

Job No. 3016557

January 25, 2002

REPORT NO. 3016557-003

**SOUND TRANSMISSION LOSS
AND CLASSIFICATION OF A FLOOR/CEILING ASSEMBLY
WITH HARDWOOD FLOORING OVER INSULAMENT UNDERLAYMENT**

RENDERED TO

**MIDWEST PADDING
2500 OLD HADAR ROAD
PO BOX 2283
NORFOLK, NE 68702**

INTRODUCTION

This report gives the results of a Sound Transmission Loss test and the determination of the Sound Transmission Class of a floor/ceiling assembly with Hardwood Flooring over Insulament Underlayment. The underlayment was selected and supplied by the client and was received at the laboratories on December 18, 2001. The test sample appeared to be in new, unused condition upon arrival.

AUTHORIZATION

Signed quote and Purchase Order No. 9218 from Midwest Padding.

TEST METHOD

The specimen was tested in accordance with the American Society for Testing and Materials designation ASTM E90-99, "Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions", and classified in accordance with the American Society for Testing and Materials designation ASTM E413-87 (Reapproved 1999), "Classification for Rating Sound Insulation".

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GENERAL**ASTM Test Method E90-99**

The sound-insulating property of a partition element is expressed in terms of the sound transmission loss. The procedure for determining this quantity is to mount (and perimeter seal) the test specimen as a partition between two reverberation rooms. Sound is introduced in one of the rooms (the source room) and measurements are made of the noise reduction between source room and receiving room. The rooms are so arranged and constructed that the only significant sound transmission between them is through the test specimen.

The purpose of the Sound Transmission Class (STC) is to provide a single figure rating that can be used for comparing the sound-insulating properties of partition elements used for general building design purposes. The higher the rating (STC) the greater the sound insulating properties of the partition.

DESCRIPTION OF TEST ASSEMBLY

The test floor is a 100 sq. ft. opening that forms the horizontal separation of the two rooms, one directly above the other. The structural members are an Open Joist 2000 system, 16 inches deep installed 24 inches on center. The sub flooring is 5/8 inch thick tongue and groove plywood. The bridging is a continuous 2 x 4 nailed to the bottom chord and the sides of the diagonals with 2 inch long nails. Resilient channels, 24 gauge galvanized steel were spaced 16 inches on center and attached to the bottom chord by screws. The insulation is 5 1/2 inches cellulose with a density of 1.6 pcf. The ceiling is gypsum board, 5/8 inches thick, with the long edges located between the joists perpendicular to the resilient channels. Short edges are staggered by 4 ft. Sheets are fastened to the resilient channels by means of 1 1/2 inch screws located 1/2 inch away from the edge, and 3 inches from the long edges; screws are spaced 6 inches on center. Joints are taped and finished with two layers of compound.

