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LATICRETE INTERNATIONAL ACOUSTICAL PERFORMANCE TEST REPORT

SCOPE OF WORK
ASTM E90 AND ASTM E492 TESTING ON
CERAMIC TILE OVER LATICRETE 170 10 MM RUBBER UNDERLAYMENT

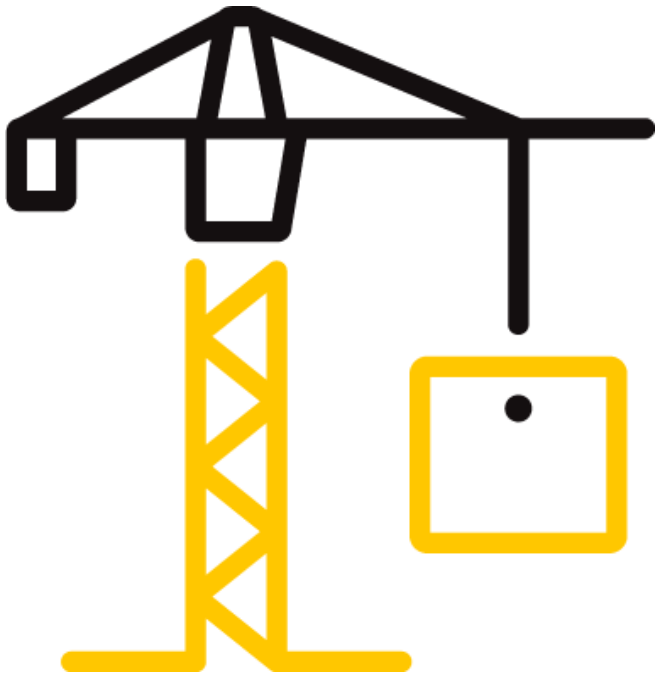
SPECIMEN TYPE
152 mm Concrete Slab with Suspended Ceiling

REPORT NUMBER
S8152.06-113-11-R0

TEST DATE
07/24/25

ISSUE DATE
08/29/25

PAGES
15



DOCUMENT CONTROL
RTTDS-R-AMER-Test-2844 (03/23/22)

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Report No.: S8152.06-113-11-R0
Date: 08/29/25

REPORT ISSUED TO
LATICRETE INTERNATIONAL
One Laticrete Park North - 91 Amity Road
Bethany, Connecticut 06524-3423

SECTION 1
SCOPE

Architectural Testing, Inc. (an Intertek company) dba Intertek Building & Construction (B&C) was contracted by Laticrete International to perform testing in accordance with ASTM E90 AND ASTM E492 on Ceramic Tile over Laticrete 170 10 mm Rubber Underlayment. Results obtained are tested values and were secured by using the designated test methods. Testing was conducted in the VT test chambers at Intertek B&C located in York, Pennsylvania.

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.	S8152.06
SERIES/MODEL:	Ceramic Tile over Laticrete 170 10 mm Rubber Underlayment
STC	63
IIC	63
HIIC	66

COMPLETED BY:	Corey S. Kohler	**REVIEWED BY:**	Daniel B. Mohler
TITLE:	Technician - Acoustical Testing	**TITLE:**	Project Manager - Acoustical Testing
SIGNATURE:	Digitally Signed by: Corey Kohler	**SIGNATURE:**	Digitally Signed by: Daniel Mohler
DATE:	08/29/25	**DATE:**	08/29/25

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SECTION 3
TEST METHODS

The specimen was evaluated in accordance with the following:

ASTM E90-23, *Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions*

ASTM E413-22, *Classification for Rating Sound Insulation*

ASTM E492-22 *, Standard Test Method for Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine*

ASTM E989-21, *Classification for Determination of Impact Insulation Class (IIC)*

ASTM E2235-04 (2020), *Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods*

ASTM E3222-20, *Standard Classification for Determination of High-Frequency Impact Sound Ratings*

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 (152 mm Concrete Slab with Suspended Ceiling) 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 4432.1 kg. B&C will store samples of the test specimen for four years. Photographs of the test specimen are included in the report. A drawing of the test specimen is included in the report.

