intertek
Total Quality. Assured.

DURA UNDERCUSHIONS ACOUSTICAL PERFORMANCE TEST REPORT

SCOPE OF WORK
ASTM E90 AND ASTM E492 TESTING ON 7 MM INTERFACE CARPET TILE OVER 2 MM DURA UNDERCUSHIONS DURA MAT UNDERLAYMENT

SPECIMEN TYPE
Concrete Slab - 203 mm

REPORT NUMBER
L3382.06-113-11-R0

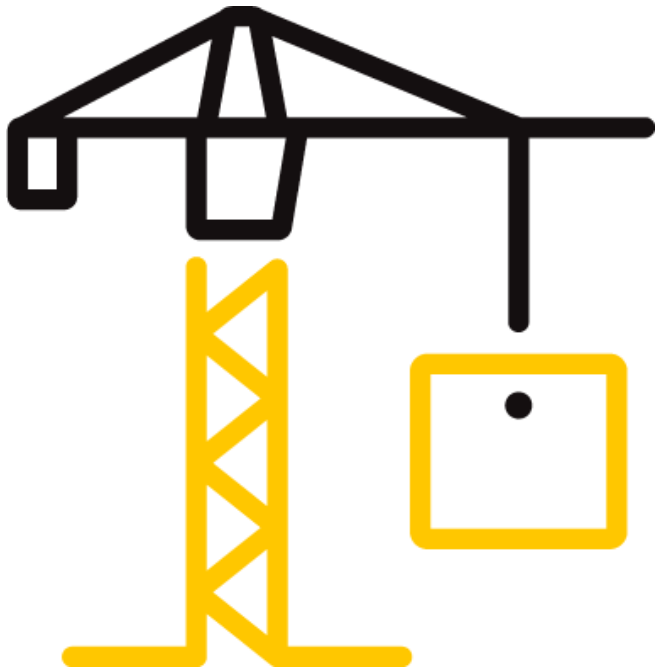
TEST DATE
09/29/20

ISSUE DATE
10/26/20

RECORD RETENTION END
09/29/24

PAGES
13

DOCUMENT CONTROL
ATI 00629 (03/21/18)
RTTDS-R-AMER-Test-2844



130 Derry Court
York, PA 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

TEST REPORT FOR DURA UNDERCUSHIONS LTD.
Report No.: L3382.06-113-11-R0
Date: 10/26/20

REPORT ISSUED TO

DURA UNDERCUSHIONS LTD.
8525 Delmeade Road
Montreal, Québec H4T 1M1 CANADA

SECTION 1

SCOPE

Intertek Building & Construction (B&C) was contracted by Dura Undercushions Ltd. to perform testing in accordance with ASTM E90 AND ASTM E492 on 7 mm Interface Carpet Tile over 2 mm Dura Undercushions Dura Mat Underlayment. 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.	L3382.06
SERIES/MODEL:	7 mm Interface Carpet Tile over 2 mm Dura Undercushions Dura Mat Underlayment
STC	55
IIC	72

COMPLETED BY:	Michael A. Unnone	**COMPLETED BY:**	Daniel B. Mohler
TITLE:	Technician - Acoustical Testing	**TITLE:**	Project Lead - Acoustical Testing
SIGNATURE:	Digitally Signed by: Michael Unnone	**SIGNATURE:**	Digitally Signed by: Daniel Mohler
DATE:	10/26/20	**DATE:**	10/26/20

130 Derry Court
York, PA 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

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 (2020), *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 (Concrete Slab - 203 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 5811.2 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.

130 Derry Court
York, PA 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

TEST REPORT FOR DURA UNDERCUSHIONS LTD.
Report No.: L3382.06-113-11-R0
Date: 10/26/20

SECTION 5
EQUIPMENT

INSTRUMENT	MANUFACTURER	MODEL	DESCRIPTION	ASSET #	CAL DATE	
Data Acquisition Unit	National Instruments	PXI-4462	Data Acquisition Card	65124	12/18	*
Data Acquisition Unit	National Instruments	PXI-4462	Data Acquisition Card	63763-4	09/18	*
Data Acquisition Unit	National Instruments	PXI-4462	Data Acquisition Card	63763-1	06/18	*
Microphone Calibrator	Norsonic	1251	Acoustical Calibrator	65105	06/19	
Receive Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	65029	03/20	
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	63742	03/20	
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	63747	08/19	
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	64903	06/19	
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	63744	06/19	
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	INT00652	01/20	
Source Room Environmental Indicator	Comet	T7510	Temperature and Humidity Transmitter	63812	10/19	
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	158.34 m^3
VT SOURCE ROOM VOLUME	190 m^3

