



D3894.03-113-11-R1
ACOUSTICAL PERFORMANCE TEST REPORT
ASTM E 492

Rendered to

PROFLEX PRODUCTS INC.

Series/Model: 6 mm DB-250 Carpet Cushion Silver

Specimen Type: Floor/Ceiling Assembly

Overall Size: 3023 mm by 3632 mm

IIC 81

Test Sample Identification:

Floor Topping: 7 mm Carlisle Castle Commercial Loop Indoor Carpet Carpet

Floor Underlayment: 5.9 mm Proflex Products Inc. DB-250 Carpet Cushion Silver

Floor Slab: 254 mm Concrete slab

Drywall Grid Main: 0.5 mm Armstrong HD8906 Main Beam

Drywall Grid Shortspan: 0.5 mm Armstrong XL8945P Cross Tee

Insulation: 88.9 mm Guardian Faced R-13 Fiberglass Insulation

Ceiling: 15.9 mm Gold Bond® Fire-Shield® Type X Gypsum Board Gypsum Panel

Reference should be made to Architectural Testing, Inc. Report D3894.03-113-11 for complete test specimen description.

Acoustical Performance Test Report

PROFLEX PRODUCTS INC.
2500 Drane Field Road
Lakeland, Florida 33811

Report	D3894.03-113-11
Test Date	12/26/13
Report Date	05/07/15
Revision Date	02/11/16

Project Scope

Architectural Testing was contracted to conduct an impact sound transmission test. This report is a reissue in the name of Proflex Products Inc. through written authorization from the original client. A summary of the results is listed in the Test Results section, and the complete test data is included as attachments to this report. The original client provided the test specimen.

Test Methods

The acoustical tests were conducted in accordance with the following standards. The equipment listed in the attachments meets the requirements of the following standards.

ASTM E 492-09, Standard Test Method for Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine
ASTM E 989-06 (2012), Classification for Determination of Impact Insulation Class (IIC)
ASTM E 2235-04 (2012) Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods

Test Procedure

All testing was conducted in the VT test chambers at Architectural Testing, Inc. located in York, Pennsylvania. The microphones were calibrated before conducting the tests.

The impact sound transmission test was conducted in accordance with the ASTM E 492 test method. Two background noise sound pressure level, two sound pressure level measurements with the tapping machine operating at each position specified by ASTM E 492, and twenty-five sound absorption measurements were conducted at each of five microphone positions.

The air temperature and relative humidity conditions were monitored and recorded during all measurements.

Test Conditions

Receive Room	
Maximum Temperature	19.2 °C
Minimum Temperature	18.7 °C
Average Temperature	18.9 °C
Maximum Relative Humidity	57%
Minimum Relative Humidity	55%
Average Relative Humidity	56%

Test Calculations

The IIC (Impact Insulation Class) rating was calculated in accordance with ASTM E 989.

Test Specimen Construction

The test specimen was constructed in the 3023 mm long by 3632 mm wide by 457 mm high opening. A drawing of the test specimen installation is included in the attachments.

Two rows of dense neoprene foam (9.5 mm thick by 76.2 mm wide) were adhered to the top of the steel test frame bottom flange. A double 2x8 wood frame was constructed and placed on the foam. The top of the 2x8 wood frame was covered with one layer of dense neoprene foam (9.5 mm thick by 76.2 mm wide). A double 2x6 wood frame was constructed and placed on top of the foam. The top of the 2x6 wood frame was covered with one layer of dense neoprene foam (9.5 mm thick by 76.2 mm wide). The concrete slab was placed on top of the foam. The perimeter of the concrete slab was sealed to the steel frame with duct seal. Cure time for the concrete slab was more than 28 days.

The 6 mm DB-250 Carpet Cushion Silver underlayment was laid on top of the concrete slab. The carpet was then placed on top of the underlayment, and the perimeter of the carpet and underlayment were sealed to the test frame with pressure sensitive tape.

Twelve gauge hanger wires were attached to the bottom side of the concrete with eye bolts at twelve locations. The hanger wires were twisted around the eye bolts a minimum of three times within 76 mm from the eye bolt. The hanger wire was bent and inserted into the HD8906 main beam and twisted around itself a minimum of three times within 76 mm from the main beam creating a 305 mm plenum. The XL8945P cross tees were inserted into the main beams on 406 mm centers.