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.

Unless differently required, Intertek reports apply the "Simple Acceptance" rule, also called “Shared Risk approach,” of ILAC-G8:09/2019, Guidelines on Decision Rules and Statements of Conformity.

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SECTION 5
EQUIPMENT

INSTRUMENT	MANUFACTURER	MODEL	DESCRIPTION	ASSET #	CAL DATE	
2-Channel Analog Input	National Instruments	NI 9250	2-Channel Analog Input	INT02672	10/24	*
2-Channel Analog Input	National Instruments	NI 9250	2-Channel Analog Input	INT02673	10/24	*
2-Channel Analog Input	National Instruments	NI 9250	2-Channel Analog Input	INT02674	10/24	*
2-Channel Analog Input	National Instruments	NI 9250	2-Channel Analog Input	INT02675	10/24	*
2-Channel Analog Input	National Instruments	NI 9250	2-Channel Analog Input	INT02676	10/24	*
2-Channel Analog Input	National Instruments	NI 9250	2-Channel Analog Input	INT02677	10/24	*
2-Channel Analog Output	National Instruments	NI 9260	2-Channel Analog Output	INT02611	N/A	*
Microphone Calibrator	Norsonic	34093	Acoustical Calibrator	65105	08/24	
Receive Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	64908	01/25	
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	INT037389	10/24	
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	INT03720	10/24	
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64903	07/24	
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64902	09/24	
Receive Room Environmental Indicator	Comet	T7510	Temperature and Humidity Transmitter	63810	09/24	
				63811	09/24	
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	63745	07/24	
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	64340	09/24	
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	INT037389	10/24	
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	64909	07/24	
Source Room Microphone	PCB Electronics	378C20	Microphone and Preamplifier	64911	09/24	
Source Room Environmental Indicator	Comet	T7510	Temperature and Humidity Transmitter	63812	11/24	
Tapping Machine	Norsonic	Nor277	Tapping Machine	INT00936	07/24	

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

VT RECEIVE ROOM VOLUME	155.77 m^3
VT SOURCE ROOM VOLUME	190 m^3

SECTION 6
LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Corey S. Kohler	Intertek B&C
Daniel B. Mohler	Intertek B&C

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York, PA 17406

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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 average temperature and humidity of both the source and receive rooms are listed in Sections 10 and 11. The maximum and minimum temperatures and humidities of the receive room from the duration of the test are listed in Sections 12 and 13.

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. Two 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), IIC (Impact Insulation Class), and HIIC (High-Frequency Impact Insulation Class) ratings were calculated in accordance with ASTM E413, ASTM E989, and ASTM E3222, respectively.

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SECTION 9
TEST SPECIMEN DESCRIPTION

MATERIAL	DIMENSIONS (mm)	THICKNESS (mm)	MANUFACTURER AND SERIES	QUANTITY	AVERAGE WEIGHT
Ceramic Tile	295.3 by 295.3	7.5	Daltile	10.98 m²	15.77 kg/m²
	Note: Laticrete Permacolor grout was placed into the 6.35 mm joints between the ceramic tile and wiped clean. The tile was back-buttered and placed with light pressure onto a bed of Laticrete 254 Platinum 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.				
Rubber Underlayment	3023 by 1219	10.0	Laticrete 170	10.98 m²	8.01 kg/m²
	Note: Loose laid				
Concrete Slab	3023 by 3632	152.4	5000 PSI	10.98 m²	366.18 kg/m²
	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. No noticeable shrinkage or cracking was visible on the specimen.				
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 305 mm plenum. The measured steel thickness was 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 610 mm centers. The measured steel thickness was 0.5 mm.				
Fiberglass Insulation	609.6 by 2438	88.9	Johns Manville Unfaced R-13	10.98 m²	1.32 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 25.4 mm fine thread drywall screws on 305 mm centers. Seams and perimeter sealed with Pecora AC-20® Acoustical Sealant and covered with pressure-sensitive tape.				

