

**TEST REPORT: MEASUREMENT OF THE SOUND
REDUCTION INDEX IN A REVERBERATION ROOM****X5EX092_1B****Ind. 4****“SILENCE” MOVABLE WALL Rw 59(-2 ; -7)
NON-VISIBLE PROFILES****ALGAFLEX
BP 66
38502 VOIRON CEDEX**

This report details the results of the measurements made in the DECIBEL FRANCE acoustic laboratory for the object submitted for the sound transmission loss tests.

The tests were performed in accordance with the NF EN ISO 10140 series of standards, supplemented by standard NF EN ISO 717-1 for calculation of R_w and standard ASTM E90-04 for calculation of the STC.

Information relating to products or installation techniques are given in this test report for information only. The manuals, drawings, sketches and other information are given under the Customer's responsibility.

This test report consists of: Three pages numbered 2 to 3 and two pages in appendix numbered 1 to 2

Date of the test: 11/01/2016
Date of the report: 30/08/2024
Report index: 4

Installation:

The laboratory consists of two reverberation rooms with an opening between them in which the test specimen is placed in an installation compliant with the measurement standard NF EN ISO 140-3 (August 1995) and the calculation standard NF EN ISO 717-1 (August 1997). Based on these measurements, the STC (Sound Transmission Class) was calculated according to standard ASTM E90-04 (April 2004).

Verification of the fact that the test specimen was installed as realistically as possible with regard to the installation. The test specimen was installed on a supporting wall without the use of a supporting partition (details in appendix 1).

Production of the sound field in the source room:

The sound field is produced by a loudspeaker and its related amplifier:
RCF ART315 loudspeaker and CROWN XLS2000 amplifier

Measuring device:

The measuring equipment includes condenser microphones, type GRAS 40AR 1/2" no.119113 and no.59349, and their related amplifier, type PRE 21S no.16106 and no.16110, an acquisition system including the Pulse 3160 system and a 114 dB NORSONIC calibrator, type 1251 class 1 no.230507. The recordings were made with microphones in different positions in the source room and in the receiving room, varying the position of the sound source. The calculations were performed based on the TRAM-04-PVAFF calculation sheet belonging to the DECIBEL FRANCE acoustic laboratory.

Calculations:

The sound reduction index was determined using the formula:

$$R = L1 - L2 + 10 \lg (S / A)$$

L1 is the average sound pressure level in the source room in dB

L2 is the average sound pressure level in the receiving room in dB

S is the surface area of the test specimen in m²

A is the equivalent sound absorption area of the receiving room in m²:

$$A = 0.16 \times V / T$$

V is the volume of the receiving room in m³

T is the reverberation duration of the receiving room in seconds

Notes:

Average sound pressure level in a room:

Ten times the common logarithm of the ratio of the space and time average of squared sound pressure to the squared reference sound pressure (20 μPa), the space average being taken over the total volume of the room, except for the regions of the room where the direct field of the sound source and the near field of the boundaries (walls, etc.) are of significance.

Sound reduction index:

Ten times the common logarithm of the ratio of the sound power incident on the tested partition (test specimen) to the sound power transmitted by the test specimen and radiated on the other side.

Reverberation duration:

Time necessary for the sound pressure level to decrease by 60 dB after the sound source stops in a room.

“SILENCE 59” MOVABLE WALL

Manufacturer: **ALGAFLEX**

Customer: **ALGAFLEX** Test report: **X5EX092_1B_Ind. 4**

Description of the test specimen and the test equipment:

Date of the test: 11/01/2016

Testing of elements constituting a movable wall composed of two 32 mm particle boards (laminated coating) Lined Double skin in 9mm OSB; rock wool filling, thickness 50 mm (45 kg/m³) ; double lip seals
Partition mounted on a flat floor

- Test specimen dimensions (L) x (H) (mm): **4680 x 2950**
- Mass per unit area (kg/m²): **75**
- Thickness of the test specimen (mm): **151**
- Area of test opening (m²): **13.8**

Description of the test conditions:

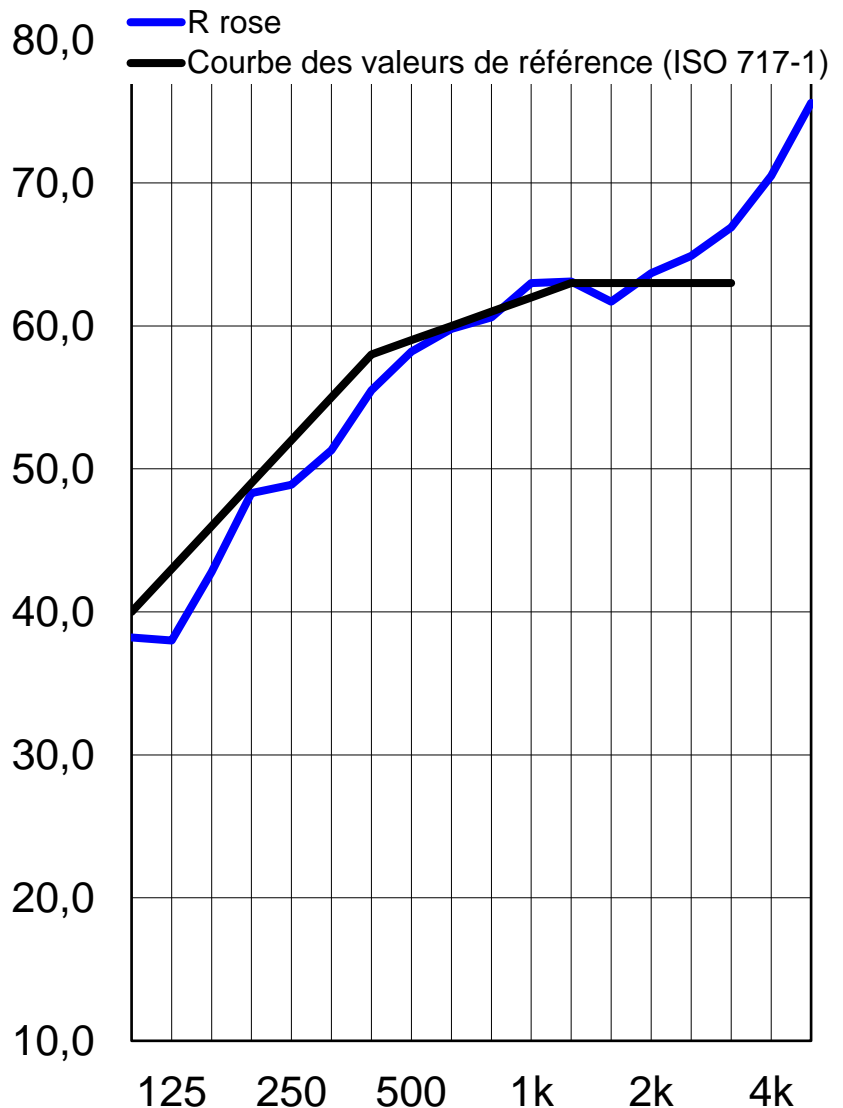
- Temperature in the source room (°C): **16.0**
- Relative humidity in the source room (%): **58.0**
- Volume of the source room (m³): **57.8**
- Temperature in the receiving room (°C): **16.0**
- Relative humidity in the receiving room (%): **64.0**
- Volume of the receiving room (m³): **72.4**

Test results:

f (Hz)	R (dB)	
	per 1/3 octave	per octave
100	38,2	34.6
125	38,0	
160	42,8	
200	48,3	47.0
250	48,9	
315	51,3	
400	55,5	
500	58,2	53.1
630	59,8	
800	60,6	
1 k	63,0	56.9
1.25 k	63,1	
1.6 k	61,7	59.1
2 k	63,7	
2.5 k	64,9	
3.15 k	66,9	68.4
4 k	70,5	
5 k	75,6	

Evaluation according to standard NF EN ISO 717-1
Rw (C;Ctr) = 59(-2;-7)

