



G0096.02-113-11-R0
ACOUSTICAL PERFORMANCE TEST REPORT
ASTM E 90 AND ASTM E 492

Rendered to

VENEKLASEN ASSOCIATES

Series/Model: Urban Luxury Vinyl 9230 Silver Line Vinyl Plank Flooring

Specimen Type: 152 mm (6") Concrete Slab with Drop Ceiling

Overall Size: 3023 mm by 3632 mm (119" by 143")

STC 63
IIC 70

Test Specimen Identification:

Floor Topping: 7 mm (0.28") Urban Luxury Vinyl 9230 Silver Line Vinyl Plank Flooring

Floor Slab: 152.4 mm (6") Concrete Slab

Main Beams: 43 mm (1.69") Armstrong HD8906 Drywall Main Beam

Cross Tees: 37.3 mm (1.47") Armstrong XL8945P Cross Tee

Insulation: 88.9 mm (3.5") Johns Manville Kraft Faced R-13 Fiberglass Insulation

Ceiling: 15.9 mm (0.63") National Gypsum Gold Bond® Fire-Shield® Type X Gypsum Panel

Reference should be made to Intertek-ATI Report G0096.02-113-11 for complete test specimen description. This page alone is not a complete report.



Acoustical Performance Test Report

VENEKLASEN ASSOCIATES
1711 16th Street
Santa Monica, California 90404

Report G0096.02-113-11
Test Date 06/24/16
Report Date 06/29/16

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(2016)e1, 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	22.6°C (72.7°F)	Average Temperature	23.7°C (74.6°F)
Average Relative Humidity	58%	Average Relative Humidity	64%

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/inch)	Thickness (mm/inch)	Manufacturer and Series	Quantity	Average Weight
Vinyl Plank Flooring	1219 by 178 48 by 7	7 / 0.28	Urban Luxury Vinyl 9230 Silver Line	10.98 m ² 118.19 ft ²	6.53 kg/m ² 1.34 lb/ft ²
	<i>Note: Loose laid. Batch #150618-8915C</i>				
Concrete Slab	3023 by 3632 119 by 143	152.4 / 6	N/A	10.98 m ² 118.19 ft ²	366.18 kg/m ² 75 lb/ft ²
	<i>Note: The concrete slab was installed in a test frame flush to the source room.</i>				
Drywall Main Beam	38.1 by 2870 1.5 by 113	43 / 1.69	Armstrong HD8906	10.9 lin m 35.8 lin ft	0.45 kg/m 0.3 lb/ft
	<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 305 mm plenum. The measured steel thickness is 0.5 mm.</i>				
Cross Tee	38.3 by 1219 1.5 by 48	37.3 / 1.47	Armstrong XL8945P	27.2 lin m 89.2 lin ft	0.45 kg/m 0.3 lb/ft
	<i>Note: Inserted into the main beams on 607 mm centers. The measured steel thickness is 0.5 mm.</i>				
Fiberglass Insulation	2962 by 584 116.6 by 23	88.9 / 3.5	Johns Manville Kraft Faced R-13	10.98 m ² 118.19 ft ²	1.33 kg/m ² 0.27 lb/ft ²
	<i>Note: Loose laid onto the ceiling grid system</i>				
Gypsum Panel	3023 by 1219 119 by 48	15.9 / 0.63	National Gypsum Gold Bond® Fire-Shield® Type X	10.56 m ² 113.67 ft ²	11.23 kg/m ² 2.3 lb/ft ²
	<i>Note: Fastened with fine thread drywall screws on 305 mm centers</i>				

Comments

The total weight of the floor/ceiling assembly was 4242.7 kg / 9353.5 lbs. Intertek-ATI 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.

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:

Daniel B. Mohler
Project Lead - Acoustical Testing

Jordan Strybos
Project Manager - Acoustical Testing

Attachments (7 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	06/29/16	N/A	Original Report Issue

