



**E9877.03-113-11-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     61**  
**IIC     56**

**Test Specimen Identification:**

Floor Topping: 8 mm Daltile Ceramic Tile

Subfloor Topping: 50.8 mm ARDEX A 38™ Rapid Set Screed

Subfloor Underlayment: 5 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 E9877.03-113-11 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** E9877.03-113-11  
**Test Date** 08/03/15  
**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	22.5°C	Average Temperature	21.6°C
Average Relative Humidity	56%	Average Relative Humidity	56%

**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
Ceramic Tile	304.8 by 304.8	8.0	Daltile	10.98 m <sup>2</sup>	15.87 kg/m <sup>2</sup>
	<i>Note: Grout was placed into the 6.35 mm joints between the ceramic tile and wiped clean. The ceramic tile was placed with light pressure onto a bed of mortar on the underlayment. The mortar was set using a 6.35 mm by 6.35 mm trowel. Both the grout and mortar were allowed to cure to manufacturer's specifications.</i>				
Rapid Set Screed	3023 by 3632	50.8	ARDEX A 38™	10.98 m <sup>2</sup>	109.85 kg/m <sup>2</sup>
	<i>Note: Poured directly onto the isolation per manufacturer's specifications, allowed to cure overnight.</i>				
Screed Isolation	3023 by 1219.2	5.0	Regupol® 7210C	10.98 m <sup>2</sup>	3.49 kg/m <sup>2</sup>
	<i>Note: Loose laid with seams taped</i>				
Concrete Slab	3023 by 3632	203.0	N/A	10.98 m <sup>2</sup>	488.24 kg/m <sup>2</sup>
	<i>Note: The concrete slab was installed in a test frame flush to the source room.</i>				
Drywall Main Beam	38.1 by 2870	43.0	Armstrong HD8906	10.9 lin m	0.45 kg/m
	<i>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.</i>				

**Test Specimen Materials and Installation Details (Continued)**

Material	Dimensions (mm)	Thickness (mm)	Manufacturer and Series	Quantity	Average Weight
Cross Tee	38.3 by 1219	37.3	Armstrong XL8945P	27.2 lin m	0.45 kg/m
	<i>Note: Inserted into the main beams on 607 mm centers. The measured steel thickness is 0.5 mm.</i>				
Fiberglass Insulation	2962 by 584	88.9	Johns Manville Kraft Faced R-13	10.98 m <sup>2</sup>	1.33 kg/m <sup>2</sup>
	<i>Note: Loose laid onto the ceiling grid system</i>				
Gypsum Panel	3023 by 1219	15.9	National Gypsum Gold Bond® Fire-Shield® Type X	10.56 m <sup>2</sup>	11.23 kg/m <sup>2</sup>
	<i>Note: Fastened with fine thread drywall screws on 305 mm centers</i>				

**Comments**

The total weight of the floor/ceiling assembly was 6930 kg. Intertek-ATI will store samples of the test specimen for four years. A drawing of the test specimen is included in the attachments.

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.

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FOR INTERTEK-ATI:

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Daniel B. Mohler  
Technician II - Acoustical Testing

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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

<u>Revision</u>	<u>Date</u>	<u>Page(s)</u>	<u>Description</u>
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 m <sup>3</sup>
VT Source Room Volume	190 m <sup>3</sup>



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**AIRBORNE SOUND TRANSMISSION LOSS**  
ASTM E 90

<b>Test Date</b>	08/03/15
<b>Data File No.</b>	E9877.03
<b>Client</b>	Regupol America
<b>Description</b>	8 mm Daltile Ceramic Tile, 50.8 mm ARDEX A 38™ Rapid Set Screed, 5 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
<b>Specimen Area</b>	10.98 m <sup>2</sup>
<b>Technician</b>	Daniel B. Mohler

