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PALZIV NORTH AMERICA ACOUSTICAL PERFORMANCE TEST REPORT

SCOPE OF WORK
ASTM E90, ASTM E492, AND ASTM E2179 TESTING ON 8 MM LAMINATE FLOORING OVER HQ LIVING HARD SURFACE UNDERLAYMENT

SPECIMEN TYPE
Concrete Slab - 152 mm

REPORT NUMBER
M5263.17-113-11-R0

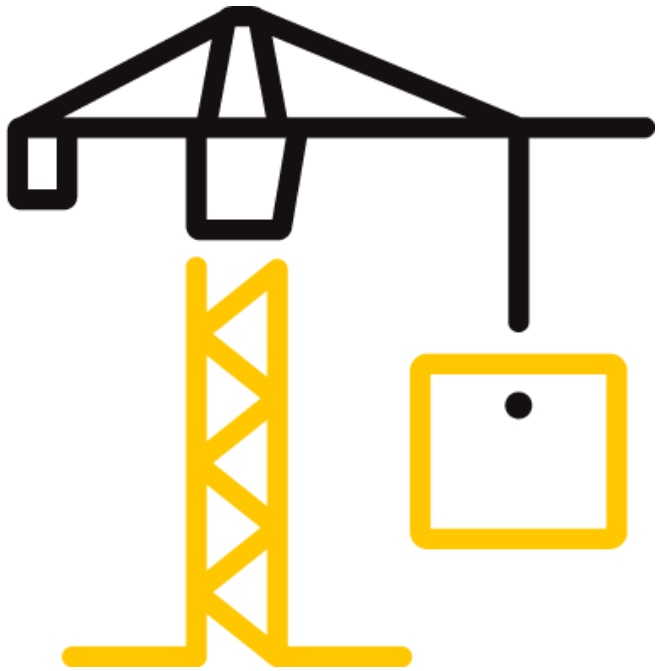
TEST DATE
07/19/21

ISSUE DATE
03/30/26

RECORD RETENTION END
07/19/25

PAGES
17

DOCUMENT CONTROL
ATI 00629 (03/21/18)
RTTDS-R-AMER-Test-2844



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TEST REPORT FOR PALZIV NORTH AMERICA
Report No.: M5263.17-113-11-R0
Date: 03/30/26

REPORT ISSUED TO
PALZIV NORTH AMERICA
7966 NC 56 Hwy
Louisburg, North Carolina 27549

SECTION 1
SCOPE

Architectural Testing, Inc. (an Intertek company) dba Intertek Building & Construction (B&C) was contracted by Palziv North America to perform testing in accordance with ASTM E90, ASTM E492, AND ASTM E2179 on 8 mm Laminate Flooring over HQ Living Hard Surface 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.	M5263.06
SERIES/MODEL:	8 mm Laminate Flooring over HQ Living Hard Surface Underlayment
STC	51
IIC	56
ΔIIC	24
HIIC	58
ΔHIIC	29

COMPLETED BY:	Daniel B. Mohler	**COMPLETED BY:**	Jordan Strybos
TITLE:	Project Lead - Acoustical Testing	**TITLE:**	Engineer, Team Lead - Acoustical Testing
SIGNATURE:	Digitally Signed by: Daniel Mohler	**SIGNATURE:**	Digitally Signed by: Jordan Strybos
DATE:	03/30/26	**DATE:**	03/30/26

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SECTION 3
TEST METHODS

The specimen was evaluated in accordance with the following:

ASTM E90-09 (2016), *Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions*

ASTM E413-16, *Classification for Rating Sound Insulation*

ASTM E492-09(2016)e1, *Standard Test Method for Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine*

ASTM E2179-21, *Standard Test Method for Laboratory Measurement of the Effectiveness of Floor Coverings in Reducing Impact Sound Transmission Through Concrete Floors*

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 (Concrete Slab - 152 mm) 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 4101.3 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	
Data Acquisition Unit	National Instruments	PXI-4462	Data Acquisition Card	63763-1	10/20	*
Data Acquisition Unit	National Instruments	PXI-4462	Data Acquisition Card	63763-4	10/20	*
Data Acquisition Unit	National Instruments	PXI-4462	Data Acquisition Card	65124	02/21	*
Microphone Calibrator	Norsonic	1251	Acoustical Calibrator	65105	09/20	
Receive Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	64340	11/20	
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	65617	09/20	
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	65968	01/21	
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	INT01089	02/21	
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	INT00652	02/21	
Receive Room Environmental Indicator	Comet	T7510	Temperature and Humidity Transmitter	63810	10/20	
				63811	10/20	
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	65969	04/21	
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	63742	03/21	
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	63747	09/20	
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	63745	09/20	
Source Room Microphone	PCB Electronics	378C20	Microphone and Preamplifier	63744	09/20	
Source Room Environmental Indicator	Comet	T7510	Temperature and Humidity Transmitter	63812	10/20	
Tapping Machine	Norsonic	Nor277	Tapping Machine	INT00936	01/21	

