



TO: All Architects, Specifiers, Sound Engineers, etc.
RE: Independent STC & IIC Test Results for:

STAUF SMP-960 One-Step Wood Floor Adhesive

STAUF Adhesives, USA, presents independent laboratory test results that measure the sound transmission and impact insulation of its product, SMP-960 One-Step, when it is used to reduce the sound in high-rise apartments, condominiums, offices, etc., to meet limits required by local codes.

The STC has been measured as high at 72 dB and the IIC as high as 74 dB. The construction of the site creates variables (e.g. thickness of slab, type ceiling, etc.).

SMP-960 One-Step has been sold in the United States over twelve years. It has met and/or exceeded sound codes in cities and municipalities all over this country and Canada. The independent lab tests you find attached will document those test results and may be downloaded and copied as attachments to proposals.

SMP-960 One-Step is a polymer-based adhesive. It is designed to permanently bond wood flooring to a variety of sub floor surfaces. It is engineered to allow wood flooring to move and not release when changes in temperature and relative humidity cause normal seasonal expansion and contraction of wood flooring.

When applied according to instructions with Stauf's #12 Trowel, SMP-960 provides sound insulation that meets standard building sound transmission codes. In addition, it provides a moisture barrier that will protect the wood floor against up to 12# of moisture pressure (Calcium Chloride Test) or up to 90% RH (Relative Humidity using the in situ probe test method).

STAUF Adhesives, USA, offers a Limited Lifetime Warranty and warrants our sound test up to the 72 and 74 dB documented by testing under the conditions shown. More information may be found by visiting our web site or calling STAUF Technical Services at 901.820.0007. Thank you for your interest in STAUF Adhesives.

Sincerely,

David Ford
Vice President, Sales and Marketing
STAUF USA, LLC



Acoustical Testing Laboratory



TEST REPORT

for

STAUF USA, LLC.
6055 Primacy Parkway
Suite 428
Memphis, TN 38119
David Ford / 901-362-5091

Sound Transmission Loss Test

ASTM E 90 – 04 / E 413 - 04

On

**8 Inch (203 mm) Concrete Slab with Gypsum Board Suspended Ceiling
Overlaid with; Engineered Hardwood Flooring
Installed using
STAUF USA SMP-960 Wood Floor Adhesive**

Report Number: NGC 5006014

Page 1 of 4
Reissued 09/29/2006

Assignment Number: G-290

Test Date: 03/01/2006

Report Date: 03/10/2006

Submitted by: _____
Craig G. Cooper
Test Engineer

Reviewed by: _____
Robert J. Merzetti
Director

The results reported above apply to specific samples submitted for measurement.
No responsibility is assumed for performance of any other specimen.
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The laboratory's test reports in no way constitutes or implies product certification, approval,
or endorsement by this laboratory.



Acoustical Testing Laboratory



Report Number: NGC 5006014

Page 2 of 4
Reissued 09/29/2006

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 / E 413 - 04.

Specimen Description: 203mm (8 in.) Concrete Slab floor-ceiling assembly with suspended gypsum board ceiling overlaid with; according to client, engineered hardwood flooring installed with STAUF USA One-Step™ SMP-960 wood floor adhesive.

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

- 1 layer of T&G type unfinished engineered hardwood flooring, 82.6mm wide x 19mm thick (3-1/4 in. wide x 3/4 in. thick). 13.2 kg/m² (2.7 PSF)
- 1 layer of STAUF USA One-Step™ SMP-960 polymer based wood floor adhesive. Applied with STAUF No. 12 notched trowel with 2.4mm (3/32 in.) spacer. Application rate = 5 gallons per 17.8 sq. m (192 sq. ft.)
- 203 mm (8 in.) thick reinforced concrete slab 418 kg/m² (85.6 PSF).
- Drywall grid suspension system consisting of 15.9mm (5/8 in.) type X gypsum board 11.2 kg/m² (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/m² (0.16 PSF).

