D Rowles

From: Roberta Wieland [rwieland@wielandacoustics.com]
Sent: Friday, April 11, 2008 1:12 PM
To: d_rowles@paragonequities.net
Subject: RE: Condo Floor/Ceiling Assembly Article

Hi Diane:

I've spoken to our Principal Consultant, David Wieland, regarding the issues you raised on the phone. Wieland Acoustics can conduct tests and provide Paragon Equities with a brief report that states the measured sound levels and includes a determination as to whether or not the measured levels meet or exceed the applicable noise standards.

However, please note that we will not be providing recommendations as to how to bring the floor/ceiling assemblies into compliance with the standards in the event that they fail the tests, and that we do not provide testimony (as an expert witness or percipient witness) or litigation support in the event a lawsuit is filed.

As background information, please find a .pdf of our newsletter, which contains the article, "The Case of the Upstairs Condominium with the Hardwood Floor." (This appears at the top of on pages 2 and 3 of the newsletter.) It may help you understand the issues involved in the problem your homeowners are discussing.

If you would like us to conduct testing only, subject to the above conditions (plus our standard contractual terms and conditions), please contact David Wieland (dwieland@wielandacoustics.com) directly, and we will provide you with a written proposal.

Thank you for your interest in Wieland Acoustics.

Best regards,

Roberta Wieland, President
rwieland@wielandacoustics.com

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noise & vibration consultants

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Subject: Acoustical Testing of Floor/Ceiling Separation Assemblies

As requested, we have conducted acoustical testing of several floor/ceiling separation assemblies within the
proposed measurements have been carried out. The following report identifies the applicable noise standards, the results of our measurements, and our assessment.

1 Noise Standards

The State of California's Noise Insulation Standards (Title 24) require that floor/ceiling separation assemblies between occupied multifamily dwelling units provide a minimum Field Impact Insulation Class[1] (FIIC) of 45 when tested in the field. Non-normalized sound levels are used to calculate both the FIIC values; i.e., the measurement data is not normalized to account for sound-absorptive materials (or lack thereof) in the receiver room.

2 Test Results

On June 24, 2008, FIIC tests were conducted for the floor/ceiling assemblies between Unit 208 and Unit 108; Unit 307 and Unit 207; and Unit 306 and Unit 206. In each case the tests were carried out between the kitchen/living area of the upper unit and the kitchen/living area of the lower unit.

[1] FIIC is a single number rating used to compare the effectiveness of floor/ceiling assemblies in providing reduction of impact generated sounds such as footsteps. It is highly dependent on the floor covering used in the test unit. In the Title 24 procedures, the FIIC rating is also influenced by the sound absorption provided by furnishings in the occupied receiver room.

The results of our testing, provided in Tables 1 through 3, are summarized in the following table:

Test Assembly	Floor Surface of Upper Unit	FIIC Rating	Pass / Fail
Floor/ceiling assembly between kitchen/living area of Unit 208 and kitchen/living area of Unit 108.	Tile	41	Fail
Floor/ceiling assembly between kitchen/living area of Unit 307 and kitchen/living area of Unit 207.	Tile	38	Fail
Floor/ceiling assembly between kitchen/living area of Unit 306 and kitchen/living area of Unit 206.	Wood	47	Pass

It should be noted that these tests results are heavily influenced by the furnishings in the receiver rooms (rooms with plush furnishings render higher FIIC ratings than sparsely furnished rooms, even with the same floor/ceiling assembly).

3 Conclusion

The results of our measurements at the Northview Condominiums indicate that the FIIC ratings of the floor/ceiling separation assemblies between Unit 208 and Unit 108, and between Unit 307 and Unit 207 do not comply with the State's Title 24 standards. The FIIC rating of the floor/ceiling separation assembly between Unit 306 and Unit 206 does comply with the State's Title 24 standards.

Thank you for this opportunity to provide you with acoustical consulting services. If you have any questions, please do not hesitate to call us at 949.474.1222.

Sincerely,

WIELAND ACOUSTICS, INC.

David L. Wieland
Principal Consultant

Thomas T. Corbishley
Associate Consultant

Table 1. Computation of the Field Impact Insulation Class (FIIC), Per Title 24

Project: Testing at 2501 Temple Avenue, Signal Hill
Partition: Floor/Ceiling between Kitchen/Living Area in Unit 208 and Kitchen/Living Area in Unit 108
Floor Surface: Tile
Test Date: June 24, 2008

FIIC: 41

Frequency, (Hz)	Lp	FIIC Curve	Residual
100	65	71	0
125	74	71	3
160	74	71	3
200	72	71	1
250	68	71	0
315	68	71	0
400	68	70	0
500	66	69	0
630	63	68	0
800	62	67	0
1000	58	66	0
1250	57	63	0
1600	58	60	0
2000	63	57	6
2500	62	54	8
3150	57	51	6
		Sum of Residuals:	27

