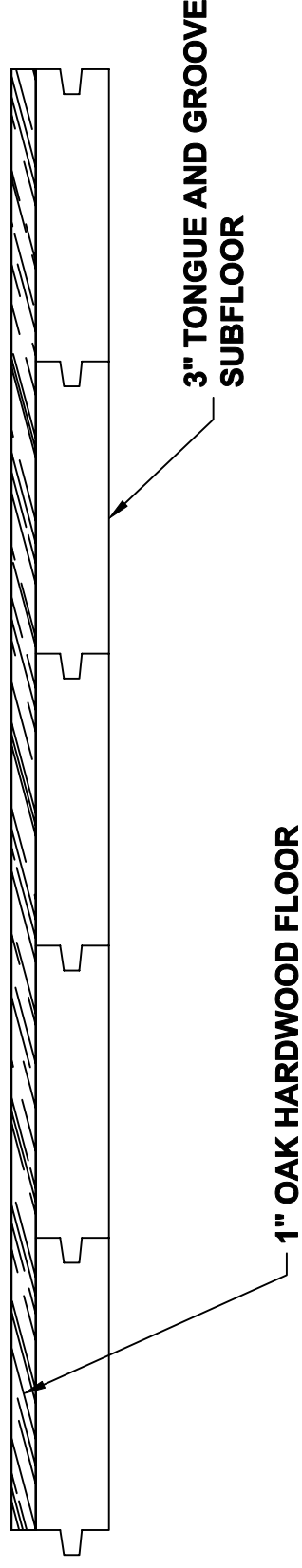


**FIIC 15  
(APPROXIMATE)**



TITLE

**TEST A14-a**

LAST DATE  
REVISED

**11-08-04**

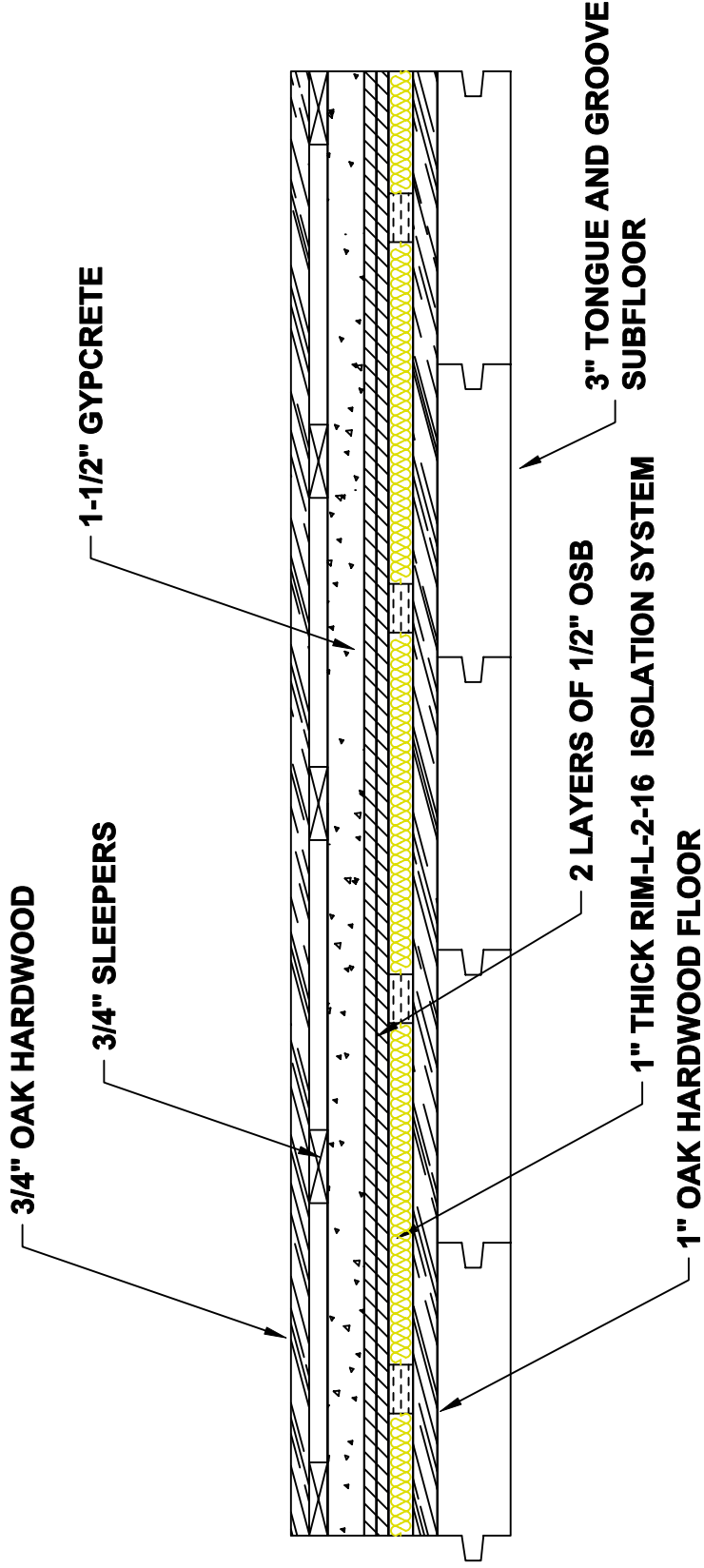
REVISED BY

**JAE**

DRAWING NO.

**A14-a**

**FSTC 50  
FIIIC 45**



TITLE



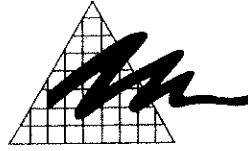
**TEST A14-b**

LAST DATE  
REVISED  
**11-08-04**

REVISED BY  
**JAE**

DRAWING NO.

**A14-b**



DAVID L. ADAMS ASSOCIATES, INC.  
Consultants in Acoustics and Performing Arts Technologies

August 18, 1997

Mr. Matt Swysgood  
Kinetics Noise Control  
6300 Irelan Place  
Dublin, Ohio 43107

Re: Brown Camp Lofts FSTC and FIIC Testing (DLAA Reference No. 5520)

Dear Matt:

The results of the Brown Camp Lofts Field Sound Transmission Class and Field Impact Insulation Class tests are included herein. Testing was conducted by Jeff Kwoikoski and myself on the night of August 6, 1997 for the floor/ceiling construction between Unit 201 and Unit 101. The attached test reports and data sheets summarize the measured and calculated data for both tests. The results indicate ratings of FSTC 50 and FIIC 45.

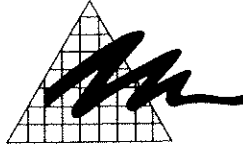
