

URBAN SURFACES ACOUSTICAL PERFORMANCE TEST REPORT

SCOPE OF WORK

ASTM E90 AND ASTM E492 TESTING ON SOUNDGUARD

SPECIMEN TYPE

152 mm Concrete Slab with Drop Ceiling

REPORT NUMBER

L3696.06-303-11-R0

TEST DATE

12/18/20

ISSUE DATE

01/04/21

RECORD RETENTION END

12/18/24

PAGES

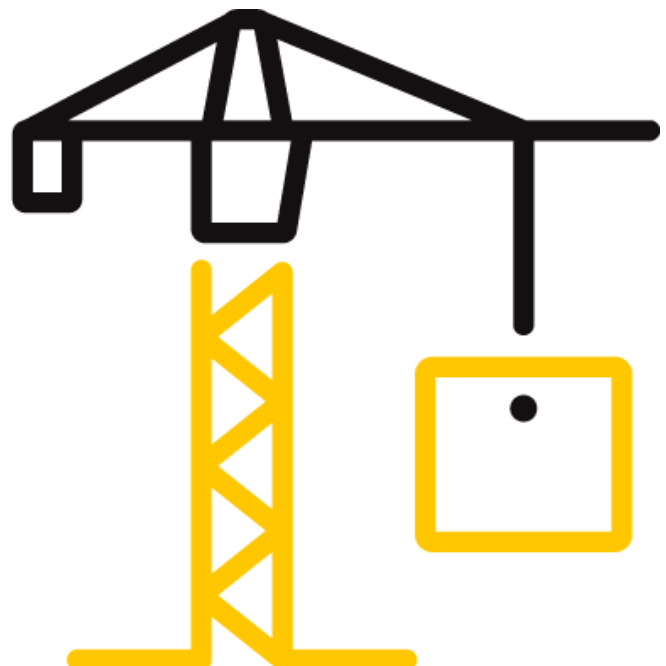
13

DOCUMENT CONTROL

ATI 00629 (03/21/18)

RTTDS-R-AMER-Test-2844

© 2017 INTERTEK



TEST REPORT FOR URBAN SURFACES

Report No.: L3696.06-303-11-R0

Date: 01/04/21

REPORT ISSUED TO

URBAN SURFACES

1121 Olympic Drive

Corona, California 92881

SECTION 1

SCOPE

Intertek Building & Construction (B&C) was contracted by to perform testing in accordance with ASTM E90 AND ASTM E492 on SoundGuard. 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 Lake Forest, California.

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.	L3696.06
SERIES/MODEL:	SoundGuard
STC	61
IIC	60

COMPLETED BY:	Marco T. Santa Rosa
TITLE:	Technician II - Acoustical Testing
SIGNATURE:	
DATE:	01/04/21

COMPLETED BY:	Leeland S. Hoover
TITLE:	Laboratory Manager - Acoustical Testing
SIGNATURE:	
DATE:	01/04/21

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 and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample(s) tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.



TEST REPORT FOR URBAN SURFACES

Report No.: L3696.06-303-11-R0

Date: 01/04/21

SECTION 3**TEST METHOD(S)**

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 E989-06 (2012), *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 client were installed on an existing B&C assembly (152 mm Concrete Slab with Drop Ceiling) 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 4395.7 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.

TEST REPORT FOR URBAN SURFACES

Report No.: L3696.06-303-11-R0

Date: 01/04/21

**SECTION 5
EQUIPMENT**

INSTRUMENT	MANUFACTURER	MODEL	DESCRIPTION	ASSET #	CAL DATE
Data Acquisition Unit	National Instruments	PXIe-4464	Data Acquisition Card	INT00396	10/19 *
Data Acquisition Unit	National Instruments	PXIe-4464	Data Acquisition Card	INT00837	11/19 *
Data Acquisition Unit	National Instruments	PXIe-4464	Data Acquisition Card	INT00393	11/19 *
Microphone Calibrator	Norsonic	1251	Pistonphone calibrator	INT00288	08/20
Receive Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	INT00234	04/20
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	INT00235	04/20
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	INT00236	04/20
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	INT00237	04/20
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	INT00238	04/20
Receive Room Environmental Indicator	Comet	T7510	Temperature and Humidity Transmitter	INT00302	08/20
Source Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	INT00239	09/20
Source Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	INT00240	09/20
Source Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	INT00241	09/20
Source Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	INT00242	09/20
Source Room Microphone	PCB Electronics	378B20	Microphone and Preamplifier	INT00243	09/20
Source Room Environmental Indicator	Comet	T7510	Temperature and Humidity Transmitter	INT00301	08/20
Tapping Machine	Norsonic	Nor277	Tapping Machine	INT00224	11/20

