



# Acoustical Testing Laboratory

## TEST REPORT

for

Starline Associates, Inc.  
 3901 SW 47 Ave.  
 Suite 410  
 Fort Lauderdale, FL 33314  
 Bernie Martinez / 954-792-1965

### Sound Transmission Loss Test ASTM E 90 - 04 On

**6 in. (152 mm) Concrete Slab with Suspended Gypsum Board Ceiling Overlaid with;  
 Wood Laminate Flooring over  
 Dura Silent Blue™ Underlayment**

Page 1 of 4

Report Number: NGC 5005009

Assignment Number: G-249

Test Date: 04/13/2005

Report Date: 04/21/2005

Submitted by: Craig G. Cooper  
 Craig G. Cooper  
 Test Engineer

Reviewed by: Robert J. Menchetti  
 Robert J. Menchetti  
 Director

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Report Number: NGC 5005009

**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 - 04.

**Specimen Description:** Floor-ceiling assembly. 6 inch (152mm) concrete slab with suspended gypsum ceiling covered with, according to client; wood laminate flooring over Dura Silent Blue™ Underlayment.

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

- 1 layer of T&G wood laminate flooring, 7.9mm (5/16) in. thick, 197mm (7-3/4 in.) wide planks, 7.71 kg/m<sup>2</sup> (1.58 PSF).
- 1 layer of 3.8mm (0.15 in.) Dura Silent Blue™ foam underlayment 0.10 kg/m<sup>2</sup> (0.02 PSF)
- 152mm (6 in.) thick reinforced concrete slab 366 kg/m<sup>2</sup> (75.0 PSF).
- Drywall grid suspension system consisting of 15.9mm (5/8 in.) type X gypsum board 11.2 kg/m<sup>2</sup> (2.3 PSF) attached with 28.6mm (1-1/8in.) screws, 305mm (12 in.) o.c. to suspended grid suspension system. 305mm (12 in.) plenum with 89mm (3-1/2 in.) lay-in fiberglass insulation 0.78 kg/m<sup>2</sup> (0.16 PSF).

The overall weight of the test assembly is 386 kg/m<sup>2</sup> (79.1 PSF) nominal.

The perimeter of the floor assembly was sealed with rubber gasketing and a sand filled trough. The test assembly is structurally isolated from the receiving room. Board joints were taped and the ceiling perimeter was sealed with acoustical caulk.

**Specimen size:** 3658mm x 4877mm (12 ft x 16 ft).

Test samples were submitted by client and tested as received.

**Conditioning:** Assembly was stored under room conditions prior to testing.  
**Cure Times:**  
Concrete cured for a minimum of 28 days.

**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.

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## Sound Transmission Loss Test Data

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Per: ASTM E 90 - 04 / ASTM E 413 - 04

No. of test report: NGC5005009

Test Date: 4/13/2005

Size: 17.8 m<sup>2</sup>

Temperature [°C]: 21.0

**Sound Transmission Class STC = 73 dB**

Sum of unfavorable deviations: 31.7 dB

Max. unfavorable deviation: 7.1 dB at 125 Hz

Frequency [Hz]	STL [dB]	L1 [dB]	L2 [dB]	T [s]	Corr. [dB]	u.Dev. [dB]	ΔSTL
100	48	106.8	66.7	2.49	8.4	--	1.844
125	50	102.3	61.7	2.82	8.9	7.1	1.612
160	55	100.3	56.1	3.93	10.4	5.1	0.933
200	58	101.4	52.5	3.15	9.4	5.1	0.374
250	62	100.9	48.3	3.24	9.5	4.1	0.490
315	67	101.8	44.2	3.17	9.4	2.1	0.632
400	73	102.1	38.2	2.94	9.1	--	0.686
500	70	99.3	37.8	2.71	8.7	3.1	0.812
630	69	97.7	37.6	2.67	8.7	5.1	0.648
800	77	98.7	30.4	2.68	8.7	--	0.316
1000	81	99.1	26.8	2.64	8.6	--	0.500
1250	82	99.2	25.5	2.33	8.1	--	0.400
1600	82	100.4	26.2	2.14	7.7	--	0.566
2000	85	100.0	22.3	1.88	7.2	--	0.141
2500	87	101.6	20.8	1.64	6.6	--	0.224
3150	89	101.6	19.0	1.56	6.4	--	0.361
4000	89	100.6	17.2	1.40	5.9	--	0.412
5000	90	99.4	15.1	1.28	5.5	--	0.632

