

# REGUPOL AMERICA

# ACOUSTICAL

# PERFORMANCE

# TEST REPORT

## SCOPE OF WORK

ASTM E90 AND ASTM E492 TESTING ON 18" OPEN WEB TRUSS WITH LUXURY VINYL TILE AND SONUSCLIP CEILING

## SPECIMEN TYPE

Open Web Truss - 457 mm

## REPORT NUMBER

H6848.05-303-11-R0

## TEST DATE(S)

11/15/17

## ISSUE DATE

01/03/18

## RECORD RETENTION END

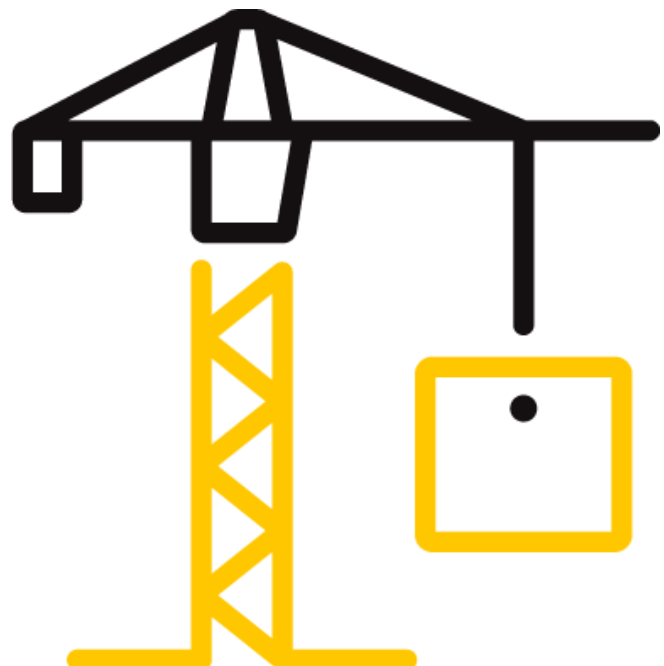
11/15/21

## PAGES

12

## DOCUMENT CONTROL

ATI 00629 (09/19/17)  
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## TEST REPORT FOR REGUPOL AMERICA

Report No.: H6848.05-303-11-R0

Date: 01/03/18

### REPORT ISSUED TO

#### REGUPOL AMERICA

11 Ritter Way

Lebanon, Pennsylvania 17042

### SECTION 1

#### SCOPE

Intertek Building & Construction (B&C) was contracted by to perform testing in accordance with ASTM E90 AND ASTM E492 on 18" Open Web Truss with Luxury Vinyl Tile and SonusClip Ceiling. 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

<b>DATA FILE NO.</b>	H6848.05
<b>SERIES/MODEL:</b>	18" Open Web Truss with Luxury Vinyl Tile and SonusClip Ceiling
<b>STC</b>	60
<b>IIC</b>	54

**COMPLETED BY:** Leeland S. Hoover

**TITLE:** Technician I

**SIGNATURE:**

**DATE:** 01/03/18

**COMPLETED BY:** Bradley D. Hunt

**TITLE:** Laboratory Manager

**SIGNATURE:**

**DATE:** 01/03/18

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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 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) 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 669.8 kg. B&C will store samples of the test specimen for four years. Photographs of the test specimen are 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	DESCRIPTION	ASSET #	CAL DATE
Data Acquisition Unit	National Instruments	PXI-1033	Data Acquisition Card	INT00392	10/17 *
Microphone Calibrator	Norsonic	1251	Pistonphone calibrator	INT00289	07/17
Receive Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	INT00229	03/17
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	INT00230	03/17
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	INT00231	03/17
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	INT00232	03/17
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	INT00233	03/17
Receive Room Environmental Indicator	Comet	T7510	Temperature and Humidity Transmitter	INT00299	10/17
Source Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	INT00234	03/17
Source Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	INT00235	03/17
Source Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	INT00236	03/17
Source Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	INT00237	03/17
Source Room Microphone	PCB Electronics	378B20	Microphone and Preamplifier	INT00238	03/17
Source Room Environmental Indicator	Comet	T7510	Temperature and Humidity Transmitter	INT00300	10/17
Tapping Machine	Look Line s.r.l.	EM50 (TM50)	Tapping Machine	INT00225	07/17