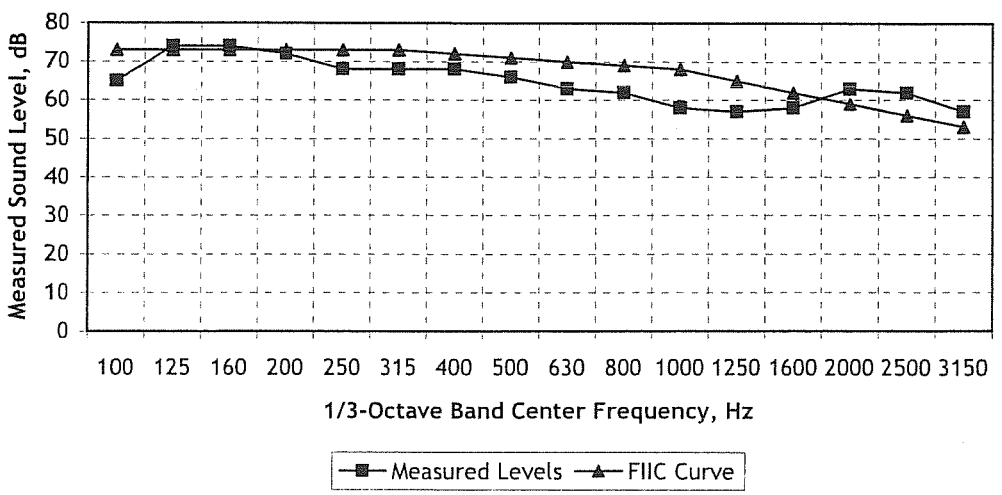

Table 2. Computation of the Field Impact Insulation Class (FIIC), Per Title 24

Project: Testing at 2501 Temple Avenue, Signal Hill
Partition: Floor/Ceiling between Kitchen/Living Area in Unit 307 and Kitchen/Living Area in Unit 207
Floor Surface: Tile
Test Date: June 24, 2008

FIIC: 38

Frequency, (Hz)	Lp	FIIC Curve	Residual
100	64	74	0
125	75	74	1
160	77	74	3
200	69	74	0
250	68	74	0
315	70	74	0
400	70	73	0
500	68	72	0
630	65	71	0
800	65	70	0
1000	62	69	0
1250	60	66	0
1600	61	63	0
2000	65	60	5
2500	65	57	8
3150	60	54	6
		Sum of Residuals:	23

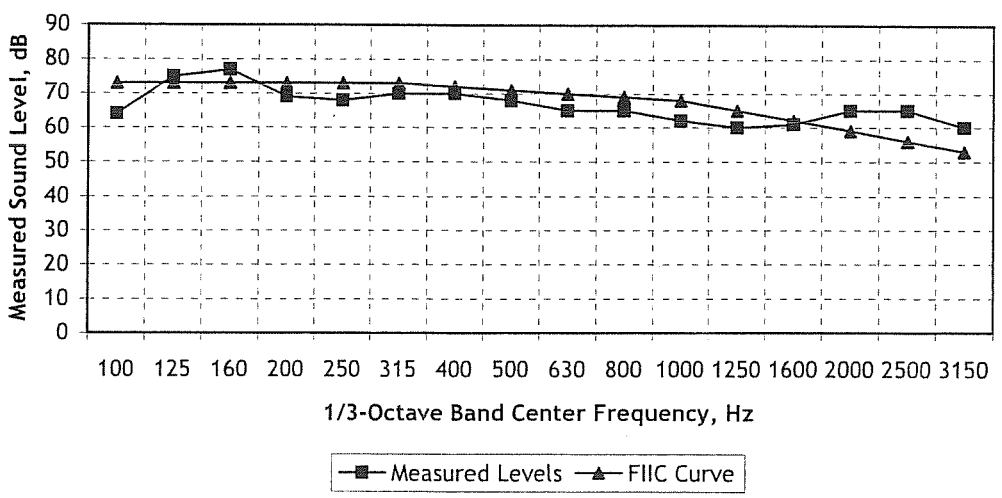

Table 3. Computation of the Field Impact Insulation Class (FIIC), Per Title 24

Project: Testing at 2501 Temple Avenue, Signal Hill
Partition: Floor/Ceiling between Kitchen/Living Area in Unit 306 and Kitchen/Living Area in Unit 206
Floor Surface: Wood
Test Date: June 24, 2008

FIIC: 47

Frequency, (Hz)	Lp	FIIC Curve	Residual
100	65	65	0
125	73	65	8
160	73	65	8
200	69	65	4
250	66	65	1
315	64	65	0
400	64	64	0
500	60	63	0
630	55	62	0
800	49	61	0
1000	45	60	0
1250	41	57	0
1600	37	54	0
2000	37	51	0
2500	36	48	0
3150	29	45	0
		Sum of Residuals:	21