E9878.02-113-11-R0
ACOUSTICAL PERFORMANCE TEST REPORT
ASTM E 90 AND ASTM E 492

Rendered to

REGUPOL AMERICA

Series/Model: Regupol® 7210C Screed Isolation

Specimen Type: 203 mm Concrete Slab with Drop Ceiling

Overall Size: 3023 mm by 3632 mm

STC	**62**
IIC	**61**

Test Specimen Identification:
Floor Topping: 12.7 mm Mannington Lexington Hickory Engineered Wood
Subfloor Topping: 50.8 mm ARDEX A 38™ Rapid Set Screed
Subfloor Underlayment: 3 mm Regupol® 7210C Screed Isolation
Floor Slab: 203 mm Concrete Slab
Main Beams: 43 mm Armstrong HD8906 Drywall Main Beam
Cross Tees: 37.3 mm Armstrong XL8945P Cross Tee
Insulation: 88.9 mm Johns Manville Kraft Faced R-13 Fiberglass Insulation
Ceiling: 15.9 mm National Gypsum Gold Bond® Fire-Shield® Type X Gypsum Panel

Reference should be made to Intertek-ATI Report E9878.02-113-11 for complete test specimen description. This page alone is not a complete report.

Acoustical Performance Test Report

REGUPOL AMERICA
33 Keystone Drive
Lebanon, Pennsylvania 17042

Report	E9878.02-113-11
Test Date	08/14/15
Report Date	09/04/15

Project Scope

Architectural Testing, Inc., a subsidiary of Intertek (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 client provided the test specimen. The specimen was constructed on the date of testing.

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, 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, 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 York, Pennsylvania. 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	
Average Temperature	22.4°C	Average Temperature	22.7°C
Average Relative Humidity	56%	Average Relative Humidity	59%

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
Engineered Wood	914.4 by 127	12.7	Mannington Lexington Hickory	10.98 m²	6.59 kg/m²
	Note: Loose laid				
Rapid Set Screed	3023 by 3632	50.8	ARDEX A 38™	10.98 m²	119.1 kg/m²
	Note: Poured directly onto the isolation per manufacturer's specifications, allowed to cure overnight.				
Screed Isolation	3023 by 1219.2	3.0	Regupol® 7210C	10.98 m²	2.49 kg/m²
	Note: Loose laid with seams taped				
Concrete Slab	3023 by 3632	203.0	N/A	10.98 m²	488.24 kg/m²
	Note: The concrete slab was installed in a test frame flush to the source room.				
Drywall Main Beam	38.1 by 2870	43.0	Armstrong HD8906	10.9 lin m	0.45 kg/m
	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 150 mm plenum. The measured steel thickness is 0.5 mm.				
Cross Tee	38.3 by 1219	37.3	Armstrong XL8945P	27.2 lin m	0.45 kg/m
	Note: Inserted into the main beams on 607 mm centers. The measured steel thickness is 0.5 mm.				

Test Specimen Materials and Installation Details (Continued)

Material	Dimensions (mm)	Thickness (mm)	Manufacturer and Series	Quantity	Average Weight
Fiberglass Insulation	2962 by 584	88.9	Johns Manville Kraft Faced R-13	10.98 m²	1.33 kg/m²
	Note: Loose laid onto the ceiling grid system				
Gypsum Panel	3023 by 1219	15.9	National Gypsum Gold Bond® Fire-Shield® Type X	10.56 m²	11.23 kg/m²
	Note: Fastened with fine thread drywall screws on 305 mm centers				

Comments

The total weight of the floor/ceiling assembly was 6918.7 kg. Intertek-ATI will store samples of the test specimen for four years. A drawing of the test specimen is included in the

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.

FOR INTERTEK-ATI:

Digitally Signed by: Daniel Mohler

Digitally Signed by: Jordan Strybos

Daniel B. Mohler
Technician II - Acoustical Testing

Jordan Strybos
Project Manager - Acoustical Testing

Attachments (6 Pages): This report is complete only when all attachments are included.

** Stated by Client/Manufacturer*
N/A - Non Applicable

Revision Log

Revision	Date	Page(s)	Description
R0	09/04/15	N/A	Original Report Issue

Attachments

Instrumentation

Instrument	Manufacturer	Model	ATI Number	Date of Calibration
Data Acquisition Unit	National Instruments	PXI-1033	63763	06/14 *
Microphone Calibrator	Norsonic	1251	Y002919	07/15
Receive Room Microphone	PCB Piezotronics	378B20	63748	05/15
Receive Room Microphone	PCB Piezotronics	378B20	63744	05/15
Receive Room Microphone	PCB Piezotronics	378B20	63745	05/15
Receive Room Microphone	PCB Piezotronics	378B20	63746	05/15
Receive Room Microphone	PCB Piezotronics	378B20	63747	05/15
Receive Room Environmental Indicator	Comet	T7510	63810 63811	09/14
Source Room Microphone	PCB Piezotronics	378B20	63738	04/15
Source Room Microphone	PCB Piezotronics	378B20	63739	04/15
Source Room Microphone	PCB Piezotronics	378B20	63740	04/15
Source Room Microphone	PCB Piezotronics	378B20	63742	04/15
Source Room Microphone	PCB Piezotronics	378B20	63741	04/15
Source Room Environmental Indicator	Comet	T7510	63812	09/14
Tapping Machine	Look Line s.r.l.	EM50 (TM50)	65351	11/14