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

VT RECEIVE ROOM VOLUME	158.86 m^3
VT SOURCE ROOM VOLUME	190 m^3

SECTION 6
LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Cody R. Snyder	Intertek B&C
Jordan Strybos	Intertek B&C

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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 through 15.

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.

The delta impact insulation test was conducted in accordance with ASTM E2179 test method. In addition to the impact sound transmission test, two sound pressure level measurements with the tapping machine operating at each position specified by ASTM E492 with only the concrete slab installed were conducted at each of five microphone positions.

The details of this construction are noted as proprietary per the customer's request. Reference should be made to Intertek-ATI Report M5263.06-113-11 for detailed information on the specific construction.

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), HIIC (High-Frequency Impact Insulation Class), and ΔIIC (Delta Impact Insulation Class) ratings were calculated in accordance with ASTM E413, ASTM E989, ASTM E3222, and ASTM E2179, respectively.

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SECTION 9
TEST SPECIMEN DESCRIPTION

MATERIAL	DIMENSIONS (mm)	THICKNESS (mm)	MANUFACTURER AND SERIES	QUANTITY	AVERAGE WEIGHT
Laminate Flooring	1200 by 190	8.0	N/A	10.98 m²	6.98 kg/m²
	Note: Loose laid				
Hard Surface Underlayment	3023 by 914.4	3.2	HQ Living	10.98 m²	0.39 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.				

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SECTION 10

TEST RESULTS - AIRBORNE SOUND TRANSMISSION LOSS

IAS ACCREDITED Testing Laboratory

TEST DATE	7/19/2021				
DATA FILE NO.	M5263.06				
CLIENT	Palziv North America				
DESCRIPTION	8 mm Laminate Flooring, 3.2 mm HQ Living Hard Surface Underlayment , 152.4 mm 5000 PSI Concrete Slab				
SPECIMEN AREA	10.98 m²	**Receive Temp.**	21.1°C	**Source Temp.**	20.7°C
TECHNICIAN	CRS	**Receive Humidity**	78%	**Source Humidity**	78%

FREQ (Hz)	BACKGROUND SPL (dB)	ABSORPTION m²	SOURCE SPL (dB)	RECEIVE SPL (dB)	SPECIMEN TL (dB)	95% CONFIDENCE LIMIT	NUMBER OF DEFICIENCIES
50	41.1	27.8	99	61	35	2.9	-
63	33.5	26.6	97	60	35	3.7	-
80	38.3	16.4	96	61	35	2.6	-
100	32.4	11.4	95	60	36	2.0	-
125	27.6	9.9	96	57	40	2.1	0
160	25.8	10.5	94	57	38	1.2	0
200	21.3	11.6	94	54	40	1.1	1
250	18.4	11.9	99	56	43	0.8	1
315	18.0	12.3	102	58	44	0.8	3
400	14.2	10.8	102	60	42	0.8	8
500	15.9	10.3	100	58	43	1.3	8
630	17.7	10.4	103	57	46	0.7	6
800	16.2	10.5	102	50	52	0.7	1
1000	17.2	10.7	102	44	58	0.5	0
1250	17.3	10.8	102	41	62	0.3	0
1600	12.1	10.8	103	39	64	0.4	0
2000	11.8	11.5	103	37	66	0.5	0
2500	8.9	12.1	101	34	68	0.3	0
3150	6.7	12.8	102	33	69	0.5	0
4000	6.4	13.9	103	32	70	0.6	0
5000	6.4	15.1	103	30	72	0.4	-
6300	6.9	18.0	98	22	74	0.6	-
8000	7.4	22.2	97	19	75	0.7	-
10000	7.7	22.2	93	9	82	0.9	-
STC Rating	**51**	*(Sound Transmission Class)*			**Sum of Deficiencies**		**28**

