



Test report AMENDMENT n. 19RP02293
10/16/2019. THIS TEST REPORT REPLACES
THE PREVIOUS NUMBER 19RP01939 FOR
SAMPLE ORIGIN CORRECTION

Spett.
ABITEX SRL.
Via E. Fermi 9/11, 35010
Cadoneghe(PD)

Sample description	"Terawall Gold Silver Cruise Stealth" striped tufted, sandwich fabrics + siliceous fiber, total thickness: from 3 to 6 cm; mass per unit area: 1,3 kg/m ²
Origin	Production plant : Castello di Godego (TV)
Kind of sample	Panel
Sampling by	Client
Sampling date	n.d.
Sampler	Client
Receiving sample date	09/18/2019
Acceptance date	09/18/2019
Test started on	09/18/2019
Test ended on	10/02/2019
Object	UNI EN ISO 10140-1:2016 + UNI EN ISO 10140-2:2010 + UNI EN ISO 10140-4:2010 + UNI EN ISO 717-1:2013 Laboratory measurement airborne sound insulation of building elements

Acoustic sector Director
Ing. Antonio Scofano

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LABORATORY MEASUREMENT AIRBORNE SOUND INSULATION OF BUILDING ELEMENTS (STANDARD SERIES ISO 10140)

1. SAMPLE DESCRIPTION*

Panel model name "Terawall Gold Silver Cruise Stealth" striped tufted, sandwich fabrics + siliceous fiber

Total thickness: from 3 to 6 cm

Mass per unit area: 1,3 kg/m²

Sealing of perimeter made with putty.

Specimen mounted by client.

Photos:



(*)nominal data provided by the client

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2. REFERENCE STANDARDS

For the technical methods of measurement and determination of the indices that define the performance of building elements must be referred to the following ISO standards:

- ☐ ISO10140-1:2016 Acoustics. Laboratory measurement of sound insulation of building elements. Part 1: Application rules for specific products.
- ☐ ISO10140-2:2010 Acoustics. Laboratory measurement of sound insulation of building elements. Part 2: Measurement of airborne sound insulation.
- ☐ ISO10140-4:2010 Acoustics. Laboratory measurement of sound insulation of building elements. Part 4: Measurement procedures and requirements.
- ☐ ISO 10140-5:2014 Acoustics. Laboratory measurement of sound insulation of building elements. Part 5: Requirements for test facilities and equipment.
- ☐ ISO 717-1:2013 Acoustics. Rating of sound insulation in buildings and of building elements. Part 1: Airborne sound insulation.

3. EQUIPMENT

The measurements were performed using the following instruments:

- Sound level meter Bruel&Kjaer model 2250 (serial number 3011945), preamplifier Bruel&Kjare ZC-0032 (serial number 26331), microphone Bruel&Kjaer 4189 (serial number 3100355)
- Calibrator Bruel&Kjaer 4231 (serial number 4231);
- Omnidirectional source LookLine Kit103 (serial number AM14019);
- Tape measure Stanley Powerlock Classic 10 m / mod. 33-442 (Serial Number Mta-7144);
- Thermohygrometer Oregon ICE ALERT (Serial Number 09A14);
- Barometer HD 9908 T-BARO (Serial Number 05020942);

All the equipment and the measurement chain is to meet the requirements in class 1 of EN, we proceeded to the calibration of equipment before and after each series of measurements.



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4. TEST ROOMS

The test environment consists of a source room that contains the noise source and a receiving room characterized acoustically by the equivalent sound absorption area.

At the source room was produced "pink noise" and were recorded sound pressure levels at various frequencies for bands 1/3 octave in the range between 100 and 5000 Hz in both the source room and in the receiving room.

At the receiving room were measured levels of residual noise and we proceeded to evaluate the acoustic characteristics of the room reverberation.

The measurements were made with reference to the procedure and test modes defined by the set of rules ISO 10140.

