

CLARKDIETRICH ACOUSTICAL PERFORMANCE TEST REPORT

SCOPE OF WORK ASTM E90 AND ASTM E492 TESTING ON SHAW CARPET & PAD

SPECIMEN TYPE Open Web Truss with CDSC Sound Clips and Type C Drywall

REPORT NUMBER P2294.06-113-11-R0

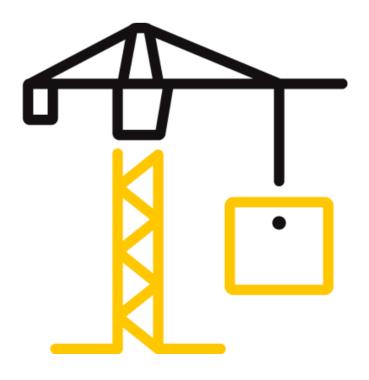
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TEST REPORT FOR CLARKDIETRICH BUILDING SYSTEMS, LLC

Report No.: P2294.06-113-11-R0 Date: 10/17/22

REPORT ISSUED TO

CLARKDIETRICH BUILDING SYSTEMS, LLC 9050 Centre Pointe Drive. Suite 400 West Chester, Ohio 45069

SECTION 1

SCOPE

Architectural Testing, Inc. (an Intertek company) dba Intertek Building & Construction (B&C) was contracted by ClarkDietrich Building Systems, LLC to perform testing in accordance with ASTM E90 AND ASTM E492 on Shaw Carpet & Pad. Results obtained are tested values and were secured by using the designated test methods. 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.	P2294.06
SERIES/MODEL:	Shaw Carpet & Pad
STC	62
IIC	82
HIIC	90

COMPLETED BY:	Corey S. Kohler	COMPLETED BY:	Daniel B. Mohler
TITLE:	Technician - Acoustical Testing	TITLE:	Manager - Acoustical Testing
SIGNATURE:		SIGNATURE:	
DATE:	10/17/22	DATE:	10/17/22

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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 E989-21, Classification for Determination of Impact Insulation Class (IIC)

ASTM E2235-04 (2020), Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods

ASTM E3222-20, Standard Classification for Determination of High-Frequency Impact Sound Ratings

SECTION 4

MATERIAL SOURCE/INSTALLATION

The full test specimen was assembled on the day of testing by B&C. All materials provided by the client were installed on an existing B&C assembly (Open Web Truss with CDSC Sound Clips and Type C Drywall) 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 1041.6 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.

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.

Unless differently required, Intertek reports apply the "Simple Acceptance" rule, also called "Shared Risk approach," of ILAC-G8:09/2019, Guidelines on Decision Rules and Statements of Conformity.



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SECTION 5

EQUIPMENT

INSTRUMENT	MANUFACTURER	MODEL	DESCRIPTION	ASSET #	CAL DA	TE
2-Channel Analog Input	National Instruments	NI 9250	2-Channel Analog Input	INT02586	04/22	*
2-Channel Analog Input	National Instruments	NI 9250	2-Channel Analog Input	INT02587	04/22	*
2-Channel Analog Input	National Instruments	NI 9250	2-Channel Analog Input	INT02608	04/22	*
2-Channel Analog Input	National Instruments	NI 9250	2-Channel Analog Input	INT02609	04/22	*
2-Channel Analog Input	National Instruments	NI 9250	2-Channel Analog Input	INT02610	04/22	*
2-Channel Analog Input	National Instruments	NI 9250	2-Channel Analog Input	INT02612	04/22	*
Microphone Calibrator	Norsonic	34093	Acoustical Calibrator	65105	10/21	
Receive Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	63741	06/22	
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	63740	04/22	
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64340	10/21	
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	63744	09/21	
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	65968	01/22	
Receive Room Environmental	Comet	T7510	Temperature and Humidity	63810	10/21	
Indicator	Comet	17510	Transmitter	63811	10/21	
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	65103	02/22	
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	64902	12/21	
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	63739	07/22	
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	63742	04/22	
Source Room Microphone	PCB Electronics	378C20	Microphone and Preamplifier	64906	04/22	
Source Room Environmental Indicator	Comet	T7510	Temperature and Humidity Transmitter 63812		10/21	
Tapping Machine	Norsonic	Nor277	Tapping Machine	INT00936	02/22	

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

VT RECEIVE ROOM VOLUME	155.77 m³
VT SOURCE ROOM VOLUME	190 m ³

SECTION 6

LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Morgan S. J. Kennedy	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 receive 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), IIC (Impact Insulation Class), and HIIC (High-Frequency Impact Insulation Class) ratings were calculated in accordance with ASTM E413, ASTM E989, and ASTM E3222, respectively.