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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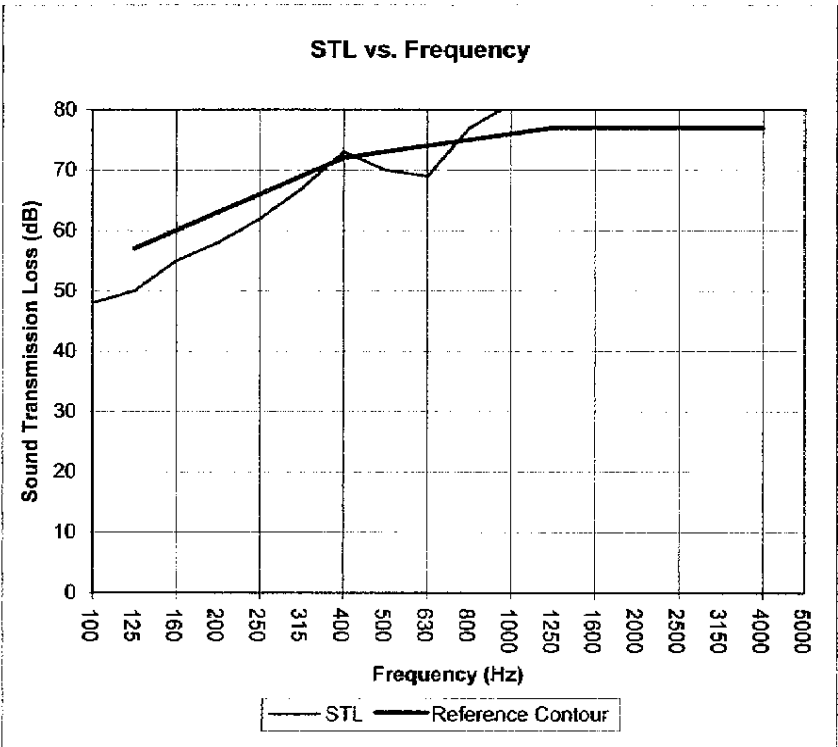
## Sound Transmission Loss Test Data

Per: ASTM E 90 - 04 / ASTM E 413 - 04

No. of test report: NGC5005009  
 Test Date: 4/13/2005  
 Size: 17.8 m<sup>2</sup>  
 Temperature [°C]: 21.0

**Sound Transmission Class STC = 73 dB**

Frequency [Hz]	STL [dB]	ΔSTL
100	48	1.844
125	50	1.612
160	55	0.933
200	58	0.374
250	62	0.490
315	67	0.632
400	73	0.686
500	70	0.812
630	69	0.648
800	77	0.316
1000	81	0.500
1250	82	0.400
1600	82	0.566
2000	85	0.141
2500	87	0.224
3150	89	0.361
4000	89	0.412
5000	90	0.632



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

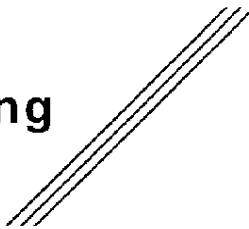
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## TEST REPORT

for

Starline Associates, Inc.  
 3901 SW 47 Ave.  
 Suite 410  
 Fort Lauderdale, FL 33314  
 Bernie Martinez / 954-792-1965

### Impact Sound Transmission Test ASTM E 492 – 04 / ASTM E 989 – 89 On


**6 in. (152 mm) Concrete Slab with Suspended Gypsum Board Ceiling Overlaid with;  
 Wood Laminate Flooring over  
 Dura Silent Blue™ Underlayment**


Report Number: NGC 7005017

Assignment Number: G-249

Test Date: 04/13/2005

Report Date: 04/21/2005

Submitted by:   
 Craig G. Cooper  
 Test Engineer

Reviewed by:   
 Robert J. Menchetti  
 Director

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## Acoustical Testing Laboratory



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Report Number: NGC 7005017

**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 - 04.

The uncertainty limits of each tapping machine location met the precision requirements of section 11.3 of ASTM E 492-04.

**Specimen Description:** Floor-ceiling assembly. 6 inch (152mm) concrete slab with suspended gypsum ceiling covered with, according to client; wood laminate flooring over Dura Silent Blue™ Underlayment.

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

- 1 layer of T&G wood laminate flooring, 7.9mm (5/16) in. thick, 197mm (7-3/4 in.) wide planks, 7.71 kg/m<sup>2</sup> (1.58 PSF).
- 1 layer of 3.8mm (0.15 in.) Dura Silent Blue™ foam underlayment 0.10 kg/m<sup>2</sup> (0.02 PSF)
- 152mm (6 in.) thick reinforced concrete slab 366 kg/m<sup>2</sup> (75.0 PSF).
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The overall weight of the test assembly is 386 kg/m<sup>2</sup> (79.1 PSF) nominal.

The perimeter of the floor assembly was sealed with rubber gasketing and a sand filled trough. The test assembly is structurally isolated from the receiving room. Board joints were taped and the ceiling perimeter was sealed with acoustical caulk.

**Specimen size:** 3658mm x 4877mm (12 ft x 16 ft).

Test samples were submitted by client and tested as received.

**Conditioning:** Assembly was stored under room conditions prior to testing.  
**Cure Times:**  
Concrete cured for a minimum of 28 days.

