

DALIAN JIABAO ACOUSTICAL PERFORMANCE TEST REPORT

SCOPE OF WORK

ASTM E90 AND ASTM E492 TESTING ON DALIAN JIABAO RIGID CORE FLOORING

SPECIMEN TYPE

Open Web Truss - 356 mm

REPORT NUMBER

K6800.04-113-11-R0

TEST DATE

01/30/20

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02/21/20

RECORD RETENTION END

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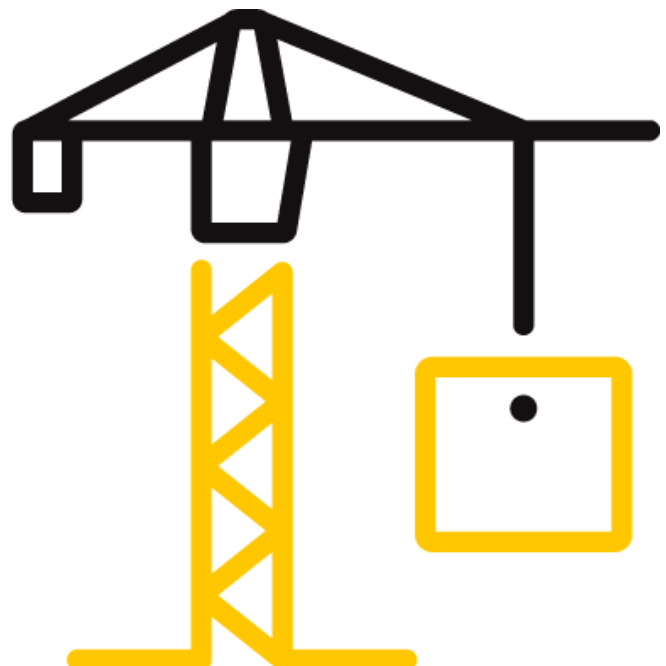
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TEST REPORT FOR DALIAN JIABAO SCIENCE & TECHNOLOGY DEVELOPMENT CO., CHINA

Report No.: K6800.04-113-11-R0

Date: 02/21/20

REPORT ISSUED TO

DALIAN JIABAO SCIENCE & TECHNOLOGY DEVELOPMENT CO., CHINA

16/F YiFang Building, No. 9 YanAn Road

ZhongShan District, Dalian CHINA

SECTION 1

SCOPE

Intertek Building & Construction (B&C) was contracted to perform testing in accordance with ASTM E90 AND ASTM E492 on Dalian Jiabao Rigid Core Flooring. This report is a reissue in the name of Dalian Jiabao Science & Technology Development Co., China through written authorization from the original report holder. Results obtained are tested values and were secured by using the designated test method(s). Testing was conducted in the VT test chambers at Intertek B&C located in York, Pennsylvania.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

SECTION 2

SUMMARY OF TEST RESULTS

DATA FILE NO.	K6800.02
SERIES/MODEL:	Dalian Jiabao Rigid Core Flooring
STC	60
IIC	55

COMPLETED BY:	Morgan S. J. Kennedy
	Technician - Acoustical
TITLE:	Testing
SIGNATURE:	
DATE:	02/21/20

COMPLETED BY:	Daniel B. Mohler
	Project Lead - Acoustical
TITLE:	Testing
SIGNATURE:	
DATE:	02/21/20

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SECTION 3**TEST METHODS**

The specimen was evaluated in accordance with the following:

ASTM E90-09 (2016), *Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions*

ASTM E413-16, *Classification for Rating Sound Insulation*

ASTM E492-09(2016)e1, *Standard Test Method for Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine*

ASTM E989-18, *Classification for Determination of Impact Insulation Class (IIC)*

ASTM E2235-04 (2012), *Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods*

SECTION 4**MATERIAL SOURCE/INSTALLATION**

The full test specimen was assembled on the day of testing by B&C. All materials provided by the original client were installed on an existing B&C assembly (Open Web Truss - 356 mm) utilizing B&C-supplied materials. The assembly was installed in a steel test frame which was installed into the opening between the source and receive rooms in the test chamber. The test frame was isolated from the structure with dense neoprene gasket.

