

REPORT NUMBER: AU09114012-1
ORIGINAL ISSUE DATE: May 18, 2012

EVALUATION CENTER

Intertek Testing Services Ltd., Shanghai Jinqiao Branch
Building T52-8, No. 1201 Gui Qiao Road,
Jinqiao Development Area, Pudong District
Shanghai 201206

RENDERED TO

CHANGZHOU HAICHEN PACKING MATERIAL CO.,LTD
CUIWEI ROAD,SHUANGRONG VILLAGE,HENGLIN TOWN,WUJIN
DISTRICT, CHANGZHOU ,JIANGSU,CHINA

PRODUCT EVALUATED
3-in-1 Acoustic Foam

EVALUATION PROPERTY
Impact Sound Transmission

Report of Testing 3-in-1 Acoustic Foam for compliance with the applicable requirements of the following criteria: *ASTM E492-09:Standard Test Method for Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine and ASTM E989-06: Standard Classification for Determination of Impact Insulation Class (IIC).*

"This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested product or service must first be approved in writing by Intertek. The observations and test results in this report are only to the sample tested. This report by itself does not imply that the material, product, or service is or has under an Intertek certification program."

1 Table of Contents

1	Table of Contents.....	2
2	Introduction	3
3	Test Samples.....	3
3.1.	SAMPLE SELECTION	3
3.2.	SAMPLE AND ASSEMBLY DESCRIPTION.....	3
4	Testing and Evaluation Methods	3
4.1.	CONDITIONING	3
4.2.	IMPACT SOUND TRANSMISSION.....	3
4.3.	STANDARD CLASSIFICATION FOR DETERMINATION OF IIC	4
5	Testing and Evaluation Results.....	4
5.1.	RESULTS AND OBSERVATIONS	4
5.2.	PRECISION	5
6	Conclusion	6
7	Appendix A: Drawings Of Floor/Ceiling Assembly System	7
8	Revision Page.....	9

2 Introduction

Intertek has conducted testing for Changzhou Haichen Packing Material Co.,Ltd, on 12mm thick laminate flooring over 3-in-1 Acoustic Foam, to evaluate sound Transmission Loss Test and Classification. This evaluation began May 12, 2012 and was completed May 14, 2012.

Testing was conducted in accordance with ASTM E492-09: Standard Test Method for Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine. It was classified in accordance with ASTM E989-06: Standard Classification for Determination of Impact Insulation Class (IIC).

3 Test Samples

3.1. SAMPLE SELECTION

Samples were submitted to Intertek directly from the client. Samples were not independently selected for testing. Samples were received at the Evaluation Center on May 18, 2012.

3.2. SAMPLE AND ASSEMBLY DESCRIPTION

Product: 3-in-1 Acoustic Foam
Model: XX6-32

The test samples consisted of 3-in-1 Acoustic Foam under 12mm thick laminate flooring. Area of the test samples was 12 square meter.

The floor/ceiling assembly system consisted of a 140mm concrete floor with a drop ceiling below forming the horizontal separation between two rooms, one directly above the other. The drop ceiling consisted of 350mm deep steel bar joists spaced 960mm on center. The ceiling construction consisted of 50mm x 100mm wood bolted to the bar joists. The 50mm x 100mm wood was spaced 600mm on center. 12mm thick gypsum board were bolted on 50mm x 100mm wood. Sound attenuation batts (glass wool), 100mm in thickness were placed between the joists in the formed cavity. The receiving room was 62 cubic meter in volume.

The drawings of floor/ceiling assembly system was applied by the applicant, see Appendices A.

4 Testing and Evaluation Methods

4.1. CONDITIONING

The test specimens were conditioned in ambient atmosphere for 48 hours before testing. The ambient temperature of the source room and receiving room was 11°C, and the relative humidity was 71%.

4.2. IMPACT SOUND TRANSMISSION

The test method, ASTM E492, is designed to measure the impact sound transmission performance of an isolated floor-ceiling assembly, in a controlled laboratory environment.

standard tapping machine was placed at four positions on a test-floor specimen that forms a horizontal separation between two rooms, one directly above the other. The transmission impact sound characterized by the spectrum of the space-time average one-third octave by the spectrum of the space-time average one-third octave band sound pressure levels produced by the tapping machine was measured in the receiving room below. The data obtained was normalized to a reference room absorption of 10 square meters in accordance with the test method.