SECTION 6
LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Michael A. Unnone	Intertek B&C
Daniel B. Mohler	Intertek B&C

130 Derry Court
York, PA 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

TEST REPORT FOR DURA UNDERCUSHIONS LTD.
Report No.: L3382.06-113-11-R0
Date: 10/26/20

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.

130 Derry Court
York, PA 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

TEST REPORT FOR DURA UNDERCUSHIONS LTD.

Report No.: L3382.06-113-11-R0
Date: 10/26/20

SECTION 9

TEST SPECIMEN DESCRIPTION

MATERIAL	DIMENSIONS (mm)	THICKNESS (mm)	MANUFACTURER AND SERIES	QUANTITY	AVERAGE WEIGHT
Carpet Tile	501.7 by 501.7	7.0	Interface	10.98 m²	3.76 kg/m²
	Note: Loose laid				
Underlayment	3023 by 1371.6	2.0	Dura Undercushions Dura Mat	10.98 m²	0.78 kg/m²
	Note: Loose laid				
Concrete Slab	3023 by 3632	203.2	5000 PSI	10.98 m²	524.71 kg/m²
	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.				

130 Derry Court
York, PA 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

TEST REPORT FOR DURA UNDERCUSHIONS LTD.

Report No.: L3382.06-113-11-R0
Date: 10/26/20

SECTION 10

TEST RESULTS - AIRBORNE SOUND TRANSMISSION LOSS

TEST DATE	9/29/2020				
DATA FILE NO.	L3382.06				
CLIENT	Dura Undercushions Ltd.				
DESCRIPTION	7 mm Interface Carpet Tile, 2 mm Dura Undercushions Dura Mat Underlayment, 203.2 mm 5000 PSI Concrete Slab				
SPECIMEN AREA	10.98 m²	**Receive Temp.**	22°C	**Source Temp.**	21.5°C
TECHNICIAN	MAU	**Receive Humidity**	80%	**Source Humidity**	80%

FREQ (Hz)	**BACKGROUND SPL** (dB)	**ABSORPTION** m²	**SOURCE SPL** (dB)	**RECEIVE SPL** (dB)	**SPECIMEN TL** (dB)	**95% CONFIDENCE LIMIT**	**NUMBER OF DEFICIENCIES**
80	36.1	14.7	93	60	32	2.7	-
100	31.4	10.8	90	55	37	2.1	-
125	27.5	10.0	92	55	40	1.7	0
160	24.5	9.2	90	53	39	1.3	3
200	21.1	10.0	92	50	44	1.2	1
250	17.3	9.9	97	51	47	1.3	1
315	24.3	9.8	100	52	49	1.0	2
400	16.0	8.4	99	48	53	0.5	1
500	14.6	8.0	97	51	48	0.6	7
630	16.8	7.7	98	50	50	1.1	6
800	16.4	8.0	97	47	52	0.7	5
1000	16.3	7.7	97	41	58	0.9	0
1250	14.5	7.6	98	37	63	0.6	0
1600	11.3	7.9	98	36	63	0.5	0
2000	9.9	8.7	98	35	65	0.6	0
2500	8.3	9.5	96	32	66	0.5	0
3150	7.4	10.4	98	31	68	0.6	0
4000	6.3	11.6	99	29	71	0.4	0
5000	6.2	12.8	99	26	73	0.6	-
6300	6.5	15.3	93	22	70	0.4	-
8000	6.7	19.3	94	15	76	0.6	-
10000	7.1	19.3	88	8	79	0.6	-
STC Rating	**55**	*(Sound Transmission Class)*			**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