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

VT RECEIVE ROOM VOLUME	180.6 m ³
VT SOURCE ROOM VOLUME	129.4 m ³

**SECTION 6
LIST OF OFFICIAL OBSERVERS**

NAME	COMPANY
Marco T. Santa Rosa	Intertek B&C
Leeland S. Hoover	Intertek B&C

TEST REPORT FOR URBAN SURFACES

Report No.: L3696.06-303-11-R0

Date: 01/04/21

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.

TEST REPORT FOR URBAN SURFACES

Report No.: L3696.06-303-11-R0

Date: 01/04/21

SECTION 9

TEST SPECIMEN DESCRIPTION

MATERIAL	DIMENSIONS (mm/inch)	THICKNESS (mm/inch)	MANUFACTURER AND SERIES	QUANTITY	AVERAGE WEIGHT
LVT	1244.6 by 228.6	8.0	Urban Surfaces SurfaceGuard	11.15 m ²	13.33 kg/m ²
	Note: Loose laid				
Concrete Slab	3023 by 3632	152.4	5000 PSI	11.15 m ²	366.18 kg/m ²
	Note: Installed in a test frame flush to the source room. Mats of #5 reinforcing bars were placed 25.4 mm from both the top and bottom of the slab, with bars spaced on 305 mm centers in both directions. No noticeable shrinkage or cracking was visible on the specimen.				
Drywall Main Beam	38.1 by 2870	43.0	Chicago Metallic 650.00C	10.9 lin m	0.45 kg/m
	Note: Twelve gauge hanger wires were attached to the bottom side of the concrete at twelve locations and then to the main beams. The hanger wire was twisted around itself a minimum of three times within 76 mm creating a 305 mm plenum. The measured steel thickness is 0.5 mm.				
Cross Tee	38.3 by 1219	36.0	Chicago Metallic 664.00C	27.2 lin m	0.45 kg/m
	Note: Inserted into the main beams on 610 mm centers. The measured steel thickness is 0.5 mm.				
Fiberglass Insulation	2962 by 584	88.9	Johns Manville Kraft Faced R-13	10.98 m ²	1.32 kg/m ²
	Note: Loose laid onto the ceiling grid system				
Gypsum Panel	1219 by 3023	15.9	USG SHEETROCK® Brand FIRECODE® C core	11.15 m ²	11.91 kg/m ²
	Note: The gypsum panels were fastened to the resilient channels on 304.8 mm centers with 25.4 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.				

TEST REPORT FOR URBAN SURFACES

Report No.: L3696.06-303-11-R0

Date: 01/04/21

SECTION 10

TEST RESULTS - AIRBORNE SOUND TRANSMISSION LOSS



TEST DATE	12/18/2020				
DATA FILE NO.	L3696.06				
CLIENT	Urban Surfaces				
DESCRIPTION	8 mm Urban Surfaces SurfaceGuard LVT, 152.4 mm 5000 PSI Concrete Slab, 43 mm Chicago Metallic 650.00C Drywall Main Beam, 36 mm Chicago Metallic 664.00C Cross Tee, 88.9 mm Johns Manville Kraft Faced R-13 Fiberglass Insulation, 15.9 mm USG SHEETROCK® Brand FIRECODE® C core Gypsum Panel				
SPECIMEN AREA	11.15 m ²	Receive Temp.	17.8°C	Source Temp.	17°C
TECHNICIAN	MTSR	Receive Humidity	59%	Source Humidity	59%