DESCRIPTION OF TEST SPECIMEN

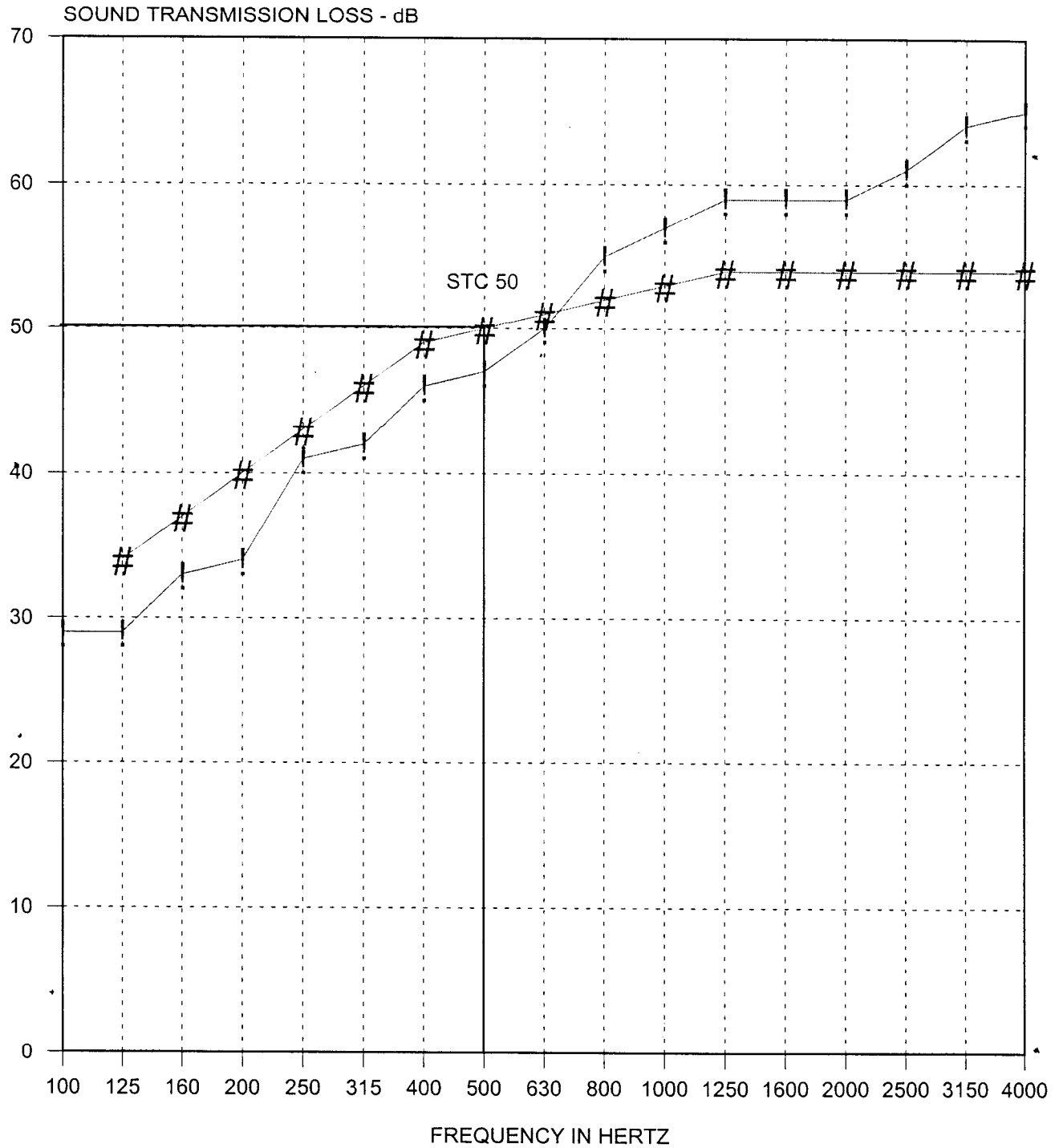
The test flooring was Hardwood Flooring – 1/2" Thick
The underlayment was Midwest Padding Insulament Underlayment, 1/8" thick.

The flooring and underlayment were adhered to each other and to the sub floor in accordance with the manufacturer's instructions.

RESULTS OF TEST

<u>1/3 Octave Band Center Frequency Hz</u>	<u>Sound Transmission Loss in dB</u>
80	29
100	29
125	29
160	33
200	34
250	41
315	42
400	46
500	47
630	50
800	55
1000	57
1250	59
1600	59
2000	59
2500	61
3150	64
4000	65
5000	60
Sound Transmission Class	50

Sound Transmission Loss



+ Sound Transmission Loss # STC Contour

Midwest Padding

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REMARKS

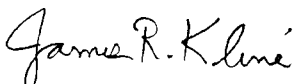
1. Aging Period: None
2. Ambient Temperature: 72°F
3. Relative Humidity: 35%

CONCLUSION

The test method employed for this test has no pass-fail criteria, therefore, the evaluation of the test results is left to the discretion of the client.

Date of Test: January 17, 2002

Report Approved By:


James R. Kline, Technician
Acoustical Testing

hkf