The total weight of the floor/ceiling assembly was 1019.8 kg. B&C will store samples of the test specimen for four years. Photographs of the test specimen are included in the report. A drawing of the test specimen is included in the report.

This report is reissued in the name of Dalian Jiabao Science & Technology Development Co., China through written authorization from the original report holder. The original Report No. is K6800.02-113-11.

B&C will service this report for the entire test record retention period. Test records, such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation, will be retained by B&C for the entire test record retention period.

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**SECTION 5
EQUIPMENT**

INSTRUMENT	MANUFACTURER	MODEL	DESCRIPTION	ASSET #	CAL DATE
Data Acquisition Unit	National Instruments	PXI-4462	Data Acquisition Card	INT00977	08/18 *
Data Acquisition Unit	National Instruments	PXI-4462	Data Acquisition Card	65124	05/18 *
Data Acquisition Unit	National Instruments	PXI-4462	Data Acquisition Card	63763-1	06/18 *
Microphone Calibrator	Norsonic	1251	Pistonphone Calibrator	65105	06/19
Receive Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	63741	04/19
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	63739	04/19
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	67340	04/19
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	63745	06/19
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	65617	06/19
Receive Room Environmental Indicator	Comet	T7510	Temperature and Humidity Transmitter	63810	10/19
				63811	10/19
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	65029	03/19
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	63747	08/19
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	64340	10/19
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	63746	10/19
Source Room Microphone	PCB Electronics	378C20	Microphone and Preamplifier	63742	03/19
Source Room Environmental Indicator	Comet	T7510	Temperature and Humidity Transmitter	INT00603	03/19
Tapping Machine	Look Line s.r.l.	EM50	Tapping Machine	65351	11/19

* The calibration frequency for this equipment is every two years per the manufacturer's recommendation.

VT RECEIVE ROOM VOLUME	156.8 m ³
VT SOURCE ROOM VOLUME	190 m ³

**SECTION 6
LIST OF OFFICIAL OBSERVERS**

NAME	COMPANY
Seth J. Allen	Intertek B&C
Daniel B. Mohler	Intertek B&C

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SECTION 7**TEST PROCEDURE**

The microphones were calibrated before conducting the tests. The air temperature and relative humidity conditions were monitored and recorded during all measurements. The average temperature and humidity of both the source and received rooms are listed in Sections 10 and 11. The maximum and minimum temperatures and humidities of the receive room from the duration of the test are listed in Sections 12 and 13.

The airborne transmission loss test was conducted in accordance with the ASTM E90 test method using the single direction method. Two background noise sound pressure level and five sound absorption measurements were conducted at each of five microphone positions. Two sound pressure level measurements were made simultaneously in both rooms, at each of five microphone positions.

The impact sound transmission test was conducted in accordance with the ASTM E492 test method. Two background noise sound pressure level, two sound pressure level measurements with the tapping machine operating at each position specified by ASTM E492, and five sound absorption measurements were conducted at each of five microphone positions.

Detailed test procedures, data for flanking limit tests, repeatability measurements, and reference specimen tests are available upon request.

SECTION 8**TEST CALCULATIONS**

The STC (Sound Transmission Class) and IIC (Impact Insulation Class) ratings were calculated in accordance with ASTM E413 and ASTM E989, respectively.

