



H3069.11-113-11-R0
ACOUSTICAL PERFORMANCE TEST REPORT
ASTM E 90 AND ASTM E 492

Rendered to

VENEKLASEN ASSOCIATES

Series/Model: Sount Tec Luxury Vinyl Plank

Specimen Type: Open Web Truss - 457 mm (18")

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

STC 58
IIC 53

Test Specimen Identification:

Floor Topping: 5.9 mm (0.23") Urban Surfaces Sound Tec Luxury Vinyl Plank
Subfloor Topping: 19.1 mm (0.75") USG Levelrock® Brand 2500 Floor Underlayment
Subfloor: 18.8 mm (0.74") Oriented Strand Board Sheathing
Insulation: 88.9 mm (3.5") Johns Manville Unfaced R-13 Fiberglass Insulation
Truss: 457.2 mm (18") York PB Truss L/360 Open Web Truss
Ceiling Isolation: 12.7 mm (0.5") ClarkDietrich RC Deluxe™ Resilient Channel
Ceiling: 15.9 mm (0.63") USG SHEETROCK® Brand FIRECODE® C Core Gypsum Panel

Reference should be made to Intertek-ATI Report H3069.11-113-11 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 H3069.11-113-11
Test Date 07/07/17
Report Date 07/27/17

Project Scope

Architectural Testing, Inc., an Intertek company (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 full test specimen was assembled on the day of testing by Intertek-ATI. All materials provided by the client were installed on an existing Intertek-ATI assembly (Open Web Truss - 457 mm (18")) utilizing Intertek-ATI-supplied materials.

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 (2016), Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions

ASTM E 413-16, 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	
Minimum Temperature	23°C (73.4°F)	Minimum Temperature	24.9°C (76.9°F)
Maximum Temperature	23.2°C (73.7°F)	Maximum Temperature	25.2°C (77.3°F)
Minimum Relative Humidity	63%	Minimum Relative Humidity	62%
Maximum Relative Humidity	63%	Maximum Relative Humidity	63%

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
Luxury Vinyl Plank	177.8 by 1219 7 by 48	5.9 / 0.23	Urban Surfaces Sound Tec	10.98 m ² 118.19 ft ²	8.73 kg/m ² 1.79 lb/ft ²
	<i>Note: Loose laid</i>				
Floor Underlayment	3023 by 3632 119 by 143	19.1 / 0.75	USG Levelrock® Brand 2500	10.98 m ² 118.19 ft ²	38 kg/m ² 7.78 lb/ft ²
	<i>Note: Poured directly onto the subfloor, cured a minimum of 14 days. The gypsum panel had a closed cell foam perimeter isolation.</i>				
Oriented Strand Board Sheathing	1219 by 2438 48 by 96	18.8 / 0.74	N/A	10.98 m ² 118.19 ft ²	13.82 kg/m ² 2.83 lb/ft ²
	<i>Note: Adhered to the floor trusses with Loctite PL 400 Subfloor adhesive. Fastened with 9D nails on 203 mm (8") centers along perimeter and 305 mm (12") centers along trusses.</i>				

Test Specimen Materials and Installation Details (Continued)

Material	Dimensions (mm/inch)	Thickness (mm/inch)	Manufacturer and Series	Quantity	Average Weight
Fiberglass Insulation	520.7 by 3023 20.5 by 119	88.9 / 3.5	Johns Manville Unfaced R-13	10.98 m ² 118.19 ft ²	1.32 kg/m ² 0.27 lb/ft ²
	<i>Note: Installed in the cavity between trusses flush with the OSB. Hanger wire was used to keep insulation secure on 305 mm (12") centers.</i>				
Open Web Truss	88.9 by 2934 3.5 by 115.5	457.2 / 18	York PB Truss L/360	7 trusses	19.05 kg/truss 42 lb/truss
	<i>Note: Installed on 610 mm (24") centers using JUS414 hanger brackets.</i>				
Resilient Channel	68.6 by 3454 2.7 by 136	12.7 / 0.5	ClarkDietrich RC Deluxe™	27.6 lin m 90.5 lin ft	0.33 kg/m 0.22 lb/ft
	<i>Note: Installed on 406 mm (16") centers perpendicular to the trusses. The measured thickness of the metal was 0.7 mm (0.03").</i>				
Gypsum Panel	1219 by 3023 48 by 119	15.9 / 0.63	USG SHEETROCK® Brand FIRECODE® C Core	10.98 m ² 118.19 ft ²	11.9 kg/m ² 2.44 lb/ft ²
	<i>Note: Fastened to the channels on 305 mm (12") centers with 25.4 mm (1") Type S bugle head screws. The seams of the gypsum panels were sealed with Pecora AC-20 FTR caulk and covered with</i>				

Comments

The total weight of the floor/ceiling assembly was 952.3 kg / 2099.8 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.