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SECTION 10

TEST RESULTS - AIRBORNE SOUND TRANSMISSION LOSS

NVLAP® TESTING LAB CODE 600258-0

TEST DATE	7/24/2025				
DATA FILE NO.	S8152.06				
CLIENT	Laticrete International				
DESCRIPTION	7.5 mm Daltile Ceramic Tile, 10 mm Laticrete 170 Rubber Underlayment, 152.4 mm 5000 PSI Concrete Slab, 43 mm Armstrong HD8906 Drywall Main Beam, 37.3 mm Armstrong XL8945P Cross Tee, 88.9 mm Johns Manville Unfaced R-13 Fiberglass Insulation, 15.9 mm National Gypsum Gold Bond® Fire-Shield® Type X Gypsum Panel				
SPECIMEN AREA	10.98 m²	**Receive Temp.**	25.1°C	**Source Temp.**	19°C
TECHNICIAN	CSK	**Receive Humidity**	73%	**Source Humidity**	73%

FREQ (Hz)	**BACKGROUND SPL** (dB)	**ABSORPTION** m²	**SOURCE SPL** (dB)	**RECEIVE SPL** (dB)	**SPECIMEN TL** (dB)	**95% SAMPLING LIMIT (dB)**	**NUMBER OF DEFICIENCIES**
50	38.2	37.5	93	54	35	3.0	-
63	36.9	22.7	92	49	41	4.2	-
80	35.4	14.4	89	57	32	3.8	-
100	27.8	9.3	86	52	36	1.4	-
125	27.5	9.9	88	49	40	2.1	7
160	30.3	8.2	88	47	44	1.6	6
200	27.7	9.3	88	43	46	0.9	7
250	25.4	10.9	92	41	52	1.1	4
315	23.1	8.8	95	41	57	1.2	2
400	23.9	8.5	95	37	61	0.9	1
500	24.6	7.6	93	33	64	0.9	0
630	23.3	7.5	96	33	66	0.9	0
800	22.9	7.8	96	31	67	0.6	0
1000	23.8	7.6	96	30	68	0.6	0
1250	23.1	7.7	96	29	69	0.4	0
1600	21.8	8.0	95	28	70	0.4	0
2000	18.4	8.4	95	27	70	0.4	0
2500	14.9	9.4	93	25	70	0.4	0
3150	13.7	9.9	92	22	71	0.5	0
4000	11.6	10.2	93	21	73	0.5	0
5000	10.8	11.2	93	18	76	0.8	-
6300	10.6	12.7	87	11	76	0.9	-
8000	10.4	13.6	87	10	77	1.2	-
10000	10.8	13.6	81	9	71	1.2	-
STC Rating	**63**	*(Sound Transmission Class)*			**Sum of Deficiencies**		**27**

Notes:

1) Receive Room levels less than 6 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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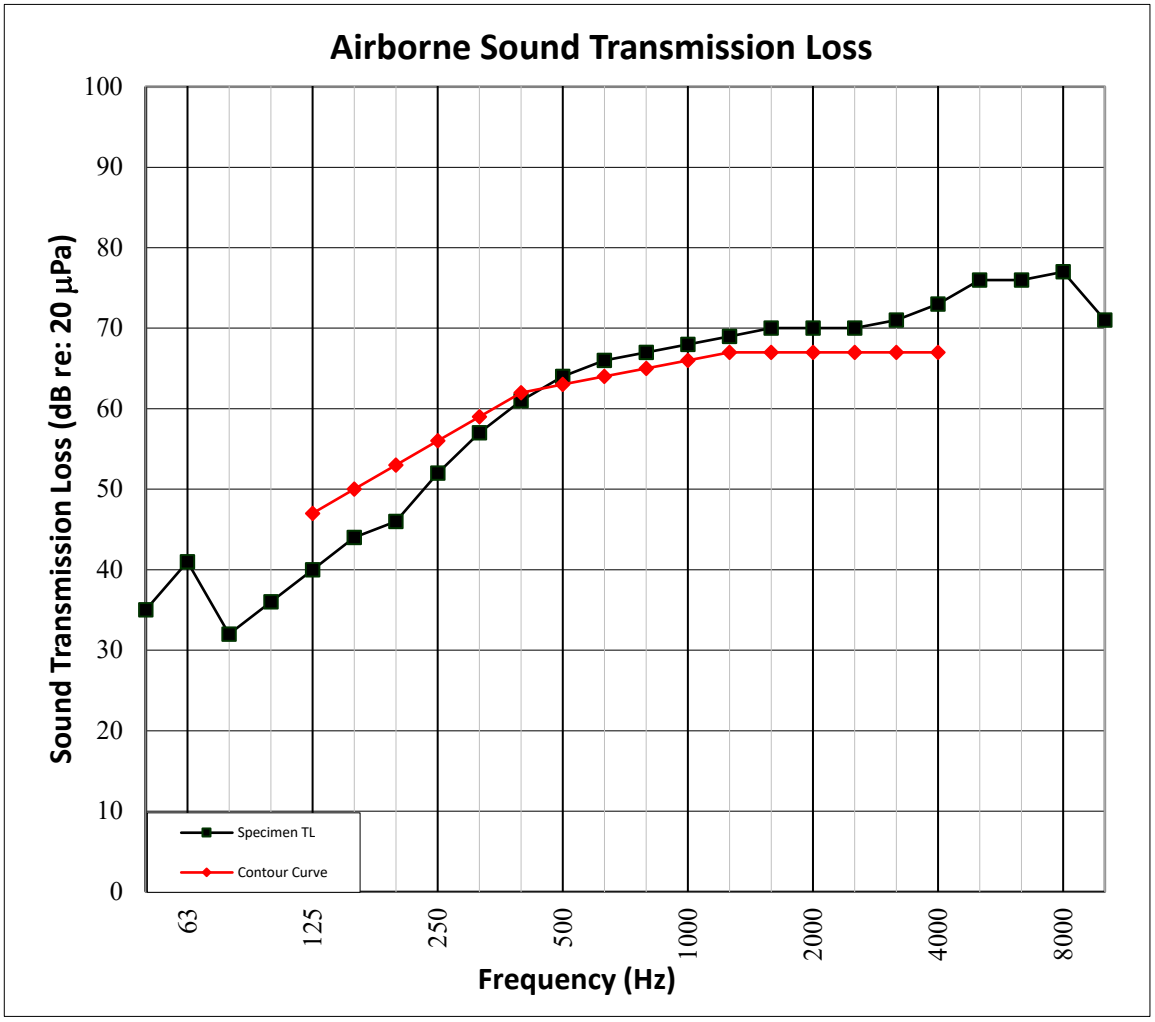
SECTION 11
TEST RESULTS - AIRBORNE SOUND TRANSMISSION LOSS GRAPH

TEST DATE	7/24/2025				
DATA FILE NO.	S8152.06				
CLIENT	Laticrete International				
DESCRIPTION	7.5 mm Daltile Ceramic Tile, 10 mm Laticrete 170 Rubber Underlayment, 152.4 mm 5000 PSI Concrete Slab, 43 mm Armstrong HD8906 Drywall Main Beam, 37.3 mm Armstrong XL8945P Cross Tee, 88.9 mm Johns Manville Unfaced R-13 Fiberglass Insulation, 15.9 mm National Gypsum Gold Bond® Fire-Shield® Type X Gypsum Panel				
SPECIMEN AREA	10.98 m²	**Receive Temp.**	25.1°C	**Source Temp.**	19°C
TECHNICIAN	CSK	**Receive Humidity**	73%	**Source Humidity**	73%