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SECTION 9

TEST SPECIMEN DESCRIPTION

MATERIAL	DIMENSIONS (mm)	THICKNESS (mm)	MANUFACTURER AND SERIES	QUANTITY	AVERAGE WEIGHT				
Correct	3023 by 3632	12.6	Shaw ECO Beauty	10.98 m²	1.37 kg/m²				
Carpet	Note: Loose laid	Note: Loose laid							
Correct Dod	3023 by 3632	10.3	Shaw Support PLS7/16	10.98 m²	1.12 kg/m²				
Carpet Pad	Note: Loose laid		-	-	-				
	3023 by 3632	19.1	Maxxon Gyp-Crete	10.98 m²	53.8 kg/m²				
Gypsum Concrete			loor, cured a minimum of 14 . No noticeable shrinkage or						
	1219 by 2438	18.8	N/A	10.98 m²	11.67 kg/m²				
Oriented Strand Board Sheathing	Note: Adhered to the floor trusses with Loctite PL 400 Subfloor adhesive. Fastened with 9D nails on 203 mm centers along perimeter and 305 mm centers along trusses.								
Fiberglass	520.7 by 3023	88.9	Johns Manville Unfaced R- 13	10.98 m²	1.32 kg/m²				
Insulation	Note: Installed in the cavity between trusses, stapled flush with the subfloor								
Open Web Truss	88.9 by 2933.7	457.2	York PB Truss L/360	7 trusses	19.05 kg/truss				
Open web truss	Note: Installed on 610 mm centers using JUS414 hanger brackets.								
Sound Clip	77 by 35.2	24.5	ClarkDietrich CDSC	36 clips	0.09 kg/clip				
	Note: Fastened to the joist bottoms in a 610 mm by 1219 mm grid pattern								
Furring/Hat	3657.6 by 76.2	22.3	ClarkDietrich 087F125-18	29.1 lin m	0.48 kg/m				
Channel	Note: Installed into the ceiling clips, 610 mm on center								
	1219 by 3023	15.9	USG SHEETROCK [®] Brand FIRECODE [®] C Core	10.98 m²	11.91 kg/m²				
Gypsum Panel	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 sensitive tape.								



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SECTION 10

TEST RESULTS - AIRBORNE SOUND TRANSMISSION LOSS



TEST DATE DATA FILE NO. CLIENT	9/22/2022 P2294.06 ClarkDietrich Bu							
DESCRIPTION	12.58 mm Shaw ECO Crete Gypsum Concre Fiberglass Insulation,	2.58 mm Shaw ECO Beauty Carpet, 10.3 mm Shaw Support PLS7/16 Carpet Pad, 19.05 mm Maxxon Gyp- rete Gypsum Concrete, 18.8 mm Oriented Strand Board Sheathing, 88.9 mm Johns Manville Unfaced R-13 iberglass Insulation, 457.2 mm York PB Truss L/360 Open Web Truss, 24.5 mm ClarkDietrich CDSC Sound lip, 22.3 mm ClarkDietrich 087F125-18 Furring/Hat Channel, 15.9 mm USG SHEETROCK® Brand FIRECODE®						
SPECIMEN AREA	10.98 m²							
TECHNICIAN	MSJK	Receive Humidity	75%	Source Humidity	75%			

	BACKGROUND	ARCORDIN	SOURCE	RECEIVE	SPECIMEN	95%	NUMBER
FREQ	SPL	ABSORPTION	SPL	SPL	тι	SAMPLING	OF
(Hz)	(dB)	m²	(dB)	(dB)	(dB)	LIMIT	DEFICIENCIES
50	46.7	26.6	107	73	31	3.2	-
63	39.2	17.9	104	70	34	4.3	-
80	34.3	14.4	101	69	31	2.8	-
100	29.5	9.2	100	65	36	2.0	-
125	31.9	10.7	104	61	44	1.3	2
160	29.0	9.2	101	58	45	1.3	4
200	25.5	11.0	97	51	48	2.0	4
250	20.3	9.8	99	49	52	0.6	3
315	20.8	9.7	103	52	52	1.1	6
400	19.8	8.4	102	49	55	0.7	6
500	17.1	7.2	99	41	61	0.7	1
630	19.4	7.6	96	37	61	0.9	2
800	19.4	7.7	98	37	63	1.0	1
1000	21.6	7.4	97	35	65	0.4	0
1250	20.6	7.8	98	33	68	0.5	0
1600	17.3	7.7	98	32	68	0.7	0
2000	14.4	8.4	97	30	69	0.5	0
2500	13.0	9.4	92	26	68	0.7	0
3150	11.1	9.9	89	21	69	0.6	0
4000	9.7	10.8	90	17	74	0.8	0
5000	9.0	12.2	89	12	77	0.7	-
6300	9.1	14.3	87	10	76	0.8	-
8000	9.8	17.2	89	10	78	1.2	-
10000	10.2	17.2	88	9	78	1.5	-
STC Rati	ng 62	(Sound Transmi	ission Class)		Sum c	of Deficiencies	29