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

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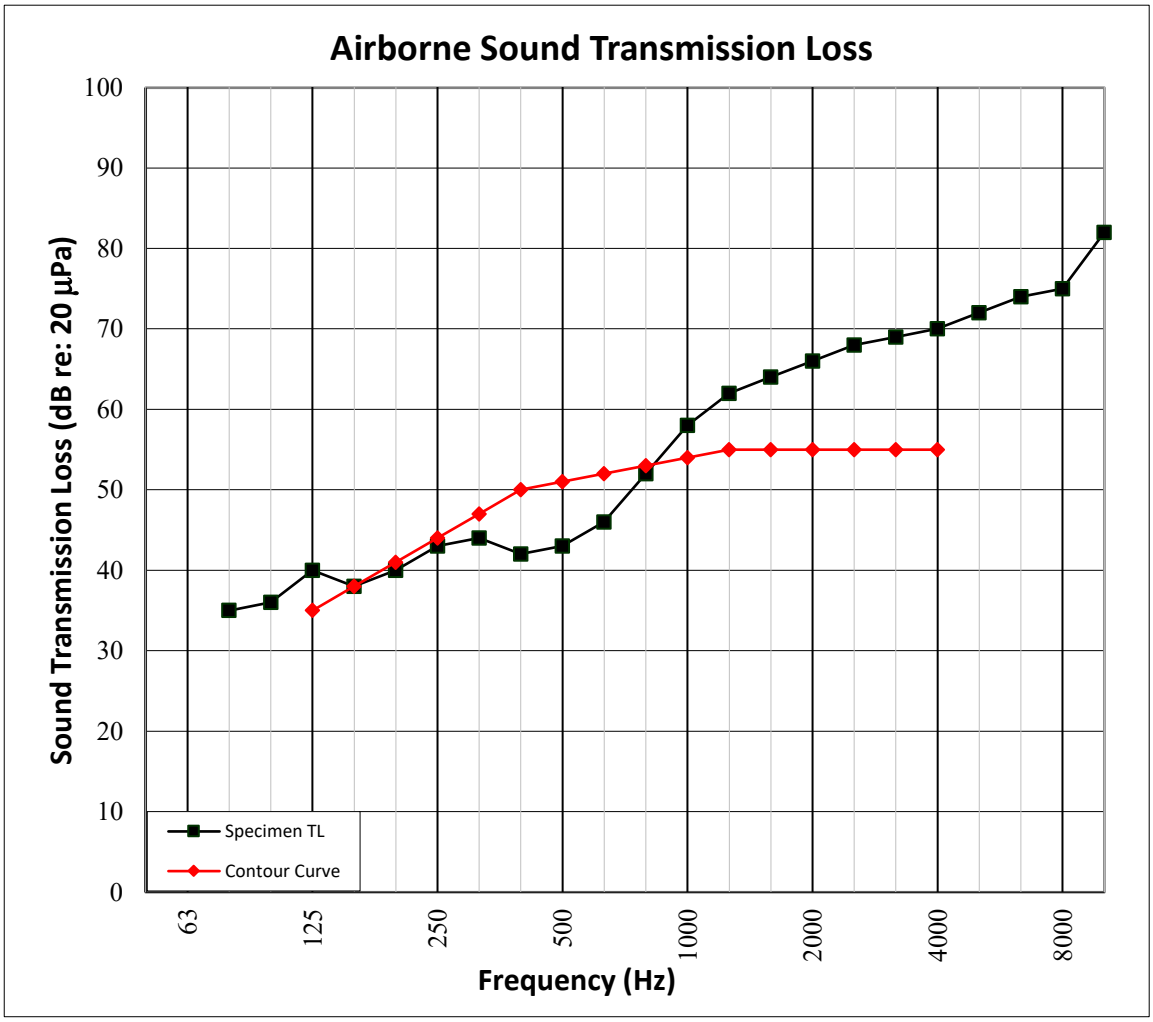
SECTION 11
TEST RESULTS - AIRBORNE SOUND TRANSMISSION LOSS GRAPH

TEST DATE	7/19/2021				
DATA FILE NO.	M5263.06				
CLIENT	Palziv North America				
DESCRIPTION	8 mm Laminate Flooring, 3.2 mm HQ Living Hard Surface Underlayment , 152.4 mm 5000 PSI Concrete Slab				
SPECIMEN AREA	10.98 m²	**Receive Temp.**	21.1°C	**Source Temp.**	20.7°C
TECHNICIAN	CRS	**Receive Humidity**	78%	**Source Humidity**	78%



