

Field Impact Sound Transmission Test Report

Apparent Impact Insulation Class (AIIIC)

Report Date:	April 18, 2024	Source Room:	2nd Floor Great Room, Volume: 3949 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Great Room/Kitchen, Volume: 3949 cu. ft.
DLAA Test No:	1.1.1	Test Assembly:	Floor-ceiling, Area: 428 sq. ft.
Test Site:	Ka'ulu by Gentry		
Client:	Gentry Builders, LLC		

STANDARDS

ASTM E1007-14	Standard Test Method for Field Measurement of Tapping Machine Impact Sound Transmission Through Floor-Ceiling Assemblies and Associated Support Structure
ASTM E989-06(2012)	Standard Classification for Determination of Impact Insulation Class (IIC)
ASTM E2235-04(2012)	Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods

STATEMENT OF CONFORMANCE:

Testing was conducted in general accordance with ASTM E1007-14, with all exceptions noted below. All requirements for measuring and reporting Absorption Normalized Impact Sound Pressure Level (ANISPL) and Apparent Impact Insulation Class (AIIIC) were met.

TEST ENVIRONMENT:

The source room was 2nd Floor Great Room. The space was finished, unfurnished. The floor was Carpet. The ceiling was gyp. The walls were gyp. All doors and windows were closed during the testing period. The source room had a volume of approximately 3949 cu. ft.

The receiver room was 1st Floor Great Room/Kitchen. The space was finished unfurnished. The floor was LVT. The ceiling was gyp. The walls were gyp. All doors and windows were closed during the testing period. The receiver room had a volume of approximately 3949 cu. ft.

The test assembly measured approximately 14.8x29.583, and had an approximate area of 428 sq. ft.

TEST ASSEMBLY:

The tested assembly was the Floor-ceiling. The assembly was not field verified, and was based on information provided by the client and drawings for the project. The client advised that no slab treatment or self-leveling was applied. Results may vary if slab treatment or self-leveling or any adhesive is used in other installations.

Field Impact Sound Transmission Test Report

Apparent Impact Insulation Class (AIIIC)

Report Date:	April 18, 2024	Source Room:	2nd Floor Great Room, Volume: 3949 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Great Room/Kitchen, Volume: 3949 cu. ft.
DLAA Test No:	1.1.1	Test Assembly:	Floor-ceiling, Area: 428 sq. ft.

Test Site:	Ka'ulu by Gentry
Client:	Gentry Builders, LLC

TEST PROCEDURE:

The test was performed in general accordance with ASTM E1007-14. Determination of Space-Average Levels performed via the manually scanned microphones technique, described in ASTM E1007-14, Paragraph 11.4.2.2.

Flanking transmission was not evaluated.

To evaluate room absorption, 1 microphone was used to measure 4 decays at 4 locations around the receiving room for a total of 16 measurements, per ASTM E2235-04(2012).

TEST INSTRUMENTATION:

Equipment Type	Manufacturer	Model Number	Serial Number	Last NIST Traceable Calibration	Last Local Calibration
Tapping Machine:	Norsonics	CAL200	2775671	9/19/2022	N/A
Sound Level Meter	Larson Davis	831	4328	10/24/2022	4/4/2024
Microphone Pre-Amp	Larson Davis	PRM831	046469	10/24/2022	4/4/2024
Microphone	Larson Davis	377B20	168830	10/20/2022	4/4/2024
Calibrator	Larson Davis	CAL200	5955	10/26/2022	N/A
Amplified Loudspeaker	QSC	K10	GAA530909	N/A	N/A
Noise Generator	NTi Audio	MR-PRO	0162	N/A	N/A

Field Impact Sound Transmission Test Report

Apparent Impact Insulation Class (AIIC)

Report Date:	April 18, 2024	Source Room:	2nd Floor Great Room, Volume: 3949 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Great Room/Kitchen, Volume: 3949 cu. ft.
DLAA Test No:	1.1.1	Test Assembly:	Floor-ceiling, Area: 428 sq. ft.
Test Site:	Ka'ulu by Gentry		
Client:	Gentry Builders, LLC		

STATEMENT OF TEST RESULTS:

Frequency	Absorption Normalized Impact Sound Pressure Level, ANISPL (dB)	Average Receiver Background Level	Average RT60 (Seconds)	Exceptions noted to ASTM E1007-14	
100 Hz	54.0	35.4	0.62		
125 Hz	51.0	39.2	0.85		2
160 Hz	47.0	33.0	0.63		2
200 Hz	40.0	37.1	1.00	1	2
250 Hz	44.0	34.4	1.02		2
315 Hz	48.0	33.7	1.14		2
400 Hz	40.0	33.3	1.34		2
500 Hz	33.0	32.5	1.26	1	2
630 Hz	30.0	31.2	1.14	1	2
800 Hz	29.0	30.6	1.12	1	2
1000 Hz	27.0	29.6	1.29	1	
1250 Hz	26.0	28.9	1.46	1	
1600 Hz	26.0	28.5	1.52	1	
2000 Hz	23.0	24.9	1.46	1	
2500 Hz	20.0	20.6	1.39	1	
3150 Hz	19.0	18.5	1.40	1	
4000 Hz	18.0	17.6	1.39		
5000 Hz	17.0	15.1	1.32		

*This test does not fully conform to the requirements of ASTM E1007-13, so the calculated AIIC rating should be considered a minimum.

Notes:

1. The signal-to-noise ratio is less < 5 dB at this frequency band.
2. Airborne sound flanking is within 10 dB of impact sound pressure measurements at this frequency band.

AIIC: 66

An Apparent Impact Insulation Class (AIIC) of 66 and an Impact Sound Rating (ISR) of 71 was calculated. The AIIC rating is based on Absorption Normalized Impact Sound Pressure Level (ANISPL), and includes the effects of noise flanking. The AIIC reference contour is shown on the next page, and has been "fit" to the ANISPL values, in accordance with the procedure of ASTM E989-06(2012).

The results stated in this report represent only the specific construction and acoustical conditions present at the time of the test. Measurements performed in accordance with this test method on nominally identical constructions and acoustical conditions may produce different results.

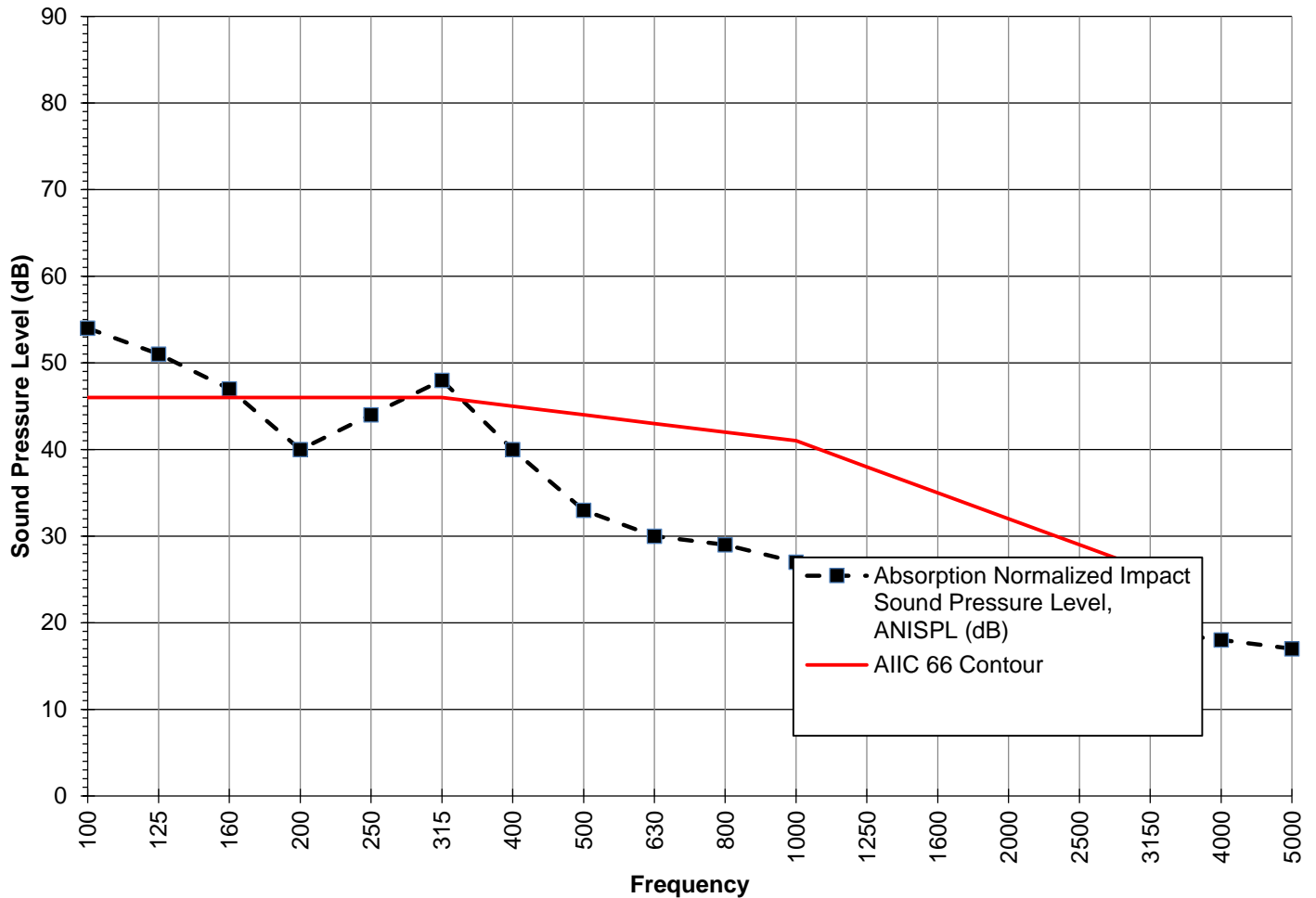
Field Impact Sound Transmission Test Report

Apparent Impact Insulation Class (AIIC)

Report Date: April 18, 2024
Test Date: April 04, 2024
DLAA Test No: 1.1.1

Source Room: 2nd Floor Great Room, Volume: 3949 cu. ft.
Receiver Room: 1st Floor Great Room/Kitchen, Volume: 3949 cu. ft.
Test Assembly: Floor-ceiling, Area: 428 sq. ft.

Test Site: Ka'ulu by Gentry
Client: Gentry Builders, LLC



AIIC: 66

Test Conducted By:

Zane Wright, Project Consultant

Jake Pfitsch, Project Consultant

Field Impact Sound Transmission Test Report

Apparent Impact Insulation Class (AIIIC)

Report Date:	April 18, 2024	Source Room:	2nd Floor Kitchen, Volume: 3949 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Great Room/Kitchen, Volume: 3949 cu. ft.
DLAA Test No:	1.2.1	Test Assembly:	Floor-ceiling, Area: 428 sq. ft.

Test Site:	Ka'ulu by Gentry
Client:	Gentry Builders, LLC

STANDARDS

ASTM E1007-14	Standard Test Method for Field Measurement of Tapping Machine Impact Sound Transmission Through Floor-Ceiling Assemblies and Associated Support Structure
ASTM E989-06(2012)	Standard Classification for Determination of Impact Insulation Class (IIC)
ASTM E2235-04(2012)	Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods

STATEMENT OF CONFORMANCE:

Testing was conducted in general accordance with ASTM E1007-14, with all exceptions noted below. All requirements for measuring and reporting Absorption Normalized Impact Sound Pressure Level (ANISPL) and Apparent Impact Insulation Class (AIIIC) were met.

TEST ENVIRONMENT:

The source room was 2nd Floor Kitchen. The space was finished unfurnished. The floor was LVT. The ceiling was gyp. The walls were gyp. All doors and windows were closed during the testing period. The source room had a volume of approximately 3949 cu. ft.

The receiver room was 1st Floor Great Room/Kitchen. The space was finished unfurnished. The floor was LVT. The ceiling was gyp. The walls were gyp. All doors and windows were closed during the testing period. The receiver room had a volume of approximately 3949 cu. ft.

The test assembly measured approximately 14.8x29.583, and had an approximate area of 428 sq. ft.

TEST ASSEMBLY:

The tested assembly was the Floor-ceiling. The assembly was not field verified, and was based on information provided by the client and drawings for the project. The client advised that no slab treatment or self-leveling was applied. Results may vary if slab treatment or self-leveling or any adhesive is used in other installations.

Field Impact Sound Transmission Test Report

Apparent Impact Insulation Class (AIIc)

Report Date:	April 18, 2024	Source Room:	2nd Floor Kitchen, Volume: 3949 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Great Room/Kitchen, Volume: 3949 cu. ft.
DLAA Test No:	1.2.1	Test Assembly:	Floor-ceiling, Area: 428 sq. ft.
Test Site:	Ka'ulu by Gentry		
Client:	Gentry Builders, LLC		

TEST PROCEDURE:

The test was performed in general accordance with ASTM E1007-14. Determination of Space-Average Levels performed via the manually scanned microphones technique, described in ASTM E1007-14, Paragraph 11.4.2.2.

Flanking transmission was not evaluated.

To evaluate room absorption, 1 microphone was used to measure 4 decays at 4 locations around the receiving room for a total of 16 measurements, per ASTM E2235-04(2012).

TEST INSTRUMENTATION:

Equipment Type	Manufacturer	Model Number	Serial Number	Last NIST Traceable Calibration	Last Local Calibration
Tapping Machine:	Norsonics	CAL200	2775671	9/19/2022	N/A
Sound Level Meter	Larson Davis	831	4328	10/24/2022	4/4/2024
Microphone Pre-Amp	Larson Davis	PRM831	046469	10/24/2022	4/4/2024
Microphone	Larson Davis	377B20	168830	10/20/2022	4/4/2024
Calibrator	Larson Davis	CAL200	5955	10/26/2022	N/A
Amplified Loudspeaker	QSC	K10	GAA530909	N/A	N/A
Noise Generator	NTi Audio	MR-PRO	0162	N/A	N/A

Field Impact Sound Transmission Test Report

Apparent Impact Insulation Class (AIIC)

Report Date:	April 18, 2024	Source Room:	2nd Floor Kitchen, Volume: 3949 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Great Room/Kitchen, Volume: 3949 cu. ft.
DLAA Test No:	1.2.1	Test Assembly:	Floor-ceiling, Area: 428 sq. ft.
Test Site:	Ka'ulu by Gentry		
Client:	Gentry Builders, LLC		

STATEMENT OF TEST RESULTS:

Frequency	Absorption Normalized Impact Sound Pressure Level, ANISPL (dB)	Average Receiver Background Level	Average RT60 (Seconds)	Exceptions noted to ASTM E1007-14
100 Hz	82.0	35.4	0.62	
125 Hz	83.0	39.2	0.85	
160 Hz	79.0	33.0	0.63	
200 Hz	76.0	37.1	1.00	
250 Hz	77.0	34.4	1.02	
315 Hz	74.0	33.7	1.14	
400 Hz	69.0	33.3	1.34	
500 Hz	63.0	32.5	1.26	
630 Hz	56.0	31.2	1.14	
800 Hz	50.0	30.6	1.12	
1000 Hz	46.0	29.6	1.29	
1250 Hz	47.0	28.9	1.46	
1600 Hz	45.0	28.5	1.52	
2000 Hz	45.0	24.9	1.46	
2500 Hz	41.0	20.6	1.39	
3150 Hz	38.0	18.5	1.40	
4000 Hz	34.0	17.6	1.39	
5000 Hz	31.0	15.1	1.32	

AIIC: 38

An Apparent Impact Insulation Class (AIIC) of 38 and an Impact Sound Rating (ISR) of 42 was calculated. The AIIC rating is based on Absorption Normalized Impact Sound Pressure Level (ANISPL), and includes the effects of noise flanking. The AIIC reference contour is shown on the next page, and has been “fit” to the ANISPL values, in accordance with the procedure of ASTM E989-06(2012).

The results stated in this report represent only the specific construction and acoustical conditions present at the time of the test. Measurements performed in accordance with this test method on nominally identical constructions and acoustical conditions may produce different results.

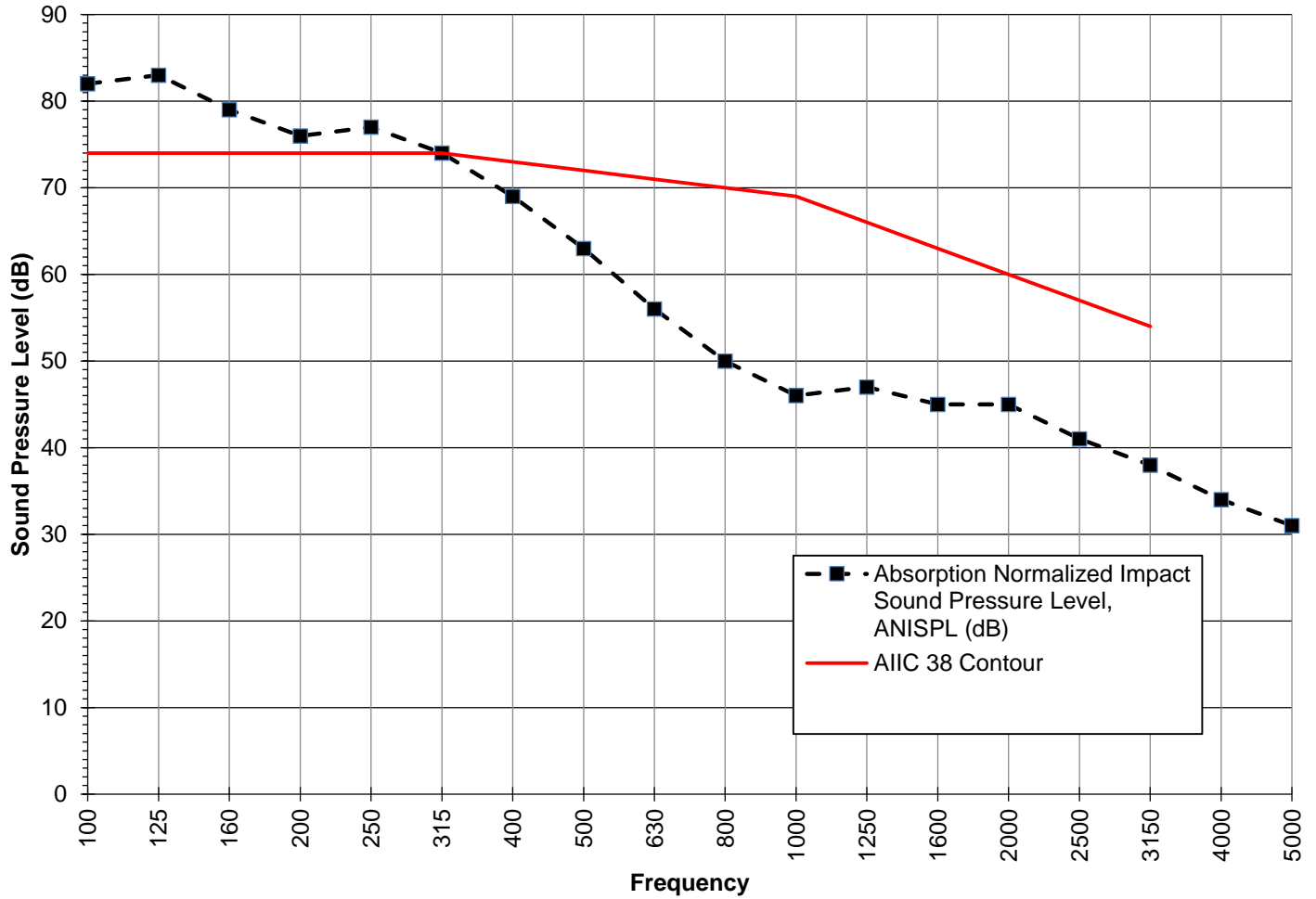
Field Impact Sound Transmission Test Report

Apparent Impact Insulation Class (AIIC)

Report Date: April 18, 2024
Test Date: April 04, 2024
DLAA Test No: 1.2.1

Source Room: 2nd Floor Kitchen, Volume: 3949 cu. ft.
Receiver Room: 1st Floor Great Room/Kitchen, Volume: 3949 cu. ft.
Test Assembly: Floor-ceiling, Area: 428 sq. ft.

Test Site: Ka'ulu by Gentry
Client: Gentry Builders, LLC



AIIC: 38

Test Conducted By:

Zane Wright, Project Consultant

Jake Pfitsch, Project Consultant

Field Impact Sound Transmission Test Report

Apparent Impact Insulation Class (AIIc)

Report Date:	April 18, 2024	Source Room:	2nd Floor Bed 3, Volume: 796 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Bed 2, Volume: 1413 cu. ft.
DLAA Test No:	1.3.1	Test Assembly:	Floor-ceiling, Area: 88 sq. ft.
Test Site:	Ka'ulu by Gentry		
Client:	Gentry Builders, LLC		

STANDARDS

ASTM E1007-14	Standard Test Method for Field Measurement of Tapping Machine Impact Sound Transmission Through Floor-Ceiling Assemblies and Associated Support Structure
ASTM E989-06(2012)	Standard Classification for Determination of Impact Insulation Class (IIC)
ASTM E2235-04(2012)	Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods

STATEMENT OF CONFORMANCE:

Testing was conducted in general accordance with ASTM E1007-14, with all exceptions noted below. All requirements for measuring and reporting Absorption Normalized Impact Sound Pressure Level (ANISPL) and Apparent Impact Insulation Class (AIIc) were met.

