

J. H. Findorff & Sons Inc.  
300 S. Bedford Street  
Madison, WI 53703

February 21, 2008

Attn: Mr. Nic Schilling  
Project Manager

Re: Field Impact Testing  
Quiet Qurl vs. Enkasonic

Dear Mr. Schilling:

The following enclosed test reports, 1080203-01, 1080203-02 and 1080203-03, document the results of Field Impact Insulation Class (FIIC) testing we conducted at the Capitol West 601 project Madison, Wisconsin on February 14, 2008.

The tests were conducted in accordance with ASTM E1007-04 on an engineered wood floor over a 10" thick concrete slab and a 1" thick Level Rock deck and also on ceramic tile over a 10" thick concrete slab. The acoustical underlayment for all of these tests was QQ StepSoft 08035. The results of our tests are shown in the column below labeled "FIIC" and in the attached test reports.

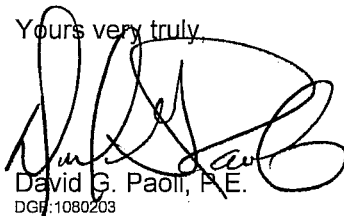
<u>Test No.</u>	<u>Description</u>	<u>FIIC</u>
1080203-01	Engineered Floor, QQ StepSoft 08035 on 10" Concrete	67
1080203-02	Ceramic Tile, QQ StepSoft 08035 on 10" Concrete	62
1080203-03	Engineered Floor, QQ StepSoft 08035 on 1" Level Rock	53

Since our testing was conducted in the mid morning hours, background sound levels due to construction noise was audible during our tests and may have affected the results, especially during test #-01. As can be seen from test #-01 results, mid and high frequency noise could not be measured accurately above the ambient noise. With lower ambient levels, the FIIC results of this assembly could have been slightly better.

All of these systems meet the minimum IBC requirement for impact insulation of FIIC 45.

If you have any questions, or comments, please do not hesitate to call.

Yours very truly,



David G. Paoli, P.E.  
DGP:1080203

attachments

PROJECT: Capitol West 601, Madison, Wisconsin

LOCATION: Unit 701 LR/DR to Unit 601 LR/DR

Date:	2/14/2008	Time:	1045	Hours
Temperature:	58 °F 14.4 °C	Relative Humidity:	45 %	
Source Room Volume:	4140 Cu Ft 117.2 m <sup>3</sup>	Receive Room Volume:	4140 Cu Ft	117.2 m <sup>3</sup>
Receive Room Surface Area:	1696 Sq Ft 157.6 m <sup>2</sup>	Lower Limiting Frequency:	100 Hz	

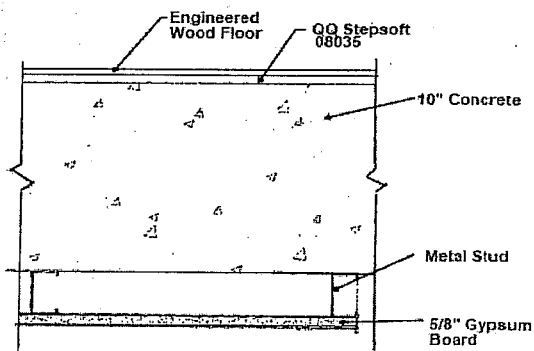
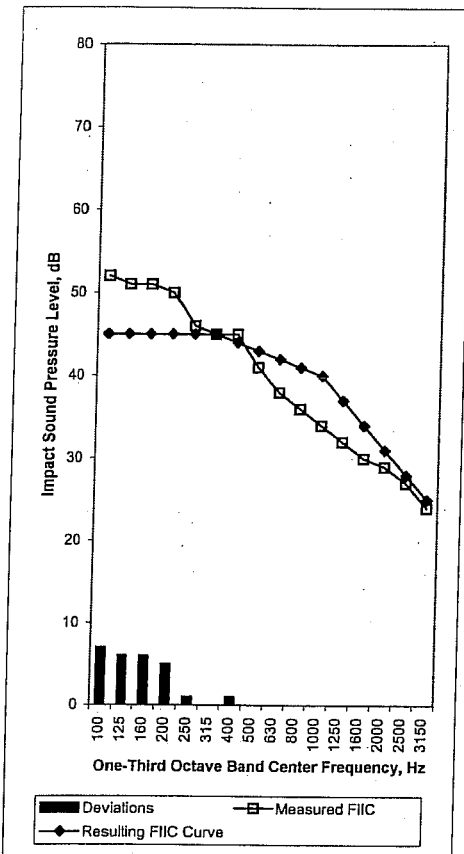
Test conducted in accordance with the provisions set forth under ASTM designation E 1007-04, *Field Measurement of Tapping Machine Impact Sound Transmission Through Floor-Ceiling Assemblies*. Receive Room sound absorption determined using ASTM designation E 2235-04, *Determination of Decay Rates for Use in Sound Insulation Test Methods*. Classification performed in accordance with ASTM designation E 989-89 (R1999), *Standard Classification for Determination of Impact Insulation Class (IIC)*. A detailed description of the test procedure and instrumentation used will be furnished on request.