The overall weight of the test assembly is 443.1 kg/m² (90.8 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. The ceiling joints were taped and the perimeter caulked with acoustical sealant.

Specimen size: 304.8mm x 406.4mm (12 ft x 16 ft).

Test samples were submitted by client and tested as received.

Conditioning: Concrete slab 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 Page 3 of 4
 Per: ASTM E 90 - 04 / ASTM E 413 - 04

No. of test report: NGC5006014
 Test Date: 3/1/2006
 Size: 17.8 m²
 Temperature [°C]: 19.0

Sound Transmission Class STC = 72 dB
 Sum of unfavorable deviations: 28.0 dB
 Max. unfavorable deviation: 7.0 dB at 125 Hz

Frequency [Hz]	STL [dB]	L1 [dB]	L2 [dB]	T [s]	Corr. [dB]	u.Dev. [dB]	ΔSTL
100	48	103.4	64.0	2.71	8.7	--	1.910
125	49	97.6	57.0	2.75	8.8	7.0	1.353
160	53	95.9	52.2	3.31	9.6	6.0	1.118
200	59	99.1	49.5	3.10	9.3	3.0	0.539
250	62	100.3	47.5	3.33	9.6	3.0	0.728
315	67	99.5	41.7	3.29	9.6	1.0	0.548
400	71	100.2	38.1	3.06	9.3	--	0.500
500	70	98.7	37.2	2.75	8.8	2.0	0.735
630	67	98.2	40.1	2.69	8.7	6.0	0.447
800	78	99.1	29.5	2.70	8.7	--	0.173
1000	83	98.6	23.8	2.68	8.7	--	0.735
1250	83	97.1	22.3	2.39	8.2	--	0.539
1600	82	97.6	23.4	2.20	7.8	--	0.707
2000	85	97.4	19.5	1.88	7.1	--	0.374
2500	87	98.9	18.7	1.68	6.7	--	0.245
3150	89	99.4	16.4	1.61	6.5	--	0.520
4000	90	98.4	14.4	1.43	6.0	--	0.500
5000	89	98.2	14.2	1.28	5.5	--	1.010

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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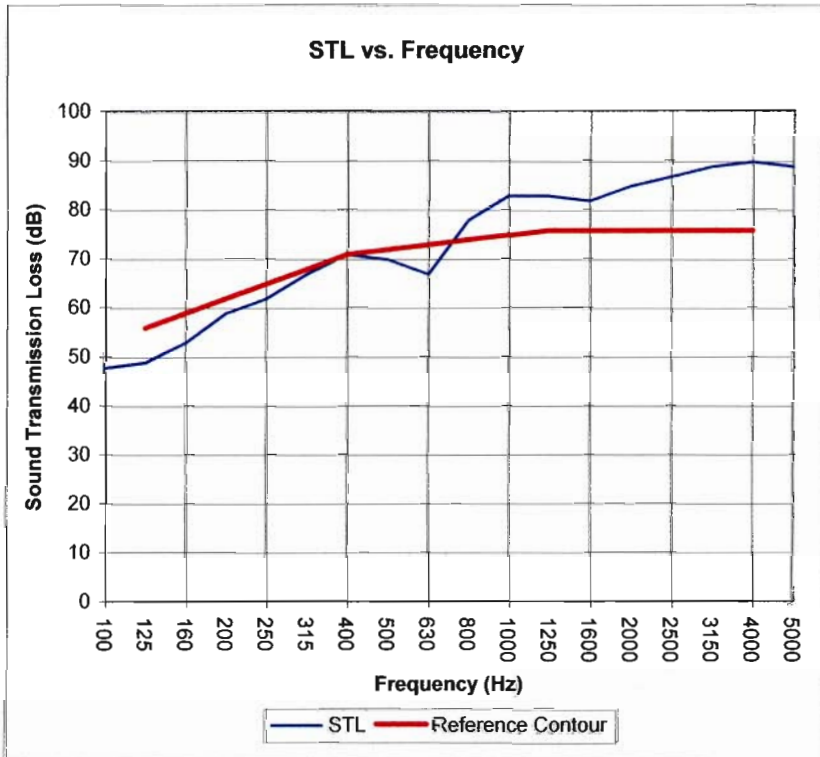
Sound Transmission Loss Test Data

