humidity	57%	Min. Humidity	56%



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SECTION 14
PHOTOGRAPHS



Photo No. 1
Source Room View of Test Specimen Installation



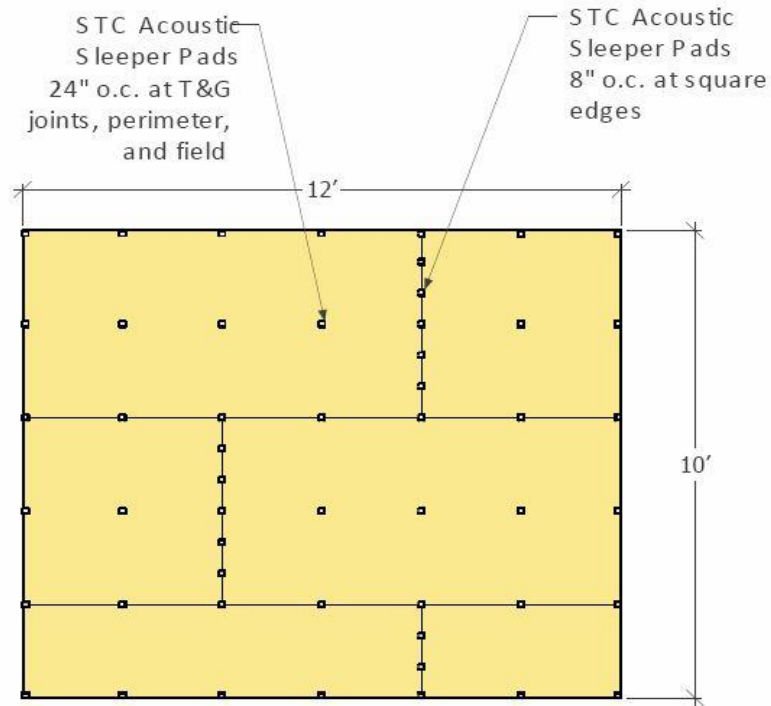
Photo No. 2
Receive Room View of Test Specimen Installation

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SECTION 15
DRAWING



Isolation Pad & Subfloor Layout

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SECTION 16

REVISION LOG

REVISION #	DATE	PAGES	DESCRIPTION
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