While at the site, we also briefly measured the impact sound pressure levels in Unit 101 with the tapping machine located on the entry foyer floor construction of Unit 201. This floor construction did **not** contain the Kinetics Noise Control RIM system, but simply consisted of 1" oak flooring over the 3" tongue and groove wood subfloor. The measurements indicate an FIIC rating of approximately 15 for this situation. Note that this test was **not** conducted in accordance with ASTM E 1007, as far as the required number of measurements, etc.

It has been a pleasure providing these testing services for you. Please contact us if you have any questions or comments regarding the information herein.

Sincerely,

Chad D. Weltzin  
Project Consultant

Encl.



DAVID L. ADAMS ASSOCIATES, INC.  
Consultants in Acoustics and Performing Arts Technologies

## Field Sound Transmission Class Test Report

Test Date: August 6, 1997  
Test Site: Brown Camp Lofts, Des Moines, Iowa  
Test Construction: Floor/Ceiling between Unit 201 and Unit 101  
Conducted for: Kinetics Noise Control

### Statement of Conformance to Standard

The FSTC testing was conducted in accordance with ASTM standard E 336: Standard Test Method for Measurement of Airborne Sound Insulation in Buildings, except that Annex A2 was not used to determine the impact of flanking paths. The results of the test were rated in accordance with ASTM standard E 413: Classification for Rating Sound Insulation.