Attachments

Instrumentation

Instrument	Manufacturer	Model	ATI Number	Date of Calibration
Data Acquisition Unit	National Instruments	PXI-1033	65124	06/16 *
Microphone Calibrator	Norsonic	1251	INT00127	01/16
Receive Room Microphone	PCB Piezontronics	378B20	63748	06/16
Receive Room Microphone	PCB Piezotronics	378B20	63744	06/16
Receive Room Microphone	PCB Piezotronics	378B20	63745	06/16
Receive Room Microphone	PCB Piezotronics	378B20	63746	06/16
Receive Room Microphone	PCB Piezotronics	378B20	63747	06/16
Receive Room Environmental Indicator	Comet	T7510	63810	10/15
			63811	10/15
Source Room Microphone	PCB Piezotronics	378B20	63738	05/16
Source Room Microphone	PCB Piezotronics	378B20	63739	05/16
Source Room Microphone	PCB Piezotronics	378B20	63740	05/16
Source Room Microphone	PCB Piezotronics	378B20	63742	05/16
Source Room Microphone	Scantek	378B20	63741	05/16
Source Room Environmental Indicator	Comet	T7510	63812	11/15
Tapping Machine	Look Line s.r.l.	EM50 (TM50)	65351	02/16

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

Test Chambers

VT Receive Room Volume	155.77 m ³ (5500.85 ft ³)
VT Source Room Volume	190 m ³ (6709.79 ft ³)



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AIRBORNE SOUND TRANSMISSION LOSS
ASTM E 90



Test Date	06/24/16
Data File No.	G0096.02
Client	Veneklasen Associates
Description	7 mm (0.28") Urban Luxury Vinyl 9230 Silver Line Vinyl Plank Flooring, 152.4 mm (6") Concrete Slab, 43 mm (1.69") Armstrong HD8906 Drywall Main Beam, 37.3 mm (1.47") Armstrong XL8945P Cross Tee, 88.9 mm (3.5") Johns Manville Kraft Faced R-13 Fiberglass Insulation, 15.9 mm (0.63") National Gypsum Gold Bond® Fire-Shield® Type X Gypsum Panel
Specimen Area	10.98 m ²
Technician	Daniel B. Mohler

Freq (Hz)	Background SPL (dB)	Absorption (m ²)	Source SPL (dB)	Receive SPL (dB)	Specimen TL (dB)	95% Confidence Limit	Number of Deficiencies
50	39.2	31.3	100	64	32	4.50	-
63	37.2	30.5	100	66	30	4.30	-
80	36.4	16.1	107	67	40	5.00	-
100	31.3	12.1	105	68	38	1.90	-
125	30.1	10.5	105	64	43	1.20	4
160	23.9	9.6	106	64	44	1.60	6
200	21.3	11.2	103	56	48	1.30	5
250	23.0	11.3	102	51	52	1.20	4
315	23.6	11.3	105	50	56	1.10	3
400	19.0	9.6	104	46	59	0.90	3
500	23.7	9.0	103	44	61	0.40	2
630	23.3	8.9	105	44	63	0.70	1
800	20.5	8.7	104	43	63	0.60	2
1000	17.3	8.6	103	40	66	0.60	0
1250	17.7	8.4	104	39	67	0.90	0
1600	12.9	8.5	104	37	69	0.50	0
2000	10.8	9.5	103	37	68	0.60	0
2500	7.1	10.0	102	36	68	0.50	0
3150	5.0	10.9	103	34	70	0.70	0
4000	5.3	12.3	104	32	72	0.50	0
5000	5.8	14.1	103	28	74	0.50	-
6300	6.2	17.9	97	21	75	0.80	-
8000	6.0	23.4	97	16	79	0.80	-
10000	6.2	28.4	92	8	81	0.60	-