4.3. STANDARD CLASSIFICATION FOR DETERMINATION OF IIC

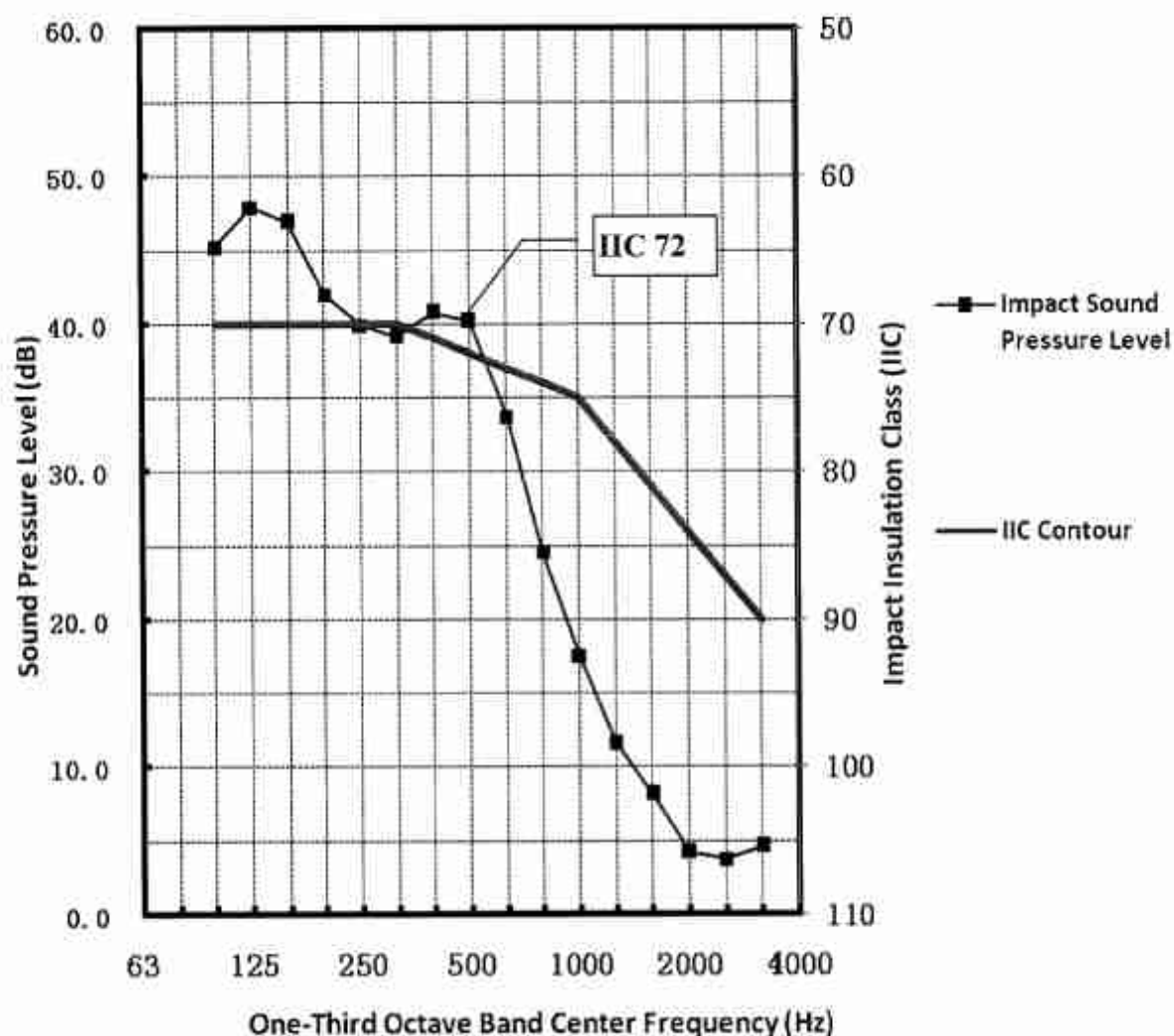
The classification method, ASTM E989, covers the determination of a single-figure rating called impact insulation class (IIC). The IIC is obtained by matching a standard reference contour to the plotted normalized one-third octave band sound pressure levels at each test frequency. The greater the IIC rating, the lower the impact sound transmission through the floor-ceiling assembly.

5 Testing and Evaluation Results

5.1. RESULTS AND OBSERVATIONS

The data obtained in the room below the panel normalized to $A_0 = 10$ square meters, is shown in Table 1 below.

Table 1. Test Results	
1/3 Octave Band Center Frequency	1/3 Octave Band Sound Pressure
Hertz	Level dB re 0.0002 Microbar
100	45
125	48
160	47
200	42
250	40
315	39
400	41
500	40
630	34
800	25
1000	18
1250	12
1600	8
2000	4
2500	4
3150	5
Impact Insulation Class (IIC)	
72	



5.2. PRECISION

The 95% uncertainty level for each tapping machine location is less than 3 dB for the 1/3 octave bands centered in the range from 100 to 400 Hz and less than 2.5 dB for the bands centered in the range from 500 to 3150 Hz.