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SECTION 12

TEST RESULTS - IMPACT SOUND TRANSMISSION

TEST DATE	7/19/2021				
DATA FILE NO.	M5263.06				
CLIENT	Palziv North America				
DESCRIPTION	8 mm Laminate Flooring, 3.2 mm HQ Living Hard Surface Underlayment , 152.4 mm 5000 PSI Concrete Slab				
SPECIMEN AREA	10.98 m²	**Maximum Temp.**	21.2°C	**Minimum Temp.**	21.1°C
TECHNICIAN	CRS	**Max. Humidity**	79%	**Min. Humidity**	77%

FREQ (Hz)	**BACKGROUND SPL** (dB)	**ABSORPTION** m²	**NORMALIZED IMPACT SPL** (dB)	**95% CONFIDENCE LIMIT**	**NUMBER OF DEFICIENCIES**
80	38.8	15.4	54	2.9	-
100	30.7	12.5	54	1.4	0
125	25.4	11.0	56	1.2	0
160	23.4	10.5	58	1.0	2
200	19.1	10.7	62	0.7	6
250	16.2	12.0	61	0.7	5
315	17.2	11.5	60	0.7	4
400	12.9	10.7	61	0.5	6
500	15.8	10.5	58	0.3	4
630	16.5	10.3	55	0.3	2
800	14.7	10.6	51	0.4	0
1000	16.8	10.5	47	0.3	0
1250	26.4	10.5	41	0.4	0
1600	13.5	10.7	35	0.5	0
2000	12.7	11.7	29	0.6	0
2500	11.4	12.1	23	0.7	0
3150	8.2	13.0	20	0.9	0
4000	8.0	13.8	20	1.0	-
5000	7.9	15.2	17	1.2	-
6300	7.3	18.0	12	1.0	-
8000	7.5	22.0	10	0.5	-
10000	7.7	22.0	9	0.3	-
IIC Rating	**56**	*(Impact Insulation Class)*		**Sum of Deficiencies**	**29**

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

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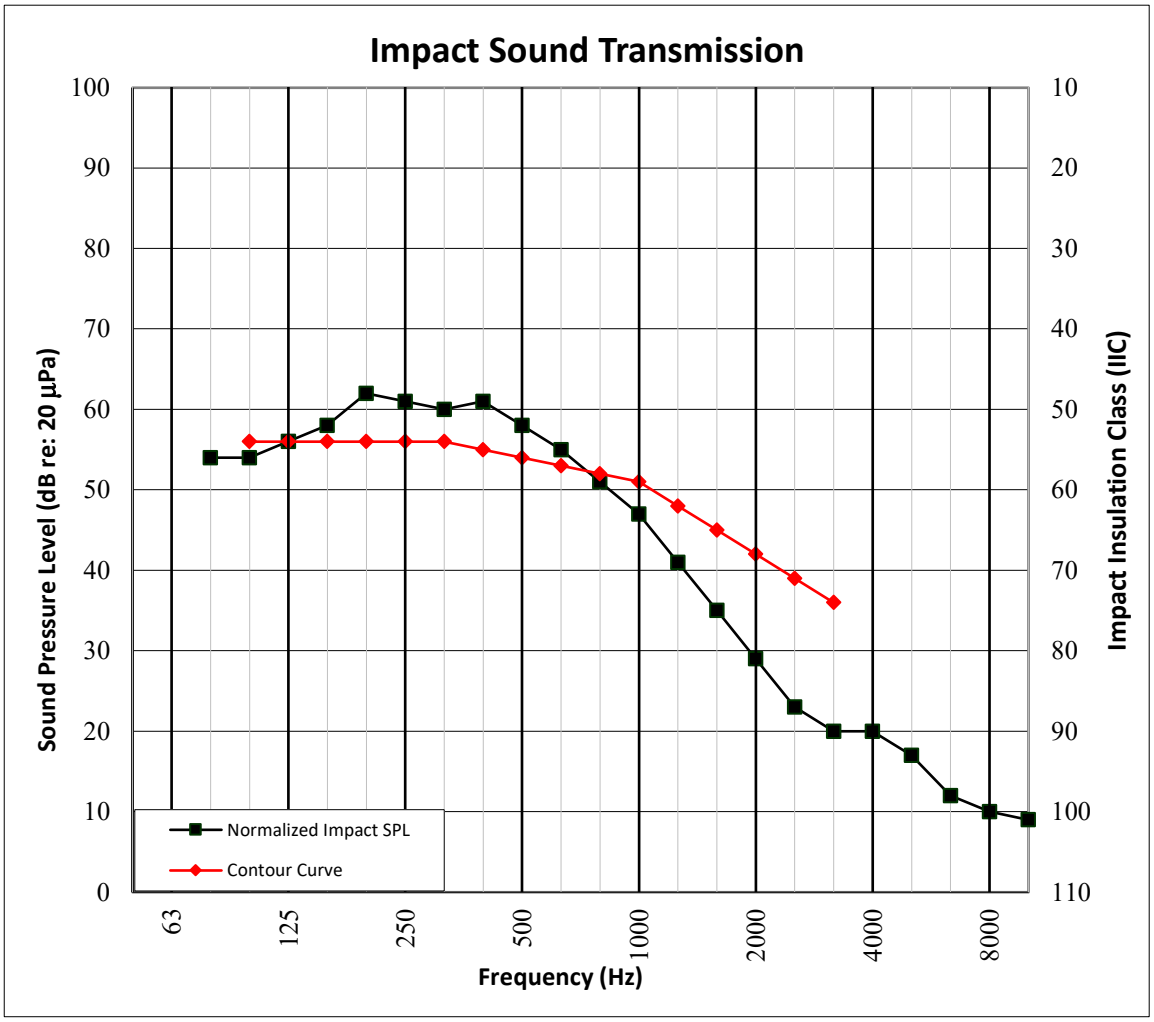
SECTION 13

