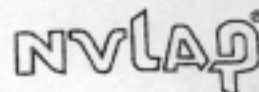




Acoustical Testing Laboratory



Accredited by the National Voluntary
Laboratory Accreditation Program
for the specific scope of accreditation
under Lab Code 200291

TEST REPORT

for

Protecto Wrap Company
2255 South Delaware Street
Denver, CO 80223
Marc Lester / 303 777-3001

Impact Sound Transmission Test
ASTM E 492 - 90 / ASTM E 989 - 89
On

**8" Concrete Slab Overlaid with;
Hardwood Flooring over WhisperMat HW Membrane Underlayment**

Page 1 of 4

Report Number: NGC 7003032

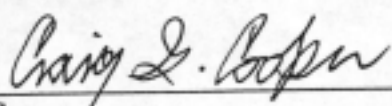
Assignment Number: G-183

Specimen Receipt Date: NA

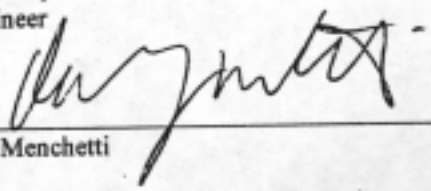
Test Date: 06/24/2003

Report Date: 07/10/2003

Submitted by:


Craig G. Cooper
Test Engineer

Reviewed by:


Robert J. Menchetti
Director

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Report Number: NGC 7003032

Test Method: This test method is in accordance with American Society for Testing and Materials Standard Test Method for Laboratory Measurement of Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine - Designation: E 492 - 90.

Specimen Description: 8" Concrete Slab Overlaid with; Hard Flooring over, according to client, WhisperMat HW Membrane Underlayment.

The test specimen was a floor-ceiling assembly consisting of the following:

- 1 layer of 7/16" thick T&G hardwood flooring, 2-3/8" wide planks (1.47 PSF), from BERTI. Description; Rovere N. Flooring attached to membrane using Franklin Adhesive 211 wood flooring adhesive with 1/4" x 1/4" V notched trowel.
- 1 layer of 0.20" thick WhisperMat HW asphalt membrane floor underlayment with foam side up. (0.26 PSF) Membrane was self-adhered to kraft paper that is adhered to the concrete at the perimeter and tapping machine areas with double-sided tape.
- 8" thick reinforced concrete slab (85.6 PSF).

The overall weight of the test assembly is 87.33 PSF.

The perimeter of the concrete slab was sealed with fiber gasketing and a sand filled trough. The test assembly is structurally isolated from the receiving room.

Specimen size: 12 ft x 16 ft.

Conditioning: Adhesive cured for a minimum of 4 hours. Concrete slab cured for a minimum of 28 days.

Test samples were submitted by client and tested as received.

Test Results: The results of the tests are given on pages 3 and 4.

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Normalized impact sound pressure level

Test: ASTM E 492 - 90 / ASTM E 989 - 89

Page 3 of 4

Test Number: NGC7003032

Date: 06/24/2003

Size: 17.84 m²

Source room

Temperature [°C]: 23.2

Humidity [%]: 60

Receiving room

Volume V = 48 m³

Temperature [°C]: 22.1

Humidity [%]: 61

Impact Insulation Class IIC = 55 dB

Sum of unfavourable deviations: 26.0 dB

Max. unfavourable deviation: 8.0 dB at 100 Hz

Frequency	L _n	L ₂	T	Corr.	u.Dev.	ΔL _n
[Hz]	[dB]	[dB]	[s]	[dB]	[dB]	
100	65.0	70.1	2.32	-5.1	8.0	0.291
125	61.0	66.6	2.82	-5.6	4.0	0.330
160	61.0	66.1	2.71	-5.1	4.0	0.195
200	64.0	69.5	2.71	-5.5	7.0	0.154
250	58.0	63.1	2.68	-5.1	1.0	0.141
315	59.0	65.1	2.89	-6.1	2.0	0.080
400	56.0	61.6	2.77	-5.6	-.	0.079
500	54.0	58.9	2.50	-4.9	-.	0.073
630	52.0	56.1	2.17	-4.1	-.	0.065
800	49.0	53.4	2.30	-4.4	-.	0.060
1000	43.0	47.7	2.27	-4.7	-.	0.059
1250	41.0	45.3	1.93	-4.3	-.	0.056
1600	38.0	41.6	1.75	-3.6	-.	0.053
2000	31.0	34.2	1.61	-3.2	-.	0.038
2500	26.0	28.8	1.43	-2.8	-.	0.040
3150	21.0	23.0	1.31	-2.0	-.	0.043
4000	19.0	20.6	1.18	-1.6	-.	0.047
5000	16.0	17.6	1.07	-1.6	-.	0.042

L_n = Normalized Sound Pressure Level, dB
L₂ = Receiving Room Level, dB
T = Reverberation Time, seconds
ΔL_n = Uncertainty for 95% Confidence Level

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Normalized impact sound pressure level