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	64.3	11.3	109	69	40	4.40	-
100	45.9	11.1	106	66	41	2.00	-
125	45.7	8.3	105	65	42	0.90	3
160	36.7	9.2	107	68	40	1.90	8
200	31.6	10.5	104	59	47	1.60	4
250	28.9	10.0	104	54	51	1.10	3
315	30.8	8.6	105	53	54	0.80	3
400	27.2	7.8	103	49	57	0.70	3
500	24.7	7.1	104	45	62	0.60	0
630	24.5	7.0	106	44	65	0.40	0
800	25.0	6.9	105	43	65	0.30	0
1000	24.7	6.8	105	42	66	0.40	0
1250	28.4	6.8	104	40	67	0.50	0
1600	21.0	6.8	104	39	68	0.20	0
2000	14.1	7.7	104	38	68	0.30	0
2500	10.6	8.7	102	36	69	0.30	0
3150	8.9	9.2	104	33	72	0.40	0
4000	7.6	10.6	104	31	74	0.50	0
5000	7.2	12.3	104	28	76	0.50	-
6300	7.3	15.4	97	18	80	0.60	-
8000	7.5	20.7	97	13	82	0.90	-
10000	7.5	25.6	92	8	82	1.10	-

**STC Rating**      **61**      (*Sound Transmission Class*)

**Deficiencies**      **24**      (*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



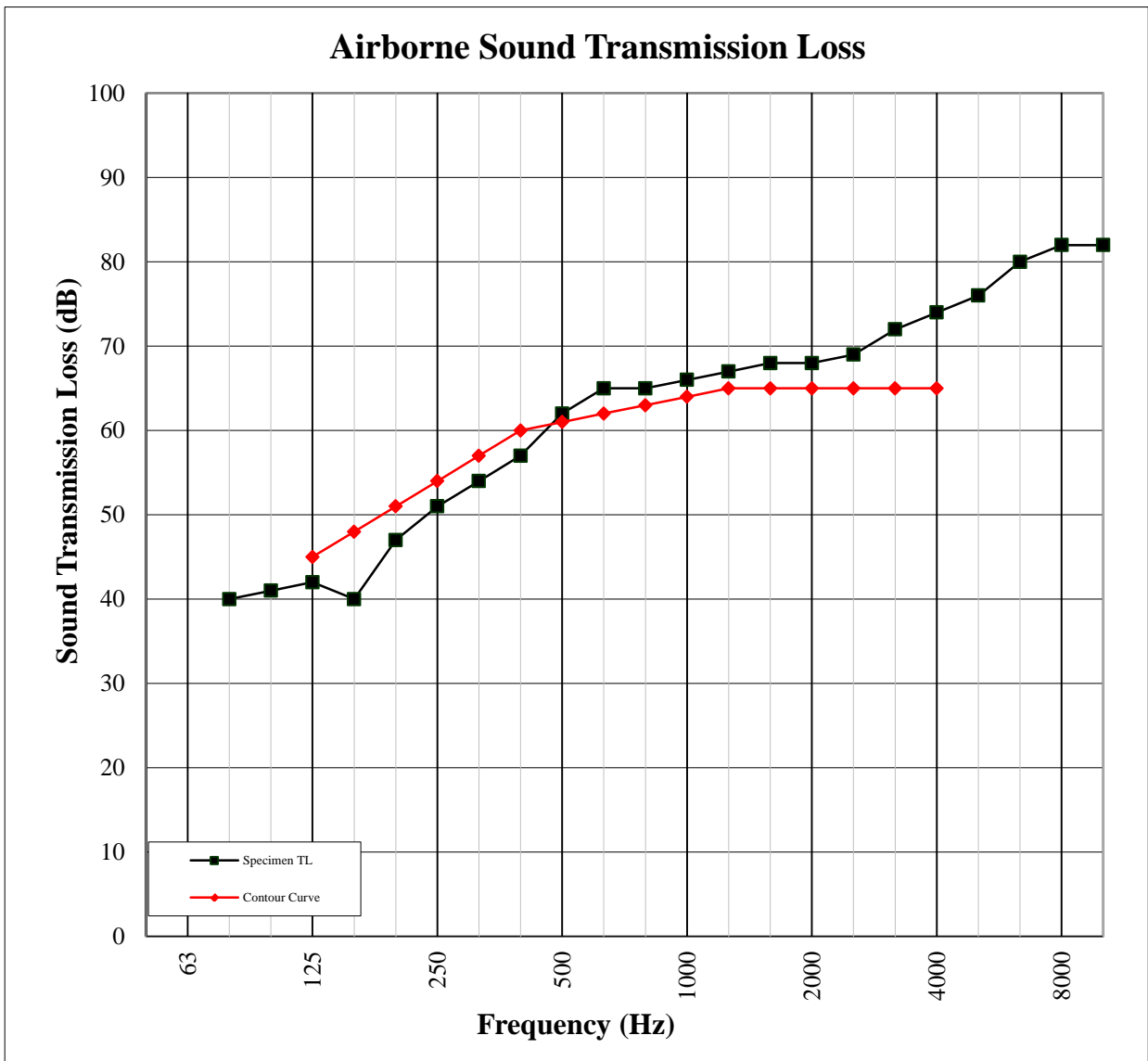


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### AIRBORNE SOUND TRANSMISSION LOSS ASTM E 90

<b>Test Date</b>	08/03/15
<b>Data File No.</b>	E9877.03
<b>Client</b>	Regupol America
<b>Description</b>	8 mm Daltile Ceramic Tile, 50.8 mm ARDEX A 38™ Rapid Set Screed, 5 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
