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EVALUATION CENTER

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RENDERED TO

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PRODUCT EVALUATED
3-in-1 Acoustic Foam

EVALUATION PROPERTY
Sound Transmission Loss Test and Classification

Report of Testing 3-in-1 Acoustic Foam for compliance with the applicable requirements of the following criteria: ASTM E90-09, Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements and ASTM E413-04, Classification for Rating Sound Insulation.

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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 E90-09, Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements. It was classified in accordance with ASTM E413-04: Classification for Rating Sound Insulation.

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 5, 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. SOUND TRANSMISSION LOSS

The test method, ASTM E90, is designed to measure the airborne sound transmission loss of building partitions, in a controlled laboratory environment. The sound-insulating property

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.

4.3. CLASSIFICATION FOR STC

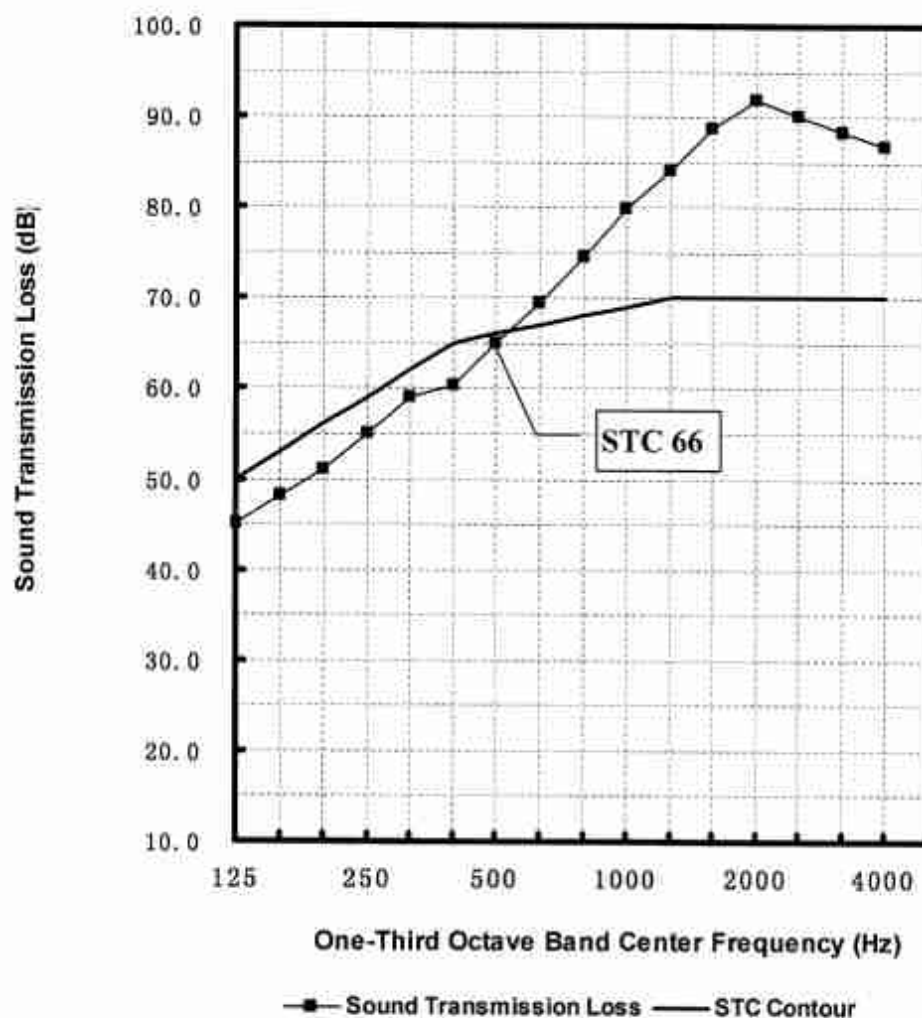
The purpose of the Sound Transmission Class (STC) is to provide a single figure rating that can be used for comparing the sound-insulating properties of partition elements used for general building design purposes. The higher the rating (STC), the greater the sound insulating properties of the partition.