Test: ASTM E 492 - 90 / ASTM E 989 - 89

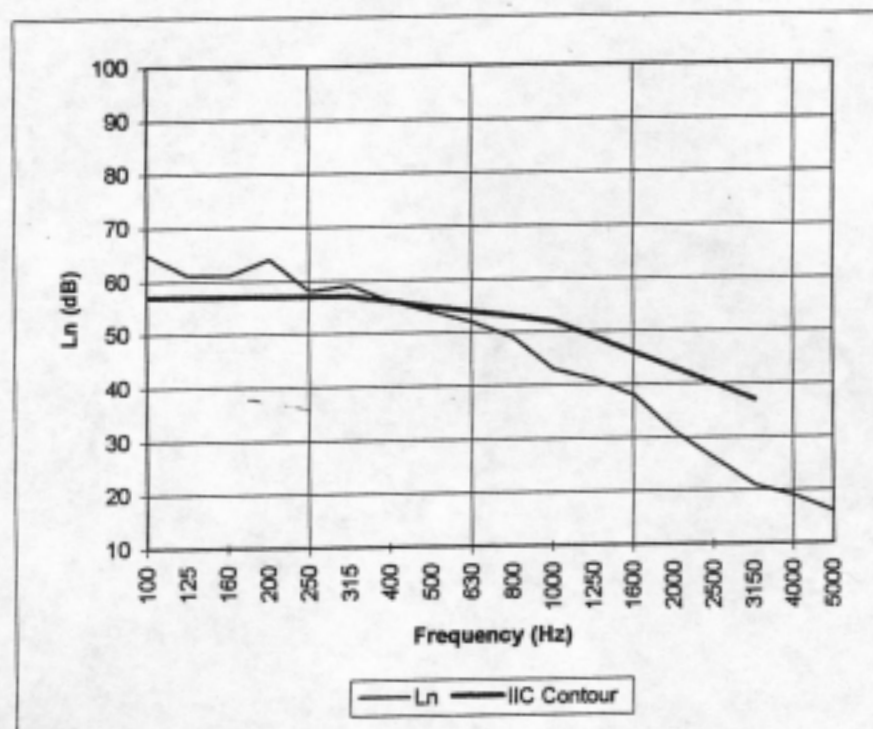
Page 4 of 4

Test Number: NGC7003032

Date: 06/24/2003

Impact Insulation Class IIC = 55 dB

Frequency	L_n
[Hz]	[dB]
100	65
125	61
160	61
200	64
250	58
315	59
400	56
500	54
630	52
800	49
1000	43
1250	41
1600	38
2000	31
2500	26
3150	21
4000	19
5000	16



- * Due to high insulating value of specimen, background levels limit results at these frequencies.

L_n = Normalized Sound Pressure Level, dB

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Acoustical Testing Laboratory

TEST REPORT

for

Protecto Wrap Company
2255 South Delaware Street
Denver, CO 80223
Marc Lester / 303 777-3001

Sound Transmission Loss Test
ASTM E 90 - 02
On

8" Concrete Slab Overlaid with;
Hardwood Flooring over WhisperMat HW Membrane Underlayment

Page 1 of 4

Report Number: NGC 5003013

Assignment Number: G-183

Specimen Receipt Date: NA

Test Date: 06/24/2003

Report Date: 07/10/2003

Submitted by:

Craig G. Cooper
Craig G. Cooper
Test Engineer

Reviewed by:

Robert J. Menchetti
Robert J. Menchetti
Director

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Acoustical Testing Laboratory

Page 2 of 4

Report Number: NGC 5003013

Test Method: This test method generally follows * the American Society for Testing and Materials Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements - Designation: E 90 - 02.

Specimen Description: 8" Concrete Slab Overlaid with; Hard Flooring over, according to client, WhisperMat HW Membrane Underlayment.

The test specimen was a floor-ceiling assembly consisting of the following:

- 1 layer of 7/16" thick T&G hardwood flooring, 2-3/8" wide planks (1.47 PSF), from BERTI. Description; Rovere N. Flooring attached to membrane using Franklin Adhesive 211 wood flooring adhesive with 1/4" x 1/4" V notched trowel.
- 1 layer of 0.20" thick WhisperMat HW asphalt membrane floor underlayment with foam side up. (0.26 PSF) Membrane was self-adhered to kraft paper that is adhered to the concrete at the perimeter and tapping machine areas with double-sided tape.
- 8" thick reinforced concrete slab (85.6 PSF).

The overall weight of the test assembly is 87.33 PSF.

The perimeter of the concrete slab was sealed with fiber gasketing and a sand filled trough. The test assembly is structurally isolated from the receiving room.

Specimen size: 12 ft x 16 ft.

Conditioning: Adhesive cured for a minimum of 4 hours. Concrete slab cured for a minimum of 28 days.

Test samples were submitted by client and tested as received.

Test Results: The results of the tests are given on pages 3 and 4.

* Tests conducted in Floor-Ceiling chambers do not meet all requirements of the most recent ASTM E 90 Standard.