TEST ENVIRONMENT:

The source room was 2nd Floor Bed 3. The space was finished, unfurnished. The floor was Carpet. The ceiling was gyp. The walls were gyp. All doors and windows were closed during the testing period. The source room had a volume of approximately 796 cu. ft.

The receiver room was 1st Floor Bed 2. The space was finished unfurnished. The floor was LVT. The ceiling was gyp. The walls were gyp. All doors and windows were closed during the testing period. The receiver room had a volume of approximately 1413 cu. ft.

The test assembly measured approximately 9x9.8, and had an approximate area of 88 sq. ft.

TEST ASSEMBLY:

The tested assembly was the Floor-ceiling. The assembly was not field verified, and was based on information provided by the client and drawings for the project. The client advised that no slab treatment or self-leveling was applied. Results may vary if slab treatment or self-leveling or any adhesive is used in other installations.

Field Impact Sound Transmission Test Report

Apparent Impact Insulation Class (AIIc)

Report Date:	April 18, 2024	Source Room:	2nd Floor Bed 3, Volume: 796 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Bed 2, Volume: 1413 cu. ft.
DLAA Test No:	1.3.1	Test Assembly:	Floor-ceiling, Area: 88 sq. ft.

Test Site:	Ka'ulu by Gentry
Client:	Gentry Builders, LLC

TEST PROCEDURE:

The test was performed in general accordance with ASTM E1007-14. Determination of Space-Average Levels performed via the manually scanned microphones technique, described in ASTM E1007-14, Paragraph 11.4.2.2.

Flanking transmission was not evaluated.

To evaluate room absorption, 1 microphone was used to measure 4 decays at 4 locations around the receiving room for a total of 16 measurements, per ASTM E2235-04(2012).

TEST INSTRUMENTATION:

Equipment Type	Manufacturer	Model Number	Serial Number	Last NIST Traceable Calibration	Last Local Calibration
Tapping Machine:	Norsonics	CAL200	2775671	9/19/2022	N/A
Sound Level Meter	Larson Davis	831	4328	10/24/2022	4/4/2024
Microphone Pre-Amp	Larson Davis	PRM831	046469	10/24/2022	4/4/2024
Microphone	Larson Davis	377B20	168830	10/20/2022	4/4/2024
Calibrator	Larson Davis	CAL200	5955	10/26/2022	N/A
Amplified Loudspeaker	QSC	K10	GAA530909	N/A	N/A
Noise Generator	NTi Audio	MR-PRO	0162	N/A	N/A

Field Impact Sound Transmission Test Report

Apparent Impact Insulation Class (AIIC)

Report Date:	April 18, 2024	Source Room:	2nd Floor Bed 3, Volume: 796 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Bed 2, Volume: 1413 cu. ft.
DLAA Test No:	1.3.1	Test Assembly:	Floor-ceiling, Area: 88 sq. ft.
Test Site:	Ka'ulu by Gentry		
Client:	Gentry Builders, LLC		

STATEMENT OF TEST RESULTS:

Frequency	Absorption Normalized Impact Sound Pressure Level, ANISPL (dB)	Average Receiver Background Level	Average RT60 (Seconds)	Exceptions noted to ASTM E1007-14	
100 Hz	50.0	31.9	0.63		
125 Hz	52.0	33.2	0.77		2
160 Hz	47.0	35.2	0.57		
200 Hz	45.0	36.9	0.75		
250 Hz	44.0	30.5	1.44		2
315 Hz	47.0	27.9	0.97		
400 Hz	39.0	23.0	1.08		2
500 Hz	34.0	21.1	1.16		2
630 Hz	29.0	20.7	1.06		2
800 Hz	26.0	19.8	1.00		2
1000 Hz	21.0	18.6	1.08		2
1250 Hz	20.0	16.2	1.21		2
1600 Hz	18.0	14.8	1.26		2
2000 Hz	16.0	11.0	1.23		2
2500 Hz	11.0	9.0	1.10		2
3150 Hz	9.0	8.4	1.00	1	2
4000 Hz	11.0	11.2	1.05		
5000 Hz	9.0	9.8	1.01		

*This test does not fully conform to the requirements of ASTM E1007-13, so the calculated AIIC rating should be considered a minimum.

Notes:

1. The signal-to-noise ratio is less < 5 dB at this frequency band.
2. Airborne sound flanking is within 10 dB of impact sound pressure measurements at this frequency band.

AIIC: 68

An Apparent Impact Insulation Class (AIIC) of 68 and an Impact Sound Rating (ISR) of 69 was calculated. The AIIC rating is based on Absorption Normalized Impact Sound Pressure Level (ANISPL), and includes the effects of noise flanking. The AIIC reference contour is shown on the next page, and has been "fit" to the ANISPL values, in accordance with the procedure of ASTM E989-06(2012).

The results stated in this report represent only the specific construction and acoustical conditions present at the time of the test. Measurements performed in accordance with this test method on nominally identical constructions and acoustical conditions may produce different results.

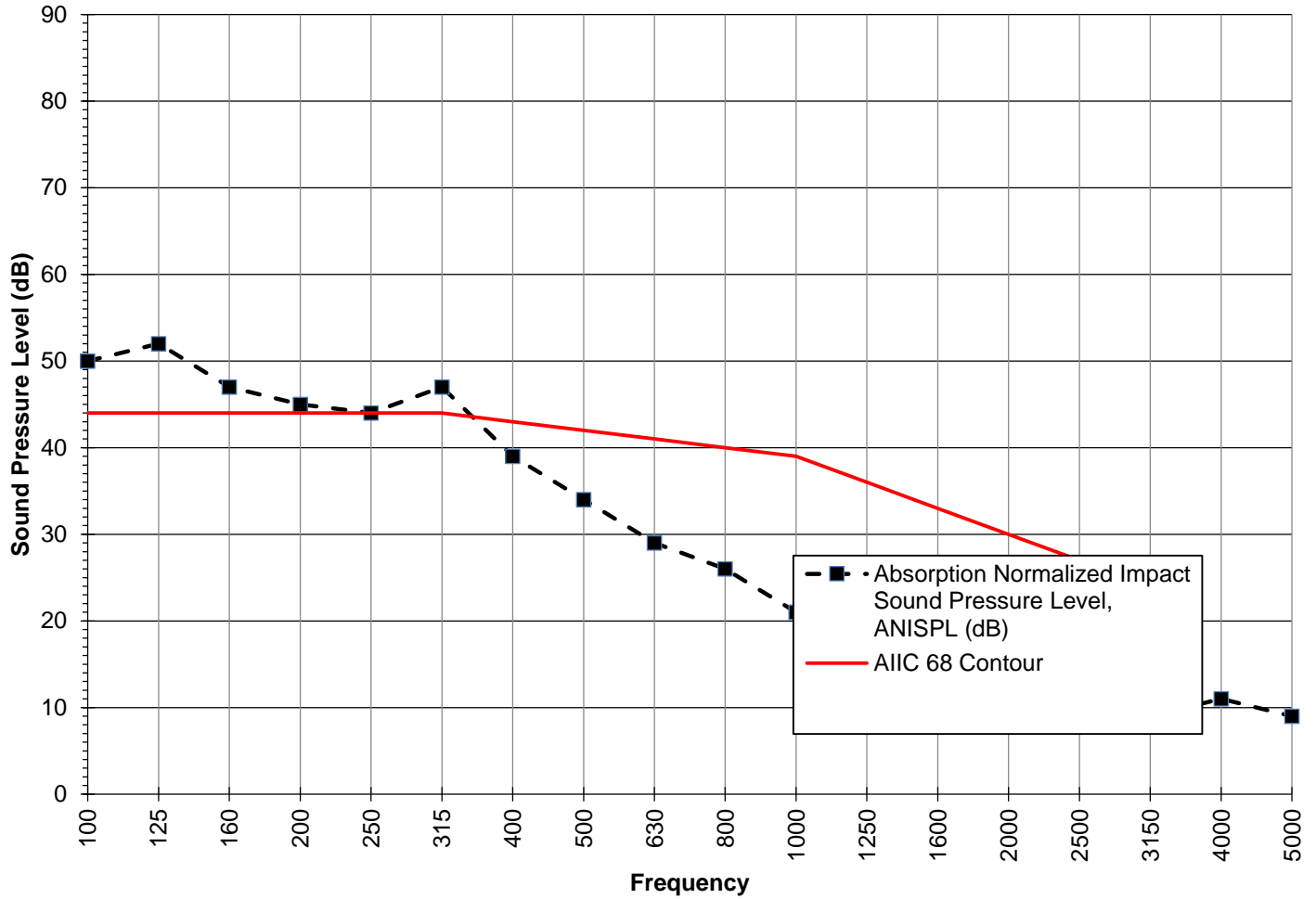
Field Impact Sound Transmission Test Report

Apparent Impact Insulation Class (AIIC)

Report Date: April 18, 2024
Test Date: April 04, 2024
DLAA Test No: 1.3.1

Source Room: 2nd Floor Bed 3, Volume: 796 cu. ft.
Receiver Room: 1st Floor Bed 2, Volume: 1413 cu. ft.
Test Assembly: Floor-ceiling, Area: 88 sq. ft.

Test Site: Ka'ulu by Gentry
Client: Gentry Builders, LLC



AIIC: 68

Test Conducted By:

Zane Wright, Project Consultant

Jake Pfitsch, Project Consultant

Field Impact Sound Transmission Test Report

Apparent Impact Insulation Class (AIIc)

Report Date:	April 18, 2024	Source Room:	2nd Floor Bed 1, Volume: 1176 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Bed 1, Volume: 1413 cu. ft.
DLAA Test No:	1.4.1	Test Assembly:	Floor-ceiling, Area: 130 sq. ft.
Test Site:	Ka'ulu by Gentry		
Client:	Gentry Builders, LLC		

STANDARDS

ASTM E1007-14	Standard Test Method for Field Measurement of Tapping Machine Impact Sound Transmission Through Floor-Ceiling Assemblies and Associated Support Structure
ASTM E989-06(2012)	Standard Classification for Determination of Impact Insulation Class (IIC)
ASTM E2235-04(2012)	Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods

STATEMENT OF CONFORMANCE:

Testing was conducted in general accordance with ASTM E1007-14, with all exceptions noted below. All requirements for measuring and reporting Absorption Normalized Impact Sound Pressure Level (ANISPL) and Apparent Impact Insulation Class (AIIc) were met.

TEST ENVIRONMENT:

The source room was 2nd Floor Bed 1. The space was finished, unfurnished. The floor was Carpet. The ceiling was gyp. The walls were gyp. All doors and windows were closed during the testing period. The source room had a volume of approximately 1176 cu. ft.

The receiver room was 1st Floor Bed 1. The space was finished, unfurnished. The floor was LVT. The ceiling was gyp. The walls were gyp. All doors and windows were closed during the testing period. The receiver room had a volume of approximately 1413 cu. ft.

The test assembly measured approximately 12.3x10.6, and had an approximate area of 130 sq. ft.

TEST ASSEMBLY:

The tested assembly was the Floor-ceiling. The assembly was not field verified, and was based on information provided by the client and drawings for the project. The client advised that no slab treatment or self-leveling was applied. Results may vary if slab treatment or self-leveling or any adhesive is used in other installations.

Field Impact Sound Transmission Test Report

Apparent Impact Insulation Class (AIIc)

Report Date:	April 18, 2024	Source Room:	2nd Floor Bed 1, Volume: 1176 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Bed 1, Volume: 1413 cu. ft.
DLAA Test No:	1.4.1	Test Assembly:	Floor-ceiling, Area: 130 sq. ft.

Test Site:	Ka'ulu by Gentry
Client:	Gentry Builders, LLC

TEST PROCEDURE:

The test was performed in general accordance with ASTM E1007-14. Determination of Space-Average Levels performed via the manually scanned microphones technique, described in ASTM E1007-14, Paragraph 11.4.2.2.

Flanking transmission was not evaluated.

To evaluate room absorption, 1 microphone was used to measure 4 decays at 4 locations around the receiving room for a total of 16 measurements, per ASTM E2235-04(2012).

TEST INSTRUMENTATION:

Equipment Type	Manufacturer	Model Number	Serial Number	Last NIST Traceable Calibration	Last Local Calibration
Tapping Machine:	Norsonics	CAL200	2775671	9/19/2022	N/A
Sound Level Meter	Larson Davis	831	4328	10/24/2022	4/4/2024
Microphone Pre-Amp	Larson Davis	PRM831	046469	10/24/2022	4/4/2024
Microphone	Larson Davis	377B20	168830	10/20/2022	4/4/2024
Calibrator	Larson Davis	CAL200	5955	10/26/2022	N/A
Amplified Loudspeaker	QSC	K10	GAA530909	N/A	N/A
Noise Generator	NTi Audio	MR-PRO	0162	N/A	N/A

Field Impact Sound Transmission Test Report

Apparent Impact Insulation Class (AIIC)

Report Date:	April 18, 2024	Source Room:	2nd Floor Bed 1, Volume: 1176 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Bed 1, Volume: 1413 cu. ft.
DLAA Test No:	1.4.1	Test Assembly:	Floor-ceiling, Area: 130 sq. ft.
Test Site:	Ka'ulu by Gentry		
Client:	Gentry Builders, LLC		

STATEMENT OF TEST RESULTS:

Frequency	Absorption Normalized Impact Sound Pressure Level, ANISPL (dB)	Average Receiver Background Level	Average RT60 (Seconds)	Exceptions noted to ASTM E1007-14	
100 Hz	57.0	39.7	0.73		
125 Hz	49.0	38.6	0.66		
160 Hz	47.0	34.0	0.57		
200 Hz	41.0	38.4	0.86		
250 Hz	39.0	34.2	1.59		2
315 Hz	44.0	25.8	1.17		
400 Hz	38.0	23.5	1.32		2
500 Hz	32.0	23.8	1.47		2
630 Hz	26.0	21.1	1.34		2
800 Hz	23.0	19.2	1.22		2
1000 Hz	18.0	19.3	1.35	1	2
1250 Hz	17.0	16.5	1.50		2
1600 Hz	16.0	14.7	1.64		2
2000 Hz	16.0	11.9	1.57		2
2500 Hz	16.0	10.2	1.46		
3150 Hz	14.0	9.4	1.26		
4000 Hz	10.0	11.9	1.33		
5000 Hz	9.0	10.6	1.36		

*This test does not fully conform to the requirements of ASTM E1007-13, so the calculated AIIC rating should be considered a minimum.

Notes:

1. The signal-to-noise ratio is less < 5 dB at this frequency band.
2. Airborne sound flanking is within 10 dB of impact sound pressure measurements at this frequency band.

AIIC: 63

An Apparent Impact Insulation Class (AIIC) of 63 and an Impact Sound Rating (ISR) of 70 was calculated. The AIIC rating is based on Absorption Normalized Impact Sound Pressure Level (ANISPL), and includes the effects of noise flanking. The AIIC reference contour is shown on the next page, and has been "fit" to the ANISPL values, in accordance with the procedure of ASTM E989-06(2012).

The results stated in this report represent only the specific construction and acoustical conditions present at the time of the test. Measurements performed in accordance with this test method on nominally identical constructions and acoustical conditions may produce different results.

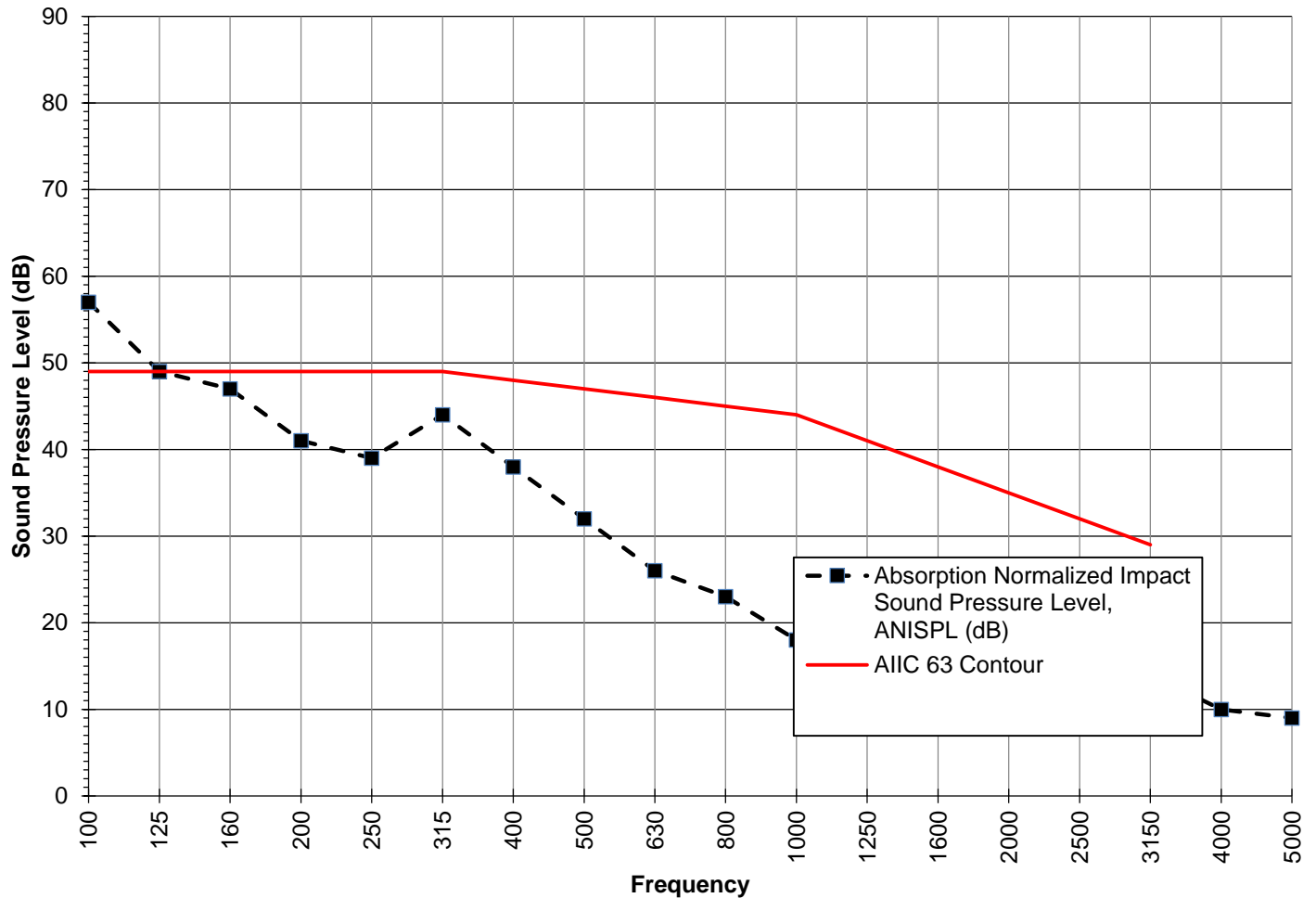
Field Impact Sound Transmission Test Report

Apparent Impact Insulation Class (AIIC)

Report Date: April 18, 2024
Test Date: April 04, 2024
DLAA Test No: 1.4.1

Source Room: 2nd Floor Bed 1, Volume: 1176 cu. ft.
Receiver Room: 1st Floor Bed 1, Volume: 1413 cu. ft.
Test Assembly: Floor-ceiling, Area: 130 sq. ft.

Test Site: Ka'ulu by Gentry
Client: Gentry Builders, LLC



AIIC: 63

Test Conducted By:

Zane Wright, Project Consultant

Jake Pfitsch, Project Consultant

Field Airborne Sound Transmission Test Report

Apparent Sound Transmission Class (ASTC)

Report Date:	April 05, 2024	Source Room:	2nd Floor Great Room, Volume: 3950 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Great Room/Kitchen, Volume: 3950 cu
DLAA Test No:	1.1.1	Test Assembly:	Floor-ceiling, Area: 428 sq. ft.
Test Site:	Ka'ulu by Gentry		
Client:	Gentry Builders, LLC		

STANDARDS

ASTM E336-16	Standard Test Method for Measurement of Airborne Sound Attenuation between Rooms in Buildings Classification for Rating Sound Insulation
ASTM E413-16 ASTM E2235-04(2012)	
	Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods

STATEMENT OF CONFORMANCE:

Testing was conducted in general accordance with ASTM E336-16, with all exceptions noted below. All requirements for measuring and reporting Apparent Transmission Loss (ATL) and Apparent Sound Transmission Class (ASTC) were met.

The procedures of ASTM E336-16 Annex were not used.

TEST ENVIRONMENT:

The source room was 2nd Floor Great Room. The space was finished, unfurnished. The floor was Carpet. The ceiling was gyp. The walls were gyp. All doors and windows were closed during the testing period. The source room had a volume of approximately 3950 cu. ft.

The receiver room was 1st Floor Great Room/Kitchen. The space was finished unfurnished. The floor was LVT. The ceiling was gyp. The walls were gyp. All doors and windows were closed during the testing period. The receiver room had a volume of approximately 3950 cu. ft.

The test assembly measured approximately 14.8x29.583, and had an approximate area of 428 sq. ft.

TEST ASSEMBLY:

The tested assembly was the Floor-ceiling The assembly was not field verified, and was based on information provided by the client and drawings for the project. The client advised that no slab treatment or self-leveling was applied. Results may vary if slab treatment or self-leveling or any adhesive is used in other installations.

Field Airborne Sound Transmission Test Report

Apparent Sound Transmission Class (ASTC)

Report Date:	April 05, 2024	Source Room:	2nd Floor Great Room, Volume: 3950 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Great Room/Kitchen, Volume: 3950 cu
DLAA Test No:	1.1.1	Test Assembly:	Floor-ceiling, Area: 428 sq. ft.
Test Site:	Ka'ulu by Gentry		
Client:	Gentry Builders, LLC		

TEST PROCEDURE:

Determination of space-average sound pressure levels was performed via the manually scanned microphones technique, described in ASTM E336-16, Paragraph 11.4.3.3.

