

REGUPOL AMERICA

ACOUSTICAL

PERFORMANCE

TEST REPORT

SCOPE OF WORK

ASTM E90 AND ASTM E492 TESTING ON
4X SOUNDPANEL WITH 5MM SONUS AND PORCELAIN TILE

SPECIMEN TYPE

Concrete Slab - 152 mm

REPORT NUMBER

H6847.07-303-11-R0

TEST DATE(S)

11/16/17

ISSUE DATE

01/03/18

RECORD RETENTION END

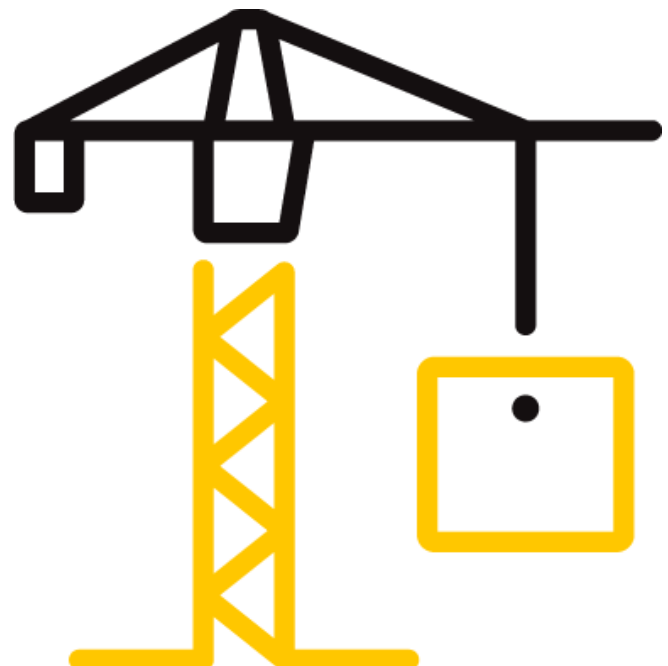
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Report No.: H6847.07-303-11-R0

Date: 01/03/18

REPORT ISSUED TO

REGUPOL AMERICA

11 Ritter Way

Lebanon, Pennsylvania 17402

SECTION 1

SCOPE

Intertek Building & Construction (B&C) was contracted by to perform testing in accordance with ASTM E90 AND ASTM E492 on 4x SoundPanel with 5mm Sonus and Porcelain Tile. 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.	H6847.07
SERIES/MODEL:	4x SoundPanel with 5mm Sonus and Porcelain Tile
STC	62
IIC	63

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 (Concrete Slab - 152 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 4533.3 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	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.

VT RECEIVE ROOM VOLUME	183.69 m ³
VT SOURCE ROOM VOLUME	129.4 m ³

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
Porcelain Tile	304.8 by 304.8	8.0	Daltile	11.15 m ²	16.21 kg/m ²
	Note: The tile was placed with light pressure onto a bed of mortar. The mortar was set using a 6.35 mm by 6.35 mm trowel. The grout was placed into the 6.35 mm joints between the tile. Both the grout and mortar were allowed to cure to the manufacturer's specifications.				
Rubber Underlayment	2794 by 1219	5.1	Regupol 5mm Sonus	11.15 m ²	3.81 kg/m ²
	Note: A sheet of 2 mil polyethylene plastic was adhered to the subfloor topping with 3M Super 77 spray adhesive. The underlayment was adhered to the polyethylene plastic.				
Plywood	3048 by 1219.2	18.0	N/A	11.15 m ²	9.18 kg/m ²
	Note: The plywood was fastened with 1-5/8" drywall screws at 12" on center				
4x Soundpanel	1219.2 by 1219.2	67.5	Regupol	11.15 m ²	11.18 kg/m ²
	Note: The panel was made up of 15.71mm thick OSB, 25mm thick insulation and 51.8mm thick rubber blocks.				
Concrete Slab	3023 by 3632	152.4	5000 PSI	11.15 m ²	366.18 kg/m ²
	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.				