### Description of Test Environment

The source room was the combined living/kitchen area of Unit 201. The entry door was not yet installed to this unit, but was temporarily covered for testing. Some work remained to be done in the kitchen and bath areas, but the unit was essentially complete and unfurnished. The source room had a footprint of approximately 456 square feet, and a volume of approximately 4,712 cubic feet. The entry foyer of Unit 201 did not have the same floor construction, but was simply a hardwood floor over the 3" thick tongue and groove subfloor. Efforts were made to alleviate this flanking path as much as possible.

The receiving room was Unit 101. Due to the fact that no wall yet existed between Unit 101 and the adjacent unit, the combined volume of the two spaces was used as the receiving room volume. The combined space had a footprint of approximately 1,261 square feet, and a volume of approximately 19,335 cubic feet. This space was unfinished, and contained holes in the exterior wall which were temporarily covered for testing.

The floor/ceiling common to both the source and receiving room was the area of the combined living/kitchen floor of Unit 201, which was approximately 456 square feet.

### **Description of Test Specimen**

The drawings we were given indicate that the tested floor/ceiling construction consisted of the following: ¾" red oak flooring over ¾" sleepers over 1½" Gyp-crete over two layers of ½" Oriented Strand Board over the 1" Kinetics Noise Control RIM system over 1" oak flooring over a 3" tongue and groove wood subfloor. The subfloor was visible from the receiving room below, and was supported by concrete beams. The total thickness of the construction is 9", and the estimated weight is 32 pounds per square foot. The construction is shown in Figure No. 1, attached.

There was no location at which we could verify the tested floor/ceiling construction. The perimeter of the floated floor was isolated from the surrounding walls and columns via a thin, styrofoam isolation material, but the finished hardwood floor was making contact with the walls and columns in some places.

### **Description of Test Procedure**

The testing procedure was as described in ASTM standard E 336 referenced above. Reverberation time measurements were used to calculate the receiving room absorption.

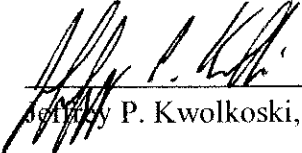
### **Statement of Test Results**


The FSTC rating is based on Field Transmission Loss (FTL) results. Reasonable attempts were made to reduce obvious flanking paths. However, since the amount of flanking was not evaluated, *the FTL and FSTC results should be considered minimum values.*

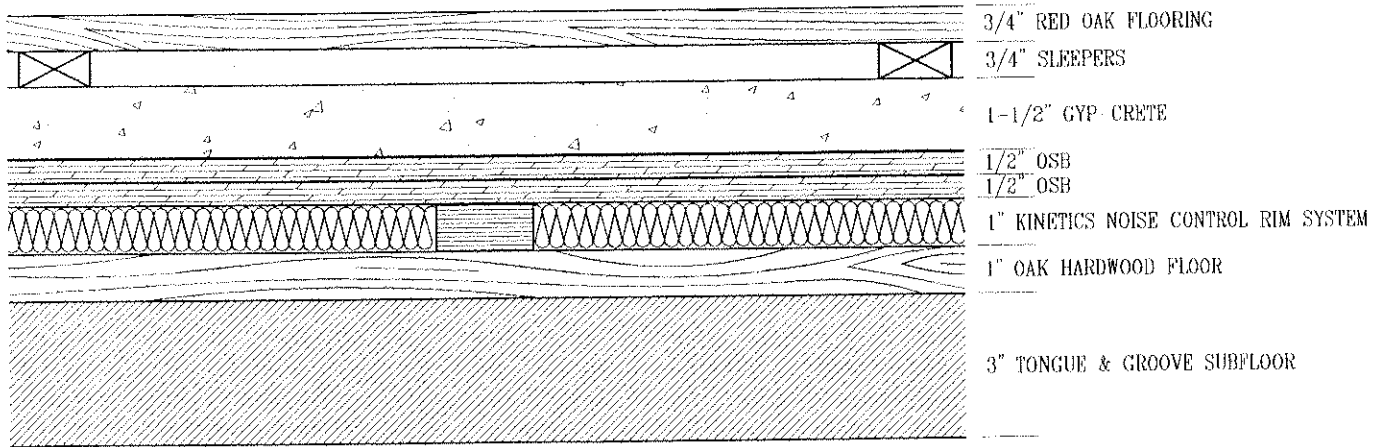
Please note that the amount of absorption in the receiving room exceeded the maximum test criteria at all frequencies, but we feel that this has a minimal impact on the results, due to the relatively large size of the room.