<b>Specimen Area</b>	10.98 m <sup>2</sup>
<b>Technician</b>	Daniel B. Mohler





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**IMPACT SOUND TRANSMISSION**  
ASTM E 492

<b>Test Date</b>	08/03/15
<b>Data File No.</b>	E9877.03
<b>Client</b>	Regupol America
<b>Description</b>	8 mm Daltile Ceramic Tile, 50.8 mm ARDEX A 38™ Rapid Set Screed, 5 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
<b>Specimen Area</b>	10.98 m <sup>2</sup>
<b>Technician</b>	Daniel B. Mohler

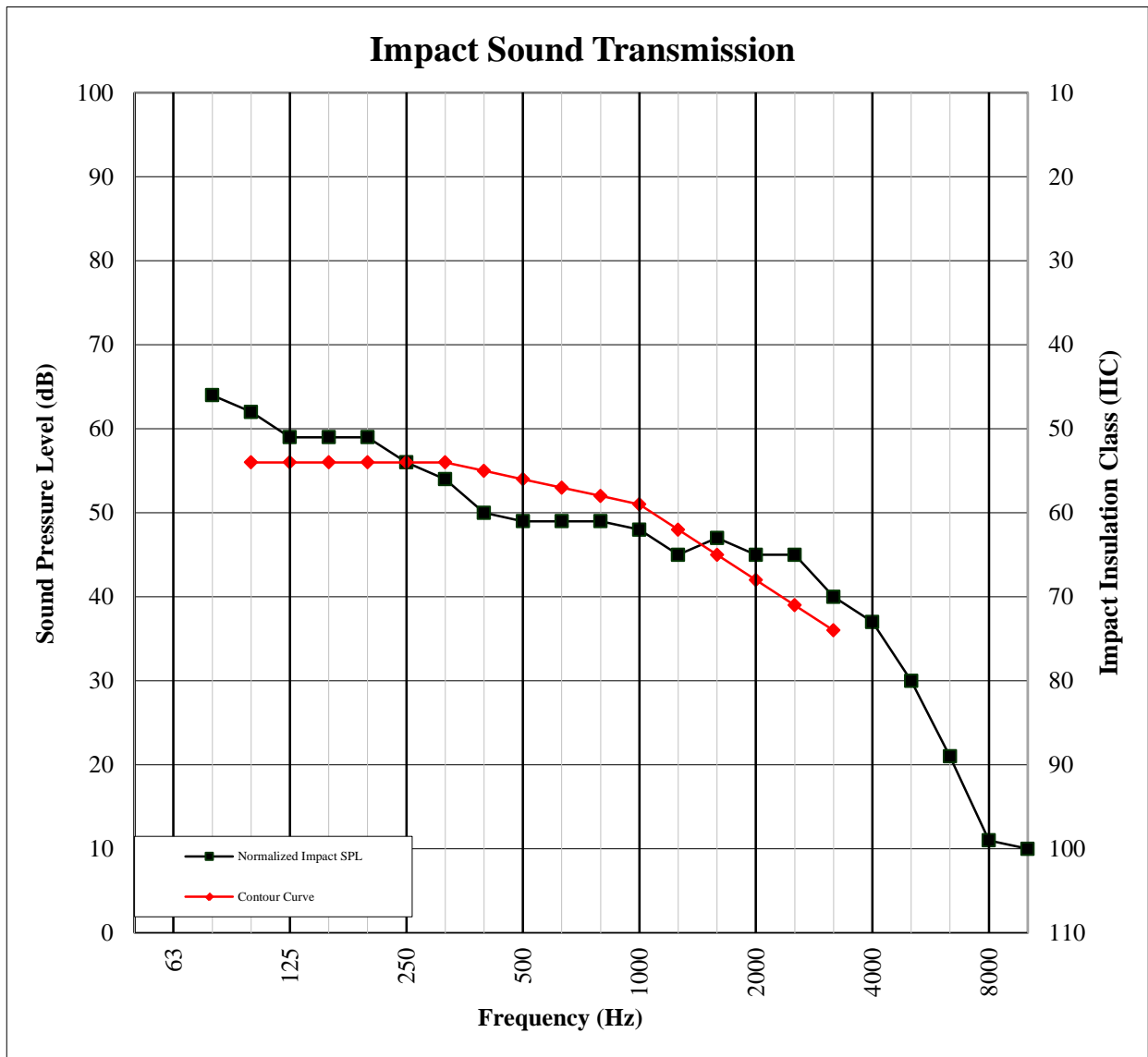
<b>Freq</b> (Hz)	<b>Background SPL</b> (dB)	<b>Absorption</b> (m <sup>2</sup> )	<b>Normalized Impact SPL</b> (dB)	<b>95% Confidence Limit</b>	<b>Number of Deficiencies</b>
80	66.0	14.3	64	6.3	-
100	46.1	12.6	62	3.1	6
125	46.2	9.1	59	2.4	3
160	35.7	8.2	59	4.0	3
200	28.4	10.4	59	1.7	3
250	27.7	9.9	56	0.9	0
315	30.3	9.1	54	3.0	0
400	26.7	7.5	50	0.5	0
500	24.0	7.0	49	0.3	0
630	24.1	6.9	49	0.9	0
800	24.6	7.0	49	0.5	0
1000	24.3	6.8	48	0.7	0
1250	24.4	6.8	45	0.5	0
1600	20.4	6.8	47	0.5	2
2000	14.0	7.6	45	0.2	3
2500	10.4	8.6	45	0.4	6
3150	8.8	9.2	40	0.5	4
4000	7.7	10.7	37	0.5	-
5000	7.5	12.4	30	0.7	-
6300	7.4	15.4	21	1.1	-
8000	7.6	20.7	11	1.5	-
10000	7.6	25.7	10	2.0	-