Evaluation according to standard ASTM E90-04
STC = 60 dB



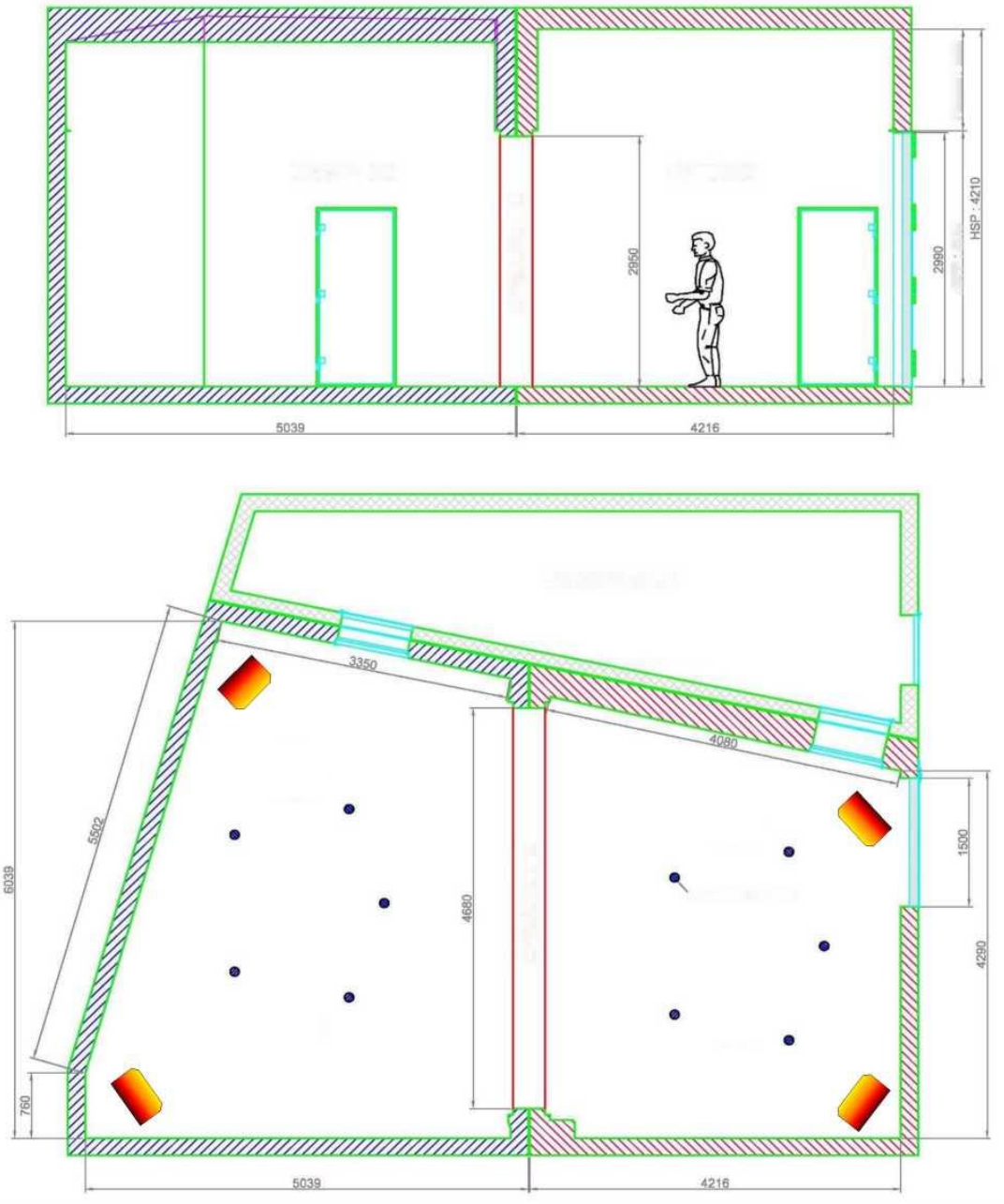
Test technician:
R.BAIXAS



Approved by:
P.REBATET

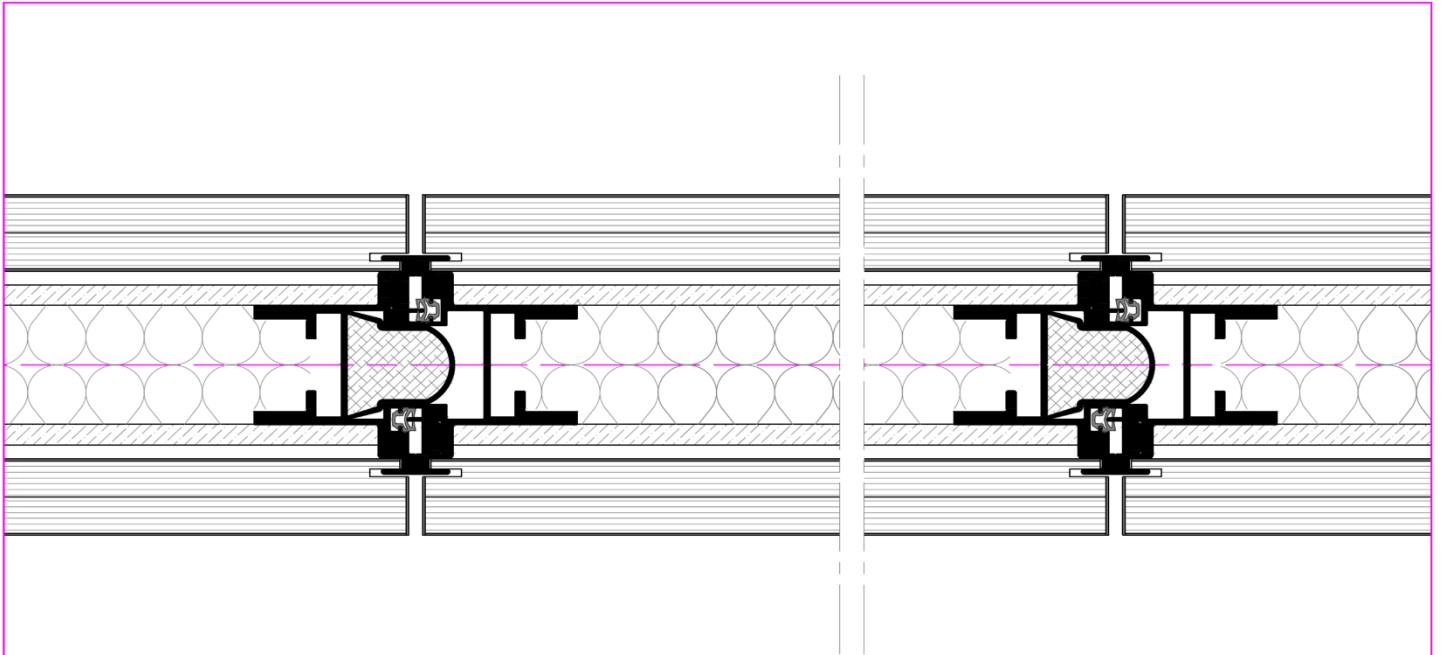


APPENDIX 1: TEST ROOM



- The source positions in the receiving room are used when measuring the reverberation times in the receiving room.
- The positions of the measurement points are given for information.

APPENDIX 2: DESCRIPTION OF THE TEST SPECIMEN



Le poids au metre carré à été constaté pour un panneau de 2757x1110mm.
 Algaflex se réserve le droit de faire évoluer ses produits sans en modifier les caracteristiques principales, afin d'y apporter des améliorations.



CLOISON MOBILE TYPE "Profils non apparents"
 Rw 59-2 / RA 57 Masse 75 Kg/m²
 2 plaques d'agglomérés 32mm
 + laine de roche + joints double levres
 Double peau OSB 9mm

APPENDIX 3: PHOTOGRAPH OF THE TEST SPECIMEN



Photograph taken on the source side



Photograph taken on the receiving side