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SECTION 10

TEST RESULTS - AIRBORNE SOUND TRANSMISSION LOSS



TEST DATE	11/16/2017				
DATA FILE NO.	H6847.07				
CLIENT	Regupol America				
DESCRIPTION	7.95 mm Daltile Porcelain Tile, 5.1 mm Regupol 5mm Sonus Rubber Underlayment, 17.98 mm Plywood, 67.51 mm Regupol 4x Soundpanel, 152.4 mm 5000 PSI Concrete Slab				
SPECIMEN AREA	11.15 m ²	Receive Temp.	21.1	Source Temp.	21.1
TECHNICIAN	LSH	Receive Humidity	45%	Source Humidity	45%

FREQ (Hz)	BACKGROUND SPL (dB)	ABSORPTION m ²	SOURCE SPL (dB)	RECEIVE SPL (dB)	SPECIMEN TL (dB)	95% CONFIDENCE LIMIT	NUMBER OF DEFICIENCIES
80	33.5	5.8	103	65	42	3.0	-
100	35.8	6.3	104	64	42	2.1	-
125	31.8	4.6	103	66	41	1.5	5
160	29.4	5.4	102	60	45	1.9	4
200	23.4	6.4	100	57	46	1.2	6
250	19.0	6.6	99	51	51	0.9	4
315	17.4	7.2	102	50	54	1.0	4
400	15.2	7.2	103	49	56	0.9	5
500	13.3	6.2	102	45	59	0.8	3
630	9.6	6.4	97	37	62	0.4	1
800	7.5	6.3	97	36	64	0.6	0
1000	9.9	6.1	98	32	68	0.9	0
1250	6.7	6.4	99	33	68	0.2	0
1600	6.6	6.8	100	30	72	0.4	0
2000	9.7	7.7	100	26	75	0.2	0
2500	12.7	8.6	100	25	77	0.3	0
3150	15.8	9.4	100	21	80	1.1	0
4000	15.3	11.2	99	16	83	0.9	0
5000	11.9	14.2	96	13	82	1.7	-
6300	10.7	18.4	95	12	81	1.4	-
8000	7.9	24.9	95	9	82	1.3	-
10000	6.8	32.3	95	7	83	1.9	-
STC Rating	62	<i>(Sound Transmission Class)</i>			Sum of Deficiencies	32	

- 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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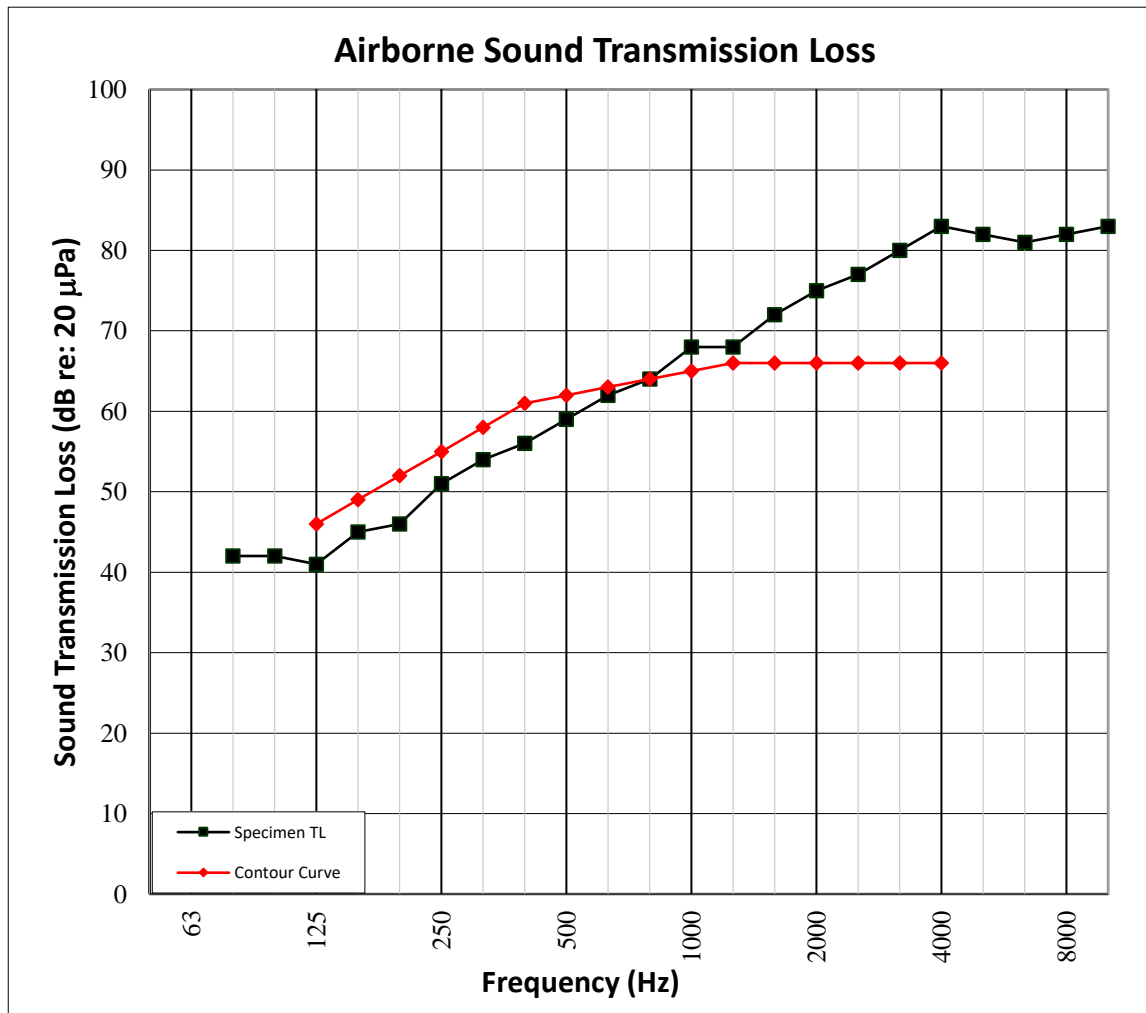
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SECTION 11