FREQ (Hz)	BACKGROUND SPL (dB)	ABSORPTION m ²	SOURCE SPL (dB)	RECEIVE SPL (dB)	SPECIMEN TL (dB)	95% CONFIDENCE LIMIT	NUMBER OF DEFICIENCIES
80	20.7	7.7	101	63	39	2.3	-
100	22.0	7.1	106	65	43	1.4	-
125	24.3	5.4	104	67	41	1.2	4
160	19.2	5.5	104	63	44	1.2	4
200	12.7	6.2	103	59	47	1.1	4
250	13.5	6.8	100	51	51	0.7	3
315	12.2	7.3	102	47	57	0.8	0
400	12.9	7.1	102	50	54	0.7	6
500	14.8	6.3	101	46	57	0.5	4
630	5.4	6.2	96	35	64	0.3	0
800	5.1	6.3	95	30	68	0.3	0
1000	5.0	6.1	96	27	72	0.3	0
1250	3.8	6.6	99	26	75	0.3	0
1600	4.3	6.8	99	24	77	0.4	0
2000	3.8	7.9	99	23	77	0.3	0
2500	6.2	8.6	100	23	78	0.3	0
3150	5.8	9.4	99	21	79	0.3	0
4000	5.8	11.2	98	18	80	0.4	0
5000	5.8	13.7	95	13	81	0.5	-
6300	6.1	17.7	94	13	78	0.4	-
8000	6.5	23.3	94	10	80	0.6	-
10000	6.7	30.2	93	9	80	0.5	-
STC Rating	61	<i>(Sound Transmission Class)</i>			Sum of Deficiencies	25	