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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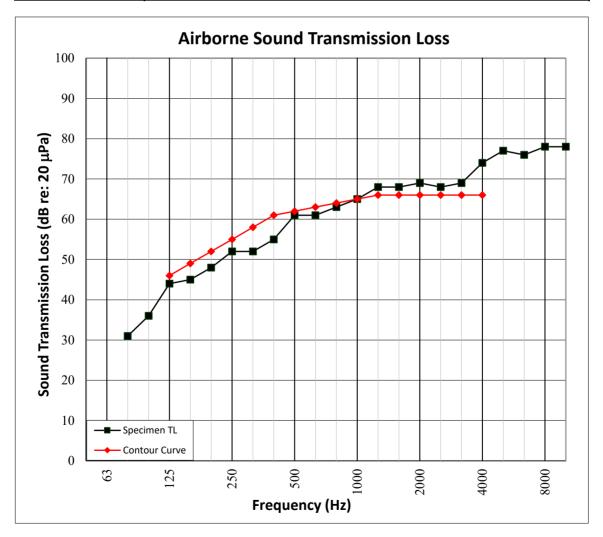
Report No.: P2294.06-113-11-R0 Date: 10/17/22

SECTION 11

TEST RESULTS - AIRBORNE SOUND TRANSMISSION LOSS GRAPH



TEST DATE	9/22/2022	2/2022						
DATA FILE NO.	P2294.06	2294.06						
CLIENT	ClarkDietrich Bu	rkDietrich Building Systems, LLC						
DESCRIPTION	Crete Gypsum Concre Fiberglass Insulation,	.58 mm Shaw ECO Beauty Carpet, 10.3 mm Shaw Support PLS7/16 Carpet Pad, 19.05 mm Maxxon Gyp- ete Gypsum Concrete, 18.8 mm Oriented Strand Board Sheathing, 88.9 mm Johns Manville Unfaced R-13 berglass Insulation, 457.2 mm York PB Truss L/360 Open Web Truss, 24.5 mm ClarkDietrich CDSC Sound p, 22.3 mm ClarkDietrich 087F125-18 Furring/Hat Channel, 15.9 mm USG SHEETROCK® Brand FIRECODE® Core Gypsum Panel						
SPECIMEN AREA	10.98 m²	8 m ² Receive Temp. 22.1°C Source Temp. 19.9°C						
TECHNICIAN	MSJK	Receive Humidity	75%	Source Humidity	75%			





TEST REPORT FOR CLARKDIETRICH BUILDING SYSTEMS, LLC

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SECTION 12

TEST RESULTS - IMPACT SOUND TRANSMISSION



TEST DATE DATA FILE NO. CLIENT	9/22/2022 P2294.06 ClarkDietrich Bu							
DESCRIPTION	Crete Gypsum Concre Fiberglass Insulation,	2.58 mm Shaw ECO Beauty Carpet, 10.3 mm Shaw Support PLS7/16 Carpet Pad, 19.05 mm Maxxon Gyp- rete Gypsum Concrete, 18.8 mm Oriented Strand Board Sheathing, 88.9 mm Johns Manville Unfaced R-13 iberglass Insulation, 457.2 mm York PB Truss L/360 Open Web Truss, 24.5 mm ClarkDietrich CDSC Sound lip, 22.3 mm ClarkDietrich 087F125-18 Furring/Hat Channel, 15.9 mm USG SHEETROCK® Brand FIRECODE®						
SPECIMEN AREA	10.98 m²	98 m ² Maximum Temp. 22.2°C Minimum Temp. 22.1°C						
TECHNICIAN	MSJK	Max. Humidity	75%	Min. Humidity	75%			