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

No. of test report: NGC5006014
 Test Date: 3/1/2006
 Size: 17.8 m²
 Temperature [°C]: 19.0

Sound Transmission Class STC = 72 dB

Frequency [Hz]	STL [dB]	ΔSTL
100	48	1.910
125	49	1.353
160	53	1.118
200	59	0.539
250	62	0.728
315	67	0.548
400	71	0.500
500	70	0.735
630	67	0.447
800	78	0.173
1000	83	0.735
1250	83	0.539
1600	82	0.707
2000	85	0.374
2500	87	0.245
3150	89	0.520
4000	90	0.500
5000	89	1.010



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

STL = Sound Transmission Loss, dB
 Δ STL = Uncertainty for 95% Confidence Level

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Acoustical Testing Laboratory



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for the specific scope of accreditation
under Lab Code 200291

TEST REPORT

for

STAUF USA, LLC.
6055 Primacy Parkway
Suite 428
Memphis, TN 38119
David Ford / 901-362-5091

Impact Sound Transmission Test

ASTM E 492 – 04 / ASTM E 989 – 89

On

**8 Inch (203 mm) Concrete Slab with Gypsum Board Suspended Ceiling
Overlaid with; Engineered Hardwood Flooring
Installed using
STAUF USA SMP-960 Wood Floor Adhesive**

Report Number: NGC 7006015

Page 1 of 4
Reissued 09/29/2006

Assignment Number: G-290

Test Date: 03/01/2006

Report Date: 03/10/2006

Submitted by: _____
Craig G. Cooper
Test Engineer

Reviewed by: _____
Robert J. Marchetti
Director

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Report Number: NGC 7006015

Page 2 of 4
Reissued 09/29/2006

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: 203mm (8 in.) Concrete Slab floor-ceiling assembly with suspended gypsum board ceiling overlaid with; according to client, engineered hardwood flooring installed with STAUF USA One-Step™ SMP-960 wood floor adhesive.

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

- 1 layer of T&G type unfinished engineered hardwood flooring, 82.6mm wide x 19mm thick (3-1/4 in. wide x 3/4 in. thick). 13.2 kg/m² (2.7 PSF)
- 1 layer of STAUF USA One-Step™ SMP-960 polymer based wood floor adhesive. Applied with STAUF No. 12 notched trowel with 2.4mm (3/32 in.) spacer. Application rate = 5 gallons per 17.8 sq. m (192 sq. ft.)
- 203 mm (8 in.) thick reinforced concrete slab 418 kg/m² (85.6 PSF).
- Drywall grid suspension system consisting of 15.9mm (5/8 in.) type X gypsum board 11.2 kg/m² (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/m² (0.16 PSF).

The overall weight of the test assembly is 443.1 kg/m² (90.8 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. The ceiling joints were taped and the perimeter caulked with acoustical sealant.

Specimen size: 304.8mm x 406.4mm (12 ft x 16 ft).

Test samples were submitted by client and tested as received.