One-Third Octave Center Frequency, Hz

	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150
Space Average Sound Level, dB	46.2	46.0	46.5	47.3	43.8	43.4	42.2	39.0	35.8	33.7	31.7	29.8	27.3	25.0	22.6	19.0
Ambient Sound Level, dB	40.8	<u>41.1</u>	<u>42.7</u>	39.8	34.7	34.9	33.7	<u>34.8</u>	<u>33.7</u>	<u>32.8</u>	<u>31.7</u>	<u>30.8</u>	<u>27.4</u>	<u>25.4</u>	<u>23.1</u>	<u>19.6</u>
Normalization, dB	5.4	5.0	4.2	2.9	2.1	1.8	2.3	1.6	1.8	1.9	2.3	2.5	3.1	4.3	4.7	4.7
Impact Insulation	52	51	51	50	46	45	45	41	38	36	34	32	30	29	27	24
FIIC 67 Curve	45	45	45	45	45	45	44	43	42	41	40	37	34	31	28	25
Deviations	7	6	6	5	1	0	1	0	0	0	0	0	0	0	0	0
Mean Absorption, m <sup>2</sup>	<u>34.6</u>	<u>31.8</u>	<u>26.5</u>	19.4	16.2	15.1	17.0	14.5	15.1	15.5	17.2	18.0	20.5	<u>26.8</u>	<u>29.3</u>	<u>29.3</u>

Bold receive levels indicate that the receive and ambient levels differed by less than 5 dB  
 Bold mean absorption values indicate that receive room one-third octave absorption exceeded 24 sq m

Field IIC 67



Floor/Ceiling Detail

Field Impact Insulation Class (FIIC): 62

Project Number: 1080203-02

Certified by: 

PROJECT: Capitol West 601, Madison, Wisconsin

LOCATION: Unit 701 Master Bath to Unit 601 Master Bath

Date: 2/14/2008  
 Temperature: 58 °F 14.4 °C  
 Source Room Volume: 744 Cu Ft 21.1 m<sup>3</sup>  
 Receive Room Surface Area: 514 Sq Ft 47.8 m<sup>2</sup>