The results reported above apply to specific samples submitted for measurement. No responsibility is assumed for performance of any other specimen. This report may not be reproduced except in full, without the written approval of the laboratory. The laboratory's test reports in no way constitutes or implies product certification, approval, or endorsement by this laboratory.

Acoustical Testing Laboratory

Sound Transmission Loss Test Data

Page 3 of 4

Per: ASTM E 90 - 02 / ASTM E 413 - 87

No. of test report: NGC5003013

Test Date: 06/24/2003

Size: 17.8 m²

Temperature [°C]: 22.2

Sound Transmission Class STC = 53 dB

Sum of unfavourable deviations: 26.0 dB

Max. unfavourable deviation: 7.0 dB at 630 Hz.

Frequency	STL	L1	L2	T	Corr.	u.Dev.	ΔSTL
[Hz]	[dB]	[dB]	[dB]	[s]	[dB]	[dB]	
100	36	104.8	75.7	2.32	7.3	-.	1.149
125	35	99.7	73.3	2.82	8.1	2.0	1.285
160	39	101.8	70.4	2.71	8.0	1.0	0.728
200	41	98.9	65.9	2.71	8.0	2.0	0.557
250	44	99.2	63.0	2.68	7.9	2.0	0.387
315	48	100.2	60.0	2.89	8.2	1.0	0.574
400	51	103.0	60.4	2.77	8.1	1.0	0.316
500	50	101.4	59.0	2.50	7.6	3.0	0.812
630	47	98.9	58.5	2.17	7.0	7.0	0.316
800	50	98.8	55.9	2.30	7.3	5.0	0.224
1000	54	97.8	50.6	2.27	7.2	2.0	0.592
1250	59	99.0	46.9	1.93	6.5	-.	0.245
1600	62	99.8	43.8	1.75	6.1	-.	0.316
2000	65	101.0	41.4	1.61	5.7	-.	0.316
2500	68	102.9	40.1	1.43	5.2	-.	0.283
3150	71	103.4	37.4	1.31	4.8	-.	0.265
4000	71	102.1	35.3	1.18	4.4	-.	0.316
5000	72	96.4	28.8	1.07	3.9	-.	0.447

STL = Sound Transmission Loss, dB
 L1 = Source Room Level, dB
 L2 = Receiving Room Level, dB
 T = Reverberation Time, seconds
 Δ STL = Uncertainty for 95% Confidence Level

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Sound Transmission Loss Test Data

Page 3 of 4

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250	44	99.2	63.0	2.68	7.9	2.0	0.387
315	48	100.2	60.0	2.89	8.2	1.0	0.574
400	51	103.0	60.4	2.77	8.1	1.0	0.316
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Sound Transmission Loss Test Data

Per: ASTM E 90 - 02 / ASTM E 413 - 87

No. of test report: NGC5003013

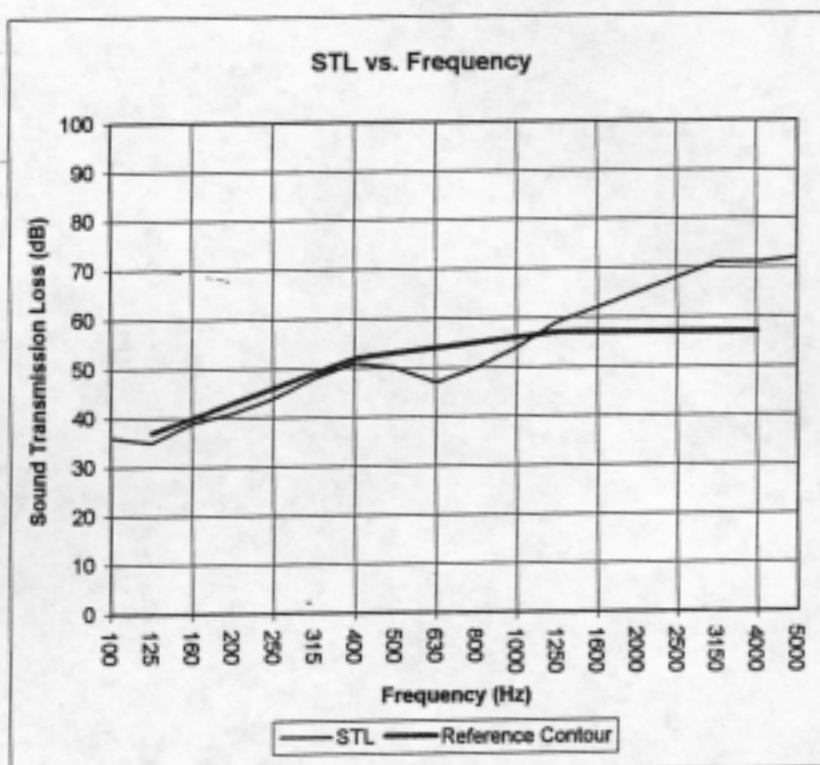
Test Date: 06/24/2003

Size: 17.8 m²

Temperature [°C]: 22.2

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