130 Derry Court
York, PA 17406

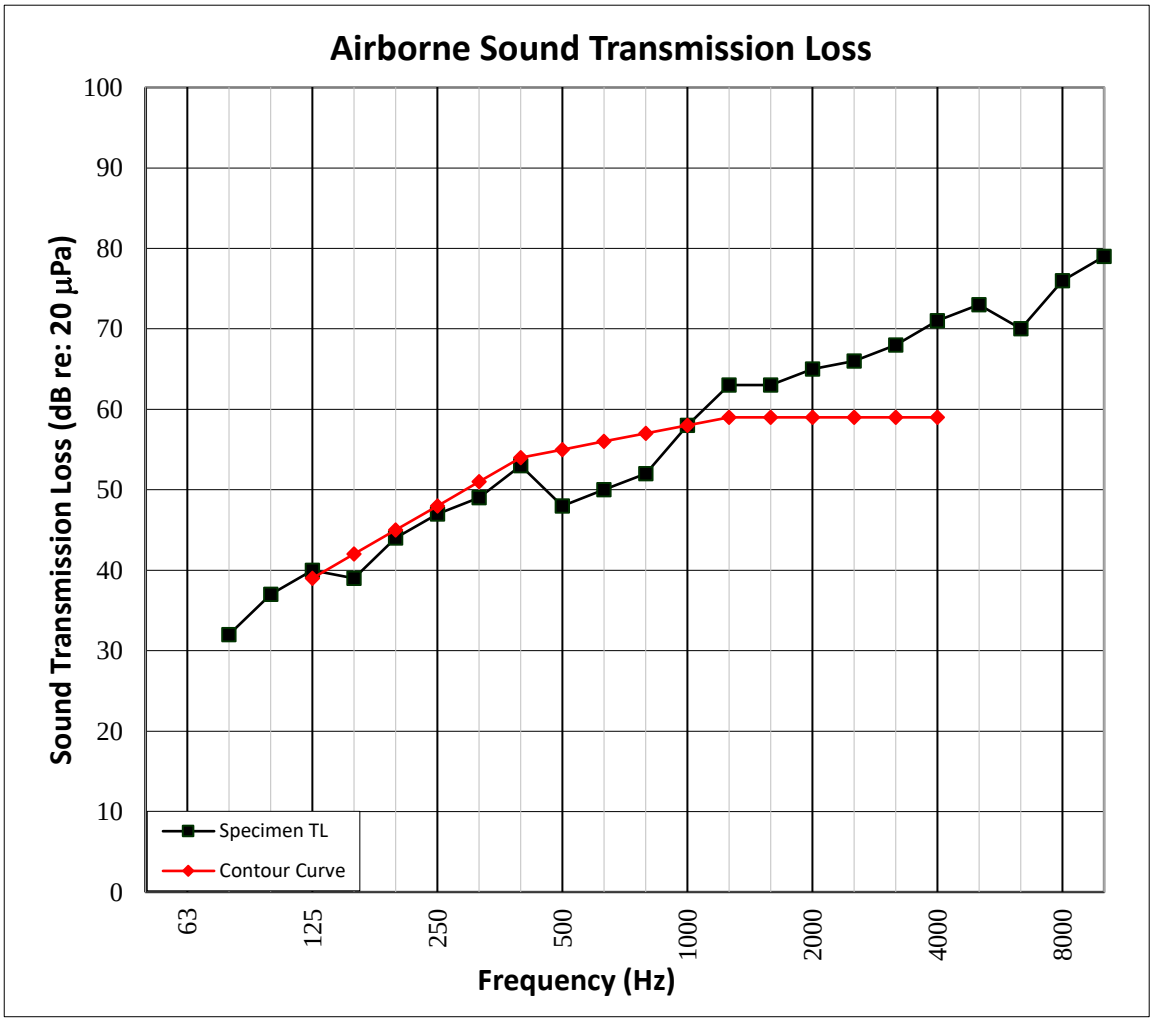
Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

TEST REPORT FOR DURA UNDERCUSHIONS LTD.
Report No.: L3382.06-113-11-R0
Date: 10/26/20

SECTION 11

TEST RESULTS - AIRBORNE SOUND TRANSMISSION LOSS GRAPH

TEST DATE	9/29/2020				
DATA FILE NO.	L3382.06				
CLIENT	Dura Undercushions Ltd.				
DESCRIPTION	7 mm Interface Carpet Tile, 2 mm Dura Undercushions Dura Mat Underlayment, 203.2 mm 5000 PSI Concrete Slab				
SPECIMEN AREA	10.98 m²	**Receive Temp.**	22°C	**Source Temp.**	21.5°C
TECHNICIAN	MAU	**Receive Humidity**	80%	**Source Humidity**	80%



130 Derry Court
York, PA 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

TEST REPORT FOR DURA UNDERCUSHIONS LTD.