Flanking transmission was not evaluated.

To evaluate room absorption, 1 microphone was used to measure 4 decays at 4 locations around the receiving room for a total of 16 measurements, per ASTM E2235-04(2012).

TEST INSTRUMENTATION:

Equipment Type	Manufacturer	Model Number	Serial Number	Last NIST Traceable Calibration	Last Local Calibration
Sound Level Meter 1	Larson Davis	831	3784	9/19/2022	Apr 2024
Microphone Pre-Amp:	Larson Davis	PRM831	051188	9/19/2022	Apr 2024
Microphone:	Larson Davis	377B20	301698	9/16/2022	Apr 2024
Calibrator:	Larson Davis	CAL200	2775671	9/19/2022	N/A
Sound Level Meter 2	Larson Davis	831	4328	10/24/2022	Apr 2024
Microphone Pre-Amp:	Larson Davis	PRM831	046469	10/24/2022	Apr 2024
Microphone:	Larson Davis	377B20	168830	10/20/2022	Apr 2024
Calibrator:	Larson Davis	CAL200	5955	10/26/2022	N/A
Amplified Loudspeakers (QTY 2)	QSC	K10	GAA530909	N/A	N/A
Noise Generator:	NTi Audio	MR-PRO	0162	N/A	N/A

Field Airborne Sound Transmission Test Report

Apparent Sound Transmission Class (ASTC)

Report Date:	April 05, 2024	Source Room:	2nd Floor Great Room, Volume: 3950 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Great Room/Kitchen, Volume: 3950 cu
DLAA Test No:	1.1.1	Test Assembly:	Floor-ceiling, Area: 428 sq. ft.

Test Site:	Ka'ulu by Gentry
Client:	Gentry Builders, LLC

STATEMENT OF TEST RESULTS:

Frequency	L1, Average Source Room Level (dB)	L2, Average Corrected Receiver Room Level (dB)	Average Receiver Background Level (dB)	Average RT60 (Seconds)	Noise Reduction, NR (dB)	Apparent Transmission Loss, ATL (dB)	Exceptions noted to ASTM E336-16
100 Hz	95.8	78.2	35.4	0.62	17.6	19.0	
125 Hz	95.0	79.5	39.2	0.85	15.5	18.2	
160 Hz	91.4	73.0	33.0	0.63	18.4	19.9	
200 Hz	90.0	65.6	37.1	1.00	24.4	27.8	
250 Hz	91.6	61.6	34.4	1.02	30.0	33.5	
315 Hz	89.7	57.6	33.7	1.14	32.1	36.1	
400 Hz	88.8	52.7	33.3	1.34	36.1	40.8	
500 Hz	84.7	47.5	32.5	1.26	37.2	41.7	
630 Hz	82.5	42.0	31.2	1.14	40.5	44.5	
800 Hz	84.5	39.9	30.6	1.12	44.6	48.5	
1000 Hz	83.0	33.7	29.6	1.29	49.3	53.9	
1250 Hz	83.8	30.4	28.9	1.46	53.4	58.5	
1600 Hz	81.4	28.2	28.5	1.52	53.2	58.5	
2000 Hz	79.8	25.5	24.9	1.46	54.3	59.4	
2500 Hz	82.4	22.1	20.6	1.39	60.3	65.2	
3150 Hz	84.0	19.6	18.5	1.40	64.4	69.3	
4000 Hz	85.0	17.7	17.6	1.39	67.3	72.2	
5000 Hz	84.3	16.1	15.1	1.32	68.2	72.8	

ASTC: 41

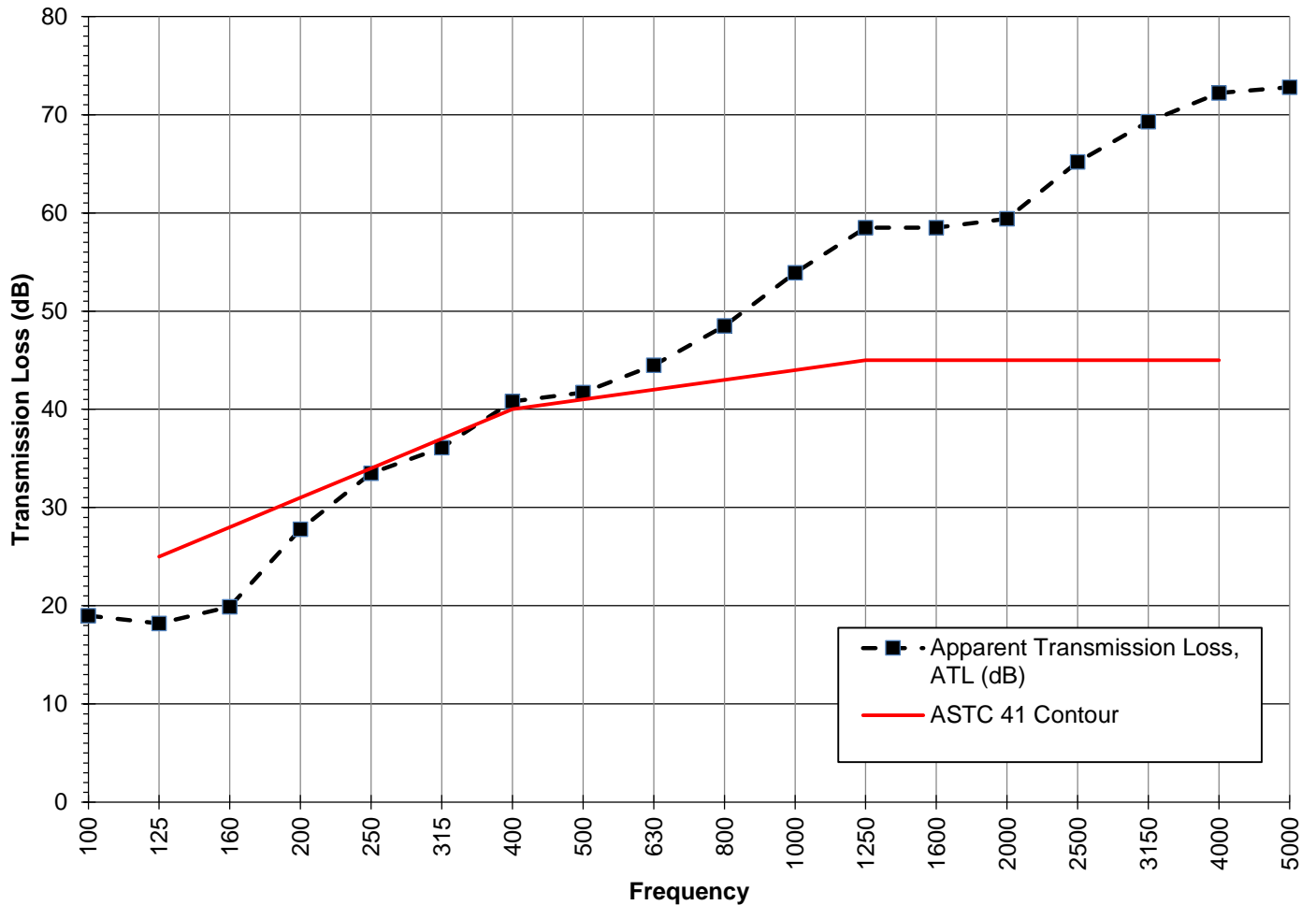
An Apparent Sound Transmission Class (ASTC) of 41, and a Noise Isolation Class (NIC) of 39 was calculated. The NIC rating is based on Noise Reduction (NR), and includes the effects of noise flanking. The NIC reference contour is shown on the next page, and has been "fit" to the Apparent Transmission Loss values, in accordance with the procedure of ASTM E413-16.

The results stated in this report represent only the specific construction and acoustical conditions present at the time of the test. Measurements performed in accordance with this test method on nominally identical constructions and acoustical conditions may produce different results.

Field Airborne Sound Transmission Test Report

Apparent Sound Transmission Class (ASTC)

Report Date:	April 05, 2024	Source Room:	2nd Floor Great Room, Volume: 3950 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Great Room/Kitchen, Volume: 3950 cu
DLAA Test No:	1.1.1	Test Assembly:	Floor-ceiling, Area: 428 sq. ft.
Test Site:	Ka'ulu by Gentry		
Client:	Gentry Builders, LLC		



ASTC: 41

Test Conducted By:

Zane Wright, Project Consultant

Jake Pfitsch, Project Consultant

Field Airborne Sound Transmission Test Report

Apparent Sound Transmission Class (ASTC)

Report Date:	April 05, 2024	Source Room:	2nd Floor Kitchen, Volume: 3950 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Great Room/Kitchen, Volume: 3950 cu
DLAA Test No:	1.2.1	Test Assembly:	Floor-ceiling, Area: 428 sq. ft.
Test Site:	Ka'ulu by Gentry		
Client:	Gentry Builders, LLC		

STANDARDS

ASTM E336-16	Standard Test Method for Measurement of Airborne Sound Attenuation between Rooms in Buildings
ASTM E413-16	Classification for Rating Sound Insulation
ASTM E2235-04(2012)	Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods

STATEMENT OF CONFORMANCE:

Testing was conducted in general accordance with ASTM E336-16, with all exceptions noted below. All requirements for measuring and reporting Apparent Transmission Loss (ATL) and Apparent Sound Transmission Class (ASTC) were met.

The procedures of ASTM E336-16 Annex were not used.

TEST ENVIRONMENT:

The source room was 2nd Floor Kitchen. The space was finished unfurnished. The floor was LVT. The ceiling was gyp. The walls were gyp. All doors and windows were closed during the testing period. The source room had a volume of approximately 3950 cu. ft.

The receiver room was 1st Floor Great Room/Kitchen. The space was finished unfurnished. The floor was LVT. The ceiling was gyp. The walls were gyp. All doors and windows were closed during the testing period. The receiver room had a volume of approximately 3950 cu. ft.

The test assembly measured approximately 14.8x29.583, and had an approximate area of 428 sq. ft.

TEST ASSEMBLY:

The tested assembly was the Floor-ceiling. The assembly was not field verified, and was based on information provided by the client and drawings for the project. The client advised that no slab treatment or self-leveling was applied. Results may vary if slab treatment or self-leveling or any adhesive is used in other installations.

Field Airborne Sound Transmission Test Report

Apparent Sound Transmission Class (ASTC)

Report Date:	April 05, 2024	Source Room:	2nd Floor Kitchen, Volume: 3950 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Great Room/Kitchen, Volume: 3950 cu
DLAA Test No:	1.2.1	Test Assembly:	Floor-ceiling, Area: 428 sq. ft.
Test Site:	Ka'ulu by Gentry		
Client:	Gentry Builders, LLC		

TEST PROCEDURE:

Determination of space-average sound pressure levels was performed via the manually scanned microphones technique, described in ASTM E336-16, Paragraph 11.4.3.3.

Flanking transmission was not evaluated.

To evaluate room absorption, 1 microphone was used to measure 4 decays at 4 locations around the receiving room for a total of 16 measurements, per ASTM E2235-04(2012).

TEST INSTRUMENTATION:

Equipment Type	Manufacturer	Model Number	Serial Number	Last NIST Traceable Calibration	Last Local Calibration
Sound Level Meter 1	Larson Davis	831	3784	9/19/2022	Apr 2024
Microphone Pre-Amp:	Larson Davis	PRM831	051188	9/19/2022	Apr 2024
Microphone:	Larson Davis	377B20	301698	9/16/2022	Apr 2024
Calibrator:	Larson Davis	CAL200	2775671	9/19/2022	N/A
Sound Level Meter 2	Larson Davis	831	4328	10/24/2022	Apr 2024
Microphone Pre-Amp:	Larson Davis	PRM831	046469	10/24/2022	Apr 2024
Microphone:	Larson Davis	377B20	168830	10/20/2022	Apr 2024
Calibrator:	Larson Davis	CAL200	5955	10/26/2022	N/A
Amplified Loudspeakers (QTY 2)	QSC	K10	GAA530909	N/A	N/A
Noise Generator:	NTi Audio	MR-PRO	0162	N/A	N/A

Field Airborne Sound Transmission Test Report

Apparent Sound Transmission Class (ASTC)

Report Date:	April 05, 2024	Source Room:	2nd Floor Kitchen, Volume: 3950 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Great Room/Kitchen, Volume: 3950 cu
DLAA Test No:	1.2.1	Test Assembly:	Floor-ceiling, Area: 428 sq. ft.

Test Site:	Ka'ulu by Gentry
Client:	Gentry Builders, LLC

STATEMENT OF TEST RESULTS:

Frequency	L1, Average Source Room Level (dB)	L2, Average Corrected Receiver Room Level (dB)	Average Receiver Background Level (dB)	Average RT60 (Seconds)	Noise Reduction, NR (dB)	Apparent Transmission Loss, ATL (dB)	Exceptions noted to ASTM E336-16
100 Hz	95.8	78.2	35.4	0.62	17.6	19.0	
125 Hz	95.0	79.5	39.2	0.85	15.5	18.2	
160 Hz	91.4	73.0	33.0	0.63	18.4	19.9	
200 Hz	90.0	65.6	37.1	1.00	24.4	27.8	
250 Hz	91.6	61.6	34.4	1.02	30.0	33.5	
315 Hz	89.7	57.6	33.7	1.14	32.1	36.1	
400 Hz	88.8	52.7	33.3	1.34	36.1	40.8	
500 Hz	84.7	47.5	32.5	1.26	37.2	41.7	
630 Hz	82.5	42.0	31.2	1.14	40.5	44.5	
800 Hz	84.5	39.9	30.6	1.12	44.6	48.5	
1000 Hz	83.0	33.7	29.6	1.29	49.3	53.9	
1250 Hz	83.8	30.4	28.9	1.46	53.4	58.5	
1600 Hz	81.4	28.2	28.5	1.52	53.2	58.5	
2000 Hz	79.8	25.5	24.9	1.46	54.3	59.4	
2500 Hz	82.4	22.1	20.6	1.39	60.3	65.2	
3150 Hz	84.0	19.6	18.5	1.40	64.4	69.3	
4000 Hz	85.0	17.7	17.6	1.39	67.3	72.2	
5000 Hz	84.3	16.1	15.1	1.32	68.2	72.8	

ASTC: 41

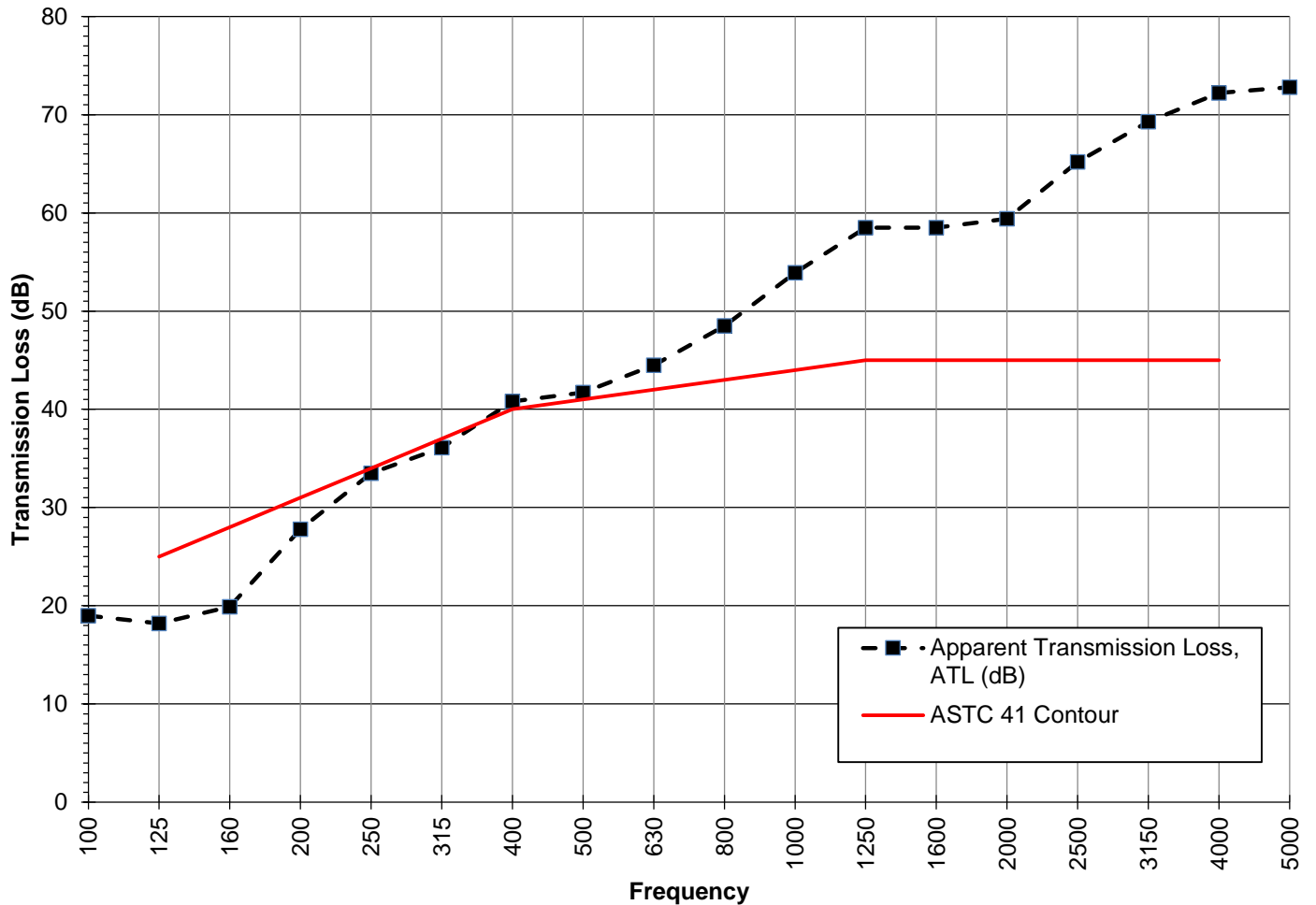
An Apparent Sound Transmission Class (ASTC) of 41, and a Noise Isolation Class (NIC) of 39 was calculated. The NIC rating is based on Noise Reduction (NR), and includes the effects of noise flanking. The NIC reference contour is shown on the next page, and has been "fit" to the Apparent Transmission Loss values, in accordance with the procedure of ASTM E413-16.

The results stated in this report represent only the specific construction and acoustical conditions present at the time of the test. Measurements performed in accordance with this test method on nominally identical constructions and acoustical conditions may produce different results.

Field Airborne Sound Transmission Test Report

Apparent Sound Transmission Class (ASTC)

Report Date:	April 05, 2024	Source Room:	2nd Floor Kitchen, Volume: 3950 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Great Room/Kitchen, Volume: 3950 cu
DLAA Test No:	1.2.1	Test Assembly:	Floor-ceiling, Area: 428 sq. ft.
Test Site:	Ka'ulu by Gentry		
Client:	Gentry Builders, LLC		



ASTC: 41

Test Conducted By:

Zane Wright, Project Consultant

Jake Pfitsch, Project Consultant

Field Airborne Sound Transmission Test Report

Apparent Sound Transmission Class (ASTC)

Report Date:	April 05, 2024	Source Room:	2nd Floor Bed 3, Volume: 800 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Bed 2, Volume: 1410 cu. ft.
DLAA Test No:	1.3.1	Test Assembly:	Floor-ceiling, Area: 88 sq. ft.
Test Site:	Ka'ulu by Gentry		
Client:	Gentry Builders, LLC		

STANDARDS

ASTM E336-16	Standard Test Method for Measurement of Airborne Sound Attenuation between Rooms in Buildings Classification for Rating Sound Insulation
ASTM E413-16	
ASTM E2235-04(2012)	Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods

STATEMENT OF CONFORMANCE:

Testing was conducted in general accordance with ASTM E336-16, with all exceptions noted below. All requirements for measuring and reporting Apparent Transmission Loss (ATL) and Apparent Sound Transmission Class (ASTC) were met.

The procedures of ASTM E336-16 Annex were not used.

TEST ENVIRONMENT:

The source room was 2nd Floor Bed 3. The space was finished, unfurnished. The floor was Carpet. The ceiling was gyp. The walls were gyp. All doors and windows were closed during the testing period. The source room had a volume of approximately 800 cu. ft.

The receiver room was 1st Floor Bed 2. The space was finished unfurnished. The floor was LVT. The ceiling was gyp. The walls were gyp. All doors and windows were closed during the testing period. The receiver room had a volume of approximately 1410 cu. ft.

The test assembly measured approximately 9x9.8, and had an approximate area of 88 sq. ft.

TEST ASSEMBLY:

The tested assembly was the Floor-ceiling. The assembly was not field verified, and was based on information provided by the client and drawings for the project. The client advised that no slab treatment or self-leveling was applied. Results may vary if slab treatment or self-leveling or any adhesive is used in other installations.

Field Airborne Sound Transmission Test Report

Apparent Sound Transmission Class (ASTC)

Report Date:	April 05, 2024	Source Room:	2nd Floor Bed 3, Volume: 800 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Bed 2, Volume: 1410 cu. ft.
DLAA Test No:	1.3.1	Test Assembly:	Floor-ceiling, Area: 88 sq. ft.

Test Site:	Ka'ulu by Gentry
Client:	Gentry Builders, LLC

TEST PROCEDURE:

Determination of space-average sound pressure levels was performed via the manually scanned microphones technique, described in ASTM E336-16, Paragraph 11.4.3.3.