A single layer of R-13 faced fiberglass insulation was loose laid onto the ceiling grid system. The Type X gypsum board was fastened with fine thread drywall screws on 305 mm centers. The perimeter of the gypsum board was sealed with acoustical caulk. The joints between the gypsum board were sealed with acoustical caulk and pressure sensitive tape.

Test Specimen Materials

Material	Dimensions (mm)	Thickness (mm)	Manufacturer and Series	Quantity	Average Weight	Total Weight
Carpet	3023 by 3632	7.0	Carlisle Castle Commercial Loop Indoor Carpet	10.98 m ²	2.05 kg/m ²	22.5 kg
DB-250 Carpet Cushion Silver	3023 by 1829	5.9	Proflex Products Inc.	10.98 m ²	1.92 kg/m ²	21.1 kg
Concrete slab	3023 by 3632	254.0	N/A	10.98 m ²	610.3 kg/m ²	6701.1 kg
Main Beam	38.1 by 43 by 2870	0.5	Armstrong HD8906	10.9 lin m	0.45 kg/m	4.9 kg
Cross Tee	38.3 by 37.3 by 1219	0.5	Armstrong XL8945P	27.2 lin m	0.45 kg/m	12.2 kg
Fiberglass Insulation	2962 by 584	88.9	Guardian Faced R-13	10.98 m ²	1.33 kg/m ²	14.6 kg
Gypsum Panel	1219 by 3032	15.9	Gold Bond® Fire-Shield® Type X Gypsum Board	10.56 m ²	11.23 kg/m ²	118.6 kg

Comments

The total weight of the floor/ceiling assembly was 6895 kg. Architectural Testing will store samples of the test specimen for four years. Photographs of the test specimen are included in the attachments.

This report is reissued in the name of Proflex Products Inc. through written authorization of the client to whom the original report was rendered. The original report number is D3894.01-113-11.

Architectural Testing 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 Architectural Testing for the entire test record retention period.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. It is the exclusive property of the client so named herein and relates only to the specimen tested. This report may not be reproduced, except in full, without the written approval of Architectural Testing.

For ARCHITECTURAL TESTING, INC:


Digitally Signed by: Daniel Mohler

Daniel B. Mohler
Technician II - Acoustical Testing


Digitally Signed by: Bradley Hunt

Bradlay D. Hunt
Project Manager - Acoustical Testing

Attachments (5)

** Stated by Client/Manufacturer*

N/A - Non Applicable



Revision Log

<u>Revision</u>	<u>Date</u>	<u>Page(s)</u>	<u>Description</u>
R0	05/07/15	N/A	Original Report Issue - Reissue of Report No. D3894.01-113-11 in the name of Proflex Products Inc.
R1	02/11/16	Cover page, Page 2, Page 3, Datasheets	Underlayment model name revised per client's request

Attachments

Instrumentation

Instrument	Manufacturer	Model	ATI Number	Date of Calibration
Data Acquisition Unit	National Instruments	PXI-1033	63763	06/12 *
Receive Room Microphone	PCB Piezotronics	378B20	63748	04/13
Receive Room Microphone	PCB Piezotronics	378B20	63744	04/13
Receive Room Microphone	PCB Piezotronics	378B20	63745	04/13
Receive Room Microphone	PCB Piezotronics	378B20	63746	04/13
Receive Room Microphone	PCB Piezotronics	378B20	63747	04/13
Receive Room Environmental Indicator	Comet	T7510	63810	09/13
Receive Room Environmental Indicator	Comet	T7510	63811	09/13
Microphone Calibrator	Cirrus Research (HP)	CRL 511E	Y001777	06/13
Tapping Machine	Norsonic	N-211	Y003242	03/13

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

Test Chambers

VT Receive Room Volume	155.8 m ³
VT Source Room Volume	190 m ³



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IMPACT TRANSMISSION
ASTM E 492

Test Date	12/26/13
Data File No.	D3894.03
Client	Proflex Products Inc.
Description	7 mm Carlisle Castle Commercial Loop Indoor Carpet Carpet, 5.9 mm Proflex Products Inc. DB-250 Carpet Cushion Silver, 254 mm Concrete slab , 0.5 mm Armstrong HD8906 Main Beam, 0.5 mm Armstrong XL8945P Cross Tee, 88.9 mm Guardian Faced R-13 Fiberglass Insulation, 15.9 mm Gold Bond® Fire-Shield® Type X Gypsum Board Gypsum Panel
Specimen Area	10.98 m ²
Technician	Daniel B. Mohler