This report may not be reproduced, except in full, without the written approval of Intertek-ATI.

FOR INTERTEK-ATI:

Cody R. Snyder
Technician I - Acoustical Testing

Jordan Strybos
Project Manager - Acoustical Testing

Attachments (7 pages): This report is complete only when all attachments listed are included.

- Instrumentation (1)
- Airborne Sound Transmission Loss Data (2)
- Impact Sound Transmission Data (2)
- Photographs (1)
- Drawings (1)

** Stated by Client/Manufacturer*

N/A - Non Applicable



Revision Log

<u>Revision</u>	<u>Date</u>	<u>Page(s)</u>	<u>Description</u>
R0	07/27/17	N/A	Original Report Issue

Attachments

Instrumentation

Instrument	Manufacturer	Model	ATI Number	Date of Calibration
Data Acquisition Unit	National Instruments	PXI-4462	65124	06/16 *
Microphone Calibrator	Norsonic	1251	INT00127	03/17
Receive Room Microphone	PCB Piezotronics	378C20	65617	05/17
Receive Room Microphone	PCB Piezotronics	378B20	63744	05/17
Receive Room Microphone	PCB Piezotronics	378B20	63745	05/17
Receive Room Microphone	PCB Piezotronics	378B20	63746	09/16
Receive Room Microphone	PCB Piezotronics	378B20	63747	05/17
Receive Room Environmental Indicator	Comet	T7510	63810	10/16
			63811	10/16
Source Room Microphone	PCB Piezotronics	378B20	63738	04/17
Source Room Microphone	PCB Piezotronics	378B20	63739	04/17
Source Room Microphone	PCB Piezotronics	378B20	63740	04/17
Source Room Microphone	PCB Piezotronics	378B20	63742	04/17
Source Room Microphone	PCB Electronics	378B20	63741	04/17
Source Room Environmental Indicator	Comet	T7510	63812	11/16
Tapping Machine	Look Line s.r.l.	EM50 (TM50)	65351	02/17

* 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)



H3069.11-113-11-R0

**AIRBORNE SOUND TRANSMISSION LOSS**

ASTM E 90

Test Date	07/07/17
Data File No.	H3069.11
Client	Veneklassen Associates
Description	5.9 mm (0.23") Urban Surfaces Sound Tec Luxury Vinyl Plank , 19.1 mm (0.75") USG Levelrock® Brand 2500 Floor Underlayment, 18.8 mm (0.74") Oriented Strand Board Sheathing, 88.9 mm (3.5") Johns Manville Unfaced R-13 Fiberglass Insulation, 457.2 mm (18") York PB Truss L/360 Open Web Truss, 12.7 mm (0.5") ClarkDietrich RC Deluxe™ Resilient Channel, 15.9 mm (0.63") USG SHEETROCK® Brand FIRECODE® C Core Gypsum Panel
Specimen Area	10.98 m ²
Technician	Jeremy L. Amend