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

<b>VT RECEIVE ROOM VOLUME</b>	180.6 m <sup>3</sup>
<b>VT SOURCE ROOM VOLUME</b>	129.4 m <sup>3</sup>

**SECTION 6  
LIST OF OFFICIAL OBSERVERS**

NAME	COMPANY
Bill Devin	Regupol America
Leeland S. Hoover	Intertek B&C
Bradlay D. Hunt	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 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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**SECTION 9**

**TEST SPECIMEN DESCRIPTION**

MATERIAL	DIMENSIONS (mm/inch)	THICKNESS (mm/inch)	MANUFACTURER AND SERIES	QUANTITY	AVERAGE WEIGHT
Luxury Vinyl Tile	914.4 by 152.4	3.8	Allure	11.15 m <sup>2</sup>	7.47 kg/m <sup>2</sup>
	Note: Adhered with pressure sensitive flooring adhesive.				
Oriented Strand Board Sheathing	1219 by 2438	18.8	N/A	11.15 m <sup>2</sup>	13.82 kg/m <sup>2</sup>
	Note: Adhered to the floor trusses with Loctite PL 400 Subfloor adhesive. Fastened with 9D nails on 203 mm centers along perimeter and 305 mm centers along trusses.				
Fiberglass Insulation	520.7 by 3023	88.9	Johns Manville Unfaced R-13	11.15 m <sup>2</sup>	1.32 kg/m <sup>2</sup>
	Note: Installed in the cavity between trusses flush with the OSB. Hanger wire was used to keep insulation secure on 305 mm				
Open Web Truss	88.9 by 2933.7	457.2	Stone Truss L/360	7 trusses	19.05 kg/truss
	Note: Installed on 610 mm centers using JUS414 hanger brackets.				
SonusClip	76.2 by 35.1	25.6	Regupol	23 clips	0.06 kg/m <sup>2</sup>
	Note: Each clip was installed with a single 50.8 mm long 8 gauge drywall screw				
25 gauge Hat Channel	3454.4 by 63.5	22.1	N/A	27.6 lin m	0.63 kg/m
	Note: Installed on 609 mm centers perpendicular to the trusses.				
Gypsum Panel	1219 by 3023	15.9	USG SHEETROCK® Brand FIRECODE® C core	11.15 m <sup>2</sup>	11.91 kg/m <sup>2</sup>
	Note: Fastened to the hat channels on 305 mm centers with 25.4 mm 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.				
Gypsum Panel	1219 by 3023	15.9	USG SHEETROCK® Brand FIRECODE® C core	11.15 m <sup>2</sup>	11.91 kg/m <sup>2</sup>
	Note: Fastened to the hat channels on 305 mm centers with 47.6 mm 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



<b>TEST DATE</b>	11/15/2017				
<b>DATA FILE NO.</b>	H6848.05				
<b>CLIENT</b>	Regupol America				
<b>DESCRIPTION</b>	3.83 mm Allure Luxury Vinyl Tile, 18.8 mm Oriented Strand Board Sheathing, 88.9 mm Johns Manville Unfaced R-13 Fiberglass Insulation, 457.2 mm Stone Truss L/360 Open Web Truss, 25.6 mm Regupol SonusClip, 22.11 mm 25 gauge Hat Channel, 15.9 mm USG SHEETROCK® Brand FIRECODE® C core Gypsum Panel, 15.9 mm USG SHEETROCK® Brand FIRECODE® C core Gypsum Panel				
<b>SPECIMEN AREA</b>	11.15 m <sup>2</sup>	<b>Receive Temp.</b>	21.1	<b>Source Temp.</b>	21.1
<b>TECHNICIAN</b>	LSH	<b>Receive Humidity</b>	45%	<b>Source Humidity</b>	45%