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SECTION 12

TEST RESULTS - IMPACT SOUND TRANSMISSION

NVLAP® TESTING LAB CODE 600258-0

TEST DATE	7/24/2025				
DATA FILE NO.	S8152.06				
CLIENT	Laticrete International				
DESCRIPTION	7.5 mm Daltile Ceramic Tile, 10 mm Laticrete 170 Rubber Underlayment, 152.4 mm 5000 PSI Concrete Slab, 43 mm Armstrong HD8906 Drywall Main Beam, 37.3 mm Armstrong XL8945P Cross Tee, 88.9 mm Johns Manville Unfaced R-13 Fiberglass Insulation, 15.9 mm National Gypsum Gold Bond® Fire-Shield® Type X Gypsum Panel				
SPECIMEN AREA	10.98 m²	**Maximum Temp.**	25.1°C	**Minimum Temp.**	25.1°C
TECHNICIAN	CSK	**Max. Humidity**	73%	**Min. Humidity**	73%

FREQ (Hz)	**BACKGROUND SPL** (dB)	**ABSORPTION** m²	**NORMALIZED IMPACT SPL** (dB)	**95% SAMPLING LIMIT (dB)**	**NUMBER OF DEFICIENCIES**
50	38.2	37.5	61	2.6	-
63	34.7	23.3	54	2.9	-
80	35.6	13.6	50	1.7	-
100	26.7	9.3	51	0.9	2
125	27.5	10.0	51	1.2	2
160	29.6	8.6	51	0.5	2
200	27.1	9.6	55	0.5	6
250	25.5	10.4	55	0.7	6
315	22.7	9.3	53	0.8	4
400	23.2	8.5	50	0.6	2
500	23.2	7.8	51	0.3	4
630	22.0	7.4	48	0.5	2
800	21.8	7.6	45	0.5	0
1000	22.9	7.4	39	0.4	0
1250	22.8	7.7	31	0.5	0
1600	22.2	7.9	23	0.2	0
2000	19.5	8.5	21	0.2	0
2500	16.2	9.5	18	0.2	0
3150	14.4	9.8	16	0.4	0
4000	12.4	10.2	14	0.3	-
5000	11.4	11.1	20	0.8	-
6300	10.6	12.8	23	0.9	-
8000	10.4	13.3	10	0.5	-
10000	10.8	13.3	10	0.4	-
IIC Rating	**63**	*(Impact Insulation Class)*		**Sum of Deficiencies**	**30**