For the floor/ceiling construction, the 95% uncertainty limits for the normalized sound pressure levels were determined to be less than 2 dB for the 1/3 octave bands centered in the range from 100 to 3150 Hz.

6 Conclusion

The 3-in-1 Acoustic Foam samples identified and evaluated in this report have been tested with the specified floor/ceiling system in accordance with ASTM E492-09: Standard Test Method for Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine. It was classified in accordance with ASTM E989-06: Standard Classification for Determination of Impact Insulation Class (IIC).

The results were presented in Section 5 of this test report and the test method employed for this test has no pass-fail criteria. Therefore, the evaluation of the test results is left to the discussion of the client.

The conclusions of this test report may not be used as part of the requirements for Intertek product certification. Authority to Mark must be issued for a product to become certified.

INTERTEK

Reported by:



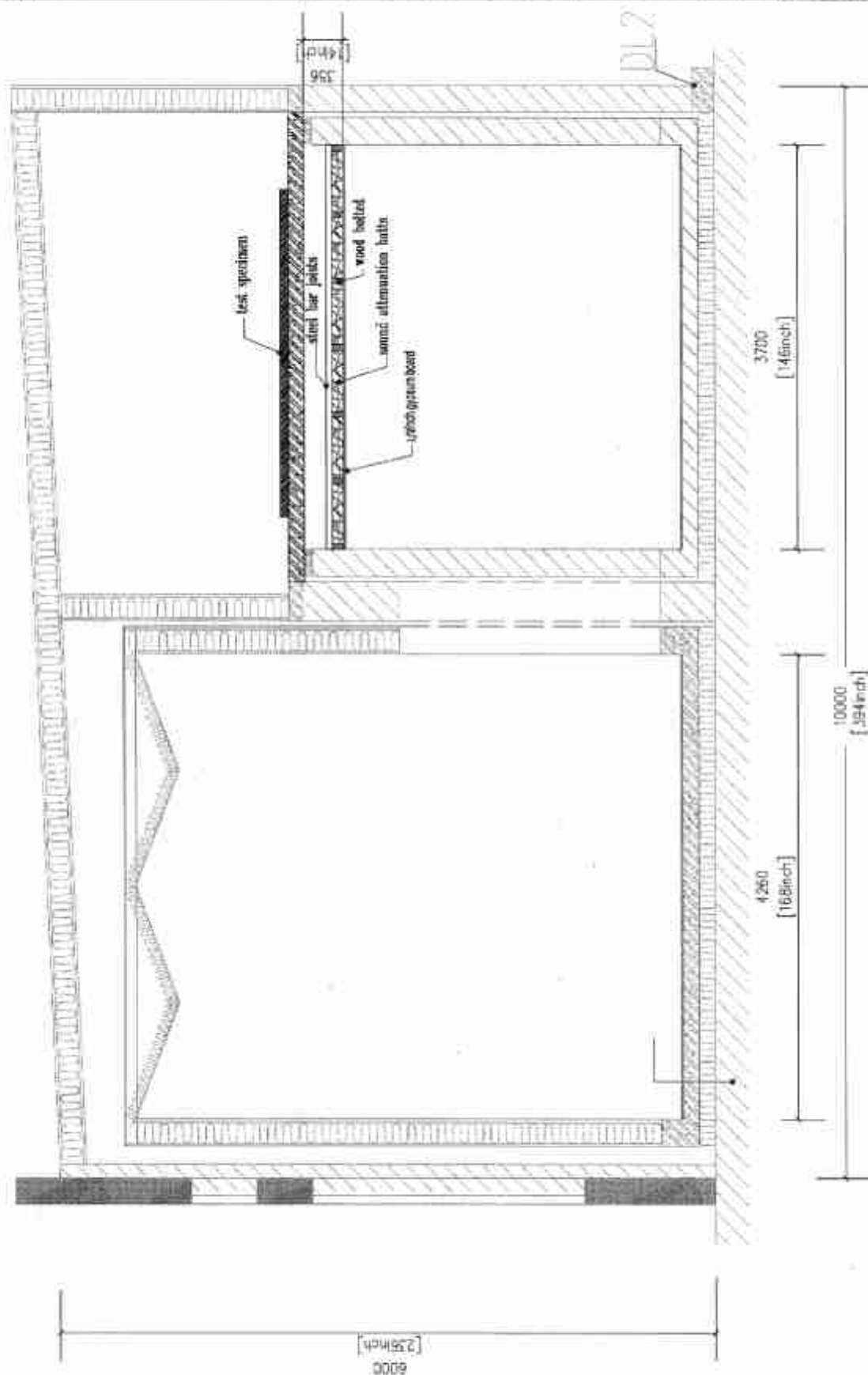
Sun Sun
Project Engineer, Building Products