Flanking transmission was not evaluated.

To evaluate room absorption, 1 microphone was used to measure 4 decays at 4 locations around the receiving room for a total of 16 measurements, per ASTM E2235-04(2012).

TEST INSTRUMENTATION:

Equipment Type	Manufacturer	Model Number	Serial Number	Last NIST Traceable Calibration	Last Local Calibration
Sound Level Meter 1	Larson Davis	831	3784	9/19/2022	Apr 2024
Microphone Pre-Amp:	Larson Davis	PRM831	051188	9/19/2022	Apr 2024
Microphone:	Larson Davis	377B20	301698	9/16/2022	Apr 2024
Calibrator:	Larson Davis	CAL200	2775671	9/19/2022	N/A
Sound Level Meter 2	Larson Davis	831	4328	10/24/2022	Apr 2024
Microphone Pre-Amp:	Larson Davis	PRM831	046469	10/24/2022	Apr 2024
Microphone:	Larson Davis	377B20	168830	10/20/2022	Apr 2024
Calibrator:	Larson Davis	CAL200	5955	10/26/2022	N/A
Amplified Loudspeakers (QTY 2)	QSC	K10	GAA530909	N/A	N/A
Noise Generator:	NTi Audio	MR-PRO	0162	N/A	N/A

Field Airborne Sound Transmission Test Report

Apparent Sound Transmission Class (ASTC)

Report Date:	April 05, 2024	Source Room:	2nd Floor Bed 3, Volume: 800 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Bed 2, Volume: 1410 cu. ft.
DLAA Test No:	1.3.1	Test Assembly:	Floor-ceiling, Area: 88 sq. ft.

Test Site:	Ka'ulu by Gentry
Client:	Gentry Builders, LLC

STATEMENT OF TEST RESULTS:

Frequency	L1, Average Source Room Level (dB)	L2, Average Corrected Receiver Room Level (dB)	Average Receiver Background Level (dB)	Average RT60 (Seconds)	Noise Reduction, NR (dB)	Apparent Transmission Loss, ATL (dB)	Exceptions noted to ASTM E336-16
100 Hz	96.1	76.2	31.9	0.63	19.9	18.9	
125 Hz	96.0	78.6	33.2	0.77	17.4	17.3	
160 Hz	92.9	67.9	35.2	0.57	25.0	23.6	
200 Hz	88.8	61.6	36.9	0.75	27.2	27.0	
250 Hz	87.8	60.2	30.5	1.44	27.6	30.2	
315 Hz	88.4	52.3	27.9	0.97	36.1	37.0	
400 Hz	88.4	50.3	23.0	1.08	38.1	39.5	
500 Hz	84.2	45.2	21.1	1.16	39.0	40.7	
630 Hz	82.1	44.6	20.7	1.06	37.5	38.8	
800 Hz	84.2	44.7	19.8	1.00	39.5	40.6	
1000 Hz	82.2	41.4	18.6	1.08	40.8	42.2	
1250 Hz	82.8	34.3	16.2	1.21	48.5	50.4	
1600 Hz	80.1	33.6	14.8	1.26	46.5	48.6	
2000 Hz	78.6	31.1	11.0	1.23	47.5	49.4	
2500 Hz	81.0	27.3	9.0	1.10	53.7	55.2	
3150 Hz	82.5	30.6	8.4	1.00	51.9	52.9	
4000 Hz	83.3	29.5	11.2	1.05	53.8	55.1	
5000 Hz	82.7	23.7	9.8	1.01	59.0	60.1	

ASTC: 41

An Apparent Sound Transmission Class (ASTC) of 41, and a Noise Isolation Class (NIC) of 40 was calculated. The NIC rating is based on Noise Reduction (NR), and includes the effects of noise flanking. The NIC reference contour is shown on the next page, and has been "fit" to the Apparent Transmission Loss values, in accordance with the procedure of ASTM E413-16.

The results stated in this report represent only the specific construction and acoustical conditions present at the time of the test. Measurements performed in accordance with this test method on nominally identical constructions and acoustical conditions may produce different results.

Field Airborne Sound Transmission Test Report

Apparent Sound Transmission Class (ASTC)

Report Date:
Test Date:
DLAA Test No:

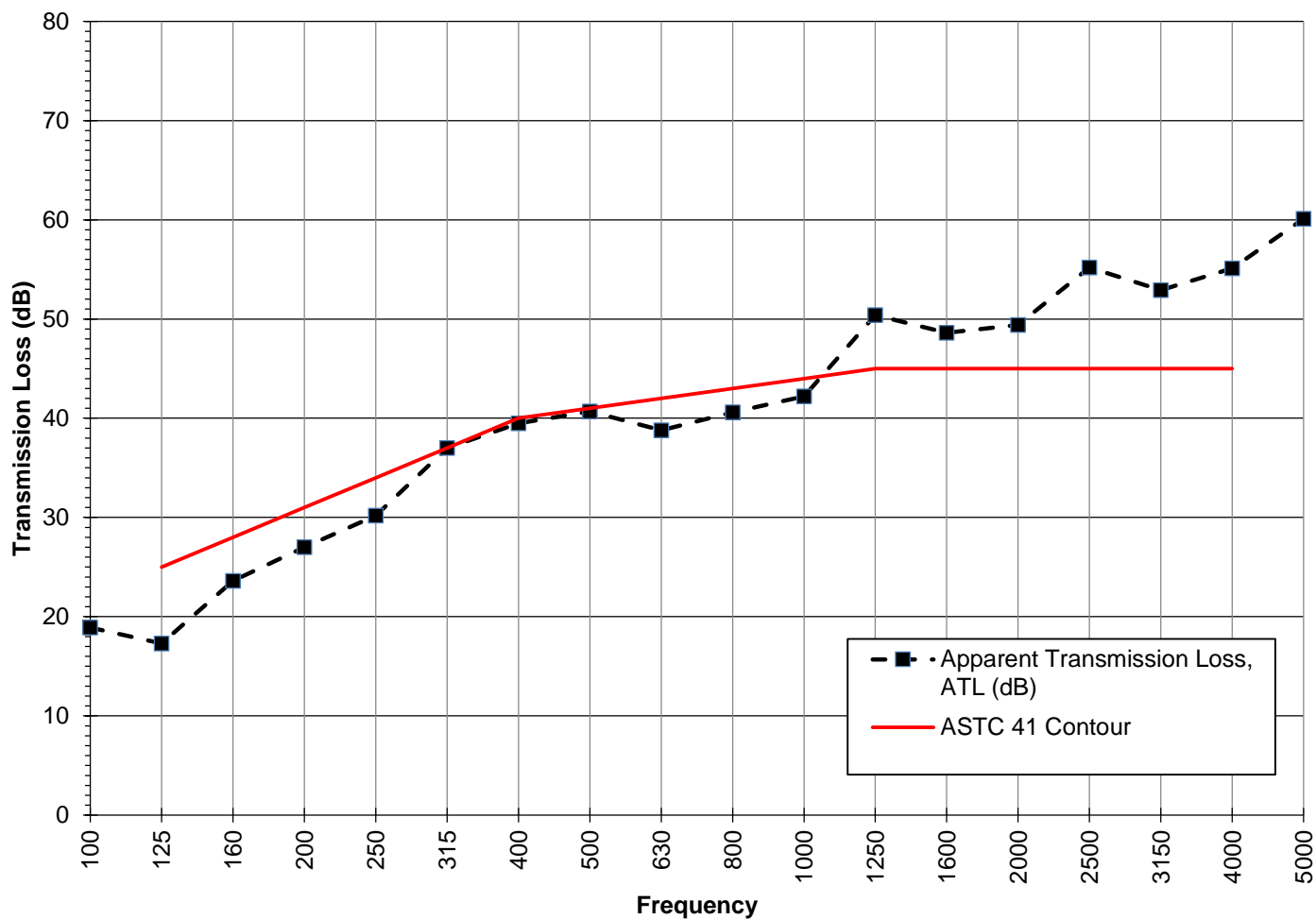
April 05, 2024
April 04, 2024
1.3.1

Source Room:
Receiver Room:
Test Assembly:

2nd Floor Bed 3, Volume: 800 cu. ft.
1st Floor Bed 2, Volume: 1410 cu. ft.
Floor-ceiling, Area: 88 sq. ft.

Test Site:
Client:

Ka'ulu by Gentry
Gentry Builders, LLC



ASTC: 41

Test Conducted By:

Zane Wright, Project Consultant

Jake Pfitsch, Project Consultant

Field Airborne Sound Transmission Test Report

Apparent Sound Transmission Class (ASTC)

Report Date:	April 05, 2024	Source Room:	2nd Floor Bed 1, Volume: 1180 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Bed 1, Volume: 1410 cu. ft.
DLAA Test No:	1.4.1	Test Assembly:	Floor-ceiling, Area: 130 sq. ft.
Test Site:	Ka'ulu by Gentry		
Client:	Gentry Builders, LLC		

STANDARDS

ASTM E336-16	Standard Test Method for Measurement of Airborne Sound Attenuation between Rooms in Buildings
ASTM E413-16	Classification for Rating Sound Insulation
ASTM E2235-04(2012)	Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods

STATEMENT OF CONFORMANCE:

Testing was conducted in general accordance with ASTM E336-16, with all exceptions noted below. All requirements for measuring and reporting Apparent Transmission Loss (ATL) and Apparent Sound Transmission Class (ASTC) were met.

The procedures of ASTM E336-16 Annex were not used.

TEST ENVIRONMENT:

The source room was 2nd Floor Bed 1. The space was finished, unfurnished. The floor was Carpet. The ceiling was gyp. The walls were gyp. All doors and windows were closed during the testing period. The source room had a volume of approximately 1180 cu. ft.

The receiver room was 1st Floor Bed 1. The space was finished, unfurnished. The floor was LVT. The ceiling was gyp. The walls were gyp. All doors and windows were closed during the testing period. The receiver room had a volume of approximately 1410 cu. ft.

The test assembly measured approximately 12.3x10.6, and had an approximate area of 130 sq. ft.

TEST ASSEMBLY:

The tested assembly was the Floor-ceiling. The assembly was not field verified, and was based on information provided by the client and drawings for the project. The client advised that no slab treatment or self-leveling was applied. Results may vary if slab treatment or self-leveling or any adhesive is used in other installations.

Field Airborne Sound Transmission Test Report

Apparent Sound Transmission Class (ASTC)

Report Date:	April 05, 2024	Source Room:	2nd Floor Bed 1, Volume: 1180 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Bed 1, Volume: 1410 cu. ft.
DLAA Test No:	1.4.1	Test Assembly:	Floor-ceiling, Area: 130 sq. ft.

Test Site:	Ka'ulu by Gentry
Client:	Gentry Builders, LLC

TEST PROCEDURE:

Determination of space-average sound pressure levels was performed via the manually scanned microphones technique, described in ASTM E336-16, Paragraph 11.4.3.3.

Flanking transmission was not evaluated.

To evaluate room absorption, 1 microphone was used to measure 4 decays at 4 locations around the receiving room for a total of 16 measurements, per ASTM E2235-04(2012).

TEST INSTRUMENTATION:

Equipment Type	Manufacturer	Model Number	Serial Number	Last NIST Traceable Calibration	Last Local Calibration
Sound Level Meter 1	Larson Davis	831	3784	9/19/2022	Apr 2024
Microphone Pre-Amp:	Larson Davis	PRM831	051188	9/19/2022	Apr 2024
Microphone:	Larson Davis	377B20	301698	9/16/2022	Apr 2024
Calibrator:	Larson Davis	CAL200	2775671	9/19/2022	N/A
Sound Level Meter 2	Larson Davis	831	4328	10/24/2022	Apr 2024
Microphone Pre-Amp:	Larson Davis	PRM831	046469	10/24/2022	Apr 2024
Microphone:	Larson Davis	377B20	168830	10/20/2022	Apr 2024
Calibrator:	Larson Davis	CAL200	5955	10/26/2022	N/A
Amplified Loudspeakers (QTY 2)	QSC	K10	GAA530909	N/A	N/A
Noise Generator:	NTi Audio	MR-PRO	0162	N/A	N/A

Field Airborne Sound Transmission Test Report

Apparent Sound Transmission Class (ASTC)

Report Date:	April 05, 2024	Source Room:	2nd Floor Bed 1, Volume: 1180 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Bed 1, Volume: 1410 cu. ft.
DLAA Test No:	1.4.1	Test Assembly:	Floor-ceiling, Area: 130 sq. ft.

Test Site:	Ka'ulu by Gentry
Client:	Gentry Builders, LLC

STATEMENT OF TEST RESULTS:

Frequency	L1, Average Source Room Level (dB)	L2, Average Corrected Receiver Room Level (dB)	Average Receiver Background Level (dB)	Average RT60 (Seconds)	Noise Reduction, NR (dB)	Apparent Transmission Loss, ATL (dB)	Exceptions noted to ASTM E336-16
100 Hz	97.3	78.2	39.7	0.73	19.1	20.5	
125 Hz	93.8	71.5	38.6	0.66	22.3	23.3	
160 Hz	93.2	69.3	34.0	0.57	23.9	24.2	
200 Hz	88.3	58.2	38.4	0.86	30.1	32.2	
250 Hz	89.8	55.3	34.2	1.59	34.5	39.3	
315 Hz	89.6	51.9	25.8	1.17	37.7	41.1	
400 Hz	89.4	52.4	23.5	1.32	37.0	40.9	
500 Hz	84.5	46.5	23.8	1.47	38.0	42.4	
630 Hz	83.6	41.1	21.1	1.34	42.5	46.5	
800 Hz	85.1	39.0	19.2	1.22	46.1	49.7	
1000 Hz	83.0	37.3	19.3	1.35	45.7	49.8	
1250 Hz	83.6	29.9	16.5	1.50	53.7	58.2	
1600 Hz	81.0	27.1	14.7	1.64	53.9	58.8	
2000 Hz	79.6	25.2	11.9	1.57	54.4	59.1	
2500 Hz	82.2	23.7	10.2	1.46	58.5	62.9	
3150 Hz	83.7	19.7	9.4	1.26	64.0	67.7	
4000 Hz	84.5	13.8	11.9	1.33	70.7	74.7	
5000 Hz	83.8	12.1	10.6	1.36	71.7	75.8	

ASTC: 45

An Apparent Sound Transmission Class (ASTC) of 45, and a Noise Isolation Class (NIC) of 43 was calculated. The NIC rating is based on Noise Reduction (NR), and includes the effects of noise flanking. The NIC reference contour is shown on the next page, and has been "fit" to the Apparent Transmission Loss values, in accordance with the procedure of ASTM E413-16.

The results stated in this report represent only the specific construction and acoustical conditions present at the time of the test. Measurements performed in accordance with this test method on nominally identical constructions and acoustical conditions may produce different results.

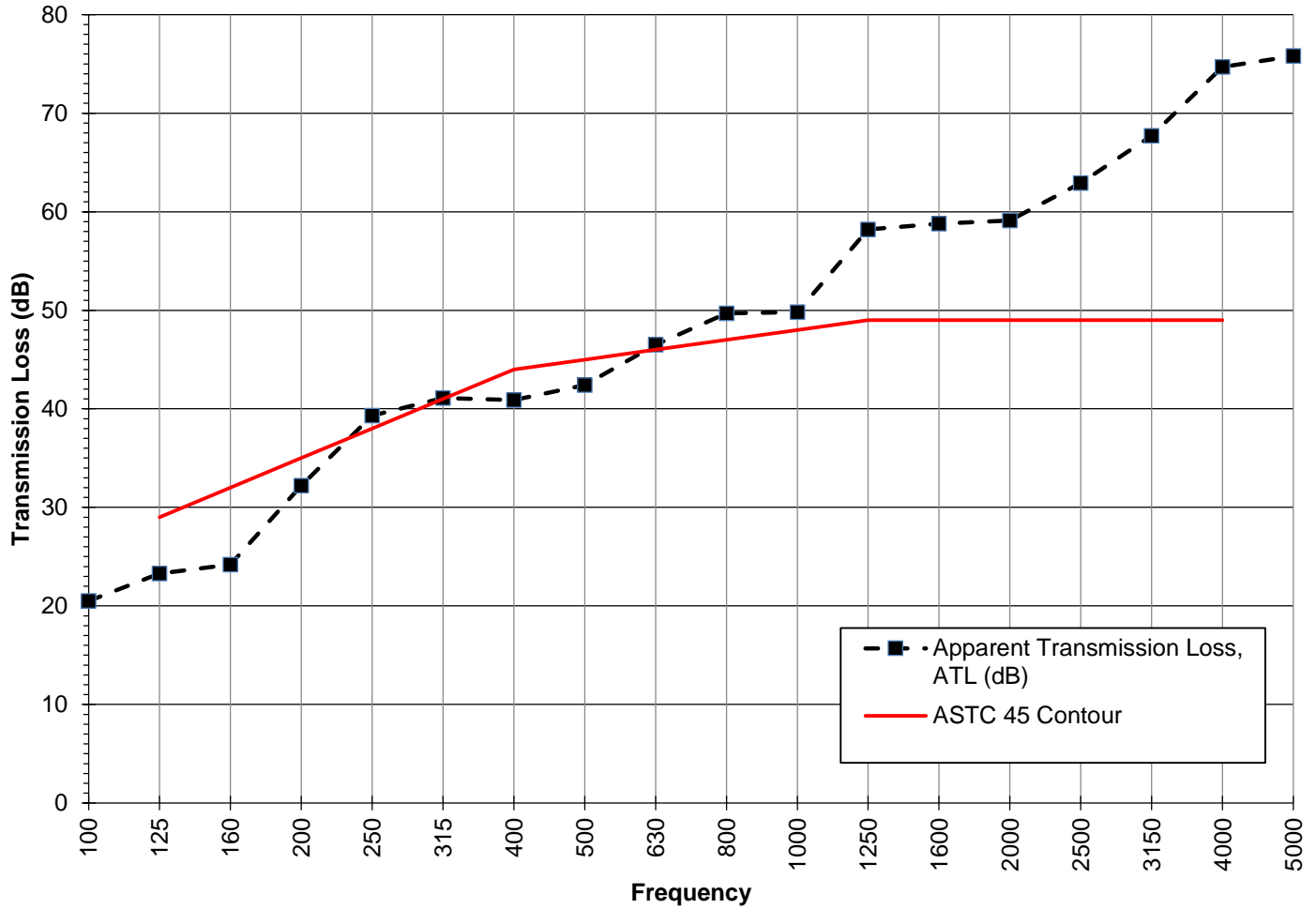
Field Airborne Sound Transmission Test Report

Apparent Sound Transmission Class (ASTC)

Report Date: April 05, 2024
Test Date: April 04, 2024
DLAA Test No: 1.4.1

Source Room: 2nd Floor Bed 1, Volume: 1180 cu. ft.
Receiver Room: 1st Floor Bed 1, Volume: 1410 cu. ft.
Test Assembly: Floor-ceiling, Area: 130 sq. ft.

Test Site: Ka'ulu by Gentry
Client: Gentry Builders, LLC



ASTC: 45

Test Conducted By:

Zane Wright, Project Consultant

Jake Pfitsch, Project Consultant



D. L. ADAMS
ASSOCIATES

acoustics | performing arts | technology

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April 18, 2024

Jonathan Kam
Gentry Builders, LLC
733 Bishop Street, Suite 1400
Honolulu, HI 96813

RE: Ka'ulu by Gentry ASTC-AIIC Testing - Acoustical Testing Results – (DLAA# 24-004)

Jonathan:

DLAA has conducted four ASTM E336-17a and ASTM E1007-16 tests at the Ka'ulu by Gentry project in Kapolei, Hawaii on Thursday April 4, 2024. The three floor/ceiling assemblies tested were between the living and bedroom areas of Building 18, Unit 1 and 2.

Acoustical Concepts and Definitions

Airborne Noise

The Sound Transmission Class (STC) is a single-number rating which grades how well an assembly attenuates airborne noise, such as conversation. STC is measured according to ASTM E90 and classified according to ASTM E413. The higher the STC rating, the more efficient the partition is at reducing airborne noise between spaces. STC is only determined in a laboratory where all paths by which sound could travel around the test specimen are strictly controlled, ensuring the measured sound is only that which travels through the test specimen. Field ratings of airborne sound isolation are measured according to ASTM E336-17a and classified according to ASTM E413. According to ASTM E336-17a, the "Standard Method for Measurement of Sound Isolation in Buildings", measurements of a partition in the field include all elements in the assembly that would otherwise be absent in a laboratory. The effects of site-specific field conditions are included in the field metric Apparent Sound Transmission Class (ASTC). The ASTC rating of a construction element is typically specified 5 points less than the corresponding laboratory rating.

Impact Noise

The Impact Insulation Class (IIC) is a single-number rating which grades how well a floor/ceiling assembly attenuates impact noise, such as footsteps. The higher the IIC rating, the more efficient the partition is at reducing impact noise between spaces. It should be noted that the IIC rating is limited in that it does not address low frequency noise below 125 Hz. This is generally not a concern when with concrete and/or steel structures. Field measurements of impact noise are classified as Apparent Impact Insulation Class (AIIC). Field measurements determine a single-number Apparent Impact Insulation Class (AIIC) rating, which is typically allowed to be 5 points less than the corresponding laboratory IIC rating. For example, a

floor/ceiling assembly with IIC 55 and AIIC 50 ratings would be considered to have equivalent impact insulation performance.