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

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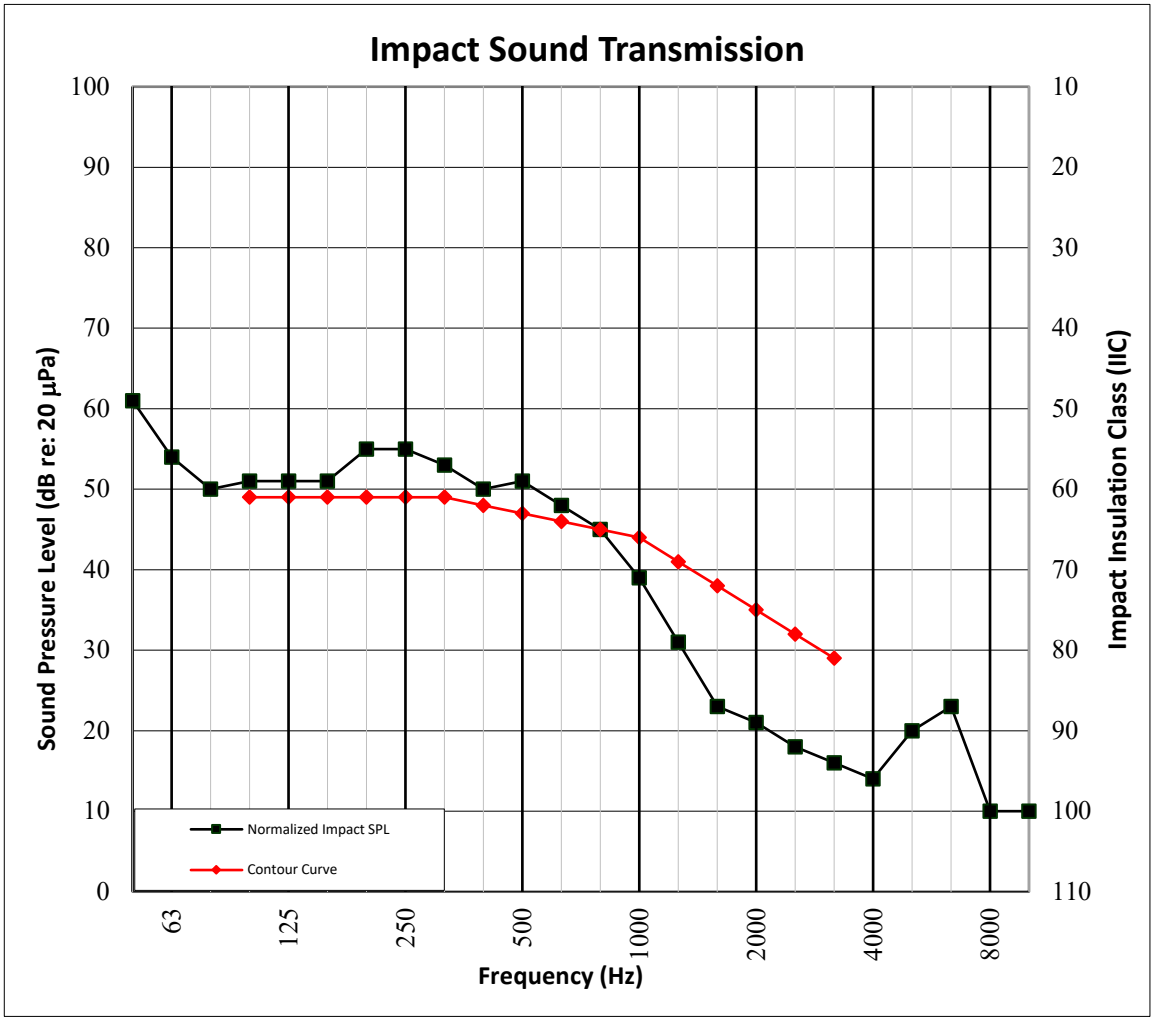
SECTION 13

TEST RESULTS - IMPACT SOUND TRANSMISSION GRAPH

TEST DATE	7/24/2025				
DATA FILE NO.	S8152.06				
CLIENT	Laticrete International				
DESCRIPTION	7.5 mm Daltile Ceramic Tile, 10 mm Laticrete 170 Rubber Underlayment, 152.4 mm 5000 PSI Concrete Slab, 43 mm Armstrong HD8906 Drywall Main Beam, 37.3 mm Armstrong XL8945P Cross Tee, 88.9 mm Johns Manville Unfaced R-13 Fiberglass Insulation, 15.9 mm National Gypsum Gold Bond® Fire-Shield® Type X Gypsum Panel				
SPECIMEN AREA	10.98 m²	**Maximum Temp.**	25.1°C	**Minimum Temp.**	25.1°C
TECHNICIAN	CSK	**Max. Humidity**	73%	**Min. Humidity**	73%