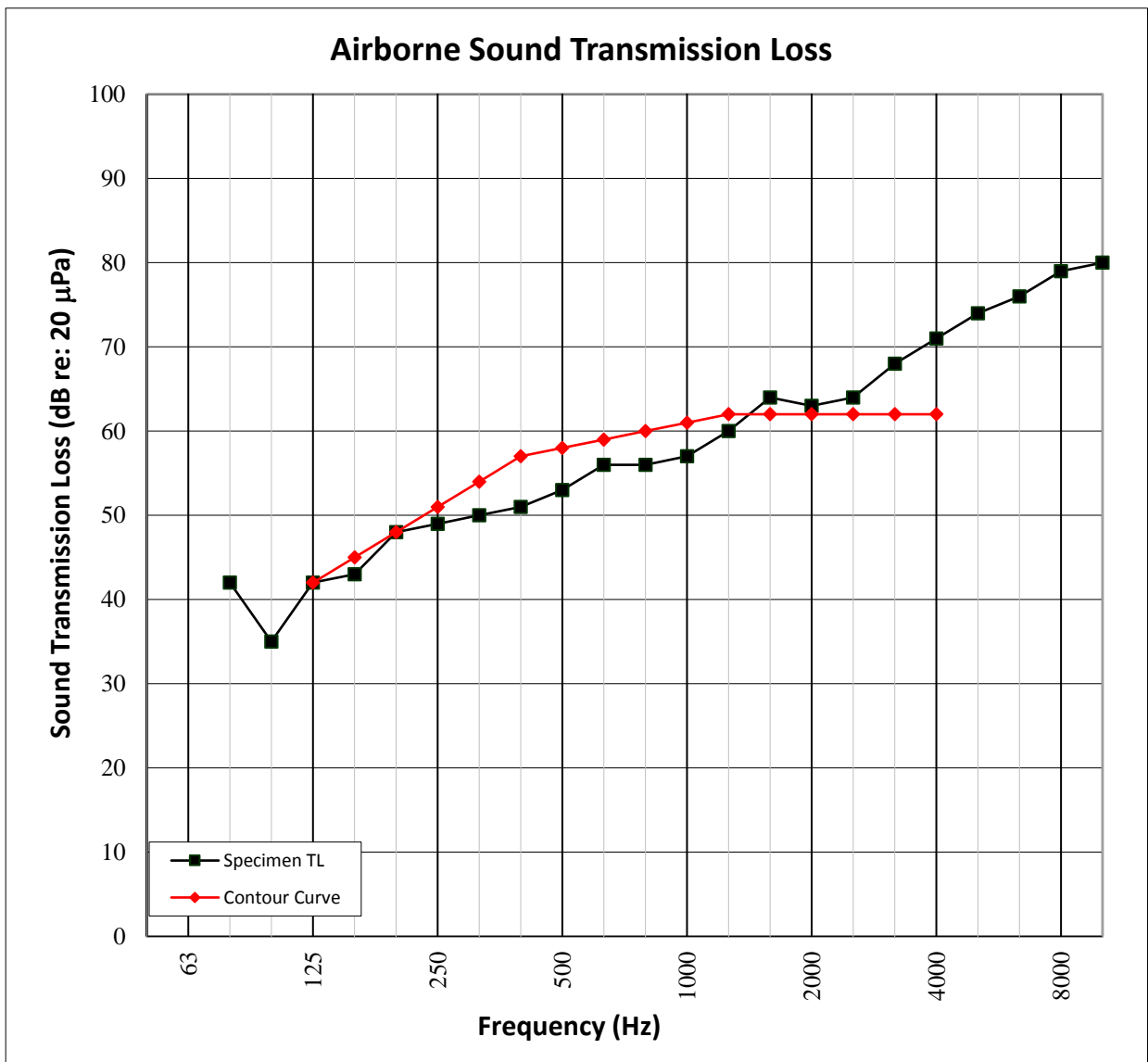
Freq (Hz)	Background SPL (dB)	Absorption (m ²)	Source SPL (dB)	Receive SPL (dB)	Specimen TL (dB)	95% Confidence Limit	Number of Deficiencies
50	38.7	33.9	101	64	33	3.90	-
63	33.5	32.2	102	63	34	4.40	-
80	33.8	15.8	111	67	42	3.70	-
100	31.2	12.1	106	70	35	3.10	-
125	32.8	10.2	105	63	42	1.00	0
160	27.6	9.3	105	62	43	0.90	2
200	26.8	9.7	103	55	48	1.40	0
250	29.4	9.3	101	53	49	1.20	2
315	24.9	9.6	105	56	50	1.00	4
400	21.1	8.0	102	53	51	0.70	6
500	22.1	7.4	101	49	53	0.40	5
630	20.7	7.3	101	47	56	0.40	3
800	20.3	7.4	100	46	56	0.60	4
1000	18.2	7.6	100	45	57	0.40	4
1250	17.7	7.4	98	39	60	0.30	2
1600	15.7	7.8	99	37	64	0.40	0
2000	12.9	8.7	99	36	63	0.60	0
2500	10.2	9.4	95	31	64	0.70	0
3150	8.6	9.9	97	29	68	0.90	0
4000	6.9	10.9	96	25	71	1.00	0
5000	6.6	12.2	94	20	74	1.20	-
6300	6.1	14.3	92	15	76	1.30	-
8000	6.5	18.5	93	12	79	1.10	-
10000	6.7	22.0	91	8	80	0.90	-

STC Rating **58** *(Sound Transmission Class)*Deficiencies **32** *(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 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