5. RESULTS

The sound reduction index is evaluated from:

$$R = L_1 - L_2 + 10 \lg(S/A) \text{ [dB]}$$

where:

c is the sound speed in the receiving room = $331 + 0,6t$ [m/s];

t is the average temperature in the receiving room [°C];

L_1 is the average sound pressure level in the source room [dB];

L_2 is the average sound pressure level in the receiving room [dB];

S is the area of the free test opening in which the test specimen is installed [m²];

A is the equivalent sound absorption area in the receiving room = $(55,3/c)(V/T)$ [m²];

V is the receiving room volume [m³];

T is the reverberation time in the receiving room [s];

The evaluation index of the sound reduction index R_w is calculated according to the ISO 717-1.

C e C_{tr} are the spectrum adaptation terms according to ISO 717-1.



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Area of test specimen = 1.76 m²

Transmitting test room temperature = 20.6 °C ± 0,4 °C. Receiving test room temperature = 20.4 °C ± 0,4 °C.

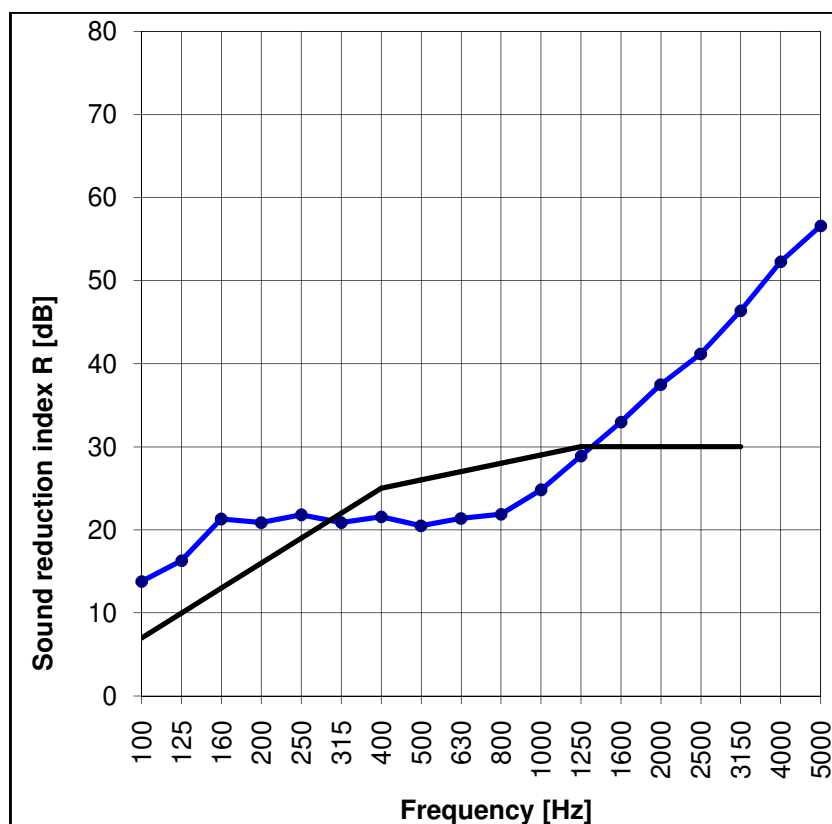
Transmitting test room relative humidity = 63 % ± 2 %. Receiving test room relative humidity = 63 % ± 2 %.

Static pressure = 100.1 kPa ± 0.06 kPa

Transmitting room volume = 77,1 m³

Receiving room volume = 66,4 m³

Frequency <i>f</i> [Hz]	<i>R</i> 1/3 octave band [dB]
100	13,8
125	16,3
160	21,3
200	20,9
250	21,8
315	20,9
400	21,6
500	20,5
630	21,4
800	21,9
1000	24,8
1250	28,9
1600	33,0
2000	37,5
2500	41,2
3150	46,4
4000	52,3
5000	56,6



Evaluation according to ISO 717-1:

$R_w(C; C_{tr}) = 26 (0; -3) \text{ dB}$

Evaluation based on laboratory measurement
results obtained by an engineering method.

$C_{100-5000} = 1 \text{ dB}$

$C_{tr, 100-5000} = -3 \text{ dB}$

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