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Date: 08/29/25

SECTION 14

TEST RESULTS - HIGH-FREQUENCY IMPACT SOUND TRANSMISSION

TEST DATE	7/24/2025				
DATA FILE NO.	S8152.06				
CLIENT	Laticrete International				
DESCRIPTION	7.5 mm Daltile Ceramic Tile, 10 mm Laticrete 170 Rubber Underlayment, 152.4 mm 5000 PSI Concrete Slab, 43 mm Armstrong HD8906 Drywall Main Beam, 37.3 mm Armstrong XL8945P Cross Tee, 88.9 mm Johns Manville Unfaced R-13 Fiberglass Insulation, 15.9 mm National Gypsum Gold Bond® Fire-Shield® Type X Gypsum Panel				
SPECIMEN AREA	10.98 m²	**Maximum Temp.**	25.1°C	**Minimum Temp.**	25.1°C
TECHNICIAN	CSK	**Max. Humidity**	73%	**Min. Humidity**	73%

FREQ (Hz)	**BACKGROUND SPL** (dB)	**ABSORPTION** m²	**NORMALIZED IMPACT SPL** (dB)	**95% SAMPLE CONFIDENCE LIMIT (dB)**	**NUMBER OF DEFICIENCIES**
400	23.2	8.5	50	0.6	5.1
500	23.2	7.8	51	0.3	6.6
630	22.0	7.4	48	0.5	5.2
800	21.8	7.6	45	0.5	2.6
1000	22.9	7.4	39	0.4	0.0
1250	22.8	7.7	31	0.5	0.0
1600	22.2	7.9	23	0.2	0.0
2000	19.5	8.5	21	0.2	0.0
2500	16.2	9.5	18	0.2	0.0
3150	14.4	9.8	16	0.4	0.0
HIIC Rating	**66**	*(High-Frequency Impact Insulation Class)*		**Sum of Deficiencies**	**19.4**

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

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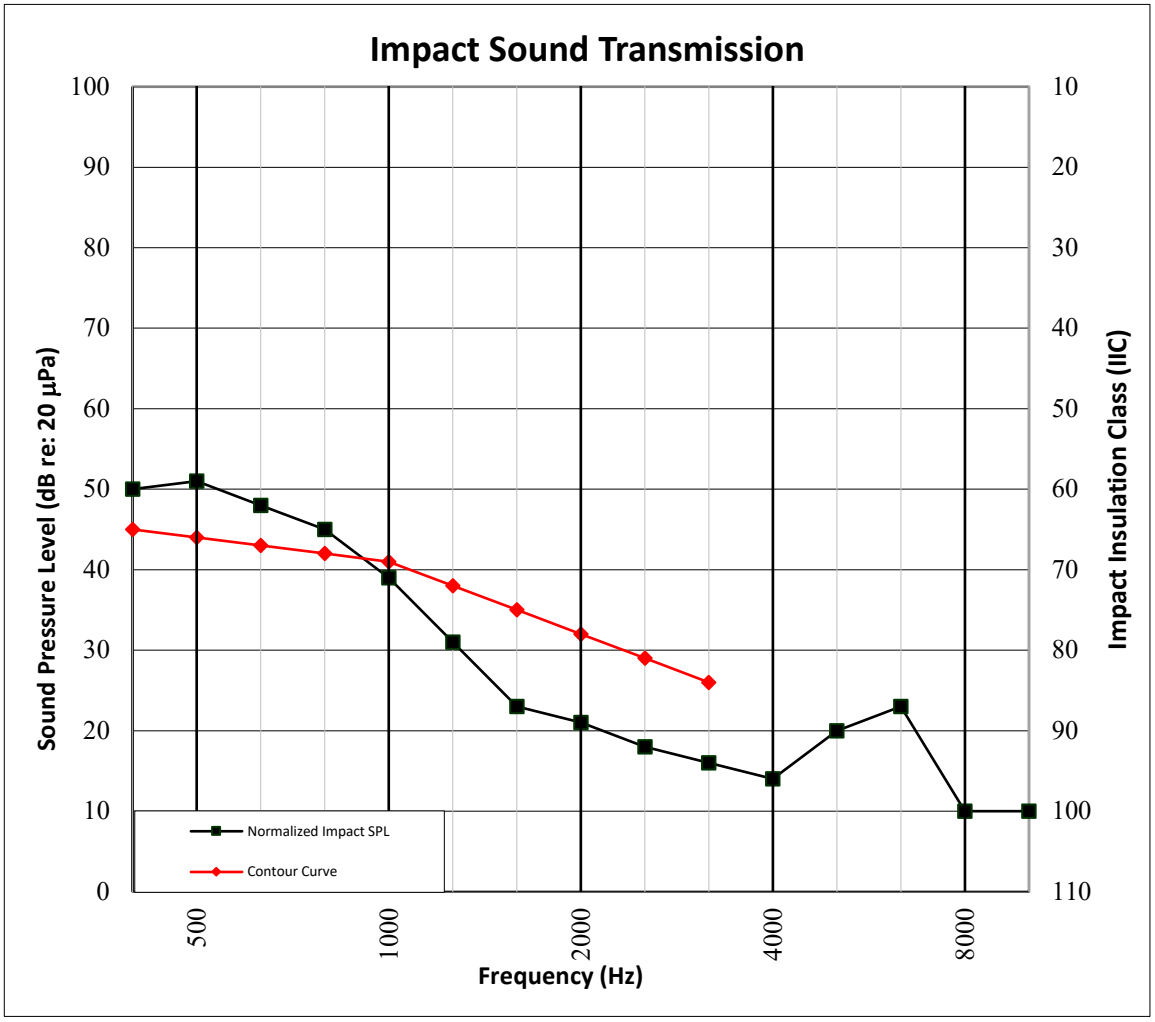
SECTION 15