TEST RESULTS - AIRBORNE SOUND TRANSMISSION LOSS GRAPH



TEST DATE	11/16/2017				
DATA FILE NO.	H6847.07				
CLIENT	Regupol America				
DESCRIPTION	7.95 mm Daltile Porcelain Tile, 5.1 mm Regupol 5mm Sonus Rubber Underlayment, 17.98 mm Plywood, 67.51 mm Regupol 4x Soundpanel, 152.4 mm 5000 PSI Concrete Slab				
SPECIMEN AREA	11.15 m ²	Receive Temp.	21.1	Source Temp.	21.1
TECHNICIAN	LSH	Receive Humidity	45%	Source Humidity	45%



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SECTION 12

TEST RESULTS - IMPACT SOUND TRANSMISSION



TEST DATE	11/16/2017				
DATA FILE NO.	H6847.07				
CLIENT	Regupol America				
DESCRIPTION	7.95 mm Daltile Porcelain Tile, 5.1 mm Regupol 5mm Sonus Rubber Underlayment, 17.98 mm Plywood, 67.51 mm Regupol 4x Soundpanel, 152.4 mm 5000 PSI Concrete Slab				
SPECIMEN AREA	11.15 m ²	Maximum Temp.	21.1	Minimum Temp.	21.1
TECHNICIAN	LSH	Max. Humidity	45%	Min. Humidity	45%

FREQ (Hz)	BACKGROUND SPL (dB)	ABSORPTION m ²	NORMALIZED IMPACT SPL (dB)	95% CONFIDENCE LIMIT	NUMBER OF DEFICIENCIES
80	30.9	5.2	52	1.4	-
100	31.7	6.5	53	1.2	4
125	31.7	4.5	53	0.6	4
160	27.4	5.6	56	0.4	7
200	21.9	6.4	56	1.0	7
250	19.0	6.9	54	0.6	5
315	15.3	7.3	52	0.3	3
400	13.7	7.3	48	0.5	0
500	13.3	6.1	45	0.2	0
630	9.5	6.2	45	0.3	0
800	7.1	6.3	41	0.3	0
1000	10.2	6.2	36	0.2	0
1250	7.0	6.4	31	0.3	0
1600	7.0	6.8	27	0.3	0
2000	10.1	7.6	22	0.2	0
2500	13.4	8.5	14	0.2	0
3150	17.4	9.4	9	0.2	0
4000	16.1	11.2	5	0.4	-
5000	13.6	14.2	5	0.5	-
6300	12.3	18.5	7	0.5	-
8000	8.4	25.0	8	0.4	-
10000	7.1	32.7	9	0.2	-
IIC Rating	63	<i>(Impact Insulation Class)</i>		Sum of Deficiencies	30