TEST RESULTS - IMPACT SOUND TRANSMISSION GRAPH

TEST DATE	7/19/2021				
DATA FILE NO.	M5263.06				
CLIENT	Palziv North America				
DESCRIPTION	8 mm Laminate Flooring, 3.2 mm HQ Living Hard Surface Underlayment , 152.4 mm 5000 PSI Concrete Slab				
SPECIMEN AREA	10.98 m²	**Maximum Temp.**	21.2°C	**Minimum Temp.**	21.1°C
TECHNICIAN	CRS	**Max. Humidity**	79%	**Min. Humidity**	77%



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SECTION 14

TEST RESULTS - HIGH-FREQUENCY IMPACT SOUND TRANSMISSION

TEST DATE	7/19/2021				
DATA FILE NO.	M5263.06				
CLIENT	Palziv North America				
DESCRIPTION	8 mm Laminate Flooring, 3.2 mm HQ Living Hard Surface Underlayment , 152.4 mm 5000 PSI Concrete Slab				
SPECIMEN AREA	10.98 m²	**Maximum Temp.**	21.2°C	**Minimum Temp.**	21.1°C
TECHNICIAN	CRS	**Max. Humidity**	79%	**Min. Humidity**	77%

FREQ (Hz)	**BACKGROUND SPL** (dB)	**ABSORPTION** m²	**NORMALIZED IMPACT SPL** (dB)	**95% CONFIDENCE LIMIT**	**NUMBER OF DEFICIENCIES**
400	12.9	10.7	61	0.5	8.1
500	15.8	10.5	58	0.3	6.3
630	16.5	10.3	55	0.3	3.6
800	14.7	10.6	51	0.4	1.3
1000	16.8	10.5	47	0.3	0.0
1250	26.4	10.5	41	0.4	0.0
1600	13.5	10.7	35	0.5	0.0
2000	12.7	11.7	29	0.6	0.0
2500	11.4	12.1	23	0.7	0.0
3150	8.2	13.0	20	0.9	0.0
HIIC Rating	**58**	*(High-Frequency Impact Insulation Class)*		**Sum of Deficiencies**	**19.2**