TEST RESULTS - HIGH-FREQUENCY IMPACT SOUND TRANSMISSION GRAPH

TEST DATE	7/24/2025				
DATA FILE NO.	S8152.06				
CLIENT	Laticrete International				
DESCRIPTION	7.5 mm Daltile Ceramic Tile, 10 mm Laticrete 170 Rubber Underlayment, 152.4 mm 5000 PSI Concrete Slab, 43 mm Armstrong HD8906 Drywall Main Beam, 37.3 mm Armstrong XL8945P Cross Tee, 88.9 mm Johns Manville Unfaced R-13 Fiberglass Insulation, 15.9 mm National Gypsum Gold Bond® Fire-Shield® Type X Gypsum Panel				
SPECIMEN AREA	10.98 m²	**Maximum Temp.**	25.1°C	**Minimum Temp.**	25.1°C
TECHNICIAN	CSK	**Max. Humidity**	73%	**Min. Humidity**	73%



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SECTION 16
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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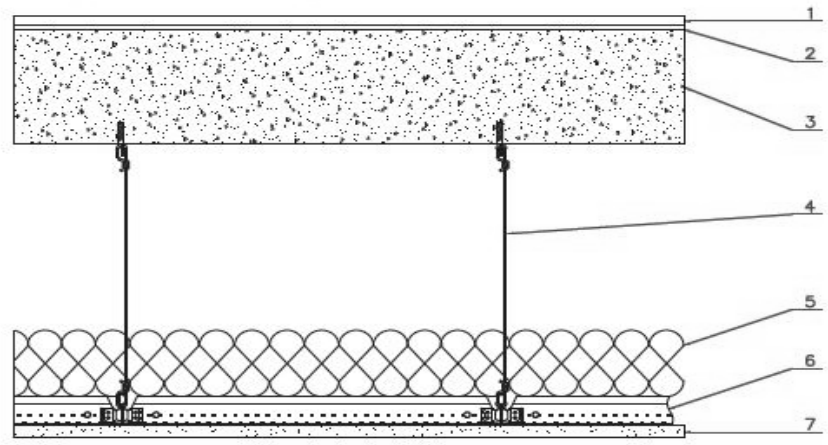
SECTION 17
DRAWING



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

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SECTION 18
REVISION LOG

REVISION #	DATE	PAGES	DESCRIPTION
R0	08/29/25	N/A	Original Report Issue