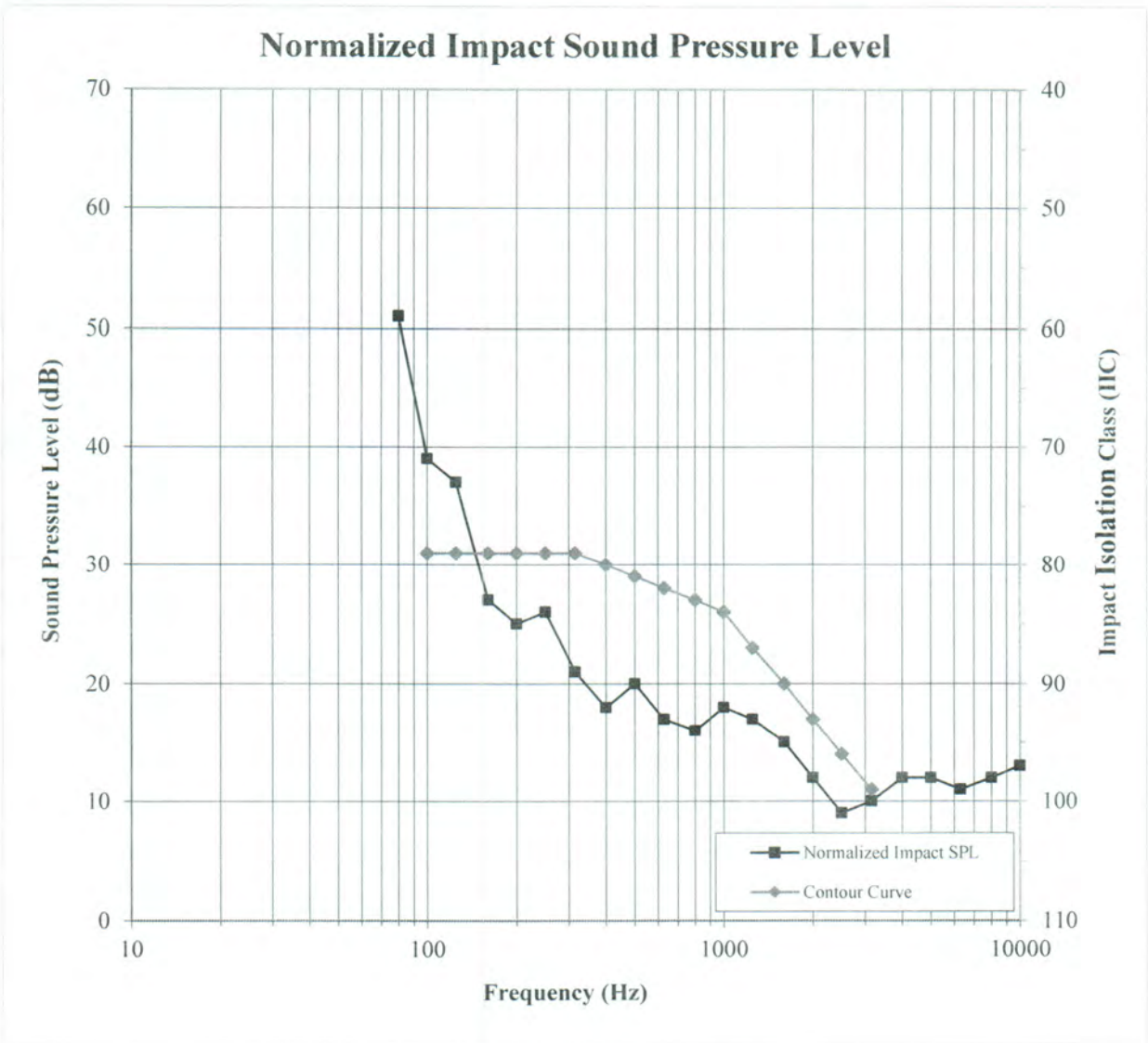
Freq (Hz)	Background SPL (dB)	Absorption (m ²)	Normalized Impact SPL (dB)	95% Confidence Limit	Number of Deficiencies
80	52.8	14.7	51	8.3	-
100	42.2	8.8	39	2.4	8
125	35.7	8.9	37	3.0	6
160	28.0	8.1	27	2.7	0
200	22.3	9.4	25	3.7	0
250	26.1	8.8	26	1.3	0
315	23.3	8.0	21	2.7	0
400	21.6	6.7	18	3.5	0
500	22.4	6.4	20	1.4	0
630	19.3	6.1	17	2.1	0
800	19.6	6.2	16	2.1	0
1000	21.3	6.3	18	1.3	0
1250	20.7	6.3	17	1.4	0
1600	18.0	6.4	15	1.6	0
2000	12.7	7.4	12	0.6	0
2500	9.1	8.4	9	0.5	0
3150	7.2	9.1	10	0.4	0
4000	6.5	10.7	12	0.3	-
5000	6.1	12.8	12	0.3	-
6300	6.2	16.2	11	0.4	-
8000	6.4	21.6	12	0.3	-
10000	6.4	28.6	13	0.5	-