FREQ	BACKGROUND SPL	ABSORPTION	NORMALIZED IMPACT SP	95% SAMPLING	NUMBER OF
(Hz)	(dB)	m²	(dB)	LIMIT	DEFICIENCIES
80	35.3	13.9	48	2.3	-
100	27.8	8.7	38	1.7	8
125	36.6	11.4	30	1.0	0
160	28.8	8.9	25	0.7	0
200	29.3	10.8	22	0.5	0
250	22.4	10.1	19	0.5	0
315	22.9	10.3	22	0.5	0
400	21.4	8.4	22	0.8	0
500	20.6	7.1	17	0.6	0
630	22.9	7.7	17	0.7	0
800	22.1	7.7	18	1.2	0
1000	22.0	7.6	18	0.8	0
1250	24.3	7.9	16	0.3	0
1600	19.3	7.7	13	0.3	0
2000	16.6	8.5	11	0.3	0
2500	15.2	9.3	10	0.5	0
3150	13.5	10.0	9	0.5	0
4000	12.5	10.9	8	0.5	-
5000	11.1	12.1	8	0.5	-
6300	10.6	14.2	9	0.5	-
8000	10.4	17.3	10	0.5	-
10000	10.3	17.3	11	0.5	-
IIC Ratin	<mark>g</mark> 82	(Impact Insulati	on Class)	Sum of Deficien	<mark>cies</mark> 8

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



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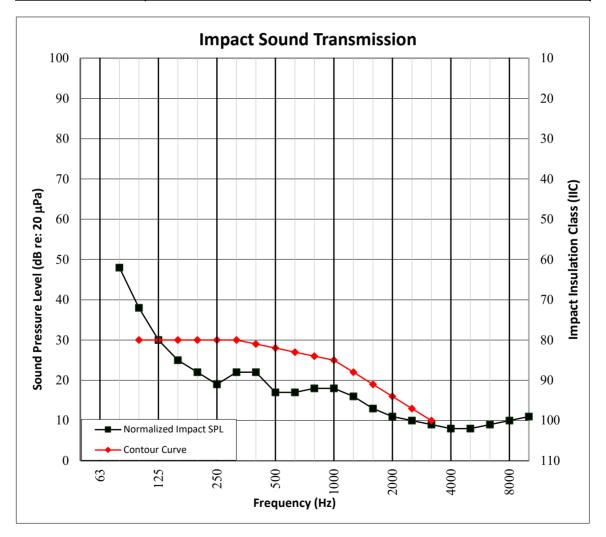
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SECTION 13

TEST RESULTS - IMPACT SOUND TRANSMISSION GRAPH



TEST DATE DATA FILE NO. CLIENT	9/22/2022 P2294.06 ClarkDietrich Bu							
DESCRIPTION	Crete Gypsum Concre Fiberglass Insulation,	2.58 mm Shaw ECO Beauty Carpet, 10.3 mm Shaw Support PLS7/16 Carpet Pad, 19.05 mm Maxxon Gyp- rete Gypsum Concrete, 18.8 mm Oriented Strand Board Sheathing, 88.9 mm Johns Manville Unfaced R-13 iberglass Insulation, 457.2 mm York PB Truss L/360 Open Web Truss, 24.5 mm ClarkDietrich CDSC Sound lip, 22.3 mm ClarkDietrich 087F125-18 Furring/Hat Channel, 15.9 mm USG SHEETROCK® Brand FIRECODE®						
SPECIMEN AREA	10.98 m²	98 m ² Maximum Temp. 22.2°C Minimum Temp. 22.1°C						
TECHNICIAN	MSJK	Max. Humidity	75%	Min. Humidity	75%			





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SECTION 14

TEST RESULTS - HIGH-FREQUENCY IMPACT SOUND TRANSMISSION



TEST DATE DATA FILE NO. CLIENT	9/22/2022 P2294.06 ClarkDietrich Building Systems, LLC				ACCREDITE Testing Laborator
DESCRIPTION	12.58 mm Shaw ECO Beauty Carpet, 10.3 mm Shaw Support PLS7/16 Carpet Pad, 19.05 mm Maxxon Gyp- Crete Gypsum Concrete, 18.8 mm Oriented Strand Board Sheathing, 88.9 mm Johns Manville Unfaced R-13 Fiberglass Insulation, 457.2 mm York PB Truss L/360 Open Web Truss, 24.5 mm ClarkDietrich CDSC Sound Clip, 22.3 mm ClarkDietrich 087F125-18 Furring/Hat Channel, 15.9 mm USG SHEETROCK® Brand FIRECODE® C Core Gypsum Panel				
SPECIMEN AREA	10.98 m²	Maximum Temp.	22.2°C	Minimum Temp.	22.1°C
TECHNICIAN	MSJK	Max. Humidity	75%	Min. Humidity	75%