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

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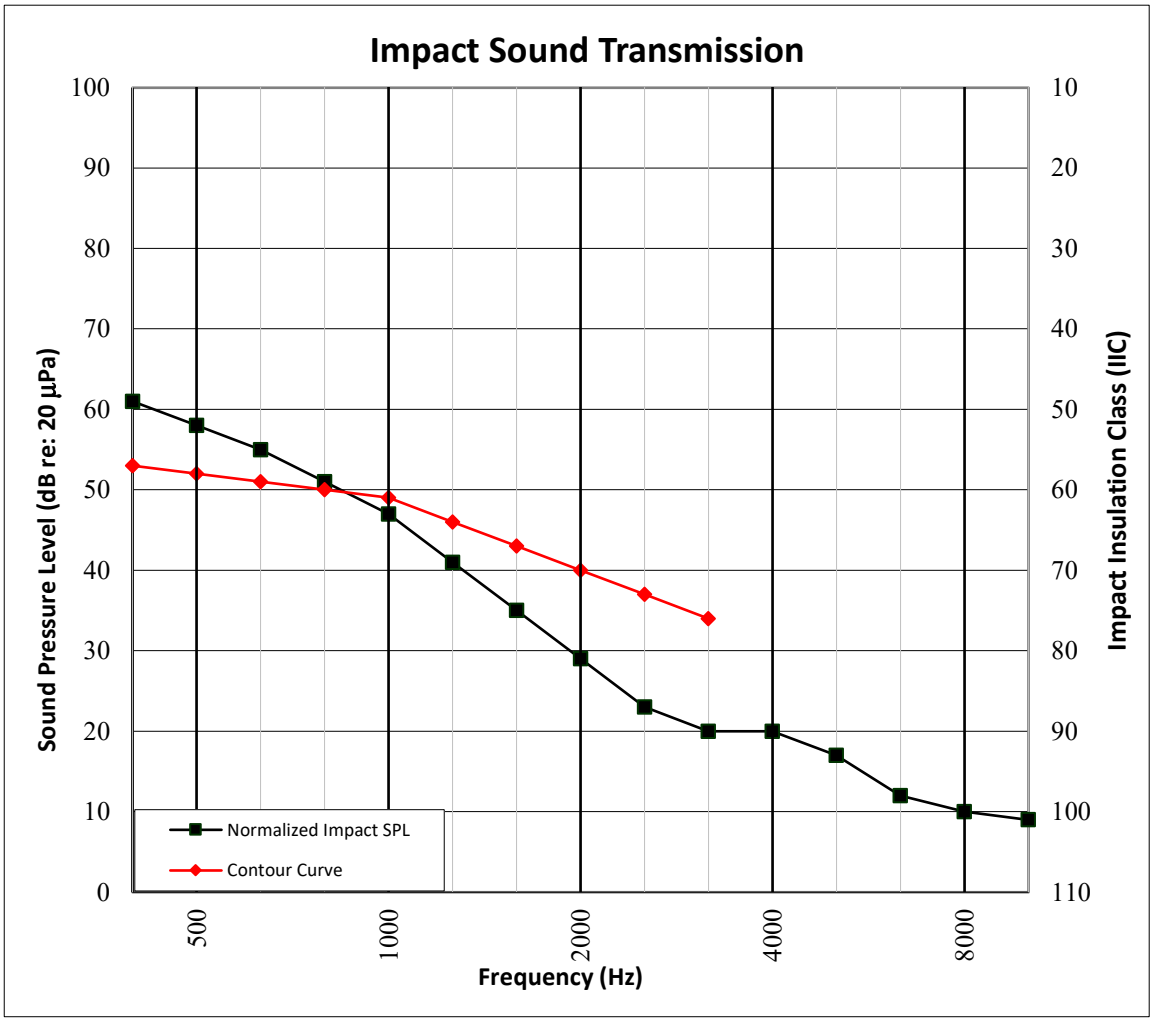
SECTION 15

TEST RESULTS -HIGH-FREQUENCY IMPACT SOUND TRANSMISSION GRAPH

TEST DATE	7/19/2021				
DATA FILE NO.	M5263.06				
CLIENT	Palziv North America				
DESCRIPTION	8 mm Laminate Flooring, 3.2 mm HQ Living Hard Surface Underlayment , 152.4 mm 5000 PSI Concrete Slab				
SPECIMEN AREA	10.98 m²	**Maximum Temp.**	21.2°C	**Minimum Temp.**	21.1°C
TECHNICIAN	CRS	**Max. Humidity**	79%	**Min. Humidity**	77%



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TEST REPORT FOR PALZIV NORTH AMERICA

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SECTION 16

TEST RESULTS - DELTA IMPACT INSULATION

TEST DATE	7/19/2021				
DATA FILE NO.	M5263.06				
CLIENT	Palziv North America				
DESCRIPTION	8 mm Laminate Flooring, 3.2 mm HQ Living Hard Surface Underlayment , 152.4 mm 5000 PSI Concrete Slab				
SPECIMEN AREA	10.98 m²	**Maximum Temp.**	21.2°C	**Minimum Temp.**	21.1°C
TECHNICIAN	CRS	**Max. Humidity**	79%	**Min. Humidity**	77%