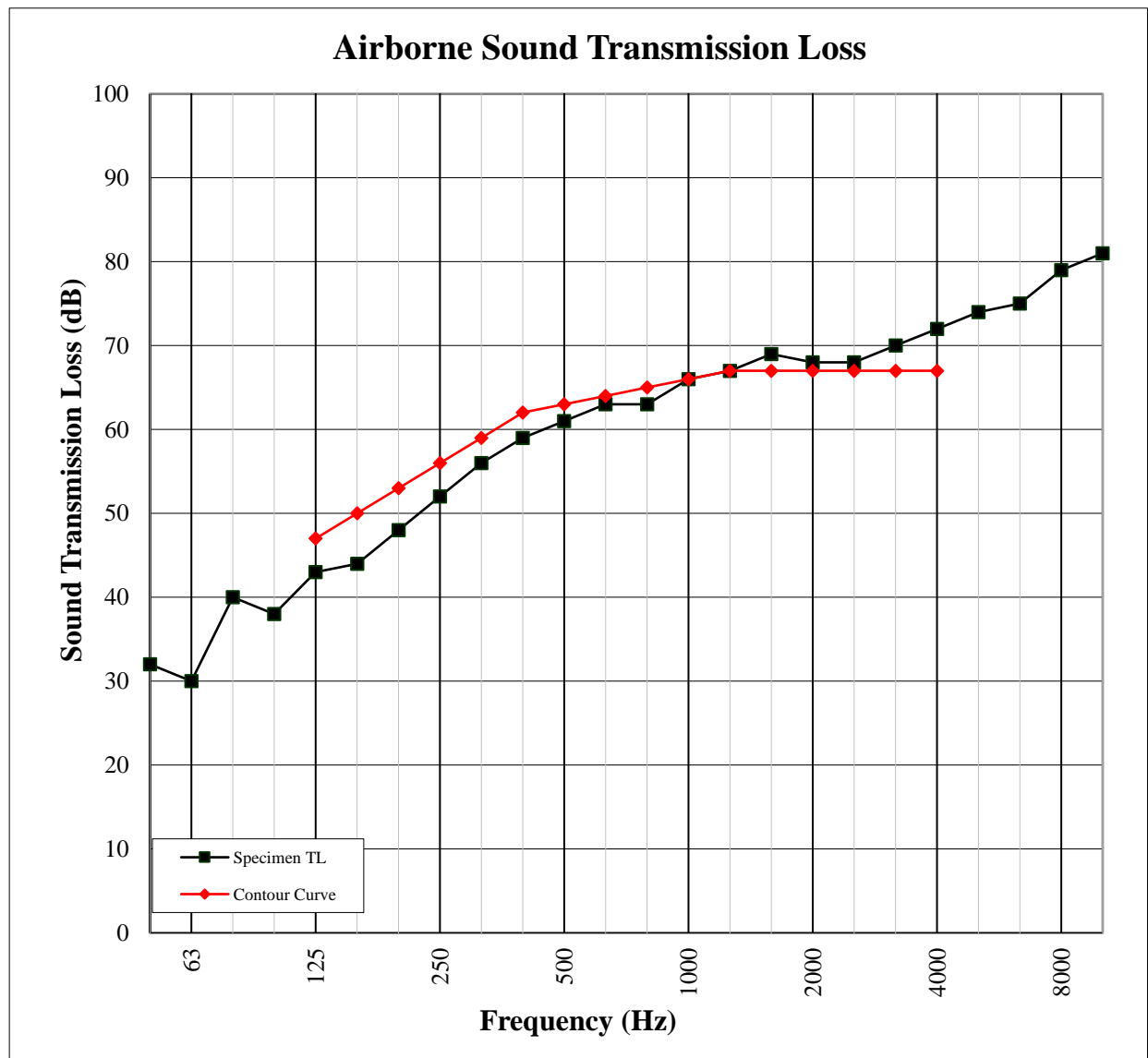
STC Rating **63** (*Sound Transmission Class*)

Deficiencies **30** (*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
ASTM E 90

Test Date	06/24/16
Data File No.	G0096.02
Client	Veneklassen Associates
Description	7 mm (0.28") Urban Luxury Vinyl 9230 Silver Line Vinyl Plank Flooring, 152.4 mm (6") Concrete Slab, 43 mm (1.69") Armstrong HD8906 Drywall Main Beam, 37.3 mm (1.47") Armstrong XL8945P Cross Tee, 88.9 mm (3.5") Johns Manville Kraft Faced R-13 Fiberglass Insulation, 15.9 mm (0.63") National Gypsum Gold Bond® Fire-Shield® Type X Gypsum Panel
Specimen Area	10.98 m ²
Technician	Daniel B. Mohler





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IMPACT SOUND TRANSMISSION
ASTM E 492

Test Date	06/24/16
Data File No.	G0096.02
Client	Veneklasen Associates
Description	7 mm (0.28") Urban Luxury Vinyl 9230 Silver Line Vinyl Plank Flooring, 152.4 mm (6") Concrete Slab, 43 mm (1.69") Armstrong HD8906 Drywall Main Beam, 37.3 mm (1.47") Armstrong XL8945P Cross Tee, 88.9 mm (3.5") Johns Manville Kraft Faced R-13 Fiberglass Insulation, 15.9 mm (0.63") National Gypsum Gold Bond® Fire-Shield® Type X Gypsum Panel
Specimen Area	10.98 m ²
Technician	Daniel B. Mohler