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

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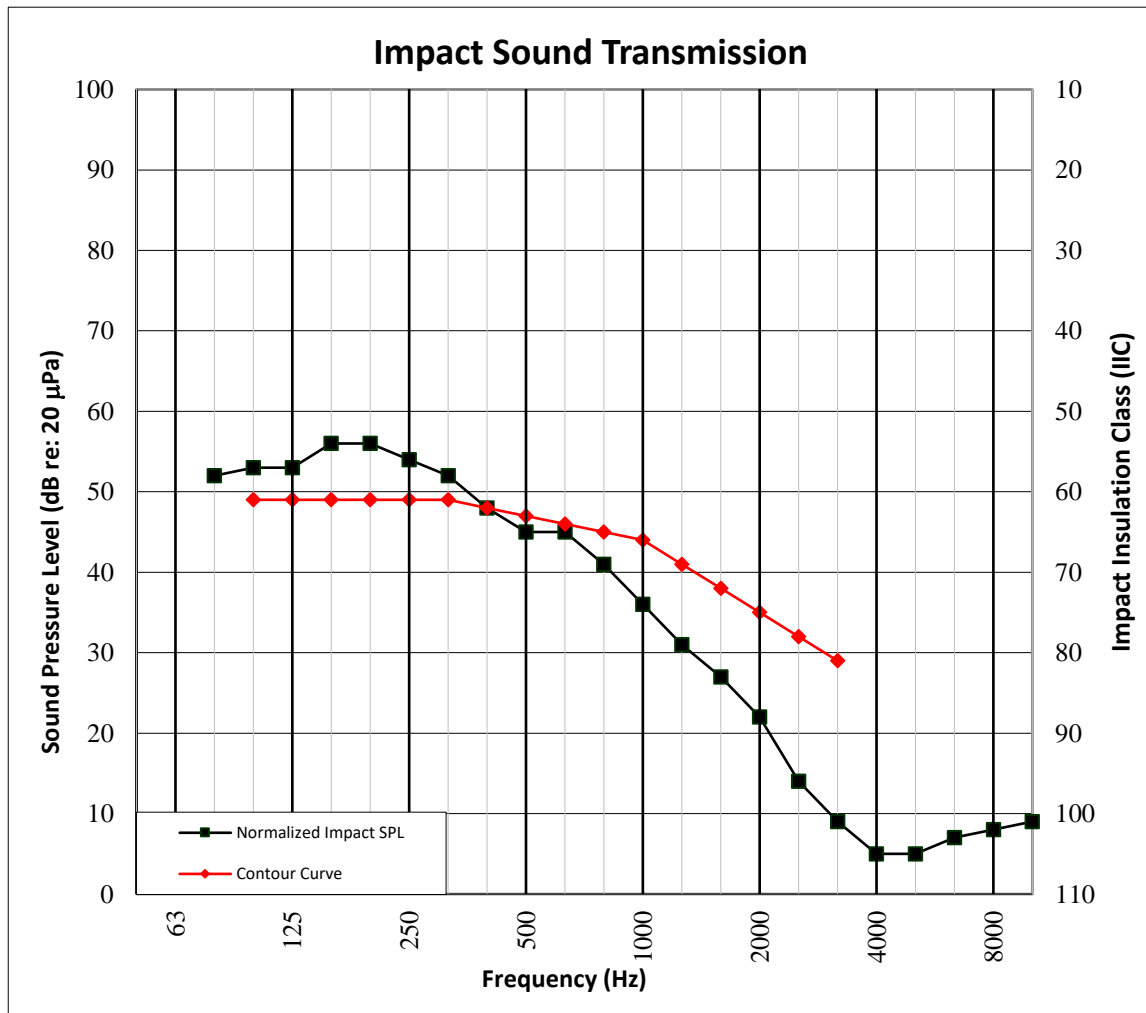
Date: 01/03/18

SECTION 13

TEST RESULTS - IMPACT SOUND TRANSMISSION GRAPH



TEST DATE	11/16/2017				
DATA FILE NO.	H6847.07				
CLIENT	Regupol America				
DESCRIPTION	7.95 mm Daltile Porcelain Tile, 5.1 mm Regupol 5mm Sonus Rubber Underlayment, 17.98 mm Plywood, 67.51 mm Regupol 4x Soundpanel, 152.4 mm 5000 PSI Concrete Slab				
SPECIMEN AREA	11.15 m ²	Maximum Temp.	21.1	Minimum Temp.	21.1
TECHNICIAN	LSH	Max. Humidity	45%	Min. Humidity	45%



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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 16

REVISION LOG

REVISION #	DATE	PAGES	DESCRIPTION
R0	01/03/18	N/A	Original Report Issue