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	Sound Transmission Loss
Hertz	dB
125	45.1
160	48.2
200	51.1
250	55.1
315	58.9
400	60.4
500	64.9
630	69.4
800	74.4
1000	79.9
1250	84.1
1600	88.7
2000	91.9
2500	90.0
3150	88.3
4000	86.8
Sound Transmission Class (STC)	66



5.2. PRECISION

For the flooring test facility, the 95% confidence interval ΔTL , is as follows:

Range of One-Third Octave Bands	Transmission Loss 95% Confidence Uncertainty
Hertz	dB
125 and 160	< 3
200 and 250	< 2
315 and 4000	< 1

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 E90-09, Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements. It was classified in accordance with ASTM E413-04: Classification for Rating Sound Insulation.

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.

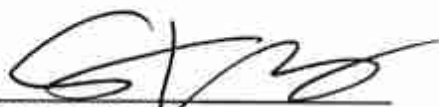
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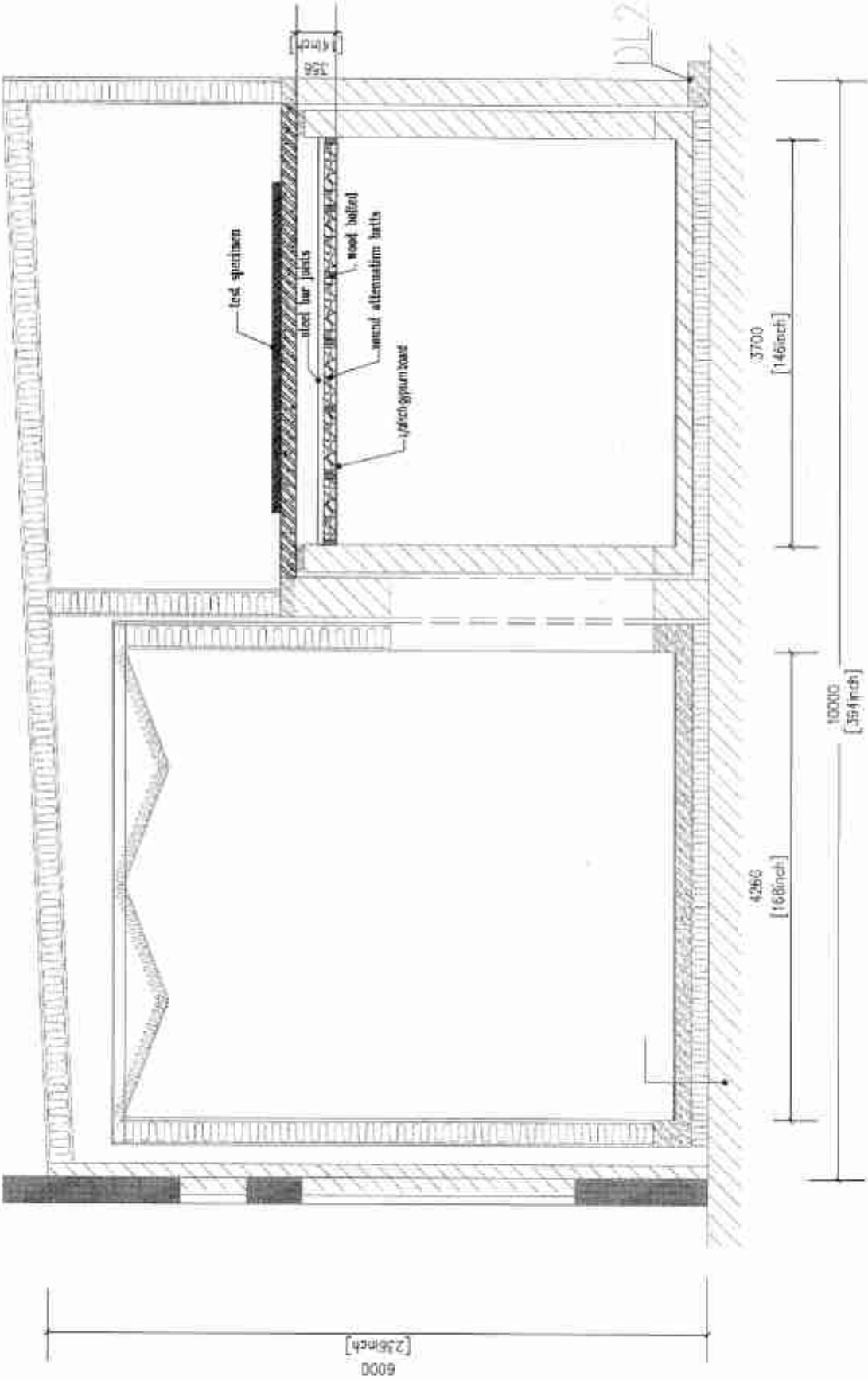
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Project Engineer, Building Products