AIRBORNE SOUND TRANSMISSION LOSS
ASTM E 90

Test Date	07/07/17
Data File No.	H3069.11
Client	Veneklasen Associates
Description	5.9 mm (0.23") Urban Surfaces Sound Tec Luxury Vinyl Plank , 19.1 mm (0.75") USG Levelrock® Brand 2500 Floor Underlayment, 18.8 mm (0.74") Oriented Strand Board Sheathing, 88.9 mm (3.5") Johns Manville Unfaced R-13 Fiberglass Insulation, 457.2 mm (18") York PB Truss L/360 Open Web Truss, 12.7 mm (0.5") ClarkDietrich RC Deluxe™ Resilient Channel, 15.9 mm (0.63") USG SHEETROCK® Brand FIRECODE® C Core Gypsum Panel
Specimen Area	10.98 m ²
Technician	Jeremy L. Amend





H3069.11-113-11-R0



IMPACT SOUND TRANSMISSION
ASTM E 492

Test Date	07/07/17
Data File No.	H3069.11
Client	Veneklassen Associates
Description	5.9 mm (0.23") Urban Surfaces Sound Tec Luxury Vinyl Plank , 19.1 mm (0.75") USG Levelrock® Brand 2500 Floor Underlayment, 18.8 mm (0.74") Oriented Strand Board Sheathing, 88.9 mm (3.5") Johns Manville Unfaced R-13 Fiberglass Insulation, 457.2 mm (18") York PB Truss L/360 Open Web Truss, 12.7 mm (0.5") ClarkDietrich RC Deluxe™ Resilient Channel, 15.9 mm (0.63") USG SHEETROCK® Brand FIRECODE® C Core Gypsum Panel
Specimen Area	10.98 m ²
Technician	Jeremy L. Amend

Freq (Hz)	Background SPL (dB)	Absorption (m ²)	Normalized Impact SPL (dB)	95% Confidence Limit	Number of Deficiencies
50	38.6	34.5	69	2.7	-
63	38.1	23.1	65	2.4	-
80	37.2	15.9	66	1.6	-
100	31.4	11.6	63	1.4	4
125	33.8	9.2	64	1.2	5
160	29.9	9.5	65	0.6	6
200	26.6	9.6	64	0.6	5
250	29.2	9.7	63	0.9	4
315	25.3	9.2	63	0.4	4
400	22.6	8.0	59	0.5	1
500	24.9	7.4	54	0.4	0
630	22.8	7.3	49	0.3	0
800	21.8	7.3	44	0.2	0
1000	20.5	7.5	39	0.3	0
1250	19.3	7.4	38	0.3	0
1600	19.0	7.6	35	0.2	0
2000	15.4	8.6	37	0.2	0
2500	12.4	9.2	33	0.2	0
3150	10.6	9.9	24	0.2	0
4000	7.9	10.9	17	0.4	-
5000	6.8	12.2	11	0.4	-
6300	6.3	14.3	9	0.3	-
8000	6.7	18.6	9	0.3	-
10000	6.9	22.1	9	0.4	-