The attached data sheet summarizes the measured and calculated data. The results indicate a rating of FSTC 50.

Test conducted by:

  
\_\_\_\_\_  
Jeffrey P. Kwoikoski, P.E.

  
\_\_\_\_\_  
Chad D. Weltzin



## Floor/Ceiling Test Specimen

Brown Camp Lofts

Scale: 3" = 1'-0"

Date  
15 August '97

Project No.  
5520

Drawn By  
SAA

Figure No.

1



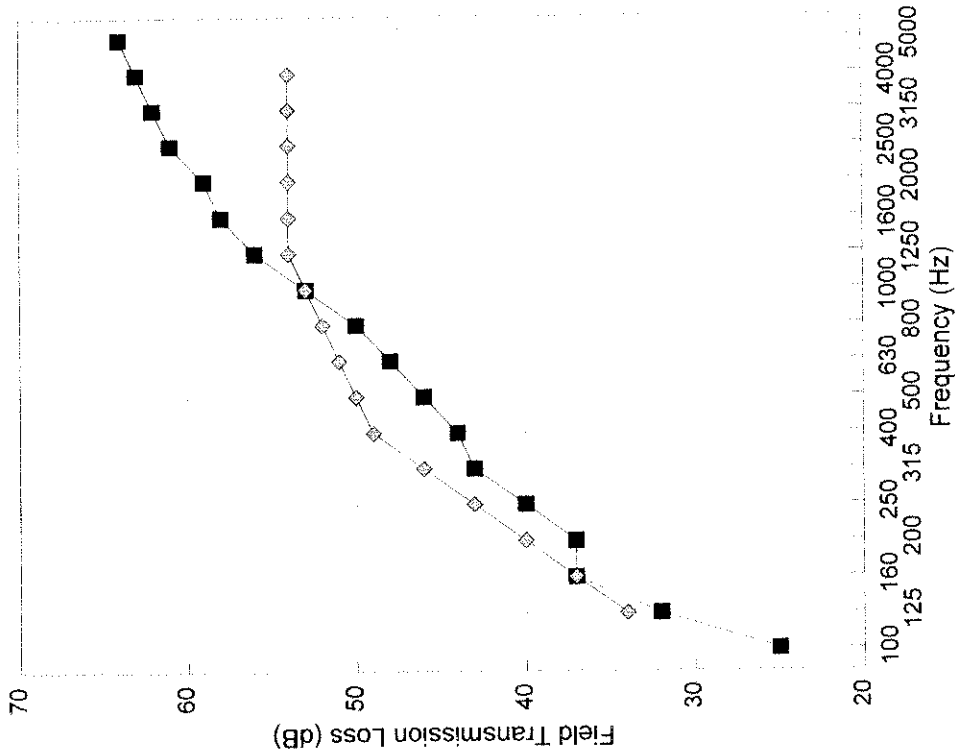
DAVID L. ADAMS ASSOCIATES, INC.  
 1701 BOULDER STREET  
 DENVER, COLORADO 80211  
 303/455-1900 FAX 303/455-9187

**Results of Test**

Project Name: Brown Camp Lofts  
 Test Partition: Unit 201 / Unit 101, Flr./Clg.  
 Test Date: 8-6-97