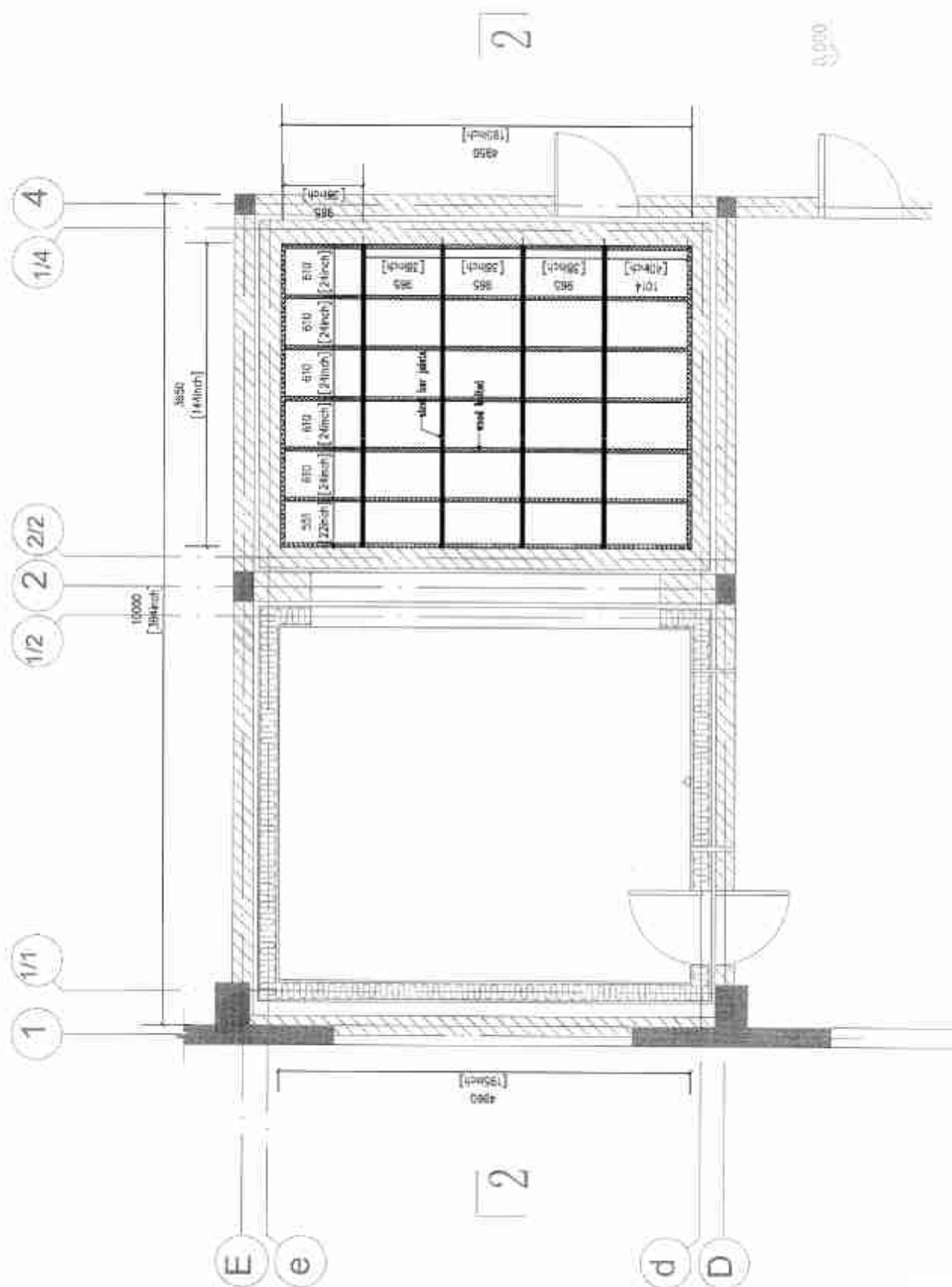
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7 Appendix A: Drawings Of Floor/Ceiling Assembly System





8 Revision Page

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

END OF DOCUMENT