Freq (Hz)	Background SPL (dB)	Absorption (m ²)	Normalized Impact SPL (dB)	95% Confidence Limit	Number of Deficiencies
50	35.5	27.0	59	3.4	-
63	35.7	33.0	56	4.1	-
80	35.2	16.3	47	2.3	-
100	29.3	12.4	50	2.4	8
125	30.4	11.4	46	2.5	4
160	24.1	9.6	45	1.8	3
200	20.1	11.3	44	1.7	2
250	21.8	11.2	43	1.6	1
315	21.9	11.3	41	0.9	0
400	17.0	9.6	40	0.7	0
500	22.4	9.1	34	1.5	0
630	19.3	9.0	35	1.1	0
800	18.6	8.8	32	0.8	0
1000	18.8	8.6	25	0.8	0
1250	16.1	8.4	20	0.3	0
1600	13.6	8.5	14	0.4	0
2000	11.4	9.4	12	0.4	0
2500	9.3	10.1	8	0.4	0
3150	8.1	10.8	6	0.2	0
4000	6.6	12.2	5	0.3	-
5000	6.4	14.1	5	0.3	-
6300	6.3	18.2	7	0.4	-
8000	6.1	23.4	8	0.5	-
10000	6.2	28.8	9	0.6	-

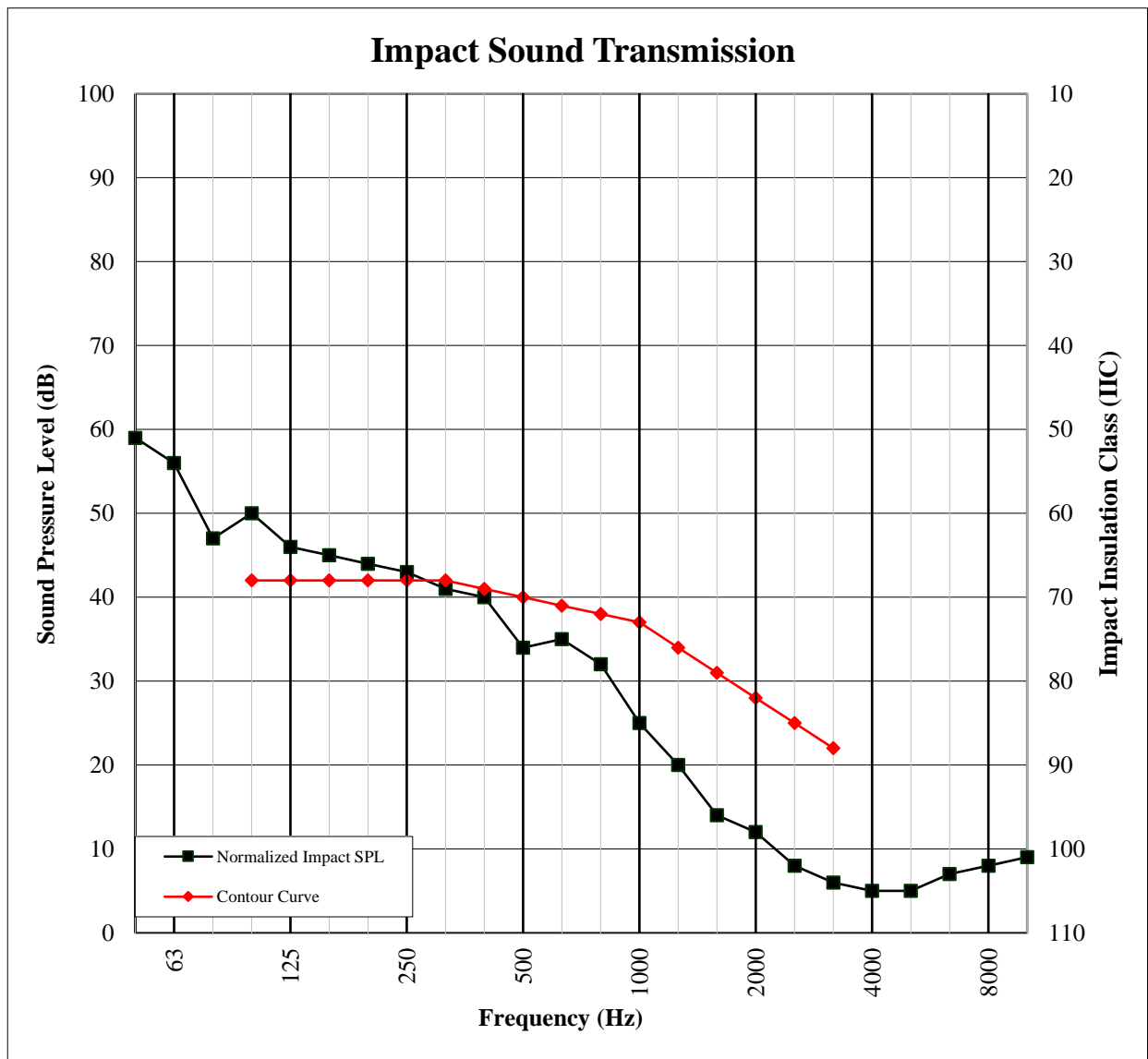
IIC Rating **70** (*Impact Insulation Class*)