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SECTION 9

TEST SPECIMEN DESCRIPTION

MATERIAL	DIMENSIONS (mm)	THICKNESS (mm)	MANUFACTURER AND SERIES	QUANTITY	AVERAGE WEIGHT
Rigid Core Flooring	1219 by 177.8	5.0	Dalian Jiabao	10.98 m ²	7.71 kg/m ²
	Note: Loose Laid				
Floor Underlayment	3023 by 3632	19.1	Maxxon Gyp-Crete	10.98 m ²	40.67 kg/m ²
	Note: Poured directly onto the subfloor underlayment, cured a minimum of 14 days. The gypsum panel had a closed cell foam perimeter isolation. No noticeable shrinkage or cracking was visible on the specimen.				
Oriented Strand Board Sheathing	1219 by 2438	18.8	N/A	10.98 m ²	13.82 kg/m ²
	Note: Fastened to trusses with 76 mm by 3 mm framing nails on 203 mm centers along perimeter and 305 mm centers in the field.				
Blown Fiberglass Insulation	3023 by 3632	355.6	CertainTeed OPTIMA®	9.15 m ²	10.25 kg/m ²
	Note: Blown in the cavities between the trusses. Suspended above the channels and ceiling panels with polyethylene sheeting to relieve any pressure on the ceiling panels.				
Open Web Truss	88.9 by 2934	355.6	York PB Truss L/360	7 trusses	14.82 kg/truss
	Note: Installed on 610 mm centers using JUS414 hanger brackets.				
Resilient Channel	68.6 by 3454	12.7	ClarkDietrich RC Deluxe™	27.6 lin m	0.33 kg/m
	Note: Installed on 406 mm centers perpendicular to the trusses. The measured thickness of the metal was 0.7 mm.				
Gypsum Panel	1219 by 3023	15.9	USG SHEETROCK® Brand FIRECODE® C Core	10.98 m ²	11.91 kg/m ²
	Note: Fastened to the channels on 305 mm centers with 25.4 mm Type S bugle head screws. The seams of the gypsum panels were sealed with Pecora AC-20 FTR caulk and covered with pressure				

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SECTION 10

TEST RESULTS - AIRBORNE SOUND TRANSMISSION LOSS



TEST DATE	1/30/2020				
DATA FILE NO.	K6800.02				
CLIENT	Dalian Jiabao Science & Technology Development Co., China				
DESCRIPTION	5 mm Dalian Jiabao Rigid Core Flooring, 19.05 mm Maxxon Gyp-Crete Floor Underlayment, 18.8 mm Oriented Strand Board Sheathing, 355.6 mm CertainTeed OPTIMA® Blown Fiberglass Insulation, 355.6 mm York PB Truss L/360 Open Web Truss, 12.7 mm ClarkDietrich RC Deluxe™ Resilient Channel, 15.9 mm USG SHEETROCK® Brand FIRECODE® C Core Gypsum Panel				
SPECIMEN AREA	10.98 m ²	Receive Temp.	18.7°C	Source Temp.	20.3°C
TECHNICIAN	SJA	Receive Humidity	60%	Source Humidity	60%

FREQ (Hz)	BACKGROUND SPL (dB)	ABSORPTION m ²	SOURCE SPL (dB)	RECEIVE SPL (dB)	SPECIMEN TL (dB)	95% CONFIDENCE LIMIT	NUMBER OF DEFICIENCIES
80	40.8	18.1	106	64	42	2.9	-
100	29.8	13.7	104	68	37	1.8	-
125	27.0	10.7	100	61	41	2.0	3
160	26.4	9.7	102	61	42	1.5	5
200	24.6	11.2	106	58	48	1.0	2
250	19.7	11.0	105	56	51	1.1	2
315	23.0	10.9	104	51	55	0.9	1
400	19.2	9.5	104	50	56	0.6	3
500	21.8	8.8	105	48	59	0.8	1
630	24.5	8.7	105	48	58	0.5	3
800	20.8	8.8	104	47	59	0.6	3
1000	20.5	8.5	103	44	60	0.5	3
1250	17.5	8.8	104	41	64	0.5	0
1600	14.3	9.0	103	39	66	0.5	0
2000	12.9	10.1	103	38	66	0.6	0
2500	10.3	11.3	102	34	69	0.8	0
3150	8.5	12.1	102	31	72	1.0	0
4000	8.2	13.7	102	29	73	1.1	0
5000	7.9	15.7	102	26	75	1.4	-
6300	8.6	19.6	95	15	78	1.9	-
8000	8.9	25.2	94	10	81	1.5	-
10000	7.9	25.2	89	6	80	1.2	-
STC Rating	60	<i>(Sound Transmission Class)</i>			Sum of Deficiencies	26	

- Notes:**
- 1) Receive Room levels less than 5 dB above the Background levels are highlighted in yellow.
 - 2) Specimen TL levels listed in red are potentially limited by the laboratory flanking limit.
 - 3) Specimen TL levels listed in blue indicate the lower limit of the transmission loss.
 - 4) Specimen TL levels listed in green indicate that there has been a filler wall correction applied