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

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<b>Normalized impact sound pressure level</b>						
Test: ASTM E 492 - 04 / ASTM E 989 - 89						
Test Number: NGC7005017						Page 3 of 4
Size: 17.84 m <sup>2</sup>						Date: 4/13/2005
<b>Source room</b>			<b>Receiving room</b>			
Temperature [°C]: 21.6			Volume V = 40.00 m <sup>3</sup>			
Humidity [%]: 29			Temperature [°C]: 21.0			
			Humidity [%]: 56			
<b>Impact Insulation Class IIC = 72 dB</b>						
Sum of unfavorable deviations: 31.8 dB						
Max. unfavorable deviation: 7.8 dB at 160 Hz						
Frequency	L <sub>n</sub>	L <sub>2</sub>	T	Corr.	u.Dev.	ΔL <sub>n</sub>
[Hz]	[dB]	[dB]	[s]	[dB]	[dB]	
100	46.0	52.0	2.49	-6.0	5.8	0.358
125	45.0	51.0	2.82	-6.0	4.8	0.367
160	48.0	55.9	3.93	-7.9	7.8	0.291
200	43.0	49.9	3.15	-6.9	2.8	0.179
250	47.0	54.4	3.24	-7.4	6.8	0.190
315	38.0	44.5	3.17	-6.5	--	0.132
400	35.0	41.3	2.94	-6.3	--	0.098
500	33.0	39.6	2.71	-6.6	--	0.099
630	34.0	40.0	2.67	-6.0	--	0.107
800	32.0	38.1	2.68	-6.1	--	0.067
1000	27.0	32.7	2.64	-5.7	--	0.053
1250	28.0	33.4	2.33	-5.4	--	0.045
1600	26.0	30.8	2.14	-4.8	--	0.047
2000	24.0	28.5	1.88	-4.5	--	0.036
2500	22.0	26.3	1.64	-4.3	--	0.049
3150	24.0	27.9	1.56	-3.9	3.8	0.038
4000	23.0	26.1	1.40	-3.1	--	0.040
5000	19.0	22.3	1.28	-3.3	--	0.033
<p>L<sub>n</sub> = Normalized Sound Pressure Level, dB  L<sub>2</sub> = Receiving Room Level, dB  T = Reverberation Time, seconds  ΔL<sub>n</sub> = Uncertainty for 95% Confidence Level</p>						

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## Normalized impact sound pressure level

Test: ASTM E 492 - 04 / ASTM E 989 - 89

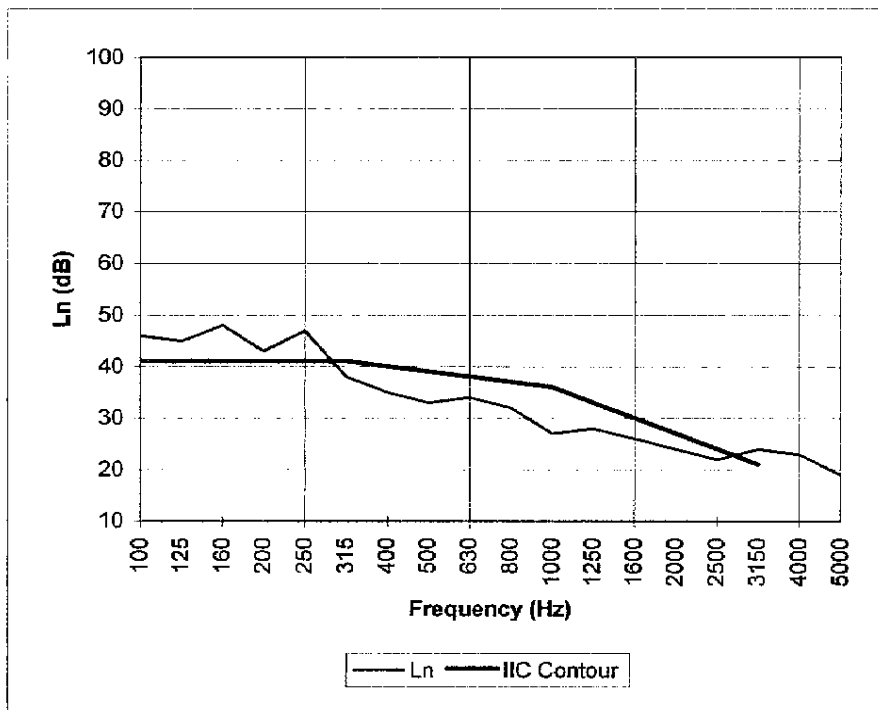
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Test Number: NGC7005017

Date: 4/13/2005

**Impact Insulation Class IIC = 72 dB**

Frequency [Hz]	$L_n$ [dB]
100	46
125	45
160	48
200	43
250	47
315	38
400	35
500	33
630	34
800	32
1000	27
1250	28
1600	26
2000	24
2500	22
3150	24
4000	23
5000	19



\* 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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