FREQ (Hz)	BACKGROUND SPL (dB)	ABSORPTION m²	NORMALIZED IMPACT SPL BARE (dB)	95% CONF LIMIT	NORMALIZED IMPACT SPL SPEC (dB)	95% CONF LIMIT	RESULT ARRAY $L_{ref,c}$	NUMBER OF DEFI-CIENCIES
100	30.7	12.5	57.5	1.7	54.3	1.7	64.0	4
125	25.4	11.0	58.8	1.5	56.3	1.5	65.0	5
160	23.4	10.5	61.3	1.1	58.1	1.3	65.0	5
200	19.1	10.7	65.3	0.8	61.8	0.9	65.0	5
250	16.2	12.0	66.1	0.7	60.9	0.8	64.0	4
315	17.2	11.5	66.5	0.9	59.9	0.9	63.0	3
400	12.9	10.7	67.6	0.6	61.1	0.7	63.0	4
500	15.8	10.5	68.5	0.7	58.3	0.4	60.0	2
630	16.5	10.3	70.4	0.6	54.6	0.4	55.0	0
800	14.7	10.6	71.2	0.7	51.3	0.6	52.0	0
1000	16.8	10.5	71.4	0.4	46.8	0.3	47.0	0
1250	26.4	10.5	72.3	0.5	40.8	0.5	41.0	0
1600	13.5	10.7	72.6	0.6	35.4	0.6	35.0	0
2000	12.7	11.7	73.1	0.7	29.0	0.7	28.0	0
2500	11.4	12.1	72.5	0.8	22.7	0.9	22.0	0
3150	8.2	13.0	71.9	1.1	20.0	1.1	20.0	0

ΔIIC Rating	**24**	*(Delta Impact Insulation Class)*	**Sum of Deficiencies**	**32**
ΔHIIC Rating	**29**	*(Delta High-Frequency Impact Insulation Class)*	**Sum of Deficiencies**	**20**

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

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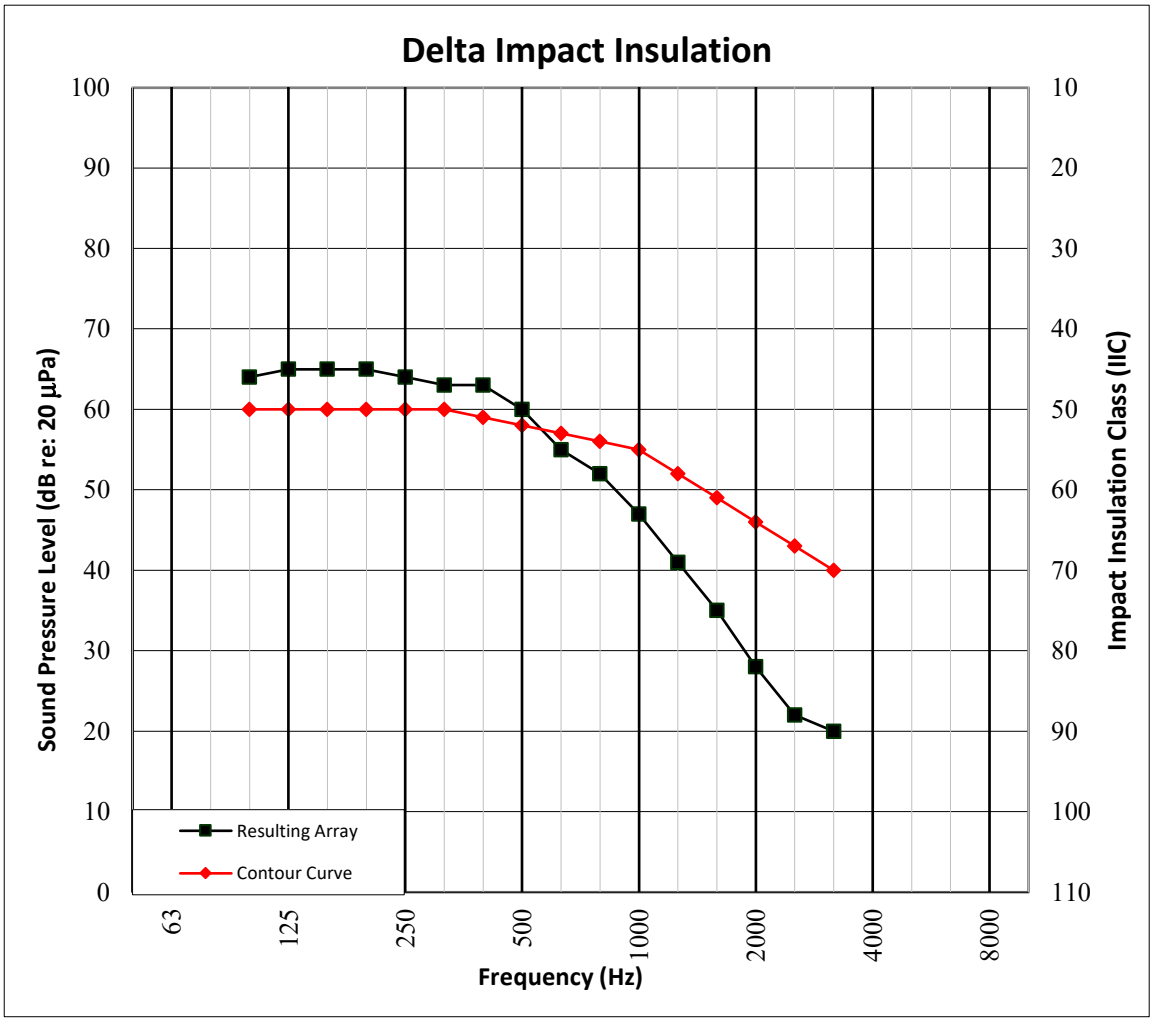
Date: 03/30/26