**IIC Rating**      **56**      *(Impact Insulation Class)*  
**Deficiencies**    **30**      *(Sum of Deficiencies)*

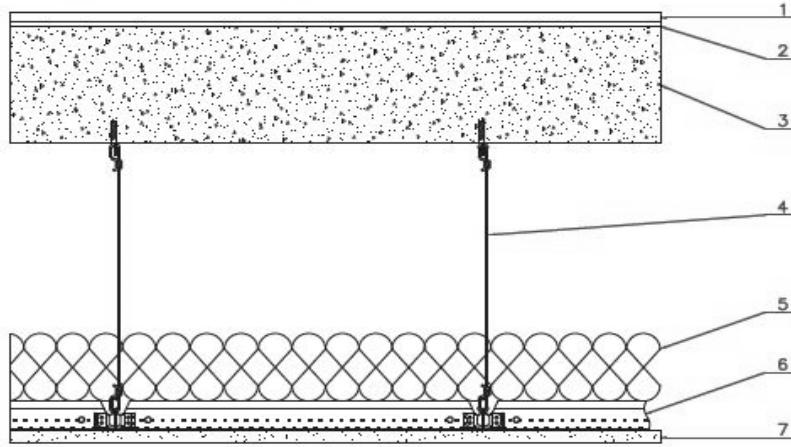
*Note:*      *Receive Room levels less than 5 dB above the Background levels are highlighted in yellow.*

**IMPACT SOUND TRANSMISSION**  
ASTM E 492

<b>Test Date</b>	08/03/15
<b>Data File No.</b>	E9877.03
<b>Client</b>	Regupol America
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<b>Specimen Area</b>	10.98 m <sup>2</sup>
<b>Technician</b>	Daniel B. Mohler



**Drawing**



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