Testing Procedure & Equipment

Impact sound insulation was measured in general accordance with ASTM E1007-16, Standard Test Method for Field Measurement of Tapping Machine Impact Sound Transmission Through Floor-Ceiling Assemblies and Associated Support Structures. Impact sound insulation ratings are determined in accordance with ASTM E989-06 (2012), Standard Classification for Determination of Impact Insulation Class (IIC). The results include a single-number Apparent Impact Insulation Class (AIIC) rating.

Equipment used for AIIC testing included a Larson Davis Model 831 Type 1 Precision Integrating Sound Level Meter (S/N 004328) with a PCB Model PRM831 preamplifier (S/N 046469) and PCB Model 377B20 ½” random incidence microphone (S/N 168830). The sound level meter calibration was verified with a Larson Davis Model CAL200 (S/N 5955) before all measurements and at the conclusion of all measurements. The tapping machine is a Norsonic Model Nor-277 (S/N 2775671).

Test Conditions

The purpose of these tests was to analyze the performance of resilient underlayment for the Hardwood and Carpet floor surfaces, as well as the ASTC performance of their assembly. The tested floor/ceiling constructions are as follows:

Unit 2

The floor/ceiling assembly in Unit 2 can be described as follows:

- One (1) layer Hardwood flooring in kitchen area, one (1) layer of carpet in Great Room, hallways and Bedrooms.
- ½” Exacor Underlayment
- Wood Truss Joist construction – R19 Batt insulation secured against subfloor
- (2) Layer 5/8” Type-X gypsum board with Resilient Channels.

Unit 1

The floor assembly in Unit 1 can be described as follows:

- One (1) layer Hardwood vinyl floor throughout Kitchen, Great Room and Bedrooms.
- Slab on grade concrete.

Test Results Summary

A summary of the tests is provided here, and the detailed test results for each test are attached.

Table 1: AIIC/ASTC Test Results

Test No.	Adjacency Tested	AIIC Result	ASTC Result
1.1	Unit 2 Great Room, Carpet to Unit 1 Great Room/Kitchen	66	41
1.2	Unit 2 Kitchen, Hardwood to Unit 1 Great Room/Kitchen	38	41
1.3	Unit 2 Bed 3, Carpet to Unit 1 Bed 2	68	41
1.4	Unit 2 Bed 1, Carpet to Unit 1 Bed 1	63	45

Please let us know if you have any questions.

Sincerely,



Jake Pfitsch
Staff Consultant
Encl: Test Results Reports

Field Impact Sound Transmission Test Report

Apparent Impact Insulation Class (AIIIC)

Report Date:	April 18, 2024	Source Room:	2nd Floor Great Room, Volume: 3949 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Great Room/Kitchen, Volume: 3949 cu. ft.
DLAA Test No:	1.1.1	Test Assembly:	Floor-ceiling, Area: 428 sq. ft.
Test Site:	Ka'ulu by Gentry		
Client:	Gentry Builders, LLC		

STANDARDS

ASTM E1007-14	Standard Test Method for Field Measurement of Tapping Machine Impact Sound Transmission Through Floor-Ceiling Assemblies and Associated Support Structure
ASTM E989-06(2012)	Standard Classification for Determination of Impact Insulation Class (IIC)
ASTM E2235-04(2012)	Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods

STATEMENT OF CONFORMANCE:

Testing was conducted in general accordance with ASTM E1007-14, with all exceptions noted below. All requirements for measuring and reporting Absorption Normalized Impact Sound Pressure Level (ANISPL) and Apparent Impact Insulation Class (AIIIC) were met.

TEST ENVIRONMENT:

The source room was 2nd Floor Great Room. The space was finished, unfurnished. The floor was Carpet. The ceiling was gyp. The walls were gyp. All doors and windows were closed during the testing period. The source room had a volume of approximately 3949 cu. ft.

The receiver room was 1st Floor Great Room/Kitchen. The space was finished unfurnished. The floor was LVT. The ceiling was gyp. The walls were gyp. All doors and windows were closed during the testing period. The receiver room had a volume of approximately 3949 cu. ft.

The test assembly measured approximately 14.8x29.583, and had an approximate area of 428 sq. ft.

TEST ASSEMBLY:

The tested assembly was the Floor-ceiling. The assembly was not field verified, and was based on information provided by the client and drawings for the project. The client advised that no slab treatment or self-leveling was applied. Results may vary if slab treatment or self-leveling or any adhesive is used in other installations.

Field Impact Sound Transmission Test Report

Apparent Impact Insulation Class (AIIIC)

Report Date:	April 18, 2024	Source Room:	2nd Floor Great Room, Volume: 3949 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Great Room/Kitchen, Volume: 3949 cu. ft.
DLAA Test No:	1.1.1	Test Assembly:	Floor-ceiling, Area: 428 sq. ft.

Test Site:	Ka'ulu by Gentry
Client:	Gentry Builders, LLC

TEST PROCEDURE:

The test was performed in general accordance with ASTM E1007-14. Determination of Space-Average Levels performed via the manually scanned microphones technique, described in ASTM E1007-14, Paragraph 11.4.2.2.

Flanking transmission was not evaluated.

To evaluate room absorption, 1 microphone was used to measure 4 decays at 4 locations around the receiving room for a total of 16 measurements, per ASTM E2235-04(2012).

TEST INSTRUMENTATION:

Equipment Type	Manufacturer	Model Number	Serial Number	Last NIST Traceable Calibration	Last Local Calibration
Tapping Machine:	Norsonics	CAL200	2775671	9/19/2022	N/A
Sound Level Meter	Larson Davis	831	4328	10/24/2022	4/4/2024
Microphone Pre-Amp	Larson Davis	PRM831	046469	10/24/2022	4/4/2024
Microphone	Larson Davis	377B20	168830	10/20/2022	4/4/2024
Calibrator	Larson Davis	CAL200	5955	10/26/2022	N/A
Amplified Loudspeaker	QSC	K10	GAA530909	N/A	N/A
Noise Generator	NTi Audio	MR-PRO	0162	N/A	N/A

Field Impact Sound Transmission Test Report

Apparent Impact Insulation Class (AIIC)

Report Date:	April 18, 2024	Source Room:	2nd Floor Great Room, Volume: 3949 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Great Room/Kitchen, Volume: 3949 cu. ft.
DLAA Test No:	1.1.1	Test Assembly:	Floor-ceiling, Area: 428 sq. ft.
Test Site:	Ka'ulu by Gentry		
Client:	Gentry Builders, LLC		

STATEMENT OF TEST RESULTS:

Frequency	Absorption Normalized Impact Sound Pressure Level, ANISPL (dB)	Average Receiver Background Level	Average RT60 (Seconds)	Exceptions noted to ASTM E1007-14	
100 Hz	54.0	35.4	0.62		
125 Hz	51.0	39.2	0.85		2
160 Hz	47.0	33.0	0.63		2
200 Hz	40.0	37.1	1.00	1	2
250 Hz	44.0	34.4	1.02		2
315 Hz	48.0	33.7	1.14		2
400 Hz	40.0	33.3	1.34		2
500 Hz	33.0	32.5	1.26	1	2
630 Hz	30.0	31.2	1.14	1	2
800 Hz	29.0	30.6	1.12	1	2
1000 Hz	27.0	29.6	1.29	1	
1250 Hz	26.0	28.9	1.46	1	
1600 Hz	26.0	28.5	1.52	1	
2000 Hz	23.0	24.9	1.46	1	
2500 Hz	20.0	20.6	1.39	1	
3150 Hz	19.0	18.5	1.40	1	
4000 Hz	18.0	17.6	1.39		
5000 Hz	17.0	15.1	1.32		

*This test does not fully conform to the requirements of ASTM E1007-13, so the calculated AIIC rating should be considered a minimum.

Notes:

1. The signal-to-noise ratio is less < 5 dB at this frequency band.
2. Airborne sound flanking is within 10 dB of impact sound pressure measurements at this frequency band.

AIIC: 66

An Apparent Impact Insulation Class (AIIC) of 66 and an Impact Sound Rating (ISR) of 71 was calculated. The AIIC rating is based on Absorption Normalized Impact Sound Pressure Level (ANISPL), and includes the effects of noise flanking. The AIIC reference contour is shown on the next page, and has been "fit" to the ANISPL values, in accordance with the procedure of ASTM E989-06(2012).

The results stated in this report represent only the specific construction and acoustical conditions present at the time of the test. Measurements performed in accordance with this test method on nominally identical constructions and acoustical conditions may produce different results.

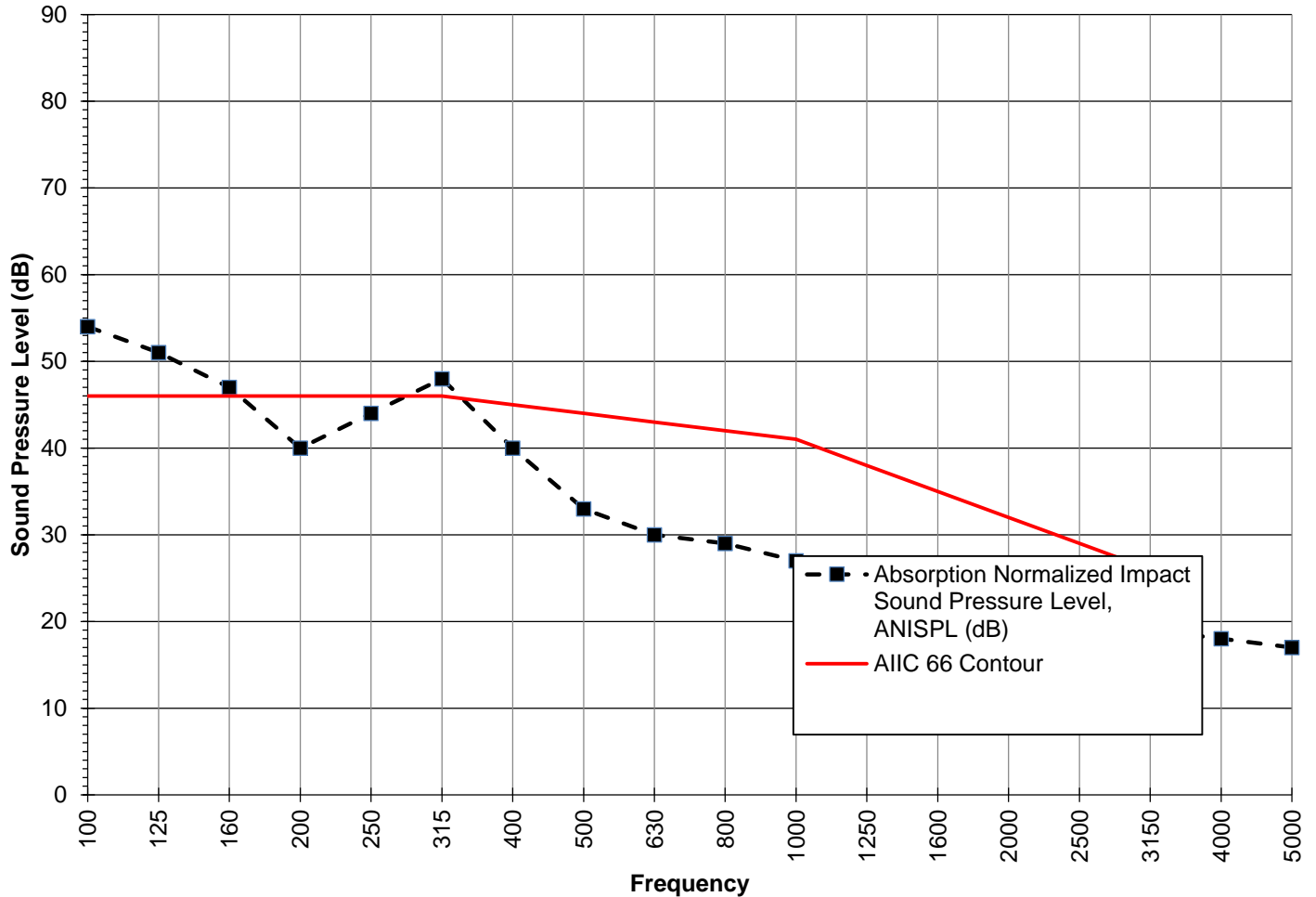
Field Impact Sound Transmission Test Report

Apparent Impact Insulation Class (AIIC)

Report Date: April 18, 2024
Test Date: April 04, 2024
DLAA Test No: 1.1.1

Source Room: 2nd Floor Great Room, Volume: 3949 cu. ft.
Receiver Room: 1st Floor Great Room/Kitchen, Volume: 3949 cu. ft.
Test Assembly: Floor-ceiling, Area: 428 sq. ft.

Test Site: Ka'ulu by Gentry
Client: Gentry Builders, LLC



AIIC: 66

Test Conducted By:

Zane Wright, Project Consultant

Jake Pfitsch, Project Consultant

Field Impact Sound Transmission Test Report

Apparent Impact Insulation Class (AIIIC)

Report Date:	April 18, 2024	Source Room:	2nd Floor Kitchen, Volume: 3949 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Great Room/Kitchen, Volume: 3949 cu. ft.
DLAA Test No:	1.2.1	Test Assembly:	Floor-ceiling, Area: 428 sq. ft.
Test Site:	Ka'ulu by Gentry		
Client:	Gentry Builders, LLC		

STANDARDS

ASTM E1007-14	Standard Test Method for Field Measurement of Tapping Machine Impact Sound Transmission Through Floor-Ceiling Assemblies and Associated Support Structure
ASTM E989-06(2012)	Standard Classification for Determination of Impact Insulation Class (IIC)
ASTM E2235-04(2012)	Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods

STATEMENT OF CONFORMANCE:

Testing was conducted in general accordance with ASTM E1007-14, with all exceptions noted below. All requirements for measuring and reporting Absorption Normalized Impact Sound Pressure Level (ANISPL) and Apparent Impact Insulation Class (AIIIC) were met.

TEST ENVIRONMENT:

The source room was 2nd Floor Kitchen. The space was finished unfurnished. The floor was LVT. The ceiling was gyp. The walls were gyp. All doors and windows were closed during the testing period. The source room had a volume of approximately 3949 cu. ft.

The receiver room was 1st Floor Great Room/Kitchen. The space was finished unfurnished. The floor was LVT. The ceiling was gyp. The walls were gyp. All doors and windows were closed during the testing period. The receiver room had a volume of approximately 3949 cu. ft.

The test assembly measured approximately 14.8x29.583, and had an approximate area of 428 sq. ft.

TEST ASSEMBLY:

The tested assembly was the Floor-ceiling. The assembly was not field verified, and was based on information provided by the client and drawings for the project. The client advised that no slab treatment or self-leveling was applied. Results may vary if slab treatment or self-leveling or any adhesive is used in other installations.

Field Impact Sound Transmission Test Report

Apparent Impact Insulation Class (AIIIC)

Report Date:	April 18, 2024	Source Room:	2nd Floor Kitchen, Volume: 3949 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Great Room/Kitchen, Volume: 3949 cu. ft.
DLAA Test No:	1.2.1	Test Assembly:	Floor-ceiling, Area: 428 sq. ft.
Test Site:	Ka'ulu by Gentry		
Client:	Gentry Builders, LLC		

TEST PROCEDURE:

The test was performed in general accordance with ASTM E1007-14. Determination of Space-Average Levels performed via the manually scanned microphones technique, described in ASTM E1007-14, Paragraph 11.4.2.2.

Flanking transmission was not evaluated.

To evaluate room absorption, 1 microphone was used to measure 4 decays at 4 locations around the receiving room for a total of 16 measurements, per ASTM E2235-04(2012).

TEST INSTRUMENTATION:

Equipment Type	Manufacturer	Model Number	Serial Number	Last NIST Traceable Calibration	Last Local Calibration
Tapping Machine:	Norsonics	CAL200	2775671	9/19/2022	N/A
Sound Level Meter	Larson Davis	831	4328	10/24/2022	4/4/2024
Microphone Pre-Amp	Larson Davis	PRM831	046469	10/24/2022	4/4/2024
Microphone	Larson Davis	377B20	168830	10/20/2022	4/4/2024
Calibrator	Larson Davis	CAL200	5955	10/26/2022	N/A
Amplified Loudspeaker	QSC	K10	GAA530909	N/A	N/A
Noise Generator	NTi Audio	MR-PRO	0162	N/A	N/A

Field Impact Sound Transmission Test Report

Apparent Impact Insulation Class (AIIC)

Report Date:	April 18, 2024	Source Room:	2nd Floor Kitchen, Volume: 3949 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Great Room/Kitchen, Volume: 3949 cu. ft.
DLAA Test No:	1.2.1	Test Assembly:	Floor-ceiling, Area: 428 sq. ft.

Test Site:	Ka'ulu by Gentry
Client:	Gentry Builders, LLC

STATEMENT OF TEST RESULTS:

Frequency	Absorption Normalized Impact Sound Pressure Level, ANISPL (dB)	Average Receiver Background Level	Average RT60 (Seconds)	Exceptions noted to ASTM E1007-14
100 Hz	82.0	35.4	0.62	
125 Hz	83.0	39.2	0.85	
160 Hz	79.0	33.0	0.63	
200 Hz	76.0	37.1	1.00	
250 Hz	77.0	34.4	1.02	
315 Hz	74.0	33.7	1.14	
400 Hz	69.0	33.3	1.34	
500 Hz	63.0	32.5	1.26	
630 Hz	56.0	31.2	1.14	
800 Hz	50.0	30.6	1.12	
1000 Hz	46.0	29.6	1.29	
1250 Hz	47.0	28.9	1.46	
1600 Hz	45.0	28.5	1.52	
2000 Hz	45.0	24.9	1.46	
2500 Hz	41.0	20.6	1.39	
3150 Hz	38.0	18.5	1.40	
4000 Hz	34.0	17.6	1.39	
5000 Hz	31.0	15.1	1.32	

AIIC: 38

An Apparent Impact Insulation Class (AIIC) of 38 and an Impact Sound Rating (ISR) of 42 was calculated. The AIIC rating is based on Absorption Normalized Impact Sound Pressure Level (ANISPL), and includes the effects of noise flanking. The AIIC reference contour is shown on the next page, and has been "fit" to the ANISPL values, in accordance with the procedure of ASTM E989-06(2012).

The results stated in this report represent only the specific construction and acoustical conditions present at the time of the test. Measurements performed in accordance with this test method on nominally identical constructions and acoustical conditions may produce different results.

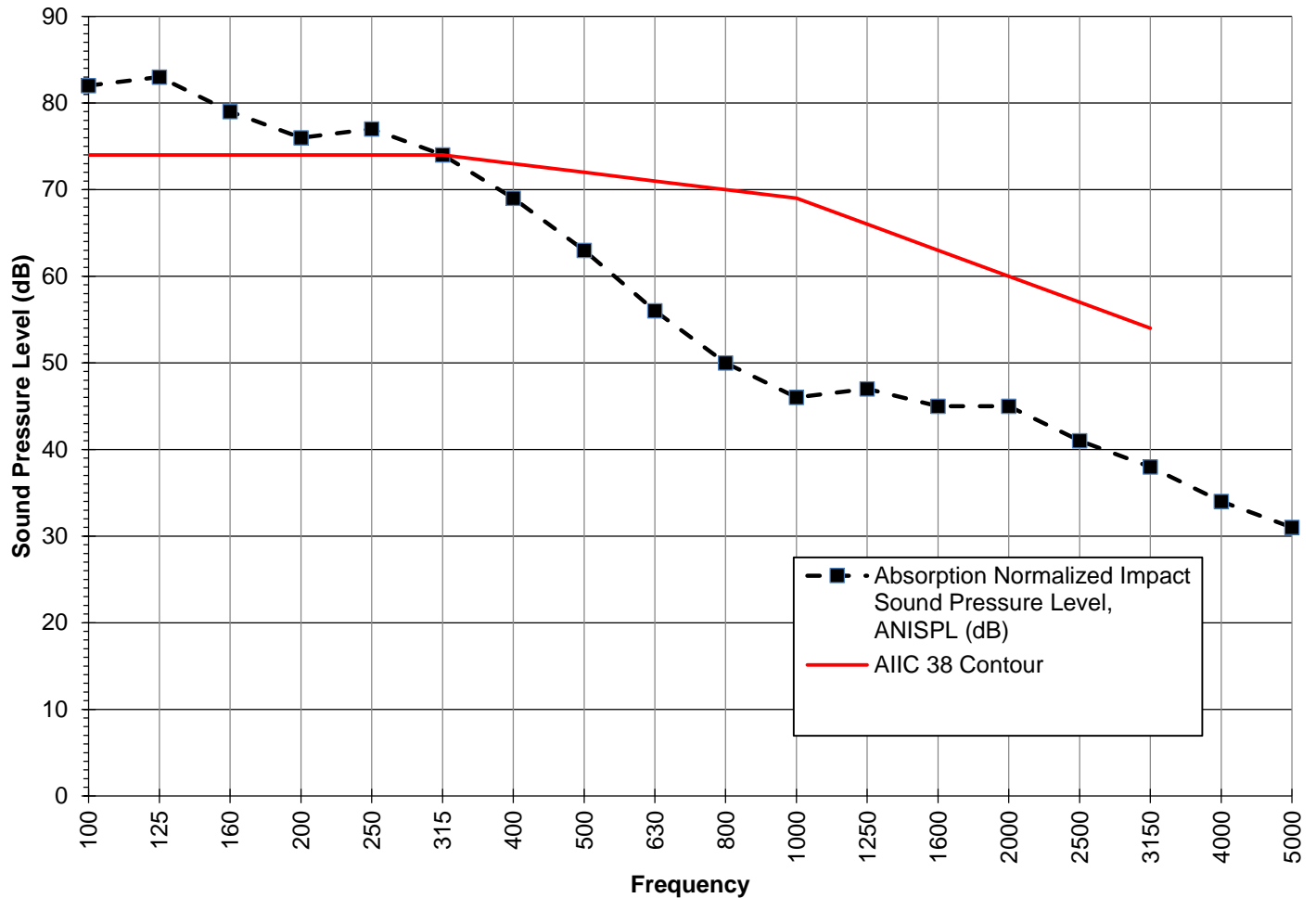
Field Impact Sound Transmission Test Report

Apparent Impact Insulation Class (AIIC)

Report Date: April 18, 2024
Test Date: April 04, 2024
DLAA Test No: 1.2.1

Source Room: 2nd Floor Kitchen, Volume: 3949 cu. ft.
Receiver Room: 1st Floor Great Room/Kitchen, Volume: 3949 cu. ft.
Test Assembly: Floor-ceiling, Area: 428 sq. ft.