**FSTC Rating: 50**

1/3 Octave Band Center Frequency	FTL (dB)	Uncertainty (dB)	Average T60 (seconds)
100 Hz	25	3	0.98
125	32	2	0.97
160	37	2	1.00
200	37	2	0.95
250	40	2	0.97
315	43	2	0.88
400	44	1	0.88
500	46	1	0.85
630	48	1	0.87
800	50	1	0.88
1000	53	1	0.88
1250	56	1	0.87
1600	58	1	0.87
2000	59	1	0.88
2500	61	1	0.87
3150	62	1	0.85
4000	63	1	0.83
5000	64	2	0.77

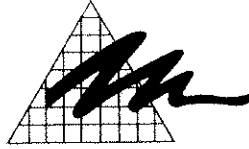


■ Measured FTL Data    ◇ FSTC Contour

where:  
 FSTC = Field Sound Transmission Class.  
 FTL = Field Transmission Loss in decibels (dB) of the test partition.  
 Uncertainty = Uncertainty in dB, for a 95% confidence limit.  
 Average T60 = Average reverberation time in the receiving room.



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DAVID L. ADAMS ASSOCIATES, INC.  
Consultants in Acoustics and Performing Arts Technologies

## Field Impact Insulation Class Test Report

Test Date: August 6, 1997  
Test Site: Brown Camp Lofts, Des Moines, Iowa  
Test Construction: Floor/Ceiling between Unit 201 and Unit 101  
Conducted for: Kinetics Noise Control

### Statement of Conformance to Standard

The FIIC testing was conducted in accordance with ASTM standard E 1007: Standard Test Method for Field Measurement of Tapping Machine Impact Sound Transmission Through Floor-Ceiling Assemblies and Associated Support Structures, and rated in accordance with ASTM E 989, Standard Classification for Determination of Impact Insulation Class (IIC).

### Description of Test Environment

The source room was the combined living/kitchen area of Unit 201. The entry door was not yet installed to this unit, but was temporarily covered for testing. Some work remained to be done in the kitchen and bath areas, but the unit was essentially complete and unfurnished. The source room had a footprint of approximately 456 square feet, and a volume of approximately 4,712 cubic feet. The entry foyer of Unit 201 did not have the same floor construction, but was simply a hardwood floor over the 3" thick tongue and groove subfloor. Efforts were made to alleviate this flanking path as much as possible.

The receiving room was Unit 101. Due to the fact that no wall yet existed between Unit 101 and the adjacent unit, the combined volume of the two spaces was used as the receiving room volume. The combined space had a footprint of approximately 1,261 square feet, and a volume of approximately 19,335 cubic feet. This space was unfinished, and contained holes in the exterior wall which were temporarily covered for testing.

The floor/ceiling common to both the source and receiving room was the area of the combined living/kitchen floor of Unit 201, which was approximately 456 square feet.

### **Description of Test Specimen**

The drawings we were given indicate that the tested floor/ceiling construction consisted of the following: ¾" red oak flooring over ¾" sleepers over 1½" Gyp-crete over two layers of ½" Oriented Strand Board over the 1" Kinetics Noise Control RIM system over 1" oak flooring over a 3" tongue and groove wood subfloor. The subfloor was visible from the receiving room below, and was supported by concrete beams. The total thickness of the construction is 9", and the estimated weight is 32 pounds per square foot. The construction is shown in Figure No. 1, attached.

There was no location at which we could verify the tested floor/ceiling construction. The perimeter of the floated floor was isolated from the surrounding walls and columns via a thin, styrofoam isolation material, but the finished hardwood floor was making contact with the walls and columns in some places.

### **Description of Test Procedure**

The testing procedure was as described in ASTM standard E 1007, referenced above. Reverberation time measurements were used to calculate the receiving room absorption.