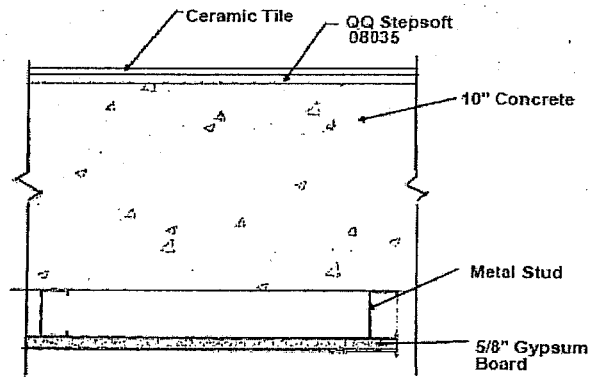
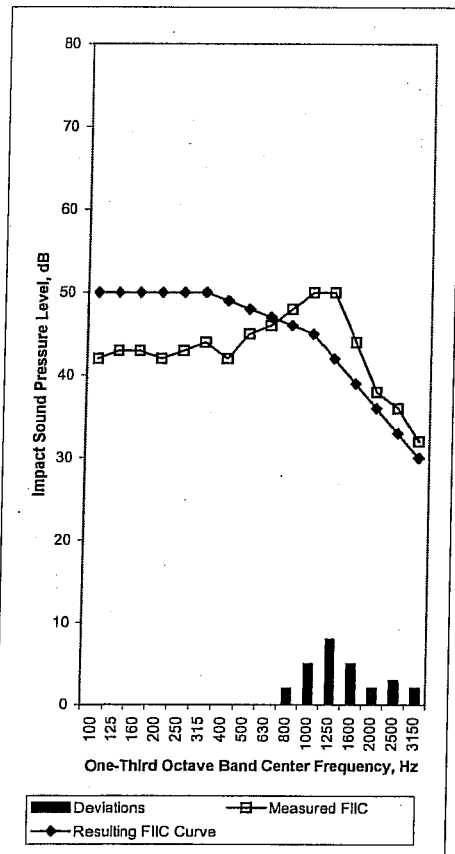
Time: 1115 Hours  
 Relative Humidity: 45 %  
 Receive Room Volume: 744 Cu Ft 21.1 m<sup>3</sup>  
 Lower Limiting Frequency: 0 Hz

Test conducted in accordance with the provisions set forth under ASTM designation E 1007-04, *Field Measurement of Tapping Machine Impact Sound Transmission Through Floor-Ceiling Assemblies*. Receive Room sound absorption determined using ASTM designation E 2235-04, *Determination of Decay Rates for Use in Sound Insulation Test Methods*. Classification performed in accordance with ASTM designation E 989-89 (R1999), *Standard Classification for Determination of Impact Insulation Class (IIC)*. A detailed description of the test procedure and instrumentation used will be furnished on request.

	One-Third Octave Center Frequency, Hz															
	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150
Space Average Sound Level, dB	43.4	43.6	44.6	46.6	47.0	48.5	45.8	48.7	50.3	51.9	53.7	53.5	47.3	40.7	38.4	34.7
Ambient Sound Level, dB	<b>42.9</b>	<b>39.9</b>	<b>43.1</b>	<b>42.0</b>	39.2	40.1	<b>44.7</b>	41.1	40.6	39.0	38.7	37.4	34.6	32.9	26.0	22.4
Normalization, dB	-1.5	-1.1	-1.2	-4.3	-4.4	-4.1	-4.3	-3.8	-4.4	-3.5	-4.1	-3.8	-3.3	-2.9	-2.7	-3.0
Impact Insulation	42	43	43	42	43	44	42	45	46	48	50	50	44	38	36	32
FIIC 62 Curve	50	50	50	50	50	50	49	48	47	46	45	42	39	36	33	30
Deviations	0	0	0	0	0	0	0	0	0	2	5	8	5	2	3	2
Mean Absorption, m <sup>2</sup>	7.1	<b>7.8</b>	7.6	3.7	3.6	3.9	3.7	4.2	3.6	4.5	3.9	4.2	4.6	5.1	5.4	5.0

Bold receive levels indicate that the receive and ambient levels differed by less than 5 dB  
 Bold mean absorption values indicate that receive room one-third octave absorption exceeded 7.6 sq m

Field IIC 62



Floor/Ceiling Detail

Field Impact Insulation Class (FIIC): 53

Project Number: 1080203-03

Certified by: 

PROJECT: Capitol West 601, Madison, Wisconsin

LOCATION: Unit 701 LR/DR to Unit 601 LR/DR

Date: 2/14/2008  
 Temperature: 58 °F 14.4 °C  
 Source Room Volume: 4140 Cu Ft 117.2 m<sup>3</sup>  
 Receive Room Surface Area: 1696 Sq Ft 157.6 m<sup>2</sup>

Time: 1130 Hours  
 Relative Humidity: 45 %  
 Receive Room Volume: 4140 Cu Ft 117.2 m<sup>3</sup>  
 Lower Limiting Frequency: 100 Hz