Test Site: Ka'ulu by Gentry
Client: Gentry Builders, LLC



AIIC: 38

Test Conducted By:

Zane Wright, Project Consultant

Jake Pfitsch, Project Consultant

Field Impact Sound Transmission Test Report

Apparent Impact Insulation Class (AIIc)

Report Date:	April 18, 2024	Source Room:	2nd Floor Bed 3, Volume: 796 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Bed 2, Volume: 1413 cu. ft.
DLAA Test No:	1.3.1	Test Assembly:	Floor-ceiling, Area: 88 sq. ft.
Test Site:	Ka'ulu by Gentry		
Client:	Gentry Builders, LLC		

STANDARDS

ASTM E1007-14	Standard Test Method for Field Measurement of Tapping Machine Impact Sound Transmission Through Floor-Ceiling Assemblies and Associated Support Structure
ASTM E989-06(2012)	Standard Classification for Determination of Impact Insulation Class (IIC)
ASTM E2235-04(2012)	Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods

STATEMENT OF CONFORMANCE:

Testing was conducted in general accordance with ASTM E1007-14, with all exceptions noted below. All requirements for measuring and reporting Absorption Normalized Impact Sound Pressure Level (ANISPL) and Apparent Impact Insulation Class (AIIc) were met.

TEST ENVIRONMENT:

The source room was 2nd Floor Bed 3. The space was finished, unfurnished. The floor was Carpet. The ceiling was gyp. The walls were gyp. All doors and windows were closed during the testing period. The source room had a volume of approximately 796 cu. ft.

The receiver room was 1st Floor Bed 2. The space was finished unfurnished. The floor was LVT. The ceiling was gyp. The walls were gyp. All doors and windows were closed during the testing period. The receiver room had a volume of approximately 1413 cu. ft.

The test assembly measured approximately 9x9.8, and had an approximate area of 88 sq. ft.

TEST ASSEMBLY:

The tested assembly was the Floor-ceiling. The assembly was not field verified, and was based on information provided by the client and drawings for the project. The client advised that no slab treatment or self-leveling was applied. Results may vary if slab treatment or self-leveling or any adhesive is used in other installations.

Field Impact Sound Transmission Test Report

Apparent Impact Insulation Class (AIIIC)

Report Date:	April 18, 2024	Source Room:	2nd Floor Bed 3, Volume: 796 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Bed 2, Volume: 1413 cu. ft.
DLAA Test No:	1.3.1	Test Assembly:	Floor-ceiling, Area: 88 sq. ft.

Test Site:	Ka'ulu by Gentry
Client:	Gentry Builders, LLC

TEST PROCEDURE:

The test was performed in general accordance with ASTM E1007-14. Determination of Space-Average Levels performed via the manually scanned microphones technique, described in ASTM E1007-14, Paragraph 11.4.2.2.

Flanking transmission was not evaluated.

To evaluate room absorption, 1 microphone was used to measure 4 decays at 4 locations around the receiving room for a total of 16 measurements, per ASTM E2235-04(2012).

TEST INSTRUMENTATION:

Equipment Type	Manufacturer	Model Number	Serial Number	Last NIST Traceable Calibration	Last Local Calibration
Tapping Machine:	Norsonics	CAL200	2775671	9/19/2022	N/A
Sound Level Meter	Larson Davis	831	4328	10/24/2022	4/4/2024
Microphone Pre-Amp	Larson Davis	PRM831	046469	10/24/2022	4/4/2024
Microphone	Larson Davis	377B20	168830	10/20/2022	4/4/2024
Calibrator	Larson Davis	CAL200	5955	10/26/2022	N/A
Amplified Loudspeaker	QSC	K10	GAA530909	N/A	N/A
Noise Generator	NTi Audio	MR-PRO	0162	N/A	N/A

Field Impact Sound Transmission Test Report

Apparent Impact Insulation Class (AIIC)

Report Date:	April 18, 2024	Source Room:	2nd Floor Bed 3, Volume: 796 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Bed 2, Volume: 1413 cu. ft.
DLAA Test No:	1.3.1	Test Assembly:	Floor-ceiling, Area: 88 sq. ft.
Test Site:	Ka'ulu by Gentry		
Client:	Gentry Builders, LLC		

STATEMENT OF TEST RESULTS:

Frequency	Absorption Normalized Impact Sound Pressure Level, ANISPL (dB)	Average Receiver Background Level	Average RT60 (Seconds)	Exceptions noted to ASTM E1007-14	
100 Hz	50.0	31.9	0.63		
125 Hz	52.0	33.2	0.77		2
160 Hz	47.0	35.2	0.57		
200 Hz	45.0	36.9	0.75		
250 Hz	44.0	30.5	1.44		2
315 Hz	47.0	27.9	0.97		
400 Hz	39.0	23.0	1.08		2
500 Hz	34.0	21.1	1.16		2
630 Hz	29.0	20.7	1.06		2
800 Hz	26.0	19.8	1.00		2
1000 Hz	21.0	18.6	1.08		2
1250 Hz	20.0	16.2	1.21		2
1600 Hz	18.0	14.8	1.26		2
2000 Hz	16.0	11.0	1.23		2
2500 Hz	11.0	9.0	1.10		2
3150 Hz	9.0	8.4	1.00	1	2
4000 Hz	11.0	11.2	1.05		
5000 Hz	9.0	9.8	1.01		

*This test does not fully conform to the requirements of ASTM E1007-13, so the calculated AIIC rating should be considered a minimum.

Notes:

1. The signal-to-noise ratio is less < 5 dB at this frequency band.
2. Airborne sound flanking is within 10 dB of impact sound pressure measurements at this frequency band.

AIIC: 68

An Apparent Impact Insulation Class (AIIC) of 68 and an Impact Sound Rating (ISR) of 69 was calculated. The AIIC rating is based on Absorption Normalized Impact Sound Pressure Level (ANISPL), and includes the effects of noise flanking. The AIIC reference contour is shown on the next page, and has been "fit" to the ANISPL values, in accordance with the procedure of ASTM E989-06(2012).

The results stated in this report represent only the specific construction and acoustical conditions present at the time of the test. Measurements performed in accordance with this test method on nominally identical constructions and acoustical conditions may produce different results.

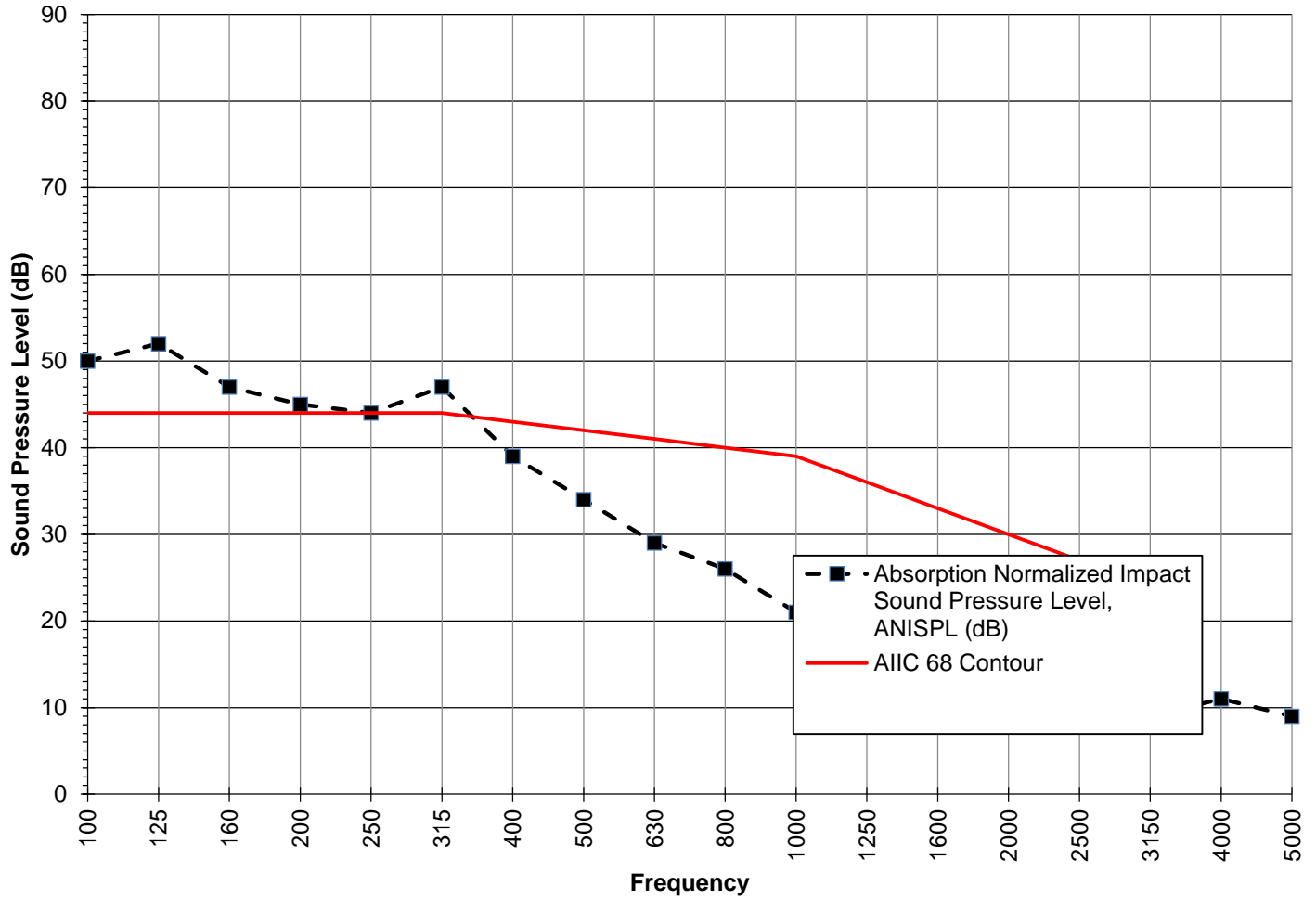
Field Impact Sound Transmission Test Report

Apparent Impact Insulation Class (AIIC)

Report Date: April 18, 2024
Test Date: April 04, 2024
DLAA Test No: 1.3.1

Source Room: 2nd Floor Bed 3, Volume: 796 cu. ft.
Receiver Room: 1st Floor Bed 2, Volume: 1413 cu. ft.
Test Assembly: Floor-ceiling, Area: 88 sq. ft.

Test Site: Ka'ulu by Gentry
Client: Gentry Builders, LLC



AIIC: 68

Test Conducted By:

Zane Wright, Project Consultant

Jake Pfitsch, Project Consultant

Field Impact Sound Transmission Test Report

Apparent Impact Insulation Class (AIIc)

Report Date:	April 18, 2024	Source Room:	2nd Floor Bed 1, Volume: 1176 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Bed 1, Volume: 1413 cu. ft.
DLAA Test No:	1.4.1	Test Assembly:	Floor-ceiling, Area: 130 sq. ft.
Test Site:	Ka'ulu by Gentry		
Client:	Gentry Builders, LLC		

STANDARDS

ASTM E1007-14	Standard Test Method for Field Measurement of Tapping Machine Impact Sound Transmission Through Floor-Ceiling Assemblies and Associated Support Structure
ASTM E989-06(2012)	Standard Classification for Determination of Impact Insulation Class (IIC)
ASTM E2235-04(2012)	Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods

STATEMENT OF CONFORMANCE:

Testing was conducted in general accordance with ASTM E1007-14, with all exceptions noted below. All requirements for measuring and reporting Absorption Normalized Impact Sound Pressure Level (ANISPL) and Apparent Impact Insulation Class (AIIc) were met.

TEST ENVIRONMENT:

The source room was 2nd Floor Bed 1. The space was finished, unfurnished. The floor was Carpet. The ceiling was gyp. The walls were gyp. All doors and windows were closed during the testing period. The source room had a volume of approximately 1176 cu. ft.

The receiver room was 1st Floor Bed 1. The space was finished, unfurnished. The floor was LVT. The ceiling was gyp. The walls were gyp. All doors and windows were closed during the testing period. The receiver room had a volume of approximately 1413 cu. ft.

The test assembly measured approximately 12.3x10.6, and had an approximate area of 130 sq. ft.

TEST ASSEMBLY:

The tested assembly was the Floor-ceiling. The assembly was not field verified, and was based on information provided by the client and drawings for the project. The client advised that no slab treatment or self-leveling was applied. Results may vary if slab treatment or self-leveling or any adhesive is used in other installations.

Field Impact Sound Transmission Test Report

Apparent Impact Insulation Class (AIIc)

Report Date:	April 18, 2024	Source Room:	2nd Floor Bed 1, Volume: 1176 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Bed 1, Volume: 1413 cu. ft.
DLAA Test No:	1.4.1	Test Assembly:	Floor-ceiling, Area: 130 sq. ft.

Test Site:	Ka'ulu by Gentry
Client:	Gentry Builders, LLC

TEST PROCEDURE:

The test was performed in general accordance with ASTM E1007-14. Determination of Space-Average Levels performed via the manually scanned microphones technique, described in ASTM E1007-14, Paragraph 11.4.2.2.

Flanking transmission was not evaluated.

To evaluate room absorption, 1 microphone was used to measure 4 decays at 4 locations around the receiving room for a total of 16 measurements, per ASTM E2235-04(2012).

TEST INSTRUMENTATION:

Equipment Type	Manufacturer	Model Number	Serial Number	Last NIST Traceable Calibration	Last Local Calibration
Tapping Machine:	Norsonics	CAL200	2775671	9/19/2022	N/A
Sound Level Meter	Larson Davis	831	4328	10/24/2022	4/4/2024
Microphone Pre-Amp	Larson Davis	PRM831	046469	10/24/2022	4/4/2024
Microphone	Larson Davis	377B20	168830	10/20/2022	4/4/2024
Calibrator	Larson Davis	CAL200	5955	10/26/2022	N/A
Amplified Loudspeaker	QSC	K10	GAA530909	N/A	N/A
Noise Generator	NTi Audio	MR-PRO	0162	N/A	N/A

Field Impact Sound Transmission Test Report

Apparent Impact Insulation Class (AIIC)

Report Date:	April 18, 2024	Source Room:	2nd Floor Bed 1, Volume: 1176 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Bed 1, Volume: 1413 cu. ft.
DLAA Test No:	1.4.1	Test Assembly:	Floor-ceiling, Area: 130 sq. ft.
Test Site:	Ka'ulu by Gentry		
Client:	Gentry Builders, LLC		

STATEMENT OF TEST RESULTS:

Frequency	Absorption Normalized Impact Sound Pressure Level, ANISPL (dB)	Average Receiver Background Level	Average RT60 (Seconds)	Exceptions noted to ASTM E1007-14	
100 Hz	57.0	39.7	0.73		
125 Hz	49.0	38.6	0.66		
160 Hz	47.0	34.0	0.57		
200 Hz	41.0	38.4	0.86		
250 Hz	39.0	34.2	1.59		2
315 Hz	44.0	25.8	1.17		
400 Hz	38.0	23.5	1.32		2
500 Hz	32.0	23.8	1.47		2
630 Hz	26.0	21.1	1.34		2
800 Hz	23.0	19.2	1.22		2
1000 Hz	18.0	19.3	1.35	1	2
1250 Hz	17.0	16.5	1.50		2
1600 Hz	16.0	14.7	1.64		2
2000 Hz	16.0	11.9	1.57		2
2500 Hz	16.0	10.2	1.46		
3150 Hz	14.0	9.4	1.26		
4000 Hz	10.0	11.9	1.33		
5000 Hz	9.0	10.6	1.36		

*This test does not fully conform to the requirements of ASTM E1007-13, so the calculated AIIC rating should be considered a minimum.

Notes:

1. The signal-to-noise ratio is less < 5 dB at this frequency band.
2. Airborne sound flanking is within 10 dB of impact sound pressure measurements at this frequency band.

AIIC: 63

An Apparent Impact Insulation Class (AIIC) of 63 and an Impact Sound Rating (ISR) of 70 was calculated. The AIIC rating is based on Absorption Normalized Impact Sound Pressure Level (ANISPL), and includes the effects of noise flanking. The AIIC reference contour is shown on the next page, and has been "fit" to the ANISPL values, in accordance with the procedure of ASTM E989-06(2012).

The results stated in this report represent only the specific construction and acoustical conditions present at the time of the test. Measurements performed in accordance with this test method on nominally identical constructions and acoustical conditions may produce different results.

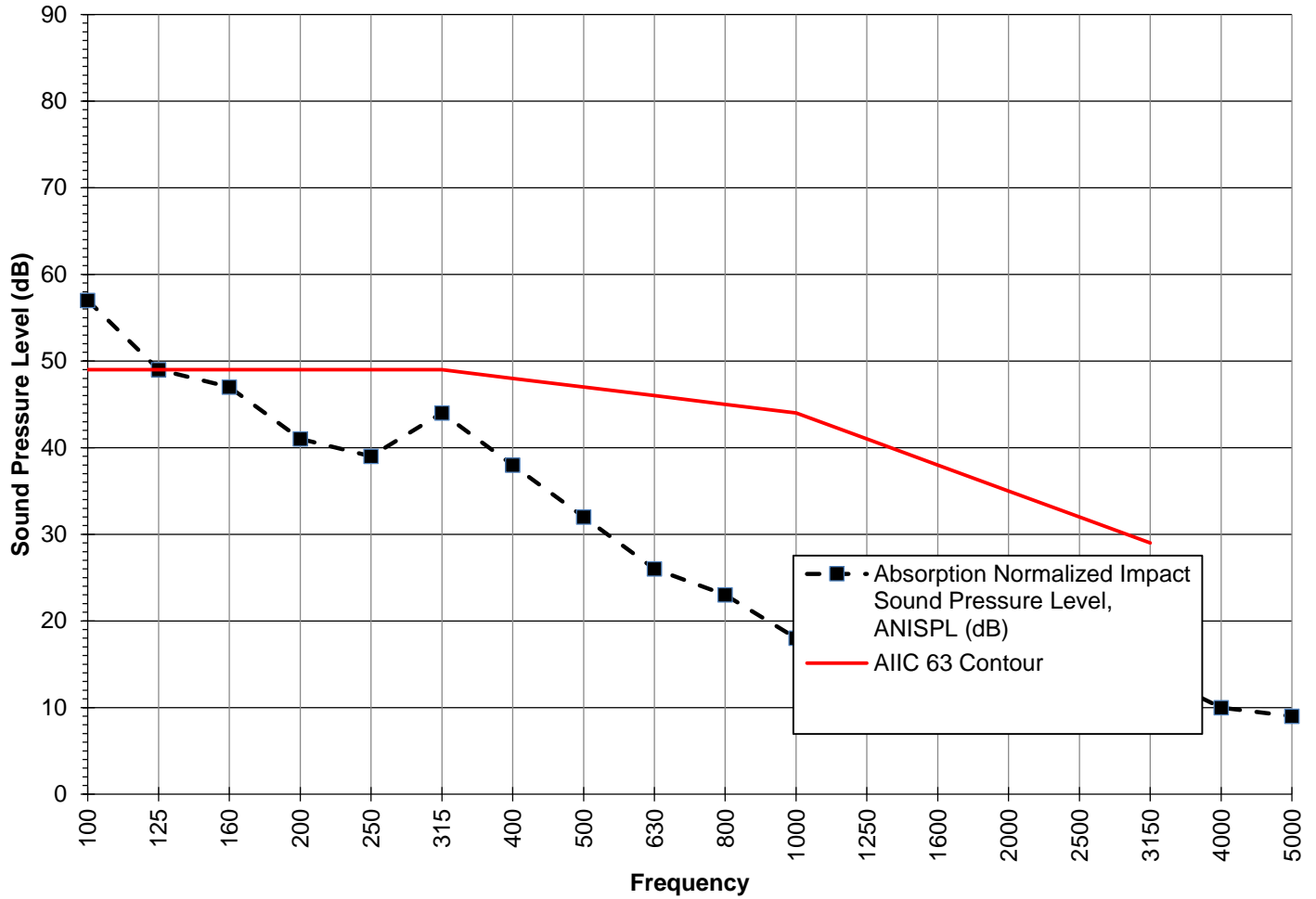
Field Impact Sound Transmission Test Report

Apparent Impact Insulation Class (AIIC)

Report Date: April 18, 2024
Test Date: April 04, 2024
DLAA Test No: 1.4.1

Source Room: 2nd Floor Bed 1, Volume: 1176 cu. ft.
Receiver Room: 1st Floor Bed 1, Volume: 1413 cu. ft.
Test Assembly: Floor-ceiling, Area: 130 sq. ft.