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

Test Chambers

VT Receive Room Volume	155.77 m³
VT Source Room Volume	190 m³

AIRBORNE SOUND TRANSMISSION LOSS

ASTM E 90

Test Date	08/14/15
Data File No.	E9878.02
Client	Regupol America
Description	12.7 mm Mannington Lexington Hickory Engineered Wood, 50.8 mm ARDEX A 38™ Rapid Set Screed, 3 mm Regupol® 7210C Screed Isolation, 203 mm Concrete Slab, 43 mm Armstrong HD8906 Drywall Main Beam, 37.3 mm Armstrong XL8945P Cross Tee, 88.9 mm Johns Manville Kraft Faced R-13 Fiberglass Insulation, 15.9 mm National Gypsum Gold Bond® Fire-Shield® Type X Gypsum Panel
Specimen Area	10.98 m²
Technician	Daniel B. Mohler

Freq (Hz)	**Background SPL** (dB)	**Absorption** (m²)	**Source SPL** (dB)	**Receive SPL** (dB)	**Specimen TL** (dB)	**95% Confidence Limit**	**Number of Deficiencies**
80	60.5	16.9	109	68	40	2.90	-
100	44.5	13.7	106	67	40	1.90	-
125	41.0	9.2	105	65	42	1.20	4
160	39.5	8.6	108	65	45	1.30	4
200	36.6	9.6	104	58	49	1.40	3
250	38.0	10.1	104	55	51	1.10	4
315	39.0	9.2	105	53	54	1.10	4
400	38.8	7.8	104	50	57	0.60	4
500	37.5	7.2	103	46	60	0.70	2
630	37.5	6.8	104	45	63	0.70	0
800	37.4	7.2	103	44	63	0.40	1
1000	37.0	7.0	103	42	64	0.60	1
1250	33.7	6.9	103	41	65	0.80	1
1600	30.9	7.0	103	40	66	0.60	0
2000	27.5	7.8	103	39	67	0.60	0
2500	23.7	8.7	101	37	67	0.40	0
3150	20.2	9.6	102	34	70	0.60	0
4000	16.7	10.9	103	32	72	0.60	0
5000	13.6	12.8	103	29	74	0.70	-
6300	11.1	16.2	97	18	79	0.70	-
8000	8.9	21.6	96	13	81	0.90	-
10000	7.8	27.5	91	8	81	0.50	-

STC Rating **62** *(Sound Transmission Class)*

Deficiencies 28 *(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 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