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

TEST REPORT FOR URBAN SURFACES

Report No.: L3696.06-303-11-R0

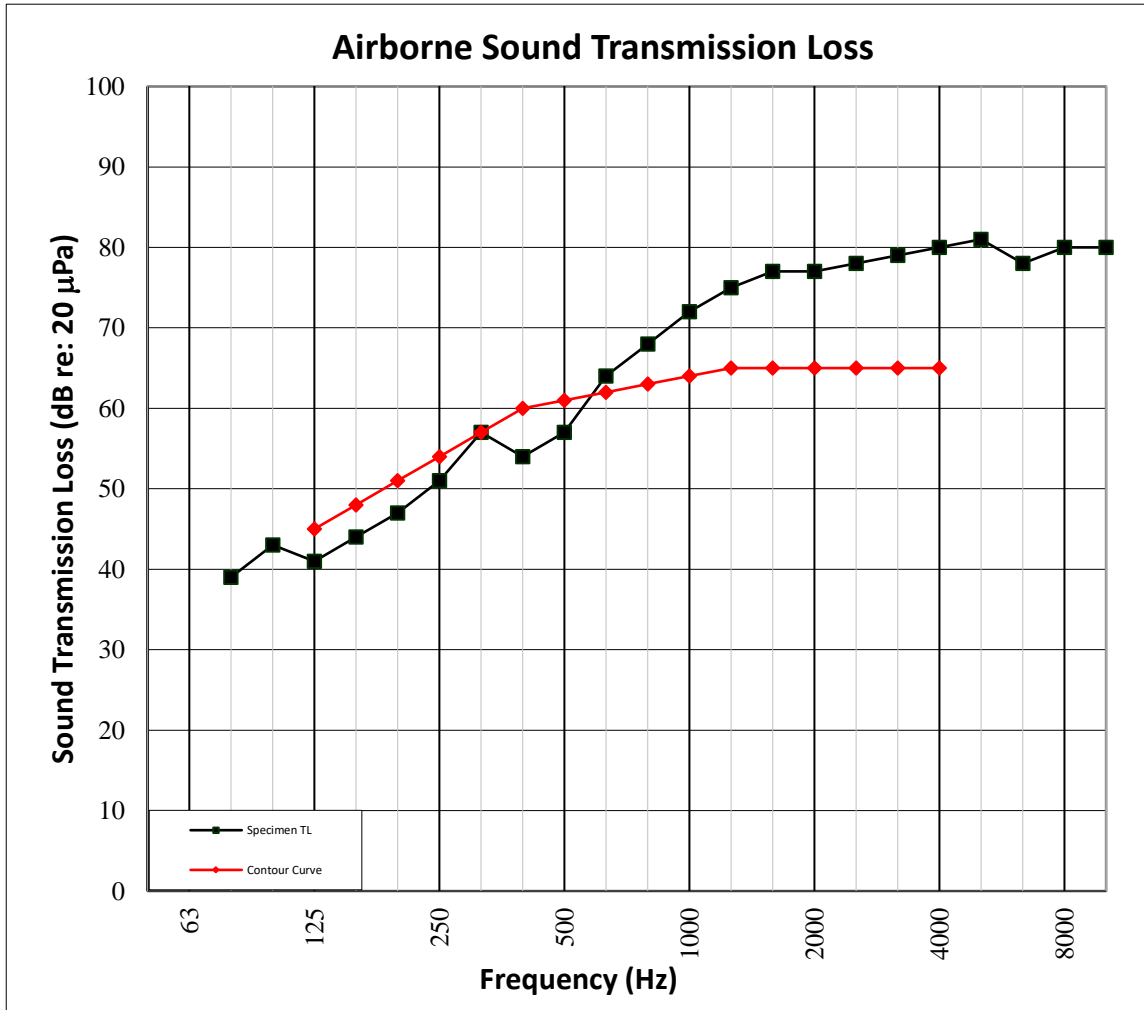
Date: 01/04/21

SECTION 11

TEST RESULTS - AIRBORNE SOUND TRANSMISSION LOSS GRAPH



TEST DATE	12/18/2020				
DATA FILE NO.	L3696.06				
CLIENT	Urban Surfaces				
DESCRIPTION	8 mm Urban Surfaces SurfaceGuard LVT, 152.4 mm 5000 PSI Concrete Slab, 43 mm Chicago Metallic 650.00C Drywall Main Beam, 36 mm Chicago Metallic 664.00C Cross Tee, 88.9 mm Johns Manville Kraft Faced R-13 Fiberglass Insulation, 15.9 mm USG SHEETROCK® Brand FIRECODE® C core Gypsum Panel				
SPECIMEN AREA	11.15 m ²	Receive Temp.	17.8°C	Source Temp.	17°C
TECHNICIAN	MTSR	Receive Humidity	59%	Source Humidity	59%



TEST REPORT FOR URBAN SURFACES

Report No.: L3696.06-303-11-R0

Date: 01/04/21

SECTION 12

TEST RESULTS - IMPACT SOUND TRANSMISSION



TEST DATE	12/18/2020				
DATA FILE NO.	L3696.06				
CLIENT	Urban Surfaces				
DESCRIPTION	8 mm Urban Surfaces SurfaceGuard LVT, 152.4 mm 5000 PSI Concrete Slab, 43 mm Chicago Metallic 650.00C Drywall Main Beam, 36 mm Chicago Metallic 664.00C Cross Tee, 88.9 mm Johns Manville Kraft Faced R-13 Fiberglass Insulation, 15.9 mm USG SHEETROCK® Brand FIRECODE® C core Gypsum Panel				
SPECIMEN AREA	11.15 m ²	Maximum Temp.	17.9°C	Minimum Temp.	17.6°C
TECHNICIAN	MTSR	Max. Humidity	59%	Min. Humidity	58%

FREQ (Hz)	BACKGROUND SPL (dB)	ABSORPTION m ²	NORMALIZED IMPACT SPL (dB)	95% CONFIDENCE LIMIT	NUMBER OF DEFICIENCIES
80	23.9	7.6	56	1.7	-
100	25.3	7.5	60	2.6	8
125	25.3	5.5	54	0.8	2
160	21.6	5.8	53	1.2	1
200	17.1	6.4	51	0.7	0
250	15.4	6.8	52	0.8	0
315	12.5	7.4	50	0.7	0
400	13.6	6.9	50	0.6	0
500	15.5	6.3	49	0.3	0
630	6.0	6.2	46	0.3	0
800	5.1	6.2	41	0.2	0
1000	5.1	6.2	36	0.2	0
1250	3.8	6.5	31	0.2	0
1600	3.5	6.9	28	0.2	0
2000	3.4	7.9	25	0.2	0
2500	4.5	8.7	20	0.3	0
3150	5.5	9.5	13	0.4	0
4000	5.0	11.0	10	0.4	-
5000	5.3	13.7	9	0.3	-
6300	5.9	17.8	7	0.5	-
8000	6.4	23.3	8	0.6	-
10000	6.6	30.0	9	0.4	-
IIC Rating	60	<i>(Impact Insulation Class)</i>		Sum of Deficiencies	11