SECTION 17

TEST RESULTS - DELTA IMPACT INSULATION GRAPH

TEST DATE	7/19/2021				
DATA FILE NO.	M5263.06				
CLIENT	Palziv North America				
DESCRIPTION	8 mm Laminate Flooring, 3.2 mm HQ Living Hard Surface Underlayment , 152.4 mm 5000 PSI Concrete Slab				
SPECIMEN AREA	10.98 m²	**Maximum Temp.**	21.2°C	**Minimum Temp.**	21.1°C
TECHNICIAN	CRS	**Max. Humidity**	79%	**Min. Humidity**	77%



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SECTION 18
PHOTOGRAPHS

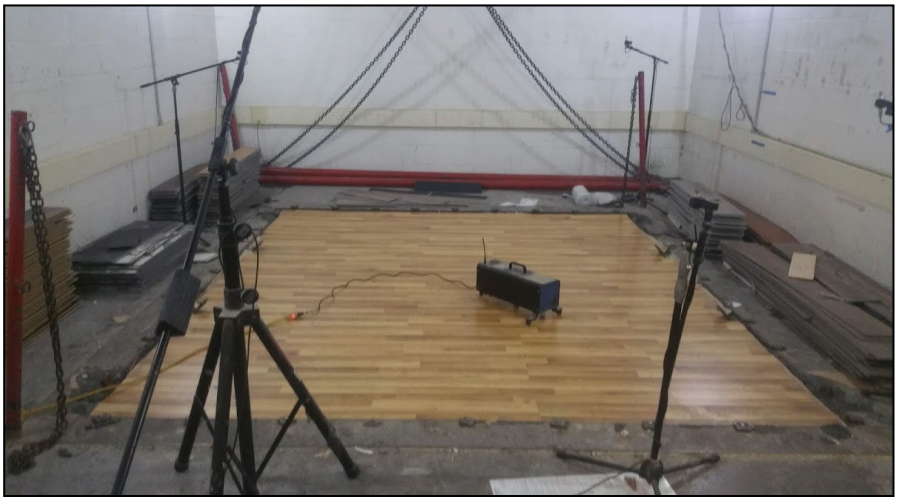

Photo No. 1
Source Room View of Test Specimen Installation

Photo No. 2
Receive Room View of Test Specimen Installation

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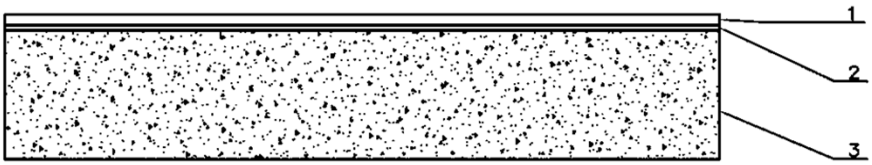
SECTION 19
DRAWING



1-Floor Topping
2-Underlayment
3-Concrete Slab

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SECTION 20

REVISION LOG

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R0	03/30/26	N/A	Original Report Issue