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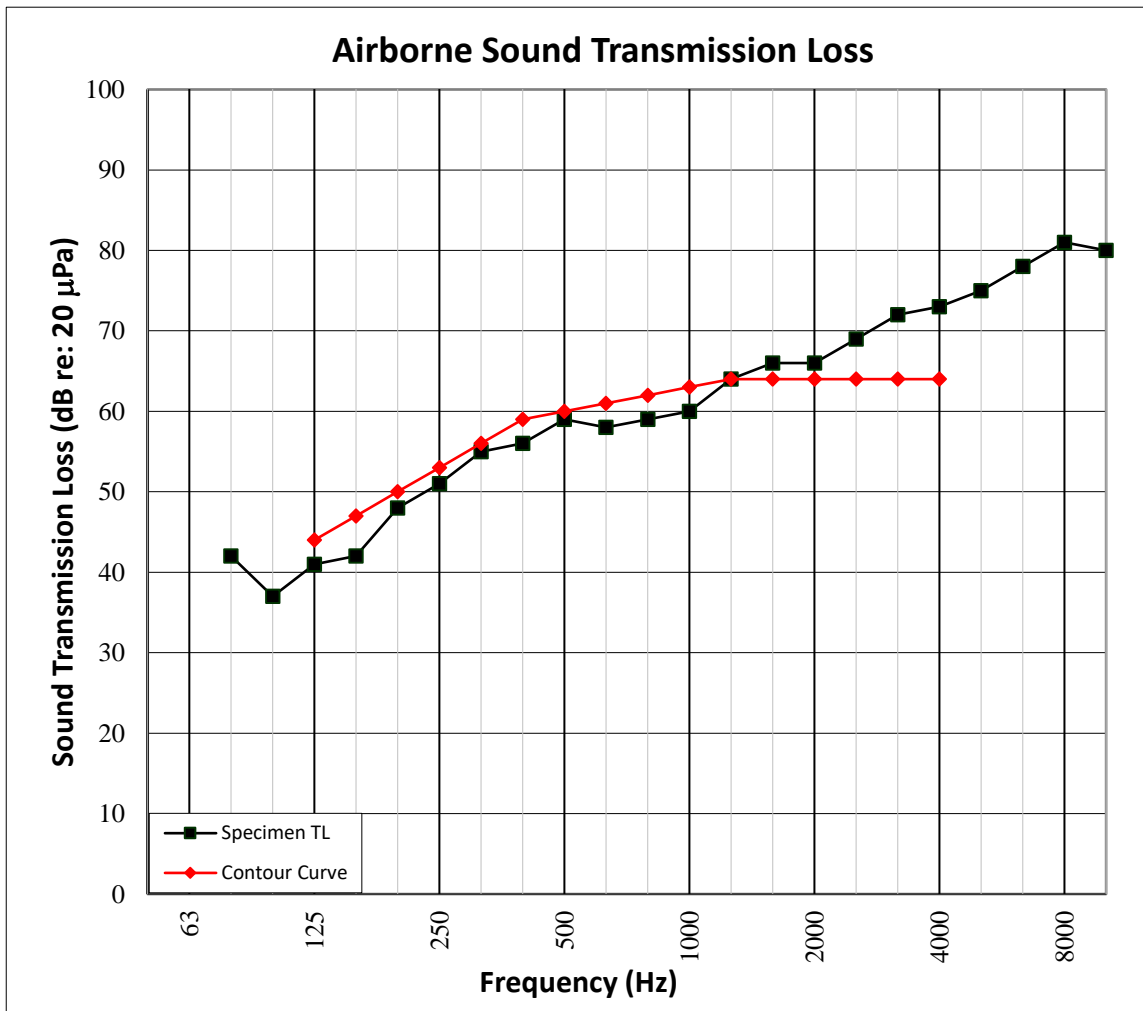
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SECTION 11