FREQ	BACKGROUND SPL	ABSORPTION	NORMALIZED IMPACT SPL	95% SAMPLE CONFIDENCE	NUMBER OF
(Hz)	(dB)	m²	(dB)	LIMIT	DEFICIENCIES
400	21.4	8.4	22	0.8	0.7
500	20.6	7.1	17	0.6	0.0
630	22.9	7.7	17	0.7	0.0
800	22.1	7.7	18	1.2	0.0
1000	22.0	7.6	18	0.8	1.1
1250	24.3	7.9	16	0.3	2.3
1600	19.3	7.7	13	0.3	1.9
2000	16.6	8.5	11	0.3	2.5
2500	15.2	9.3	10	0.5	4.8
3150	13.5	10.0	9	0.5	6.5
HIIC Rati	<mark>ng</mark> 90	(High-Frequency	y Impact Insulation Class)	Sum of Deficiencies	19.8

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



TEST REPORT FOR CLARKDIETRICH BUILDING SYSTEMS, LLC

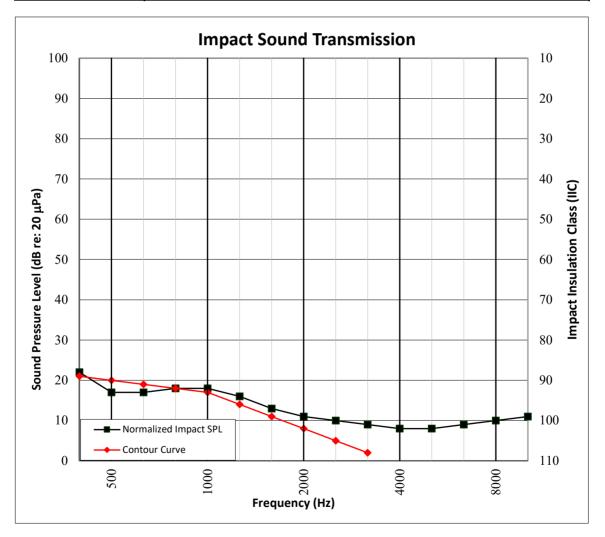
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SECTION 15

TEST RESULTS - HIGH-FREQUENCY IMPACT SOUND TRANSMISSION GRAPH



TEST DATE DATA FILE NO. CLIENT	9/22/2022 P2294.06 ClarkDietrich Building Systems, LLC				ACCREDITE Testing Laboratory
DESCRIPTION	12.58 mm Shaw ECO Beauty Carpet, 10.3 mm Shaw Support PLS7/16 Carpet Pad, 19.05 mm Maxxon Gyp- Crete Gypsum Concrete, 18.8 mm Oriented Strand Board Sheathing, 88.9 mm Johns Manville Unfaced R-13 Fiberglass Insulation, 457.2 mm York PB Truss L/360 Open Web Truss, 24.5 mm ClarkDietrich CDSC Sound Clip, 22.3 mm ClarkDietrich 087F125-18 Furring/Hat Channel, 15.9 mm USG SHEETROCK [®] Brand FIRECODE [®] C Core Gypsum Panel				
SPECIMEN AREA	10.98 m²	Maximum Temp.	22.2°C	Minimum Temp.	22.1°C
TECHNICIAN	MSJK	Max. Humidity	75%	Min. Humidity	75%





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SECTION 16

PHOTOGRAPHS



Photo No. 1 Source Room View of Test Specimen Installation



Photo No. 2 Receive Room View of Test Specimen Installation

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130 Derry Court York, PA 17406

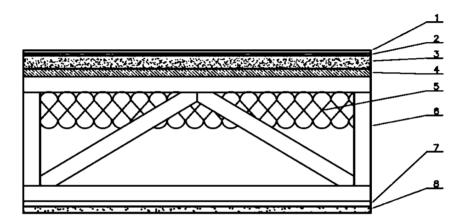
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SECTION 17

DRAWING



1-Floor Topping
2-Underlayment
3-Subfloor Topping
4-Subfloor
5-Insulation
6-Truss
7-Ceiling Isolation
8-Ceiling



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SECTION 18

REVISION LOG

REVISION #	DATE	PAGES	DESCRIPTION
RO	10/17/22	N/A	Original Report Issue