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	25.0	7.0	100	65	37	2.3	-
100	24.6	6.0	103	68	37	2.7	-
125	23.9	4.8	102	67	38	1.4	6
160	19.5	5.6	102	61	43	1.0	4
200	11.7	6.2	101	56	47	0.7	3
250	11.1	6.2	98	51	49	0.6	4
315	6.3	7.1	102	48	56	0.8	0
400	4.7	7.3	102	49	55	0.7	4
500	6.5	6.1	101	46	57	0.3	3
630	4.1	6.1	96	40	59	0.3	2
800	3.0	6.3	96	38	60	0.5	2
1000	4.8	6.2	96	36	63	0.5	0
1250	2.2	6.6	98	36	65	0.3	0
1600	1.7	6.8	98	33	68	0.2	0
2000	3.1	7.8	99	31	70	0.2	0
2500	3.6	8.6	100	28	72	0.3	0
3150	5.0	9.2	100	24	77	0.2	0
4000	5.4	11.0	99	20	79	0.3	0
5000	5.2	13.7	96	15	80	0.4	-
6300	5.7	17.6	95	12	81	0.4	-
8000	6.1	23.7	95	10	82	0.5	-
10000	6.3	30.7	94	8	82	0.4	-
<b>STC Rating</b>	<b>60</b>	<i>(Sound Transmission Class)</i>			<b>Sum of Deficiencies</b>	<b>28</b>	

- 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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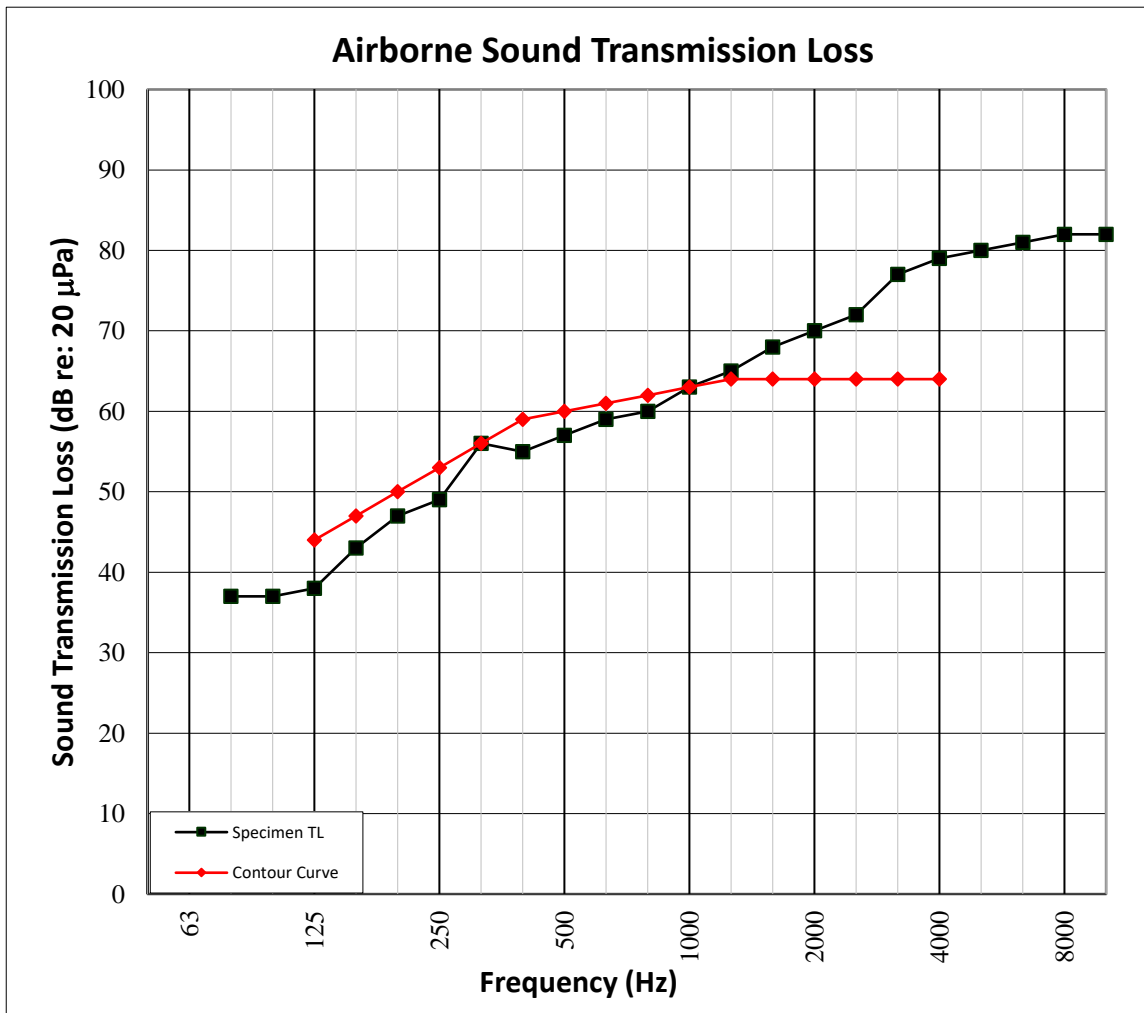
Date: 01/03/18