Test Site: Ka'ulu by Gentry
Client: Gentry Builders, LLC



AIIC: 63

Test Conducted By:

Zane Wright, Project Consultant

Jake Pfitsch, Project Consultant

Field Airborne Sound Transmission Test Report

Apparent Sound Transmission Class (ASTC)

Report Date:	April 05, 2024	Source Room:	2nd Floor Great Room, Volume: 3950 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Great Room/Kitchen, Volume: 3950 cu
DLAA Test No:	1.1.1	Test Assembly:	Floor-ceiling, Area: 428 sq. ft.
Test Site:	Ka'ulu by Gentry		
Client:	Gentry Builders, LLC		

STANDARDS

ASTM E336-16	Standard Test Method for Measurement of Airborne Sound Attenuation between Rooms in Buildings
ASTM E413-16	Classification for Rating Sound Insulation
ASTM E2235-04(2012)	Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods

STATEMENT OF CONFORMANCE:

Testing was conducted in general accordance with ASTM E336-16, with all exceptions noted below. All requirements for measuring and reporting Apparent Transmission Loss (ATL) and Apparent Sound Transmission Class (ASTC) were met.

The procedures of ASTM E336-16 Annex were not used.

TEST ENVIRONMENT:

The source room was 2nd Floor Great Room. The space was finished, unfurnished. The floor was Carpet. The ceiling was gyp. The walls were gyp. All doors and windows were closed during the testing period. The source room had a volume of approximately 3950 cu. ft.

The receiver room was 1st Floor Great Room/Kitchen. The space was finished unfurnished. The floor was LVT. The ceiling was gyp. The walls were gyp. All doors and windows were closed during the testing period. The receiver room had a volume of approximately 3950 cu. ft.

The test assembly measured approximately 14.8x29.583, and had an approximate area of 428 sq. ft.

TEST ASSEMBLY:

The tested assembly was the Floor-ceiling The assembly was not field verified, and was based on information provided by the client and drawings for the project. The client advised that no slab treatment or self-leveling was applied. Results may vary if slab treatment or self-leveling or any adhesive is used in other installations.

Field Airborne Sound Transmission Test Report

Apparent Sound Transmission Class (ASTC)

Report Date:	April 05, 2024	Source Room:	2nd Floor Great Room, Volume: 3950 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Great Room/Kitchen, Volume: 3950 cu
DLAA Test No:	1.1.1	Test Assembly:	Floor-ceiling, Area: 428 sq. ft.
Test Site:	Ka'ulu by Gentry		
Client:	Gentry Builders, LLC		

TEST PROCEDURE:

Determination of space-average sound pressure levels was performed via the manually scanned microphones technique, described in ASTM E336-16, Paragraph 11.4.3.3.

Flanking transmission was not evaluated.

To evaluate room absorption, 1 microphone was used to measure 4 decays at 4 locations around the receiving room for a total of 16 measurements, per ASTM E2235-04(2012).

TEST INSTRUMENTATION:

Equipment Type	Manufacturer	Model Number	Serial Number	Last NIST Traceable Calibration	Last Local Calibration
Sound Level Meter 1	Larson Davis	831	3784	9/19/2022	Apr 2024
Microphone Pre-Amp:	Larson Davis	PRM831	051188	9/19/2022	Apr 2024
Microphone:	Larson Davis	377B20	301698	9/16/2022	Apr 2024
Calibrator:	Larson Davis	CAL200	2775671	9/19/2022	N/A
Sound Level Meter 2	Larson Davis	831	4328	10/24/2022	Apr 2024
Microphone Pre-Amp:	Larson Davis	PRM831	046469	10/24/2022	Apr 2024
Microphone:	Larson Davis	377B20	168830	10/20/2022	Apr 2024
Calibrator:	Larson Davis	CAL200	5955	10/26/2022	N/A
Amplified Loudspeakers (QTY 2)	QSC	K10	GAA530909	N/A	N/A
Noise Generator:	NTi Audio	MR-PRO	0162	N/A	N/A

Field Airborne Sound Transmission Test Report

Apparent Sound Transmission Class (ASTC)

Report Date:	April 05, 2024	Source Room:	2nd Floor Great Room, Volume: 3950 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Great Room/Kitchen, Volume: 3950 cu
DLAA Test No:	1.1.1	Test Assembly:	Floor-ceiling, Area: 428 sq. ft.

Test Site:	Ka'ulu by Gentry
Client:	Gentry Builders, LLC

STATEMENT OF TEST RESULTS:

Frequency	L1, Average Source Room Level (dB)	L2, Average Corrected Receiver Room Level (dB)	Average Receiver Background Level (dB)	Average RT60 (Seconds)	Noise Reduction, NR (dB)	Apparent Transmission Loss, ATL (dB)	Exceptions noted to ASTM E336-16
100 Hz	95.8	78.2	35.4	0.62	17.6	19.0	
125 Hz	95.0	79.5	39.2	0.85	15.5	18.2	
160 Hz	91.4	73.0	33.0	0.63	18.4	19.9	
200 Hz	90.0	65.6	37.1	1.00	24.4	27.8	
250 Hz	91.6	61.6	34.4	1.02	30.0	33.5	
315 Hz	89.7	57.6	33.7	1.14	32.1	36.1	
400 Hz	88.8	52.7	33.3	1.34	36.1	40.8	
500 Hz	84.7	47.5	32.5	1.26	37.2	41.7	
630 Hz	82.5	42.0	31.2	1.14	40.5	44.5	
800 Hz	84.5	39.9	30.6	1.12	44.6	48.5	
1000 Hz	83.0	33.7	29.6	1.29	49.3	53.9	
1250 Hz	83.8	30.4	28.9	1.46	53.4	58.5	
1600 Hz	81.4	28.2	28.5	1.52	53.2	58.5	
2000 Hz	79.8	25.5	24.9	1.46	54.3	59.4	
2500 Hz	82.4	22.1	20.6	1.39	60.3	65.2	
3150 Hz	84.0	19.6	18.5	1.40	64.4	69.3	
4000 Hz	85.0	17.7	17.6	1.39	67.3	72.2	
5000 Hz	84.3	16.1	15.1	1.32	68.2	72.8	

ASTC: 41

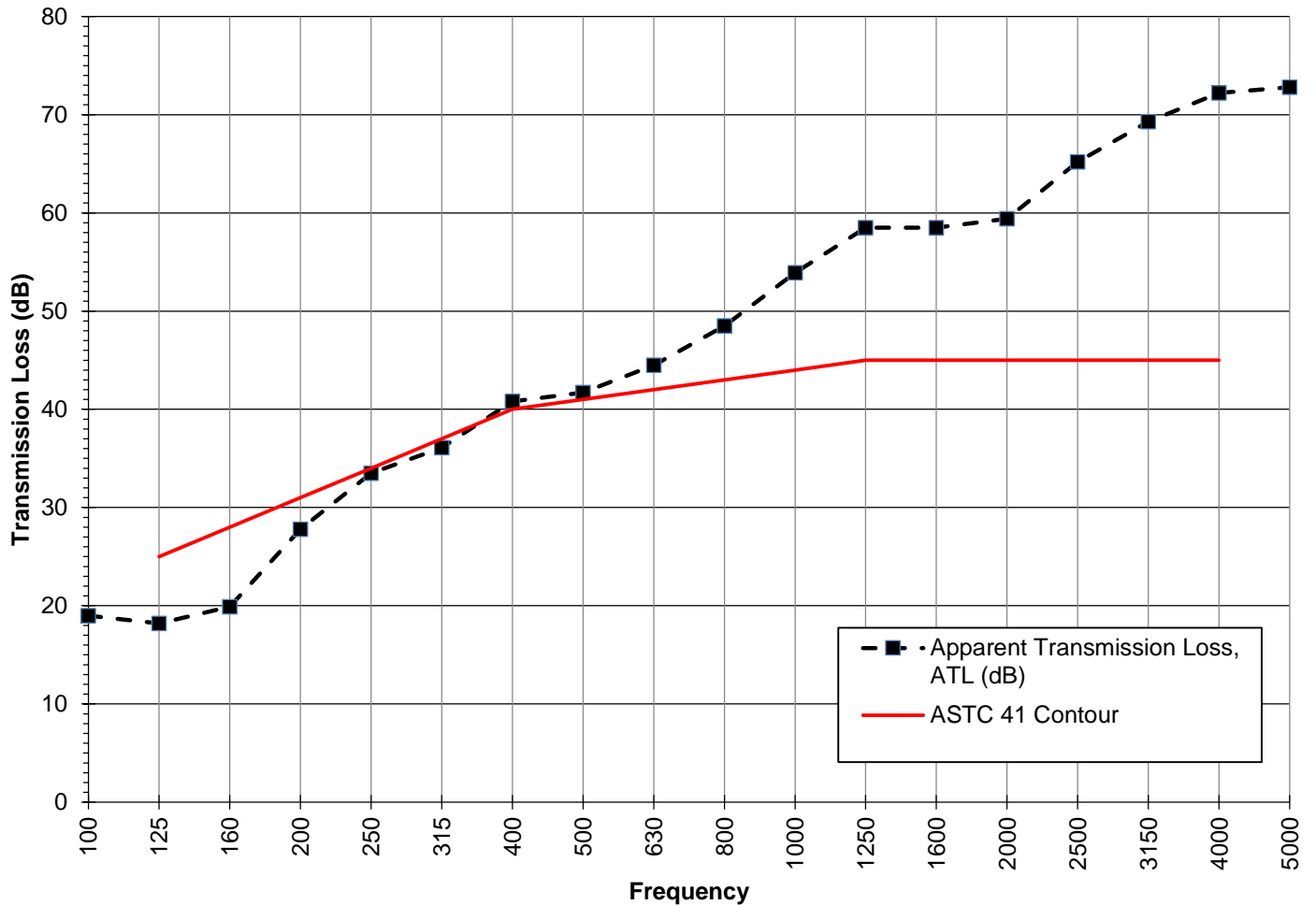
An Apparent Sound Transmission Class (ASTC) of 41, and a Noise Isolation Class (NIC) of 39 was calculated. The NIC rating is based on Noise Reduction (NR), and includes the effects of noise flanking. The NIC reference contour is shown on the next page, and has been "fit" to the Apparent Transmission Loss values, in accordance with the procedure of ASTM E413-16.

The results stated in this report represent only the specific construction and acoustical conditions present at the time of the test. Measurements performed in accordance with this test method on nominally identical constructions and acoustical conditions may produce different results.

Field Airborne Sound Transmission Test Report

Apparent Sound Transmission Class (ASTC)

Report Date:	April 05, 2024	Source Room:	2nd Floor Great Room, Volume: 3950 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Great Room/Kitchen, Volume: 3950 cu
DLAA Test No:	1.1.1	Test Assembly:	Floor-ceiling, Area: 428 sq. ft.
Test Site:	Ka'ulu by Gentry		
Client:	Gentry Builders, LLC		



ASTC: 41

Test Conducted By:

Zane Wright, Project Consultant

Jake Pfitsch, Project Consultant

Field Airborne Sound Transmission Test Report

Apparent Sound Transmission Class (ASTC)

Report Date:	April 05, 2024	Source Room:	2nd Floor Kitchen, Volume: 3950 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Great Room/Kitchen, Volume: 3950 cu
DLAA Test No:	1.2.1	Test Assembly:	Floor-ceiling, Area: 428 sq. ft.
Test Site:	Ka'ulu by Gentry		
Client:	Gentry Builders, LLC		

STANDARDS

ASTM E336-16	Standard Test Method for Measurement of Airborne Sound Attenuation between Rooms in Buildings
ASTM E413-16	Classification for Rating Sound Insulation
ASTM E2235-04(2012)	Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods

STATEMENT OF CONFORMANCE:

Testing was conducted in general accordance with ASTM E336-16, with all exceptions noted below. All requirements for measuring and reporting Apparent Transmission Loss (ATL) and Apparent Sound Transmission Class (ASTC) were met.

The procedures of ASTM E336-16 Annex were not used.

TEST ENVIRONMENT:

The source room was 2nd Floor Kitchen. The space was finished unfurnished. The floor was LVT. The ceiling was gyp. The walls were gyp. All doors and windows were closed during the testing period. The source room had a volume of approximately 3950 cu. ft.

The receiver room was 1st Floor Great Room/Kitchen. The space was finished unfurnished. The floor was LVT. The ceiling was gyp. The walls were gyp. All doors and windows were closed during the testing period. The receiver room had a volume of approximately 3950 cu. ft.

The test assembly measured approximately 14.8x29.583, and had an approximate area of 428 sq. ft.

TEST ASSEMBLY:

The tested assembly was the Floor-ceiling. The assembly was not field verified, and was based on information provided by the client and drawings for the project. The client advised that no slab treatment or self-leveling was applied. Results may vary if slab treatment or self-leveling or any adhesive is used in other installations.

Field Airborne Sound Transmission Test Report

Apparent Sound Transmission Class (ASTC)

Report Date:	April 05, 2024	Source Room:	2nd Floor Kitchen, Volume: 3950 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Great Room/Kitchen, Volume: 3950 cu
DLAA Test No:	1.2.1	Test Assembly:	Floor-ceiling, Area: 428 sq. ft.
Test Site:	Ka'ulu by Gentry		
Client:	Gentry Builders, LLC		

TEST PROCEDURE:

Determination of space-average sound pressure levels was performed via the manually scanned microphones technique, described in ASTM E336-16, Paragraph 11.4.3.3.

Flanking transmission was not evaluated.

To evaluate room absorption, 1 microphone was used to measure 4 decays at 4 locations around the receiving room for a total of 16 measurements, per ASTM E2235-04(2012).

TEST INSTRUMENTATION:

Equipment Type	Manufacturer	Model Number	Serial Number	Last NIST Traceable Calibration	Last Local Calibration
Sound Level Meter 1	Larson Davis	831	3784	9/19/2022	Apr 2024
Microphone Pre-Amp:	Larson Davis	PRM831	051188	9/19/2022	Apr 2024
Microphone:	Larson Davis	377B20	301698	9/16/2022	Apr 2024
Calibrator:	Larson Davis	CAL200	2775671	9/19/2022	N/A
Sound Level Meter 2	Larson Davis	831	4328	10/24/2022	Apr 2024
Microphone Pre-Amp:	Larson Davis	PRM831	046469	10/24/2022	Apr 2024
Microphone:	Larson Davis	377B20	168830	10/20/2022	Apr 2024
Calibrator:	Larson Davis	CAL200	5955	10/26/2022	N/A
Amplified Loudspeakers (QTY 2)	QSC	K10	GAA530909	N/A	N/A
Noise Generator:	NTi Audio	MR-PRO	0162	N/A	N/A

Field Airborne Sound Transmission Test Report

Apparent Sound Transmission Class (ASTC)

Report Date:	April 05, 2024	Source Room:	2nd Floor Kitchen, Volume: 3950 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Great Room/Kitchen, Volume: 3950 cu
DLAA Test No:	1.2.1	Test Assembly:	Floor-ceiling, Area: 428 sq. ft.

Test Site:	Ka'ulu by Gentry
Client:	Gentry Builders, LLC

STATEMENT OF TEST RESULTS:

Frequency	L1, Average Source Room Level (dB)	L2, Average Corrected Receiver Room Level (dB)	Average Receiver Background Level (dB)	Average RT60 (Seconds)	Noise Reduction, NR (dB)	Apparent Transmission Loss, ATL (dB)	Exceptions noted to ASTM E336-16
100 Hz	95.8	78.2	35.4	0.62	17.6	19.0	
125 Hz	95.0	79.5	39.2	0.85	15.5	18.2	
160 Hz	91.4	73.0	33.0	0.63	18.4	19.9	
200 Hz	90.0	65.6	37.1	1.00	24.4	27.8	
250 Hz	91.6	61.6	34.4	1.02	30.0	33.5	
315 Hz	89.7	57.6	33.7	1.14	32.1	36.1	
400 Hz	88.8	52.7	33.3	1.34	36.1	40.8	
500 Hz	84.7	47.5	32.5	1.26	37.2	41.7	
630 Hz	82.5	42.0	31.2	1.14	40.5	44.5	
800 Hz	84.5	39.9	30.6	1.12	44.6	48.5	
1000 Hz	83.0	33.7	29.6	1.29	49.3	53.9	
1250 Hz	83.8	30.4	28.9	1.46	53.4	58.5	
1600 Hz	81.4	28.2	28.5	1.52	53.2	58.5	
2000 Hz	79.8	25.5	24.9	1.46	54.3	59.4	
2500 Hz	82.4	22.1	20.6	1.39	60.3	65.2	
3150 Hz	84.0	19.6	18.5	1.40	64.4	69.3	
4000 Hz	85.0	17.7	17.6	1.39	67.3	72.2	
5000 Hz	84.3	16.1	15.1	1.32	68.2	72.8	

ASTC: 41

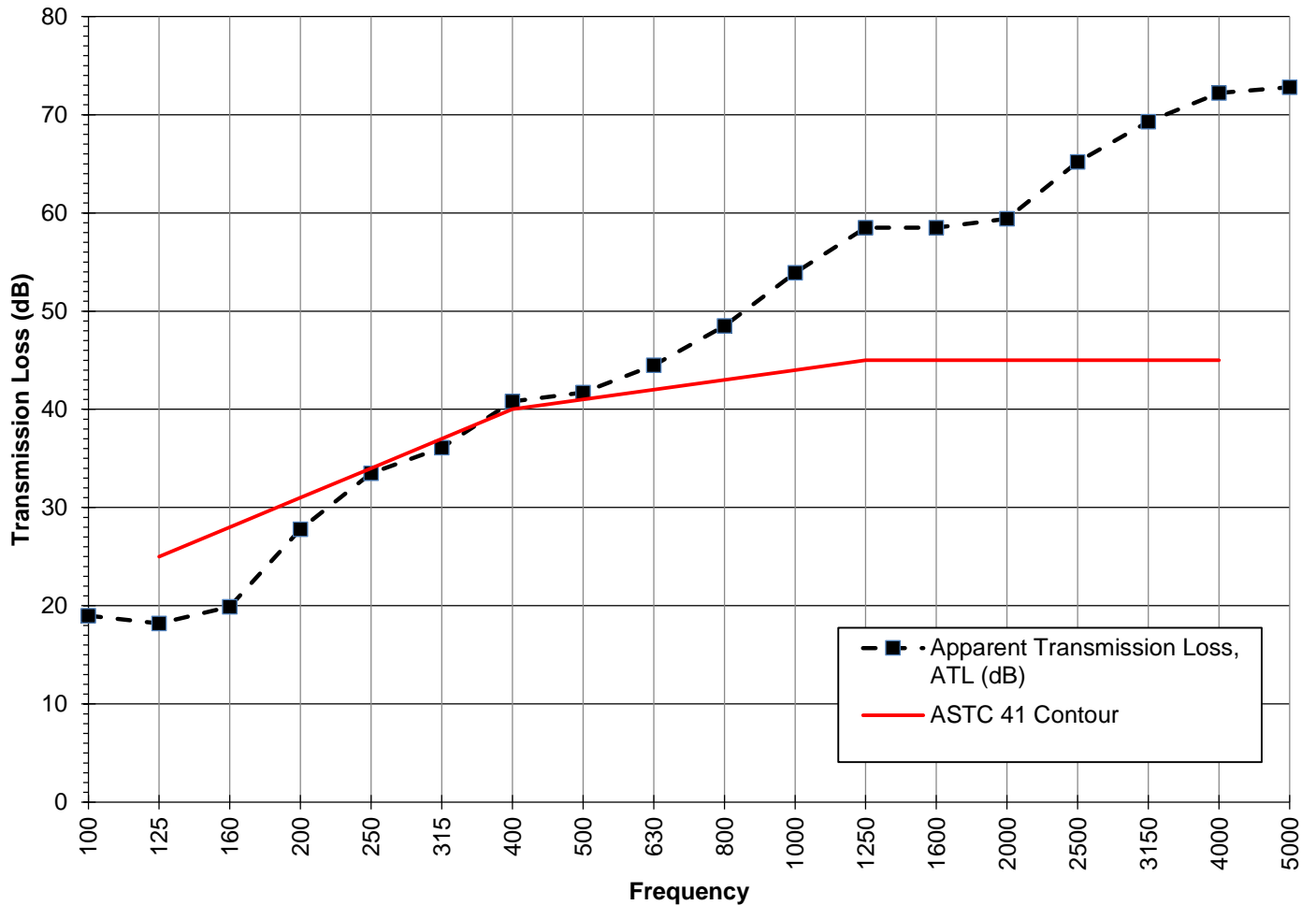
An Apparent Sound Transmission Class (ASTC) of 41, and a Noise Isolation Class (NIC) of 39 was calculated. The NIC rating is based on Noise Reduction (NR), and includes the effects of noise flanking. The NIC reference contour is shown on the next page, and has been "fit" to the Apparent Transmission Loss values, in accordance with the procedure of ASTM E413-16.

The results stated in this report represent only the specific construction and acoustical conditions present at the time of the test. Measurements performed in accordance with this test method on nominally identical constructions and acoustical conditions may produce different results.