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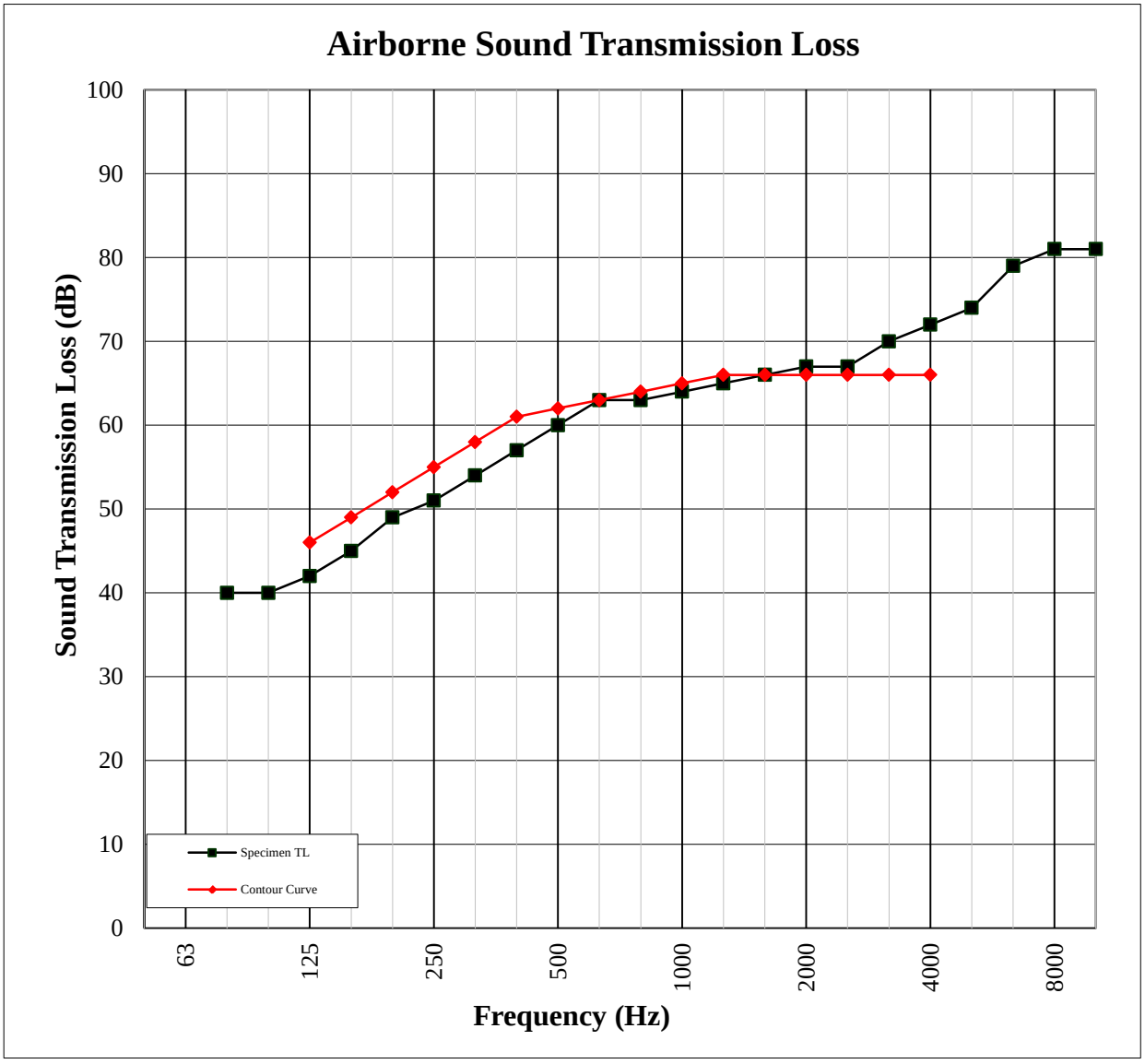
Technician	Daniel B. Mohler



IMPACT SOUND TRANSMISSION

ASTM E 492

Test Date	08/14/15
Data File No.	E9878.02
Client	Regupol America
Description	12.7 mm Mannington Lexington Hickory Engineered Wood, 50.8 mm ARDEX A 38™ Rapid Set Screed, 3 mm Regupol® 7210C Screed Isolation, 203 mm Concrete Slab, 43 mm Armstrong HD8906 Drywall Main Beam, 37.3 mm Armstrong XL8945P Cross Tee, 88.9 mm Johns Manville Kraft Faced R-13 Fiberglass Insulation, 15.9 mm National Gypsum Gold Bond® Fire-Shield® Type X Gypsum Panel
Specimen Area	10.98 m²
Technician	Daniel B. Mohler

Freq (Hz)	**Background SPL** (dB)	**Absorption** (m²)	**Normalized Impact SPL** (dB)	**95% Confidence Limit**	**Number of Deficiencies**
80	60.6	16.3	60	7.0	-
100	44.8	14.7	59	2.8	8
125	40.6	8.9	54	2.1	3
160	40.7	8.7	54	1.2	3
200	36.7	9.6	53	2.1	2
250	37.8	10.0	57	1.8	6
315	39.1	8.9	52	1.3	1
400	38.7	7.9	48	1.2	0
500	37.5	7.3	41	0.4	0
630	37.5	6.9	38	0.4	0
800	37.5	7.1	36	0.2	0
1000	37.1	7.0	34	0.3	0
1250	33.7	6.9	31	0.2	0
1600	30.9	7.0	28	0.3	0
2000	27.6	7.8	25	0.3	0
2500	23.6	8.7	23	0.2	0
3150	20.1	9.6	19	0.3	0
4000	16.6	11.0	16	0.4	-
5000	13.4	12.9	13	0.6	-
6300	11.0	16.2	12	0.5	-
8000	9.0	21.9	12	0.5	-
10000	7.6	27.3	13	0.4	-