### SECTION 11

#### TEST RESULTS - AIRBORNE SOUND TRANSMISSION LOSS GRAPH



<b>TEST DATE</b>	11/15/2017				
<b>DATA FILE NO.</b>	H6848.05				
<b>CLIENT</b>	Regupol America				
<b>DESCRIPTION</b>	3.83 mm Allure Luxury Vinyl Tile, 18.8 mm Oriented Strand Board Sheathing, 88.9 mm Johns Manville Unfaced R-13 Fiberglass Insulation, 457.2 mm Stone Truss L/360 Open Web Truss, 25.6 mm Regupol SonusClip, 22.11 mm 25 gauge Hat Channel, 15.9 mm USG SHEETROCK® Brand FIRECODE® C core Gypsum Panel, 15.9 mm USG SHEETROCK® Brand FIRECODE® C core Gypsum Panel				
<b>SPECIMEN AREA</b>	11.15 m <sup>2</sup>	<b>Receive Temp.</b>	21.1	<b>Source Temp.</b>	21.1
<b>TECHNICIAN</b>	LSH	<b>Receive Humidity</b>	45%	<b>Source Humidity</b>	45%





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### SECTION 12

#### TEST RESULTS - IMPACT SOUND TRANSMISSION



<b>TEST DATE</b>	11/15/2017				
<b>DATA FILE NO.</b>	H6848.05				
<b>CLIENT</b>	Regupol America				
<b>DESCRIPTION</b>	3.83 mm Allure Luxury Vinyl Tile, 18.8 mm Oriented Strand Board Sheathing, 88.9 mm Johns Manville Unfaced R-13 Fiberglass Insulation, 457.2 mm Stone Truss L/360 Open Web Truss, 25.6 mm Regupol SonusClip, 22.11 mm 25 gauge Hat Channel, 15.9 mm USG SHEETROCK® Brand FIRECODE® C core Gypsum Panel, 15.9 mm USG SHEETROCK® Brand FIRECODE® C core Gypsum Panel				
<b>SPECIMEN AREA</b>	11.15 m <sup>2</sup>	<b>Maximum Temp.</b>	21.1	<b>Minimum Temp.</b>	21.1
<b>TECHNICIAN</b>	LSH	<b>Max. Humidity</b>	45%	<b>Min. Humidity</b>	45%