Test conducted in accordance with the provisions set forth under ASTM designation E 1007-04, *Field Measurement of Tapping Machine Impact Sound Transmission Through Floor-Ceiling Assemblies*. Receive Room sound absorption determined using ASTM designation E 2235-04, *Determination of Decay Rates for Use in Sound Insulation Test Methods*. Classification performed in accordance with ASTM designation E 989-89 (R1999), *Standard Classification for Determination of Impact Insulation Class (IIC)*. A detailed description of the test procedure and instrumentation used will be furnished on request.

One-Third Octave Center Frequency, Hz

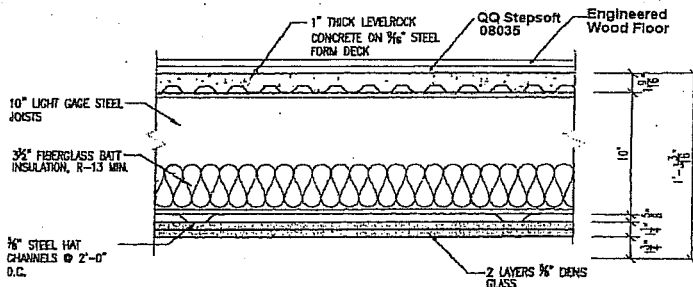
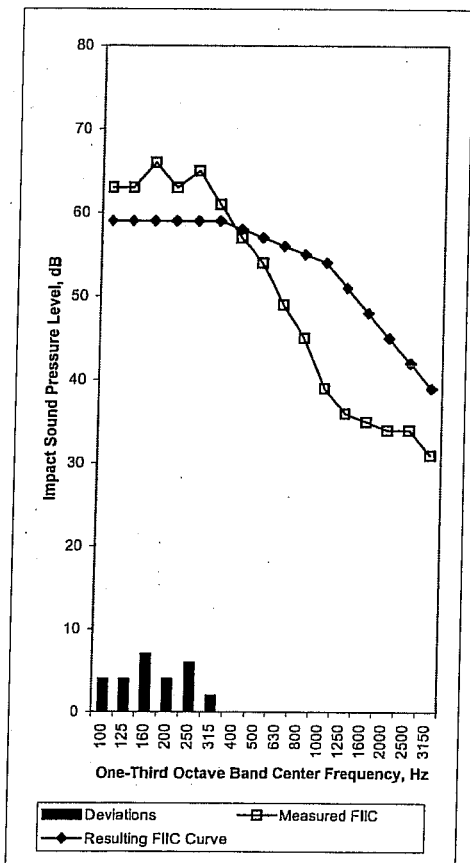
	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150
Space Average Sound Level, dB	58.1	58.0	61.7	60.6	62.7	59.4	55.1	51.9	46.8	43.3	37.0	33.9	31.9	29.5	29.0	26.6
Ambient Sound Level, dB	40.8	41.1	42.7	39.8	34.7	34.9	33.7	34.8	33.7	32.8	31.7	<b>30.8</b>	<b>27.4</b>	<b>25.4</b>	23.1	19.6
Normalization, dB	5.4	5.0	4.2	2.9	2.1	1.8	2.3	1.6	1.8	1.9	2.3	2.5	3.1	4.3	4.7	4.7
Impact Insulation	63	63	66	63	65	61	57	54	49	45	39	36	35	34	34	31
FIIC 53 Curve	59	59	59	59	59	59	58	57	56	55	54	51	48	45	42	39
Deviations	4	4	7	4	6	2	0	0	0	0	0	0	0	0	0	0

Mean Absorption, m<sup>2</sup>      **34.6**   **31.8**   **26.5**   19.4   16.2   15.1   17.0   14.5   15.1   15.5   17.2   18.0   20.5   **26.8**   **29.3**   **29.3**

Bold receive levels indicate that the receive and ambient levels differed by less than 5 dB

Bold mean absorption values indicate that receive room one-third octave absorption exceeded 24 sq m

Field IIC 53



**Floor/Ceiling Detail**