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

TEST REPORT FOR URBAN SURFACES

Report No.: L3696.06-303-11-R0

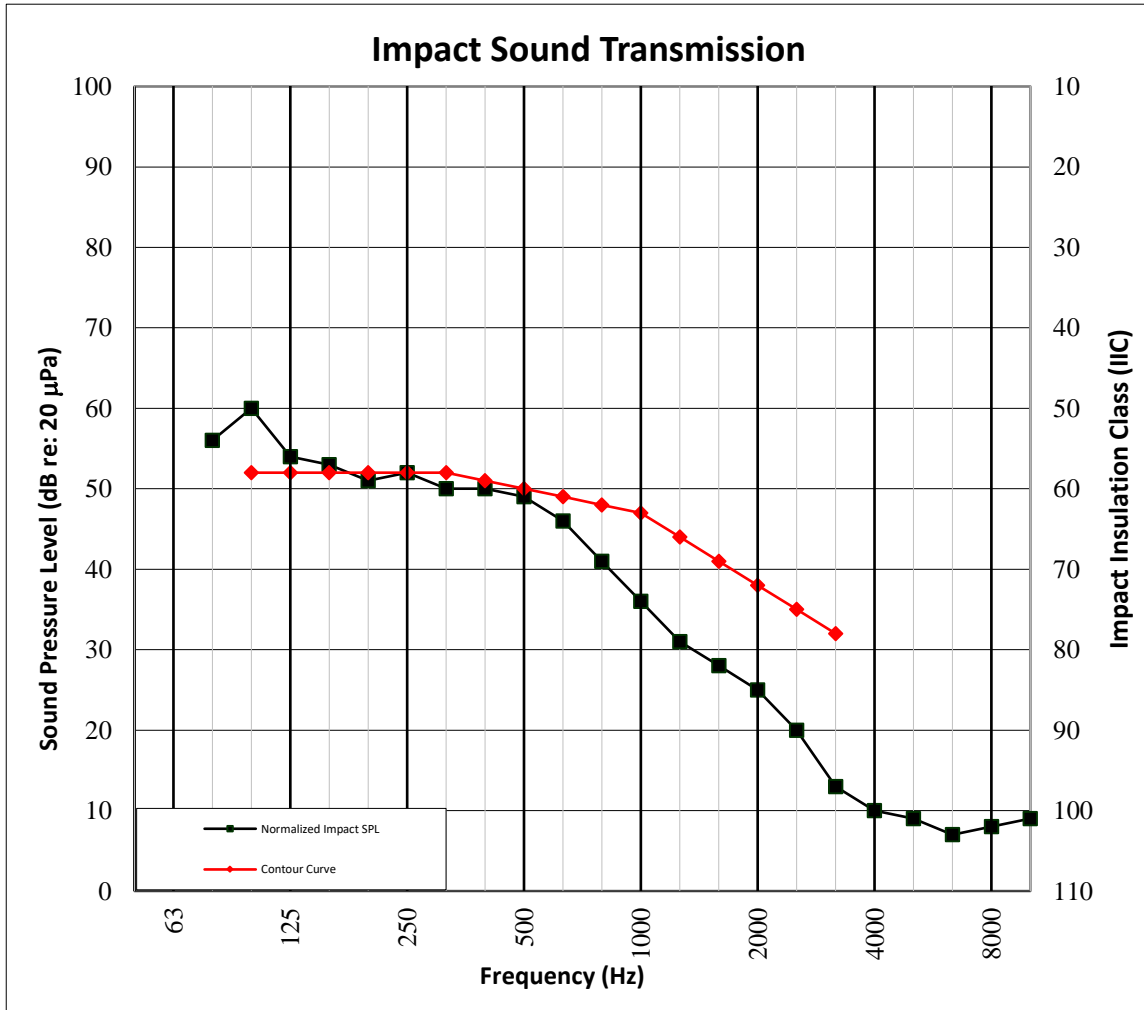
Date: 01/04/21

SECTION 13

TEST RESULTS - IMPACT SOUND TRANSMISSION GRAPH



TEST DATE	12/18/2020				
DATA FILE NO.	L3696.06				
CLIENT	Urban Surfaces				
DESCRIPTION	8 mm Urban Surfaces SurfaceGuard LVT, 152.4 mm 5000 PSI Concrete Slab, 43 mm Chicago Metallic 650.00C Drywall Main Beam, 36 mm Chicago Metallic 664.00C Cross Tee, 88.9 mm Johns Manville Kraft Faced R-13 Fiberglass Insulation, 15.9 mm USG SHEETROCK® Brand FIRECODE® C core Gypsum Panel				
SPECIMEN AREA	11.15 m ²	Maximum Temp.	17.9°C	Minimum Temp.	17.6°C
TECHNICIAN	MTSR	Max. Humidity	59%	Min. Humidity	58%



TEST REPORT FOR URBAN SURFACES

Report No.: L3696.06-303-11-R0