TEST RESULTS - AIRBORNE SOUND TRANSMISSION LOSS GRAPH



TEST DATE	1/30/2020				
DATA FILE NO.	K6800.02				
CLIENT	Dalian Jiabao Science & Technology Development Co., China				
DESCRIPTION	5 mm Dalian Jiabao Rigid Core Flooring, 19.05 mm Maxxon Gyp-Crete Floor Underlayment, 18.8 mm Oriented Strand Board Sheathing, 355.6 mm CertainTeed OPTIMA® Blown Fiberglass Insulation, 355.6 mm York PB Truss L/360 Open Web Truss, 12.7 mm ClarkDietrich RC Deluxe™ Resilient Channel, 15.9 mm USG SHEETROCK® Brand FIRECODE® C Core Gypsum Panel				
SPECIMEN AREA	10.98 m ²	Receive Temp.	18.7°C	Source Temp.	20.3°C
TECHNICIAN	SJA	Receive Humidity	60%	Source Humidity	60%



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SECTION 12

TEST RESULTS - IMPACT SOUND TRANSMISSION



TEST DATE	1/30/2020				
DATA FILE NO.	K6800.02				
CLIENT	Dalian Jiabao Science & Technology Development Co., China				
DESCRIPTION	5 mm Dalian Jiabao Rigid Core Flooring, 19.05 mm Maxxon Gyp-Crete Floor Underlayment, 18.8 mm Oriented Strand Board Sheathing, 355.6 mm CertainTeed OPTIMA® Blown Fiberglass Insulation, 355.6 mm York PB Truss L/360 Open Web Truss, 12.7 mm ClarkDietrich RC Deluxe™ Resilient Channel, 15.9 mm USG SHEETROCK® Brand FIRECODE® C Core Gypsum Panel				
SPECIMEN AREA	10.98 m ²	Maximum Temp.	18.8°C	Minimum Temp.	18.7°C
TECHNICIAN	SJA	Max. Humidity	60%	Min. Humidity	59%

FREQ (Hz)	BACKGROUND SPL (dB)	ABSORPTION m ²	NORMALIZED IMPACT SPL (dB)	95% CONFIDENCE LIMIT	NUMBER OF DEFICIENCIES
80	36.8	18.1	64	2.3	-
100	27.5	13.7	63	1.0	6
125	25.1	10.7	63	1.0	6
160	23.4	9.7	64	0.8	7
200	20.9	11.2	63	0.3	6
250	19.2	11.0	61	0.6	4
315	19.2	10.9	59	0.5	2
400	16.1	9.5	55	0.5	0
500	15.7	8.8	47	0.4	0
630	18.8	8.7	42	0.4	0
800	20.2	8.8	38	0.3	0
1000	19.7	8.5	36	0.5	0
1250	16.0	8.8	31	0.2	0
1600	12.1	9.0	27	0.3	0
2000	10.0	10.1	29	0.4	0
2500	6.8	11.3	26	0.6	0
3150	4.7	12.1	26	1.0	0
4000	4.7	13.7	21	1.1	-
5000	5.3	15.7	22	1.2	-
6300	5.9	19.6	20	1.3	-
8000	6.4	25.2	25	2.2	-
10000	6.8	25.2	22	1.3	-
IIC Rating	55	<i>(Impact Insulation Class)</i>		Sum of Deficiencies	31

Notes: Receive Room levels less than 5 dB above the Background levels are highlighted in yellow.