FREQ (Hz)	BACKGROUND SPL (dB)	ABSORPTION m <sup>2</sup>	NORMALIZED IMPACT SPL (dB)	95% CONFIDENCE LIMIT	NUMBER OF DEFICIENCIES
80	25.1	6.8	66	1.9	-
100	25.0	5.9	66	1.2	8
125	24.2	5.0	64	0.9	6
160	20.2	5.5	63	0.8	5
200	12.4	6.2	63	0.4	5
250	11.5	6.2	63	0.5	5
315	10.0	7.2	59	0.5	1
400	8.3	7.3	59	0.5	2
500	6.9	6.0	54	0.3	0
630	4.6	6.1	49	0.1	0
800	3.4	6.2	46	0.1	0
1000	5.0	6.2	41	0.2	0
1250	2.3	6.7	35	0.2	0
1600	1.7	6.9	32	0.3	0
2000	3.0	7.8	33	0.3	0
2500	3.8	8.5	28	0.2	0
3150	5.0	9.1	24	0.3	0
4000	5.5	11.1	21	0.5	-
5000	5.2	13.8	16	0.5	-
6300	5.7	17.5	15	0.6	-
8000	6.1	23.8	12	0.5	-
10000	6.3	30.4	11	0.3	-
<b>IIC Rating</b>	<b>54</b>	<i>(Impact Insulation Class)</i>		<b>Sum of Deficiencies</b>	<b>32</b>

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

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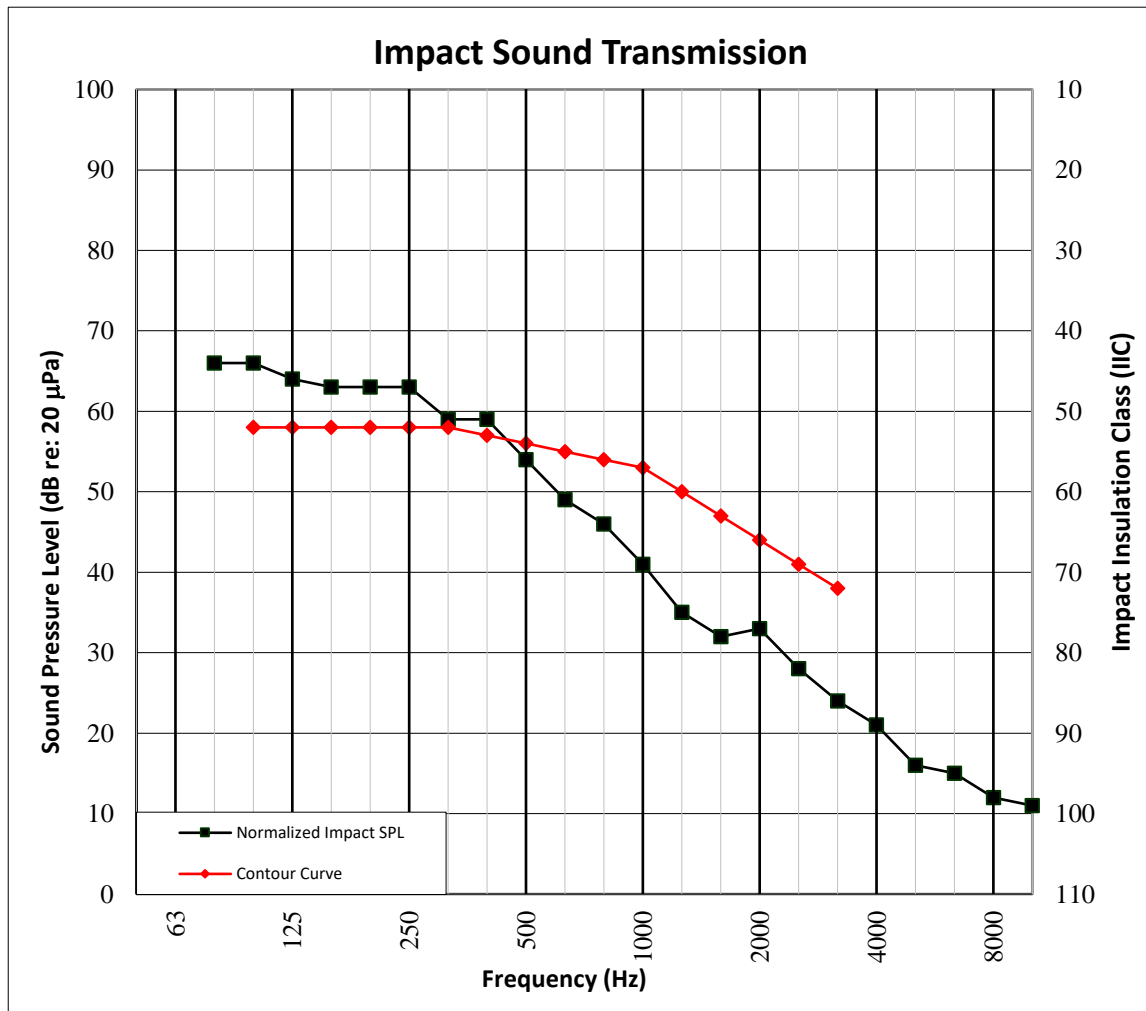
Date: 01/03/18