Field Airborne Sound Transmission Test Report

Apparent Sound Transmission Class (ASTC)

Report Date:	April 05, 2024	Source Room:	2nd Floor Kitchen, Volume: 3950 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Great Room/Kitchen, Volume: 3950 cu
DLAA Test No:	1.2.1	Test Assembly:	Floor-ceiling, Area: 428 sq. ft.
Test Site:	Ka'ulu by Gentry		
Client:	Gentry Builders, LLC		



ASTC: 41

Test Conducted By:

Zane Wright, Project Consultant

Jake Pfitsch, Project Consultant

Field Airborne Sound Transmission Test Report

Apparent Sound Transmission Class (ASTC)

Report Date:	April 05, 2024	Source Room:	2nd Floor Bed 3, Volume: 800 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Bed 2, Volume: 1410 cu. ft.
DLAA Test No:	1.3.1	Test Assembly:	Floor-ceiling, Area: 88 sq. ft.
Test Site:	Ka'ulu by Gentry		
Client:	Gentry Builders, LLC		

STANDARDS

ASTM E336-16	Standard Test Method for Measurement of Airborne Sound Attenuation between Rooms in Buildings Classification for Rating Sound Insulation
ASTM E413-16	
ASTM E2235-04(2012)	Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods

STATEMENT OF CONFORMANCE:

Testing was conducted in general accordance with ASTM E336-16, with all exceptions noted below. All requirements for measuring and reporting Apparent Transmission Loss (ATL) and Apparent Sound Transmission Class (ASTC) were met.

The procedures of ASTM E336-16 Annex were not used.

TEST ENVIRONMENT:

The source room was 2nd Floor Bed 3. The space was finished, unfurnished. The floor was Carpet. The ceiling was gyp. The walls were gyp. All doors and windows were closed during the testing period. The source room had a volume of approximately 800 cu. ft.

The receiver room was 1st Floor Bed 2. The space was finished unfurnished. The floor was LVT. The ceiling was gyp. The walls were gyp. All doors and windows were closed during the testing period. The receiver room had a volume of approximately 1410 cu. ft.

The test assembly measured approximately 9x9.8, and had an approximate area of 88 sq. ft.

TEST ASSEMBLY:

The tested assembly was the Floor-ceiling. The assembly was not field verified, and was based on information provided by the client and drawings for the project. The client advised that no slab treatment or self-leveling was applied. Results may vary if slab treatment or self-leveling or any adhesive is used in other installations.

Field Airborne Sound Transmission Test Report

Apparent Sound Transmission Class (ASTC)

Report Date:	April 05, 2024	Source Room:	2nd Floor Bed 3, Volume: 800 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Bed 2, Volume: 1410 cu. ft.
DLAA Test No:	1.3.1	Test Assembly:	Floor-ceiling, Area: 88 sq. ft.

Test Site:	Ka'ulu by Gentry
Client:	Gentry Builders, LLC

TEST PROCEDURE:

Determination of space-average sound pressure levels was performed via the manually scanned microphones technique, described in ASTM E336-16, Paragraph 11.4.3.3.

Flanking transmission was not evaluated.

To evaluate room absorption, 1 microphone was used to measure 4 decays at 4 locations around the receiving room for a total of 16 measurements, per ASTM E2235-04(2012).

TEST INSTRUMENTATION:

Equipment Type	Manufacturer	Model Number	Serial Number	Last NIST Traceable Calibration	Last Local Calibration
Sound Level Meter 1	Larson Davis	831	3784	9/19/2022	Apr 2024
Microphone Pre-Amp:	Larson Davis	PRM831	051188	9/19/2022	Apr 2024
Microphone:	Larson Davis	377B20	301698	9/16/2022	Apr 2024
Calibrator:	Larson Davis	CAL200	2775671	9/19/2022	N/A
Sound Level Meter 2	Larson Davis	831	4328	10/24/2022	Apr 2024
Microphone Pre-Amp:	Larson Davis	PRM831	046469	10/24/2022	Apr 2024
Microphone:	Larson Davis	377B20	168830	10/20/2022	Apr 2024
Calibrator:	Larson Davis	CAL200	5955	10/26/2022	N/A
Amplified Loudspeakers (QTY 2)	QSC	K10	GAA530909	N/A	N/A
Noise Generator:	NTi Audio	MR-PRO	0162	N/A	N/A

Field Airborne Sound Transmission Test Report

Apparent Sound Transmission Class (ASTC)

Report Date:	April 05, 2024	Source Room:	2nd Floor Bed 3, Volume: 800 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Bed 2, Volume: 1410 cu. ft.
DLAA Test No:	1.3.1	Test Assembly:	Floor-ceiling, Area: 88 sq. ft.

Test Site:	Ka'ulu by Gentry
Client:	Gentry Builders, LLC

STATEMENT OF TEST RESULTS:

Frequency	L1, Average Source Room Level (dB)	L2, Average Corrected Receiver Room Level (dB)	Average Receiver Background Level (dB)	Average RT60 (Seconds)	Noise Reduction, NR (dB)	Apparent Transmission Loss, ATL (dB)	Exceptions noted to ASTM E336-16
100 Hz	96.1	76.2	31.9	0.63	19.9	18.9	
125 Hz	96.0	78.6	33.2	0.77	17.4	17.3	
160 Hz	92.9	67.9	35.2	0.57	25.0	23.6	
200 Hz	88.8	61.6	36.9	0.75	27.2	27.0	
250 Hz	87.8	60.2	30.5	1.44	27.6	30.2	
315 Hz	88.4	52.3	27.9	0.97	36.1	37.0	
400 Hz	88.4	50.3	23.0	1.08	38.1	39.5	
500 Hz	84.2	45.2	21.1	1.16	39.0	40.7	
630 Hz	82.1	44.6	20.7	1.06	37.5	38.8	
800 Hz	84.2	44.7	19.8	1.00	39.5	40.6	
1000 Hz	82.2	41.4	18.6	1.08	40.8	42.2	
1250 Hz	82.8	34.3	16.2	1.21	48.5	50.4	
1600 Hz	80.1	33.6	14.8	1.26	46.5	48.6	
2000 Hz	78.6	31.1	11.0	1.23	47.5	49.4	
2500 Hz	81.0	27.3	9.0	1.10	53.7	55.2	
3150 Hz	82.5	30.6	8.4	1.00	51.9	52.9	
4000 Hz	83.3	29.5	11.2	1.05	53.8	55.1	
5000 Hz	82.7	23.7	9.8	1.01	59.0	60.1	

ASTC: 41

An Apparent Sound Transmission Class (ASTC) of 41, and a Noise Isolation Class (NIC) of 40 was calculated. The NIC rating is based on Noise Reduction (NR), and includes the effects of noise flanking. The NIC reference contour is shown on the next page, and has been "fit" to the Apparent Transmission Loss values, in accordance with the procedure of ASTM E413-16.

The results stated in this report represent only the specific construction and acoustical conditions present at the time of the test. Measurements performed in accordance with this test method on nominally identical constructions and acoustical conditions may produce different results.

Field Airborne Sound Transmission Test Report

Apparent Sound Transmission Class (ASTC)

Report Date:
Test Date:
DLAA Test No:

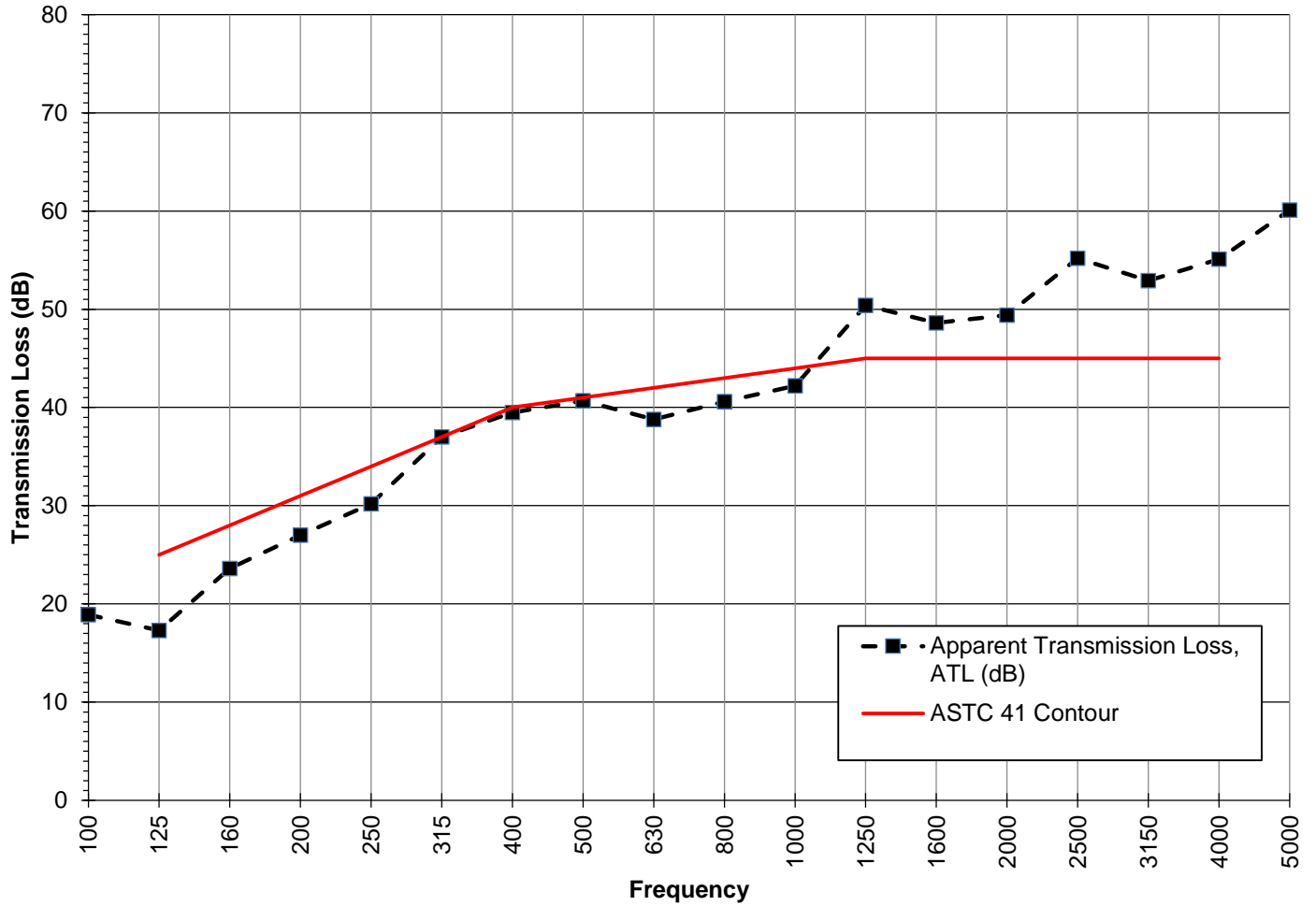
April 05, 2024
April 04, 2024
1.3.1

Source Room:
Receiver Room:
Test Assembly:

2nd Floor Bed 3, Volume: 800 cu. ft.
1st Floor Bed 2, Volume: 1410 cu. ft.
Floor-ceiling, Area: 88 sq. ft.

Test Site:
Client:

Ka'ulu by Gentry
Gentry Builders, LLC



ASTC: 41

Test Conducted By:

Zane Wright, Project Consultant

Jake Pfitsch, Project Consultant

Field Airborne Sound Transmission Test Report

Apparent Sound Transmission Class (ASTC)

Report Date:	April 05, 2024	Source Room:	2nd Floor Bed 1, Volume: 1180 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Bed 1, Volume: 1410 cu. ft.
DLAA Test No:	1.4.1	Test Assembly:	Floor-ceiling, Area: 130 sq. ft.
Test Site:	Ka'ulu by Gentry		
Client:	Gentry Builders, LLC		

STANDARDS

ASTM E336-16	Standard Test Method for Measurement of Airborne Sound Attenuation between Rooms in Buildings
ASTM E413-16	Classification for Rating Sound Insulation
ASTM E2235-04(2012)	Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods

STATEMENT OF CONFORMANCE:

Testing was conducted in general accordance with ASTM E336-16, with all exceptions noted below. All requirements for measuring and reporting Apparent Transmission Loss (ATL) and Apparent Sound Transmission Class (ASTC) were met.

The procedures of ASTM E336-16 Annex were not used.

TEST ENVIRONMENT:

The source room was 2nd Floor Bed 1. The space was finished, unfurnished. The floor was Carpet. The ceiling was gyp. The walls were gyp. All doors and windows were closed during the testing period. The source room had a volume of approximately 1180 cu. ft.

The receiver room was 1st Floor Bed 1. The space was finished, unfurnished. The floor was LVT. The ceiling was gyp. The walls were gyp. All doors and windows were closed during the testing period. The receiver room had a volume of approximately 1410 cu. ft.

The test assembly measured approximately 12.3x10.6, and had an approximate area of 130 sq. ft.

TEST ASSEMBLY:

The tested assembly was the Floor-ceiling. The assembly was not field verified, and was based on information provided by the client and drawings for the project. The client advised that no slab treatment or self-leveling was applied. Results may vary if slab treatment or self-leveling or any adhesive is used in other installations.

Field Airborne Sound Transmission Test Report

Apparent Sound Transmission Class (ASTC)

Report Date:	April 05, 2024	Source Room:	2nd Floor Bed 1, Volume: 1180 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Bed 1, Volume: 1410 cu. ft.
DLAA Test No:	1.4.1	Test Assembly:	Floor-ceiling, Area: 130 sq. ft.

Test Site:	Ka'ulu by Gentry
Client:	Gentry Builders, LLC

TEST PROCEDURE:

Determination of space-average sound pressure levels was performed via the manually scanned microphones technique, described in ASTM E336-16, Paragraph 11.4.3.3.

Flanking transmission was not evaluated.

To evaluate room absorption, 1 microphone was used to measure 4 decays at 4 locations around the receiving room for a total of 16 measurements, per ASTM E2235-04(2012).

TEST INSTRUMENTATION:

Equipment Type	Manufacturer	Model Number	Serial Number	Last NIST Traceable Calibration	Last Local Calibration
Sound Level Meter 1	Larson Davis	831	3784	9/19/2022	Apr 2024
Microphone Pre-Amp:	Larson Davis	PRM831	051188	9/19/2022	Apr 2024
Microphone:	Larson Davis	377B20	301698	9/16/2022	Apr 2024
Calibrator:	Larson Davis	CAL200	2775671	9/19/2022	N/A
Sound Level Meter 2	Larson Davis	831	4328	10/24/2022	Apr 2024
Microphone Pre-Amp:	Larson Davis	PRM831	046469	10/24/2022	Apr 2024
Microphone:	Larson Davis	377B20	168830	10/20/2022	Apr 2024
Calibrator:	Larson Davis	CAL200	5955	10/26/2022	N/A
Amplified Loudspeakers (QTY 2)	QSC	K10	GAA530909	N/A	N/A
Noise Generator:	NTi Audio	MR-PRO	0162	N/A	N/A

Field Airborne Sound Transmission Test Report

Apparent Sound Transmission Class (ASTC)

Report Date:	April 05, 2024	Source Room:	2nd Floor Bed 1, Volume: 1180 cu. ft.
Test Date:	April 04, 2024	Receiver Room:	1st Floor Bed 1, Volume: 1410 cu. ft.
DLAA Test No:	1.4.1	Test Assembly:	Floor-ceiling, Area: 130 sq. ft.

Test Site:	Ka'ulu by Gentry
Client:	Gentry Builders, LLC

STATEMENT OF TEST RESULTS:

Frequency	L1, Average Source Room Level (dB)	L2, Average Corrected Receiver Room Level (dB)	Average Receiver Background Level (dB)	Average RT60 (Seconds)	Noise Reduction, NR (dB)	Apparent Transmission Loss, ATL (dB)	Exceptions noted to ASTM E336-16
100 Hz	97.3	78.2	39.7	0.73	19.1	20.5	
125 Hz	93.8	71.5	38.6	0.66	22.3	23.3	
160 Hz	93.2	69.3	34.0	0.57	23.9	24.2	
200 Hz	88.3	58.2	38.4	0.86	30.1	32.2	
250 Hz	89.8	55.3	34.2	1.59	34.5	39.3	
315 Hz	89.6	51.9	25.8	1.17	37.7	41.1	
400 Hz	89.4	52.4	23.5	1.32	37.0	40.9	
500 Hz	84.5	46.5	23.8	1.47	38.0	42.4	
630 Hz	83.6	41.1	21.1	1.34	42.5	46.5	
800 Hz	85.1	39.0	19.2	1.22	46.1	49.7	
1000 Hz	83.0	37.3	19.3	1.35	45.7	49.8	
1250 Hz	83.6	29.9	16.5	1.50	53.7	58.2	
1600 Hz	81.0	27.1	14.7	1.64	53.9	58.8	
2000 Hz	79.6	25.2	11.9	1.57	54.4	59.1	
2500 Hz	82.2	23.7	10.2	1.46	58.5	62.9	
3150 Hz	83.7	19.7	9.4	1.26	64.0	67.7	
4000 Hz	84.5	13.8	11.9	1.33	70.7	74.7	
5000 Hz	83.8	12.1	10.6	1.36	71.7	75.8	

ASTC: 45

An Apparent Sound Transmission Class (ASTC) of 45, and a Noise Isolation Class (NIC) of 43 was calculated. The NIC rating is based on Noise Reduction (NR), and includes the effects of noise flanking. The NIC reference contour is shown on the next page, and has been "fit" to the Apparent Transmission Loss values, in accordance with the procedure of ASTM E413-16.

The results stated in this report represent only the specific construction and acoustical conditions present at the time of the test. Measurements performed in accordance with this test method on nominally identical constructions and acoustical conditions may produce different results.

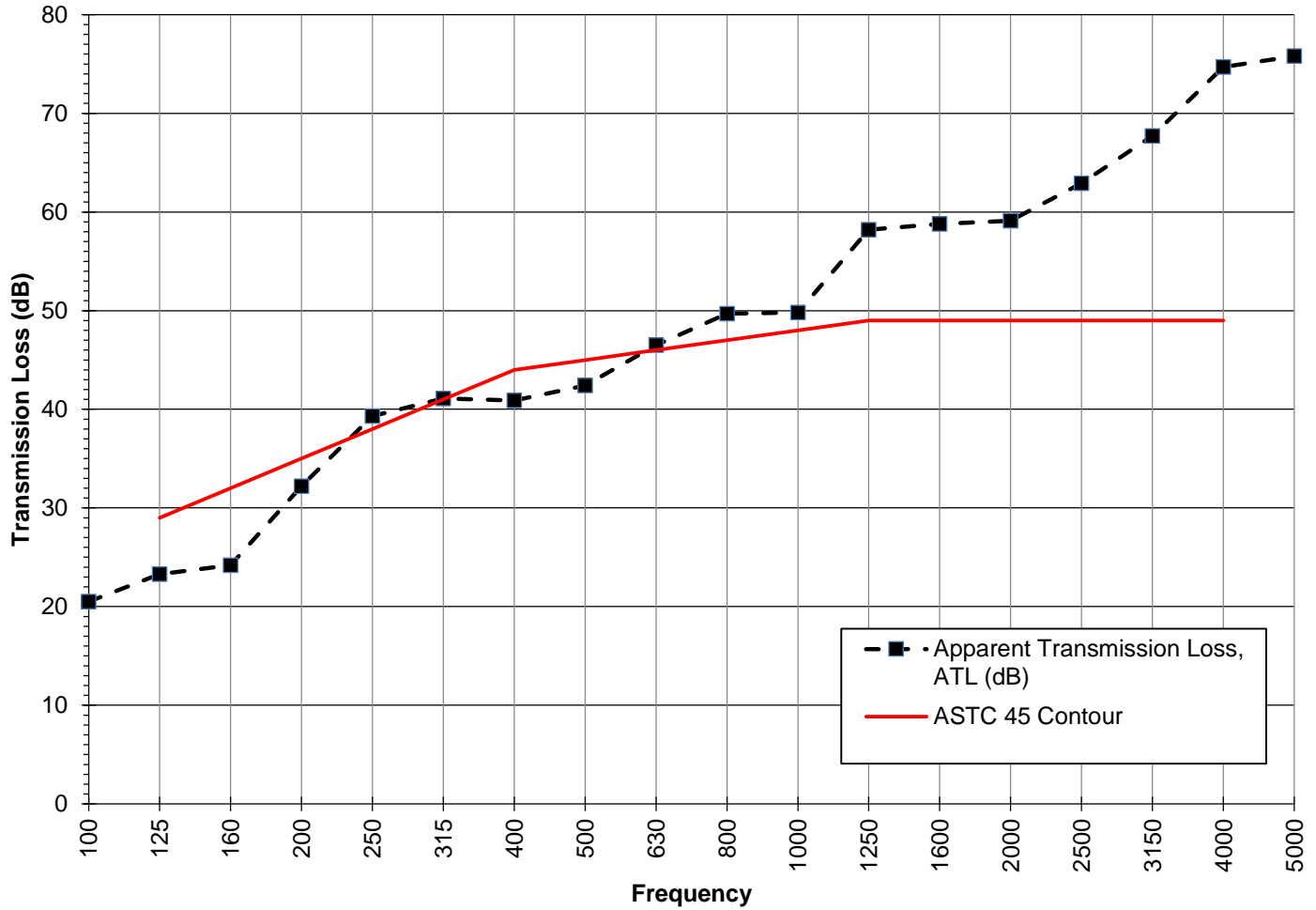
Field Airborne Sound Transmission Test Report

Apparent Sound Transmission Class (ASTC)

Report Date: April 05, 2024
Test Date: April 04, 2024
DLAA Test No: 1.4.1

Source Room: 2nd Floor Bed 1, Volume: 1180 cu. ft.
Receiver Room: 1st Floor Bed 1, Volume: 1410 cu. ft.
Test Assembly: Floor-ceiling, Area: 130 sq. ft.

Test Site: Ka'ulu by Gentry
Client: Gentry Builders, LLC



ASTC: 45

Test Conducted By:

Zane Wright, Project Consultant

Jake Pfitsch, Project Consultant