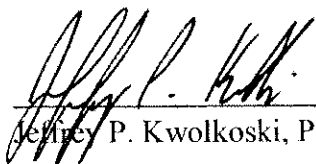
### **Statement of Test Results**

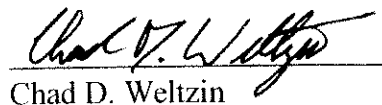
The FIIC rating is based on normalized impact sound pressure levels. Reasonable attempts were made to reduce obvious flanking paths. However, since the amount of flanking was not evaluated, *the FIIC results should be considered minimum values.*

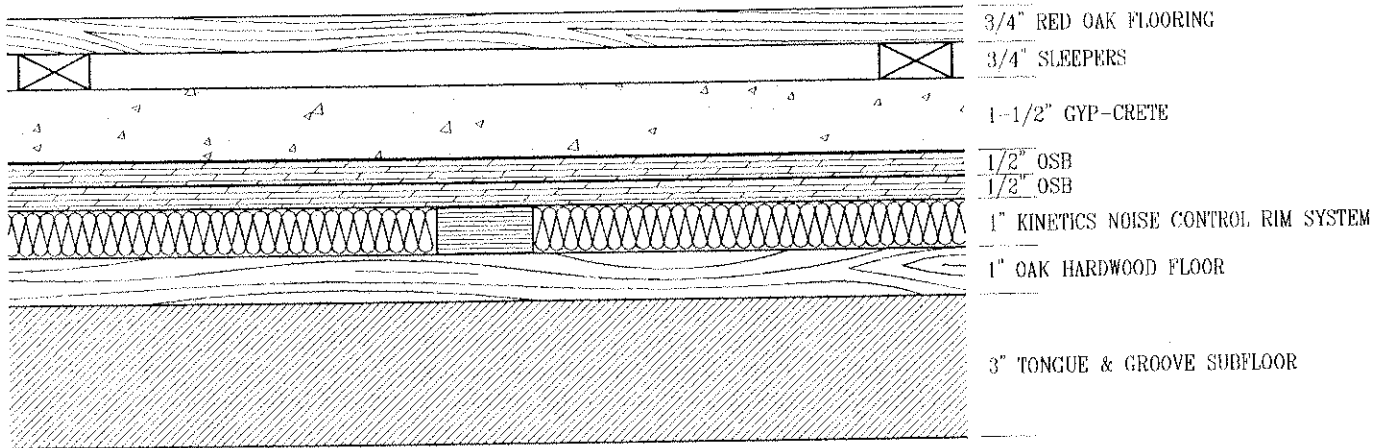
Please note that the amount of absorption in the receiving room exceeded the maximum test criteria at all frequencies, but we feel that this has a minimal impact on the results, due to the relatively large size of the room.

The attached data sheet summarizes the measured and calculated data. The results indicate a rating of FIIC 45.

Test conducted by:

  
\_\_\_\_\_  
Jeffrey P. Kwoikoski, P.E.

  
\_\_\_\_\_  
Chad D. Weltzin



## Floor/Ceiling Test Specimen

Brown Camp Lofts

Scale: 3" = 1'-0"

Date  
15 August '97

Project No.  
5520

Drawn By  
SAA

Figure No.

1



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 DENVER, COLORADO 80211  
 303/455-1900 FAX 303/455-9187

**Results of Test**

Project Name: Brown Camp Lofts  
 Test Partition: Unit 201 / Unit 101, Flr./Clg.  
 Test Date: 8-6-97

**FIIC Rating: 45**

1/3 Octave Band Center Frequency	Normalized Impact Sound Pressure Level (dB)	Uncertainty (dB)	Average Absorption (sabins)
100 Hz	71	1	963
125	72	1	980
160	71	1	947
200	72	1	997
250	70	1	980
315	69	1	1073
400	67	1	1073
500	67	1	1115
630	66	1	1093
800	63	1	1073
1000	58	1	1073
1250	54	1	1093
1600	50	1	1093
2000	44	1	1073
2500	37	1	1093
3150	32	0	1115
4000	27	1	1137
5000	23	1	1236

where:  
 FIIC = Field Impact Insulation Class.  
 Uncertainty = Uncertainty in dB, for a 95% confidence limit.  
 Average Absorption = Average absorption in the receiving room.