IIC Rating **61** *(Impact Insulation Class)*

Deficiencies 23 *(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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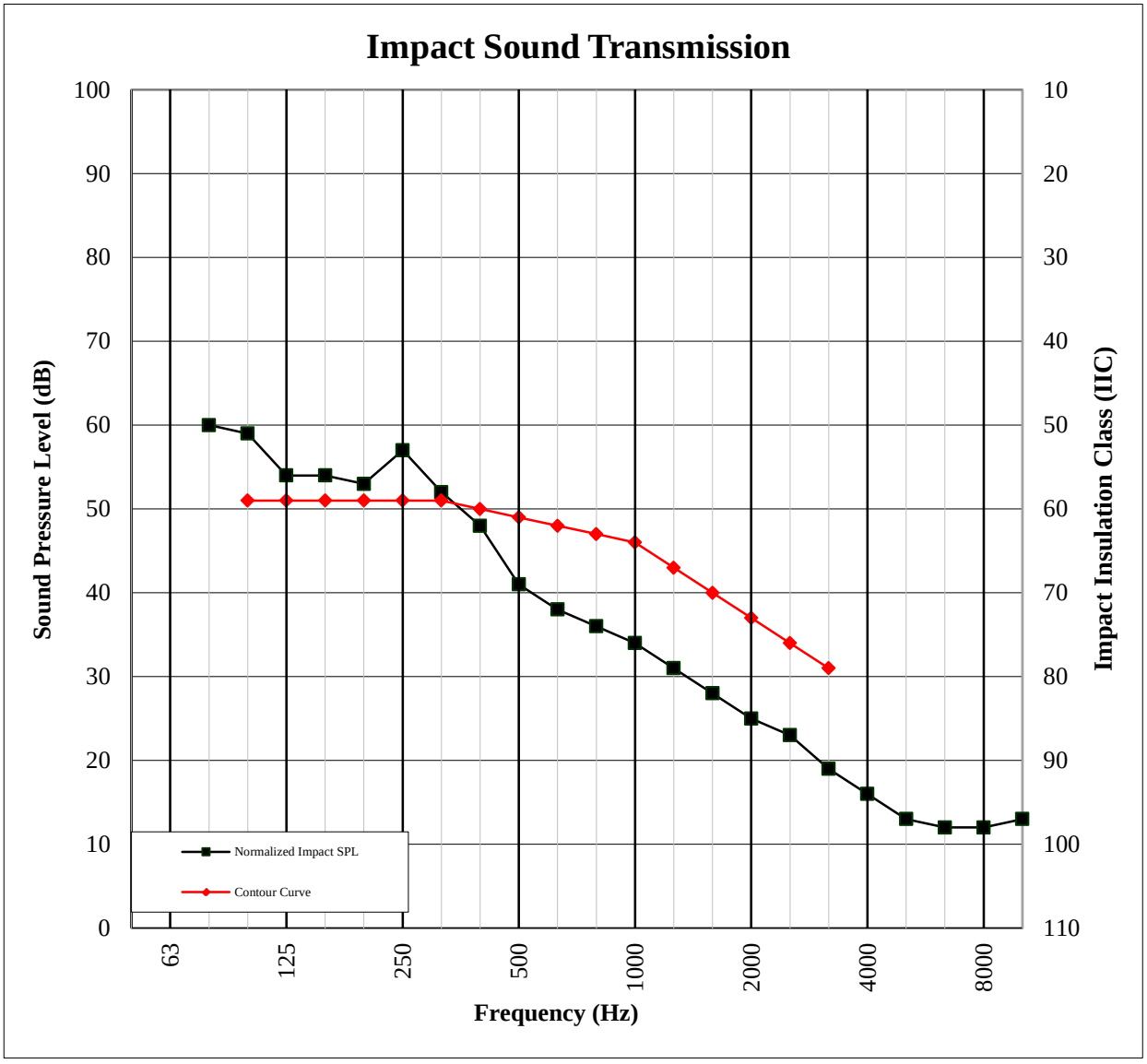
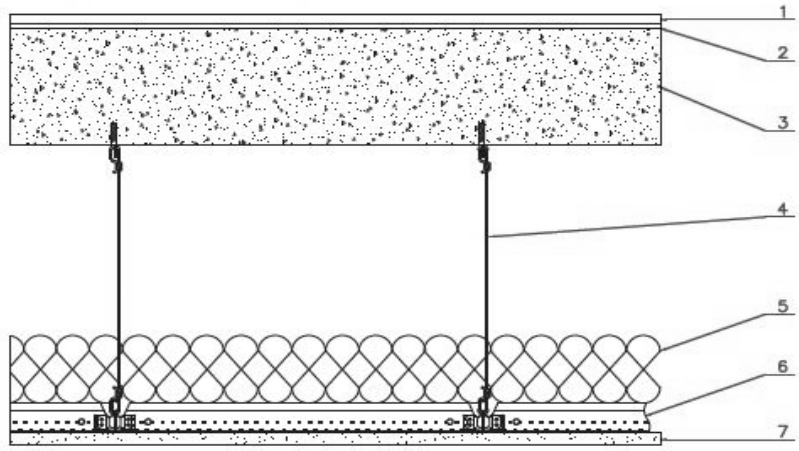


Drawing



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