Report No.: L3382.06-113-11-R0
Date: 10/26/20

SECTION 12

TEST RESULTS - IMPACT SOUND TRANSMISSION

TEST DATE	9/29/2020				
DATA FILE NO.	L3382.06				
CLIENT	Dura Undercushions Ltd.				
DESCRIPTION	7 mm Interface Carpet Tile, 2 mm Dura Undercushions Dura Mat Underlayment, 203.2 mm 5000 PSI Concrete Slab				
SPECIMEN AREA	10.98 m²	**Maximum Temp.**	22°C	**Minimum Temp.**	22°C
TECHNICIAN	MAU	**Max. Humidity**	80%	**Min. Humidity**	80%

FREQ (Hz)	**BACKGROUND SPL** (dB)	**ABSORPTION** m²	**NORMALIZED IMPACT SPL** (dB)	**95% CONFIDENCE LIMIT**	**NUMBER OF DEFICIENCIES**
80	32.7	14.2	48	2.4	-
100	26.8	12.6	48	1.4	8
125	24.1	10.0	46	1.6	6
160	22.6	8.9	47	1.3	7
200	17.8	9.9	47	1.0	7
250	14.3	9.8	42	1.1	2
315	23.4	9.6	36	0.8	0
400	15.0	8.2	28	0.4	0
500	14.9	8.0	28	0.4	0
630	16.3	7.7	23	0.8	0
800	16.5	7.8	23	0.4	0
1000	17.0	7.6	18	0.4	0
1250	15.1	7.5	16	0.5	0
1600	11.0	7.8	13	0.5	0
2000	9.9	8.5	11	0.5	0
2500	8.0	9.6	9	0.8	0
3150	6.5	10.3	7	0.6	0
4000	5.8	11.6	7	0.4	-
5000	6.0	12.8	7	0.3	-
6300	6.5	15.4	8	0.2	-
8000	6.7	19.2	9	0.3	-
10000	7.1	19.2	9	0.3	-
IIC Rating	**72**	*(Impact Insulation Class)*		**Sum of Deficiencies**	**30**