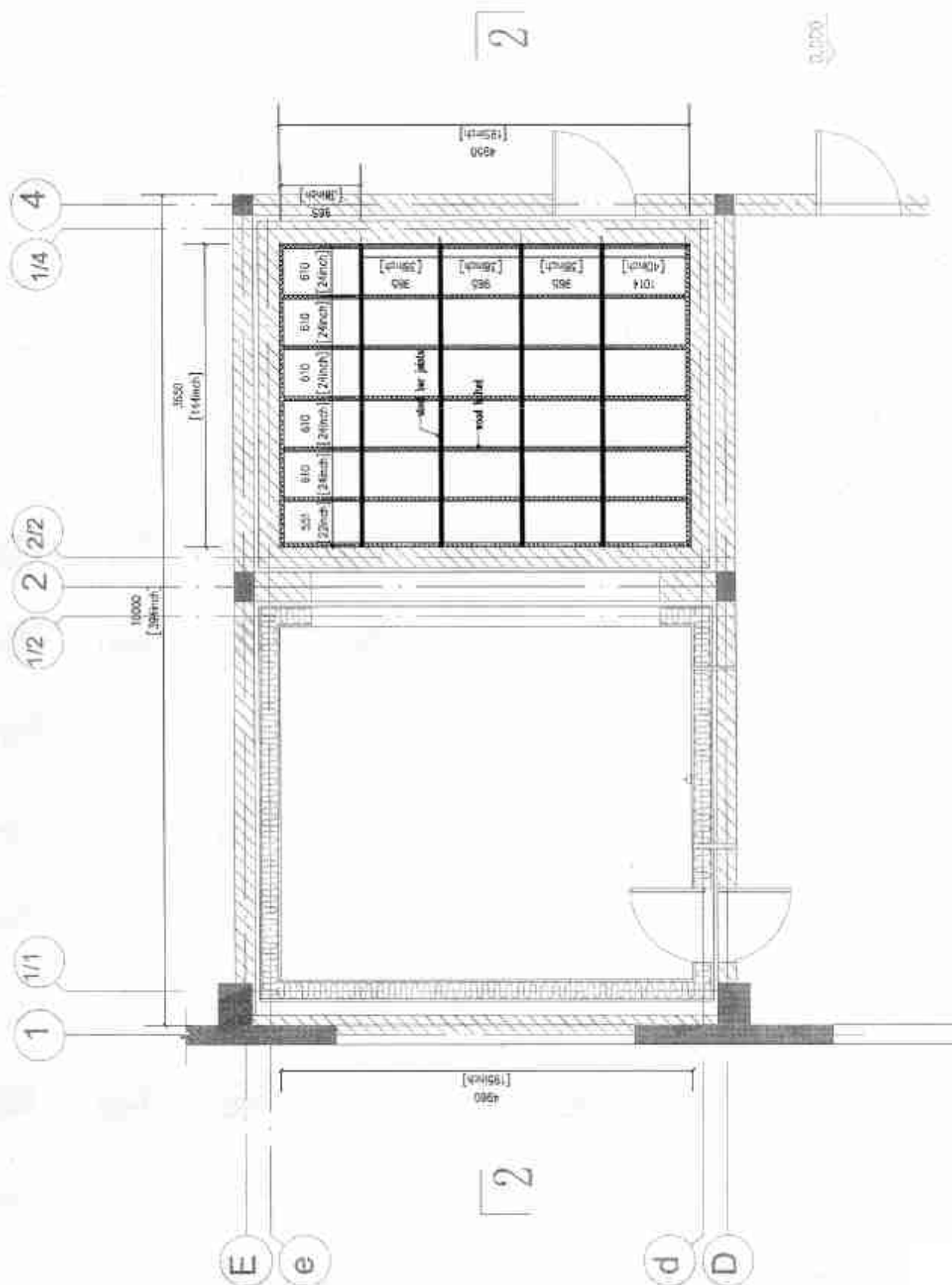
Reviewed by:



Stanley Zhou
Laboratory Manager, Building Products

7 Appendix A: Drawings Of Floor/Ceiling Assembly System





8 Revision Page

Revision No.	Date	Changes	Author	Reviewer
0	May 18, 2012	First issue	Sun Sun	Stanley Zhou

END OF DOCUMENT