Conditioning: Concrete slab 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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Normalized impact sound pressure level						
Test: ASTM E 492 - 04 / ASTM E 989 - 89						
Test Number: NGC7006015					Date: 3/1/2006	
Size: 17.84 m ²						
Source room			Receiving room			
Temperature [°C]: 19.5			Volume V = 40.00 m ³			
Humidity [%]: 26			Temperature [°C]: 18.8			
			Humidity [%]: 57			
Impact Insulation Class IIC = 74 dB						
Sum of unfavorable deviations: 28.0 dB						
Max. unfavorable deviation: 7.0 dB at 125 Hz						
Frequency	L _n	L2	T	Corr.	u.Dev.	ΔL _n
[Hz]	[dB]	[dB]	[s]	[dB]	[dB]	
100	40.0	46.4	2.71	-6.4	2.0	0.289
125	45.0	51.4	2.75	-6.4	7.0	0.242
160	41.0	47.8	3.31	-6.8	3.0	0.260
200	40.0	47.2	3.10	-7.2	2.0	0.142
250	35.0	42.1	3.33	-7.1	--	0.204
315	36.0	43.1	3.29	-7.1	--	0.144
400	36.0	42.5	3.06	-6.5	--	0.097
500	36.0	41.8	2.75	-5.8	--	0.124
630	36.0	41.7	2.69	-5.7	1.0	0.064
800	31.0	36.9	2.70	-5.9	--	0.047
1000	29.0	34.9	2.68	-5.9	--	0.044
1250	30.0	35.5	2.39	-5.5	--	0.045
1600	29.0	34.2	2.20	-5.2	2.0	0.042
2000	27.0	31.3	1.88	-4.3	3.0	0.039
2500	25.0	28.8	1.68	-3.8	4.0	0.037
3150	22.0	25.8	1.61	-3.8	4.0	0.036
4000	18.0	21.8	1.43	-3.8	--	0.030
5000	15.0	17.7	1.28	-2.7	--	0.035
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

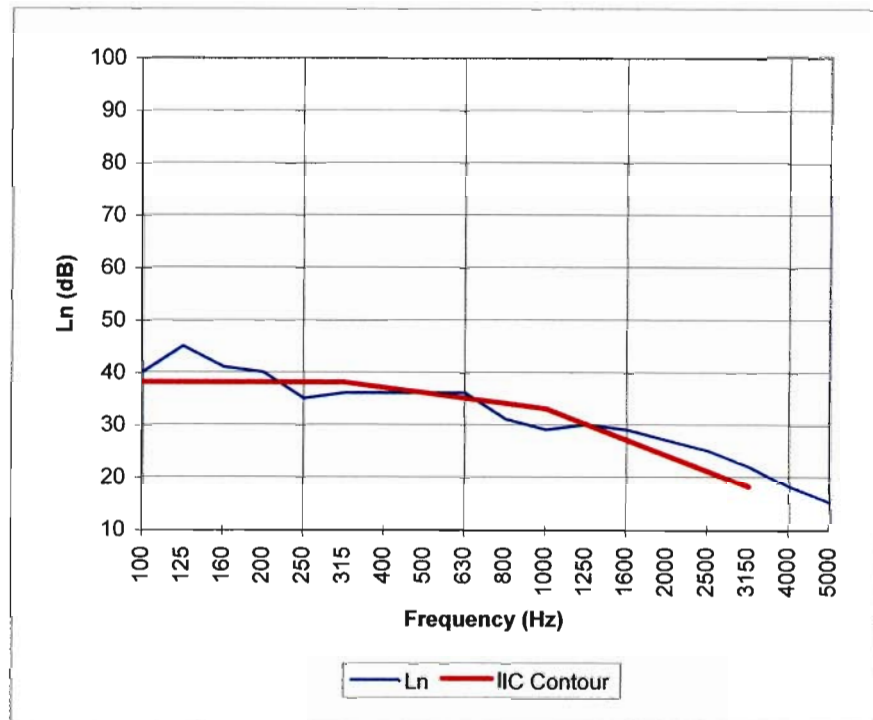
Test: ASTM E 492 - 04 / ASTM E 989 - 89

Test Number: NGC7006015

Date: 3/1/2006

Impact Insulation Class IIC = 74 dB

Frequency [Hz]	L_n [dB]
100	40
125	45
160	41
200	40
250	35
315	36
400	36
500	36
630	36
800	31
1000	29
1250	30
1600	29
2000	27
2500	25
3150	22
4000	18
5000	15



* 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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