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

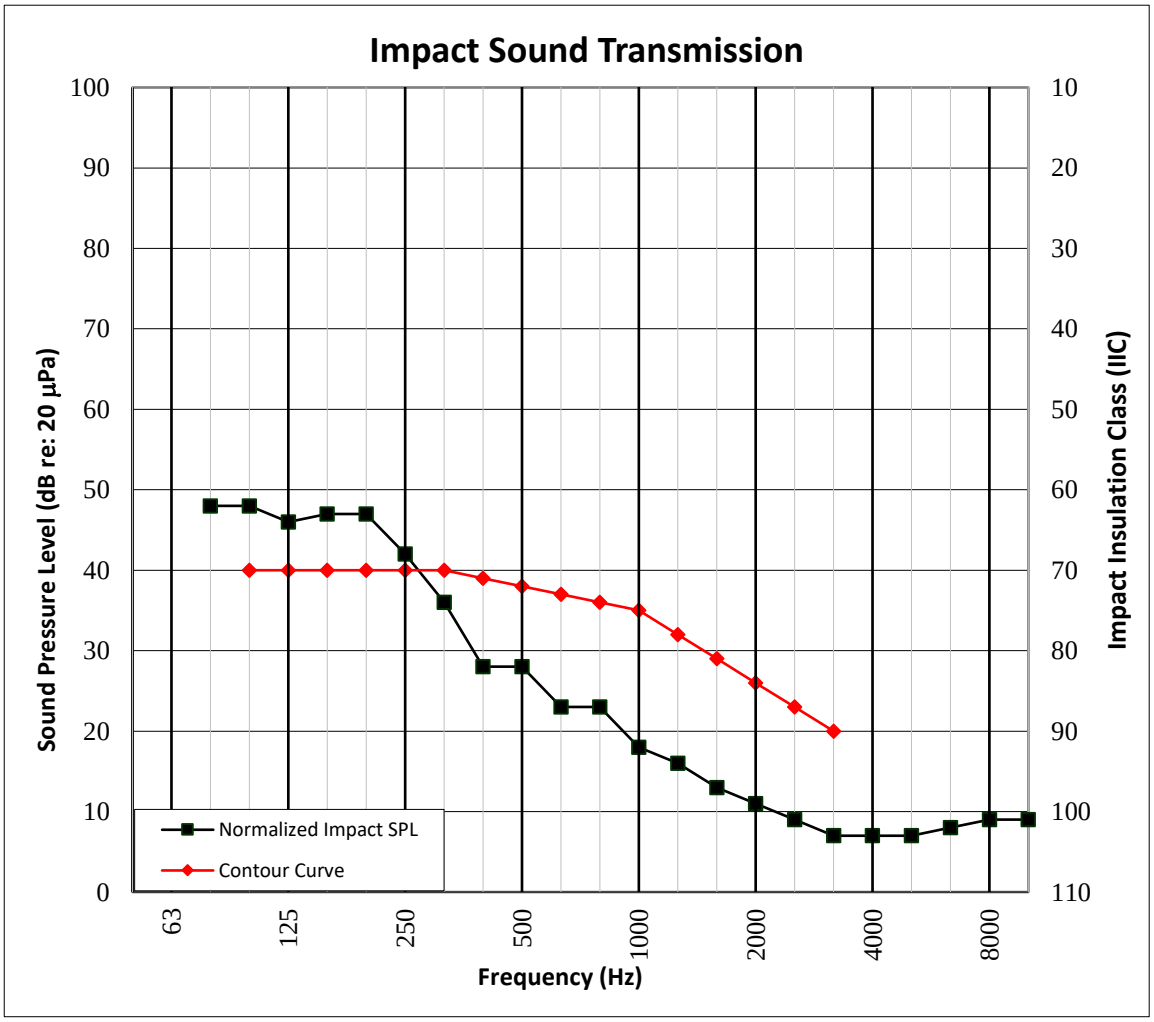
130 Derry Court
York, PA 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

TEST REPORT FOR DURA UNDERCUSHIONS LTD.
Report No.: L3382.06-113-11-R0
Date: 10/26/20

SECTION 13
TEST RESULTS - IMPACT SOUND TRANSMISSION GRAPH

TEST DATE	9/29/2020				
DATA FILE NO.	L3382.06				
CLIENT	Dura Undercushions Ltd.				
DESCRIPTION	7 mm Interface Carpet Tile, 2 mm Dura Undercushions Dura Mat Underlayment, 203.2 mm 5000 PSI Concrete Slab				
SPECIMEN AREA	10.98 m²	**Maximum Temp.**	22°C	**Minimum Temp.**	22°C
TECHNICIAN	MAU	**Max. Humidity**	80%	**Min. Humidity**	80%



130 Derry Court
York, PA 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

SECTION 14
PHOTOGRAPHS

Photo No. 1
Source Room View of Test Specimen Installation

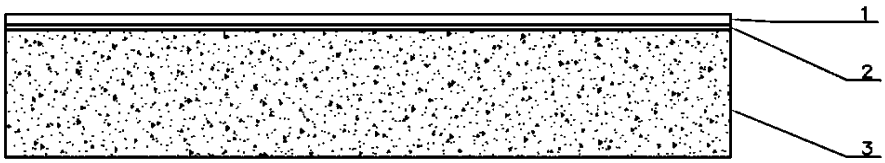
Photo No. 2
Receive Room View of Test Specimen Installation

130 Derry Court
York, PA 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

TEST REPORT FOR DURA UNDERCUSHIONS LTD.
Report No.: L3382.06-113-11-R0
Date: 10/26/20

SECTION 15
DRAWING



1-Floor Topping
2-Underlayment
3-Concrete Slab

130 Derry Court
York, PA 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

SECTION 16
REVISION LOG

REVISION #	DATE	PAGES	DESCRIPTION
R0	10/26/20	N/A	Original Report Issue