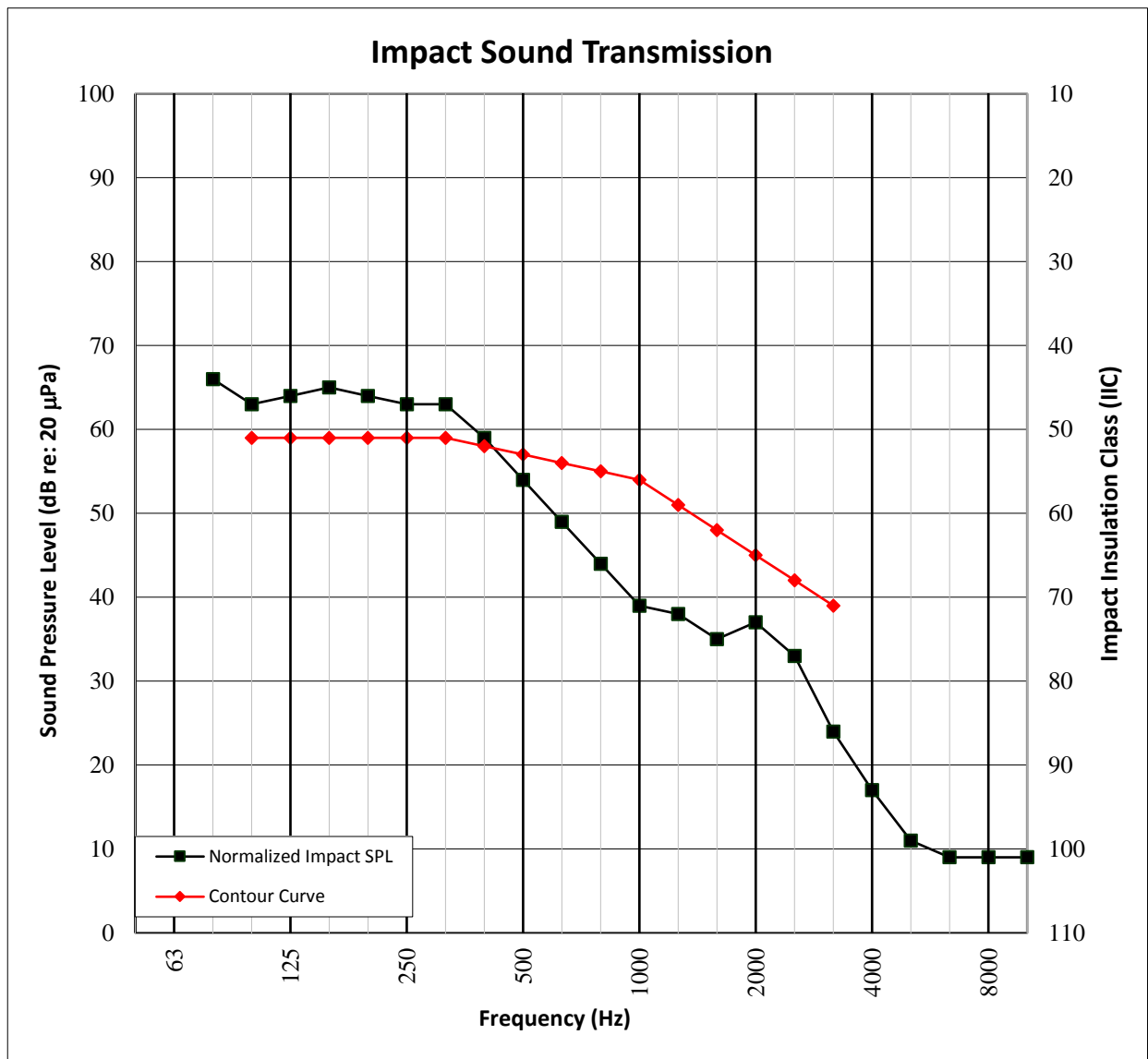
IIC Rating **53** *(Impact Insulation Class)*

Deficiencies **29** *(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

Test Date	07/07/17
Data File No.	H3069.11
Client	Veneklasen Associates
Description	5.9 mm (0.23") Urban Surfaces Sound Tec Luxury Vinyl Plank , 19.1 mm (0.75") USG Levelrock® Brand 2500 Floor Underlayment, 18.8 mm (0.74") Oriented Strand Board Sheathing, 88.9 mm (3.5") Johns Manville Unfaced R-13 Fiberglass Insulation, 457.2 mm (18") York PB Truss L/360 Open Web Truss, 12.7 mm (0.5") ClarkDietrich RC Deluxe™ Resilient Channel, 15.9 mm (0.63") USG SHEETROCK® Brand FIRECODE® C Core Gypsum Panel
Specimen Area	10.98 m ²
Technician	Jeremy L. Amend



Photographs

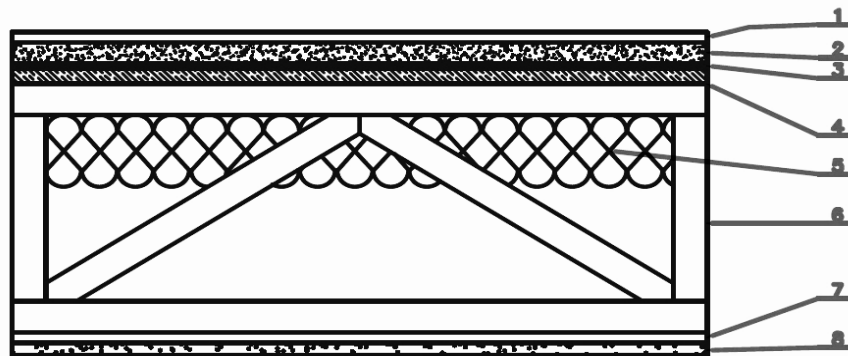


Source Room View of Test Specimen Installation



Receive Room View of Test Specimen Installation

Drawing



- 1-Floor Topping
- 2-Subfloor Topping
- 3-Subfloor Underlayment
- 4-Subfloor
- 5-Insulation
- 6-Truss
- 7-Ceiling Isolation
- 8-Ceiling