Deficiencies **18** (*Sum of Deficiencies*)

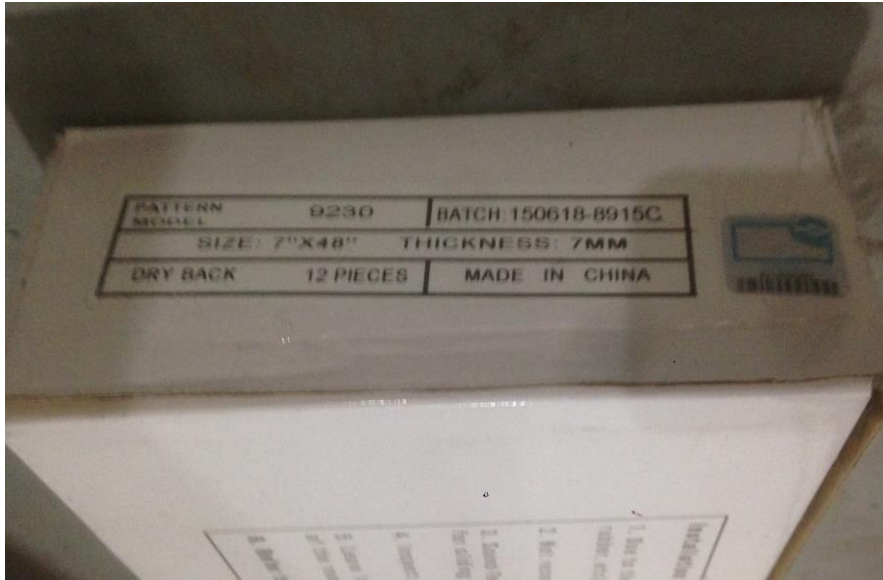
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IMPACT SOUND TRANSMISSION
ASTM E 492

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Specimen Area	10.98 m ²
Technician	Daniel B. Mohler



Photographs

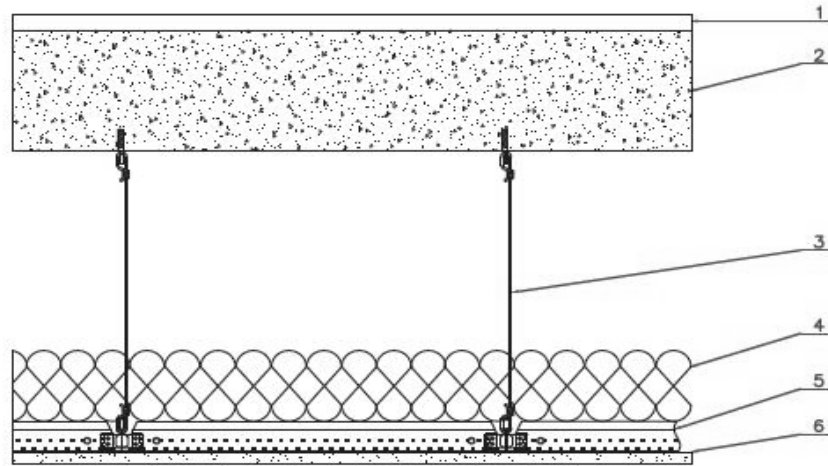


Close-Up of Test Specimen



Receive Room View of Test Specimen Installation

Drawing



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