IIC Rating **81** *(Impact Insulation Class)*
Deficiencies **14** *(Sum of Deficiencies)*

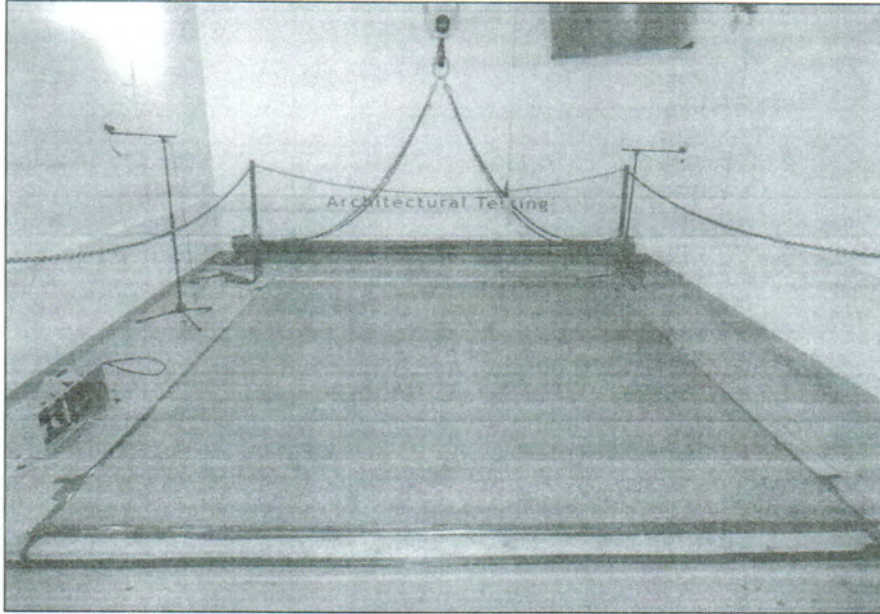
Note: *Receive Room levels less than 5 dB above the Background levels are highlighted in yellow.*

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Specimen Area	10.98 m ²
Technician	Daniel B. Mohler



Photographs

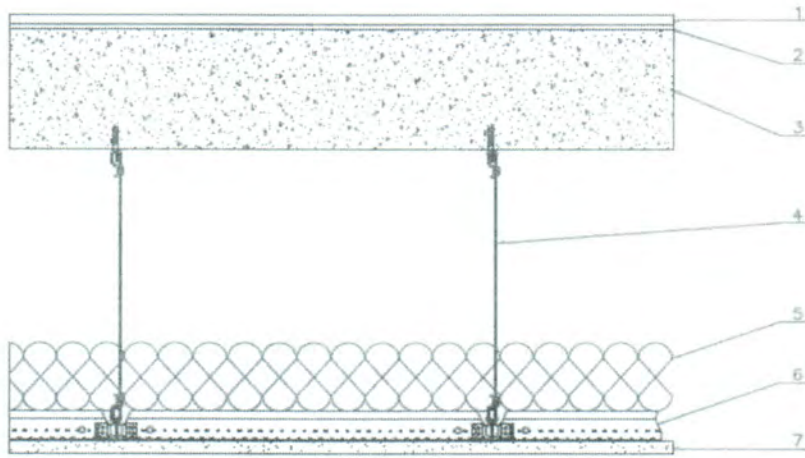


Source Room View of Test Specimen Installation



Receive Room View of Test Specimen Installation

Drawing



Cross Section View of Test Specimen

- 1-Floor Topping
- 2-Underlayment
- 3-Floor Slab
- 4-Hanger Wire
- 5-Insulation
- 6-Drywall Grid System
- 7-Ceiling