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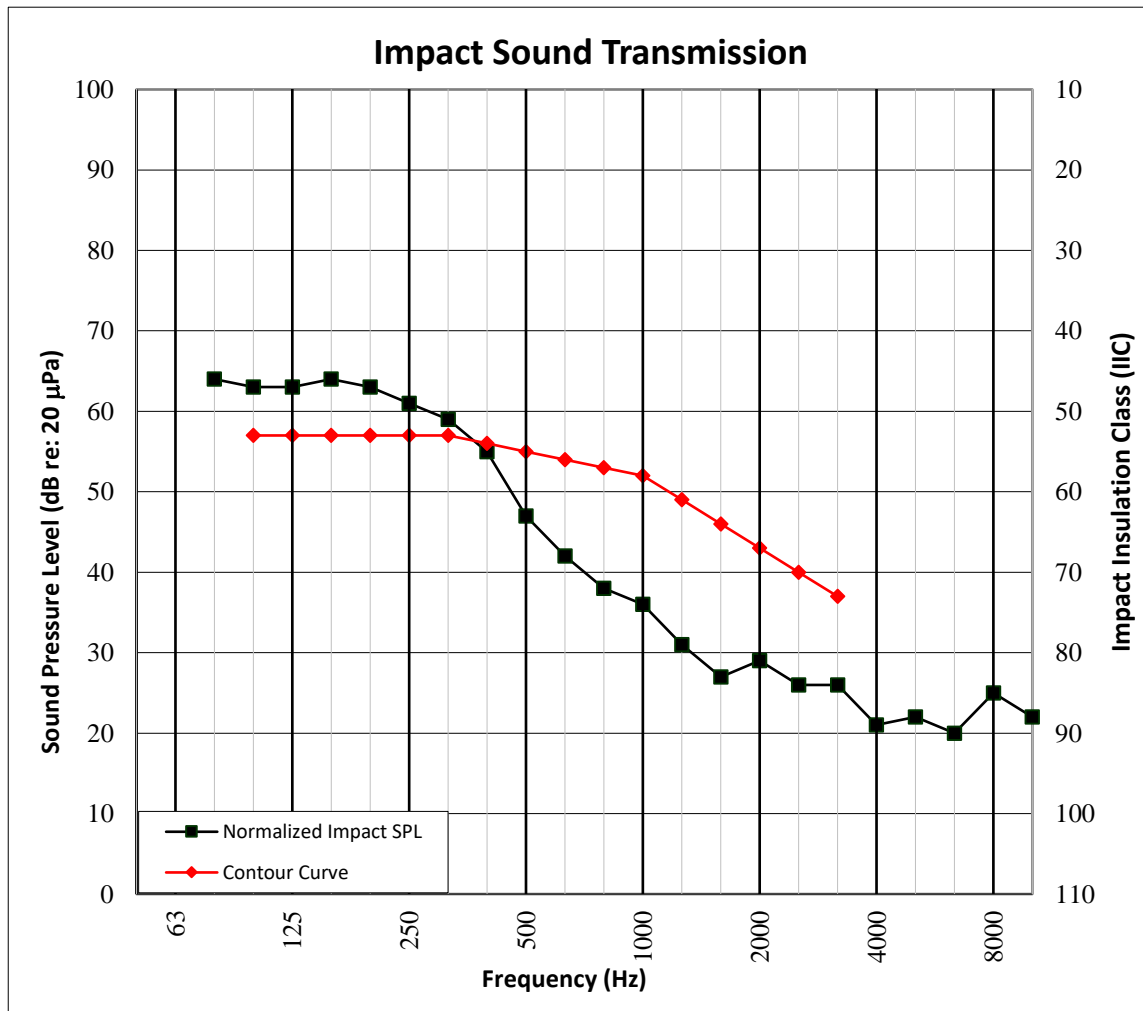
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SECTION 13

TEST RESULTS - IMPACT SOUND TRANSMISSION GRAPH



TEST DATE	1/30/2020				
DATA FILE NO.	K6800.02				
CLIENT	Dalian Jiabao Science & Technology Development Co., China				
DESCRIPTION	5 mm Dalian Jiabao Rigid Core Flooring, 19.05 mm Maxxon Gyp-Crete Floor Underlayment, 18.8 mm Oriented Strand Board Sheathing, 355.6 mm CertainTeed OPTIMA® Blown Fiberglass Insulation, 355.6 mm York PB Truss L/360 Open Web Truss, 12.7 mm ClarkDietrich RC Deluxe™ Resilient Channel, 15.9 mm USG SHEETROCK® Brand FIRECODE® C Core Gypsum Panel				
SPECIMEN AREA	10.98 m ²	Maximum Temp.	18.8°C	Minimum Temp.	18.7°C
TECHNICIAN	SJA	Max. Humidity	60%	Min. Humidity	59%



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SECTION 14

PHOTOGRAPHS



Photo No. 1

Source Room View of Test Specimen Installation



Photo No. 2

Receive Room View of Test Specimen Installation



Total Quality. Assured.

130 Derry Court
York, PA 17406

Telephone: 717-764-7700
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www.intertek.com/building

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SECTION 15

DRAWING

TEST REPORT FOR DALIAN JIABAO SCIENCE & TECHNOLOGY DEVELOPMENT CO., CHINA

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SECTION 16

REVISION LOG

REVISION #	DATE	PAGES	DESCRIPTION
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