### SECTION 13

### TEST RESULTS - IMPACT SOUND TRANSMISSION GRAPH



<b>TEST DATE</b>	11/15/2017				
<b>DATA FILE NO.</b>	H6848.05				
<b>CLIENT</b>	Regupol America				
<b>DESCRIPTION</b>	3.83 mm Allure Luxury Vinyl Tile, 18.8 mm Oriented Strand Board Sheathing, 88.9 mm Johns Manville Unfaced R-13 Fiberglass Insulation, 457.2 mm Stone Truss L/360 Open Web Truss, 25.6 mm Regupol SonusClip, 22.11 mm 25 gauge Hat Channel, 15.9 mm USG SHEETROCK® Brand FIRECODE® C core Gypsum Panel, 15.9 mm USG SHEETROCK® Brand FIRECODE® C core Gypsum Panel				
<b>SPECIMEN AREA</b>	11.15 m <sup>2</sup>	<b>Maximum Temp.</b>	21.1	<b>Minimum Temp.</b>	21.1
<b>TECHNICIAN</b>	LSH	<b>Max. Humidity</b>	45%	<b>Min. Humidity</b>	45%



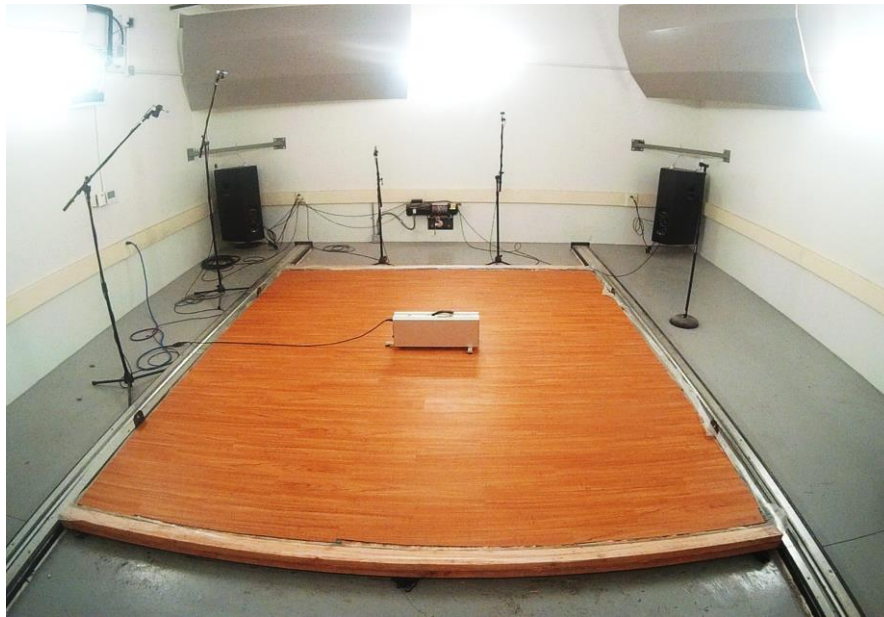
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### SECTION 14

#### PHOTOGRAPHS



**Photo No. 1**

**Source Room View of Test Specimen Installation**



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### SECTION 16

#### REVISION LOG

REVISION #	DATE	PAGES	DESCRIPTION
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