Date: 01/04/21

SECTION 14 PHOTOGRAPHS



Photo No. 1

Source Room View of Test Specimen Installation

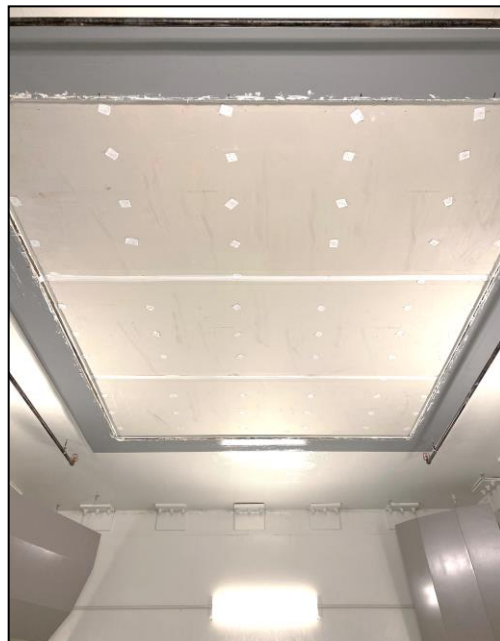


Photo No. 2

Receive Room View of Test Specimen Installation

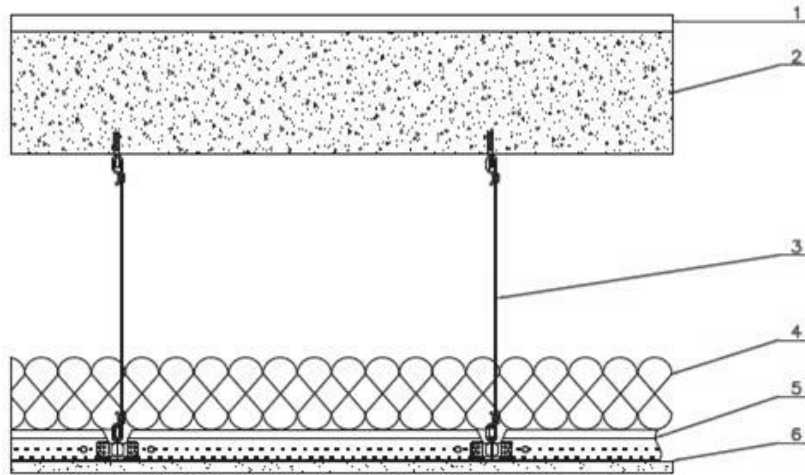
TEST REPORT FOR URBAN SURFACES

Report No.: L3696.06-303-11-R0

Date: 01/04/21

SECTION 15

DRAWING



- 1-Floor Topping
- 2-Concrete Slab
- 3-Hanger Wire
- 4-Insulation
- 5-Ceiling Grid
- 6-Ceiling



Total Quality. Assured.

25800 Commercentre Dr.
Lake Forest, CA 92630

Telephone: 949-349-1684
Facsimile: 717-764-4129
www.intertek.com/building

TEST REPORT FOR URBAN SURFACES

Report No.: L3696.06-303-11-R0

Date: 01/04/21

SECTION 16

REVISION LOG

REVISION #	DATE	PAGES	DESCRIPTION
R0	01/04/21	N/A	Original Report Issue