TEST REPORT: MEASUREMENT OF THE SOUND REDUCTION INDEX IN A REVERBERATION ROOM

PV - 070102 - 50	**Ind. 2**	**"STYLIST 50" MOVABLE WALL**

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 Rw 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:	07/01/2001
Date of the report:	29/08/2024
Report index:	2

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.

"STYLIST 50" MOVABLE WALL

Manufacturer: **ALGAFLEX** Customer: **ALGAFLEX** Test report: **PV - 070102 – 50 Ind. 2**

Description of the test specimen and the test equipment: Date of the test: 19/12/2001

Testing of elements constituting a movable wall composed of two 16 mm particle boards (laminate coating)
rock wool filling, thickness 80 mm (40 kg/m3)
Cladding of rail in box with BA13 plasterboard
Partition mounted on a flat floor

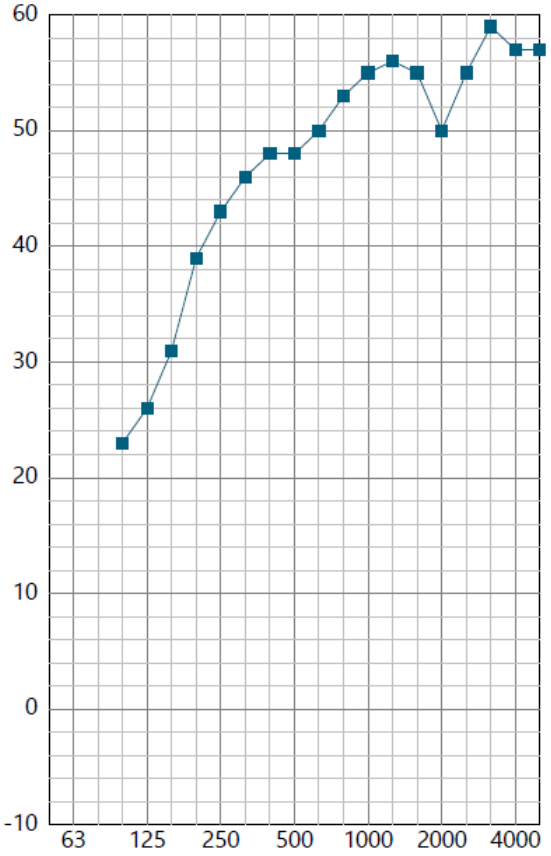
- Test specimen dimensions (L) x (H) (mm): **4690 x 2920**
- Thickness of the test specimen (mm): **112**
- Mass per unit area (kg/m2): **30**
- Area of test opening (m2): **13.8**

Description of the test conditions:

- Temperature in the source room (°C): **15.0**
- Temperature in the receiving room (C°): **15.0**
- Relative humidity in the source room (%): **60.0**
- Relative humidity in the receiving room (%): **60.0**
- Volume of the source room (m3): **57.8**
- Volume of the receiving room (m3): **72.4**

Test results:

f (Hz)	R (dB)	
	per 1/3 octave	per octave
100	23	25,6
125	26	
160	31	
200	39	41,7
250	43	
315	46	
400	48	48,6
500	48	
630	50	
800	53	54,5
1 k	55	
1.25 k	56	
1.6 k	55	52,6
2 k	50	
2.5 k	55	
3.15 k	59	57,6
4 k	57	
5 k	57	



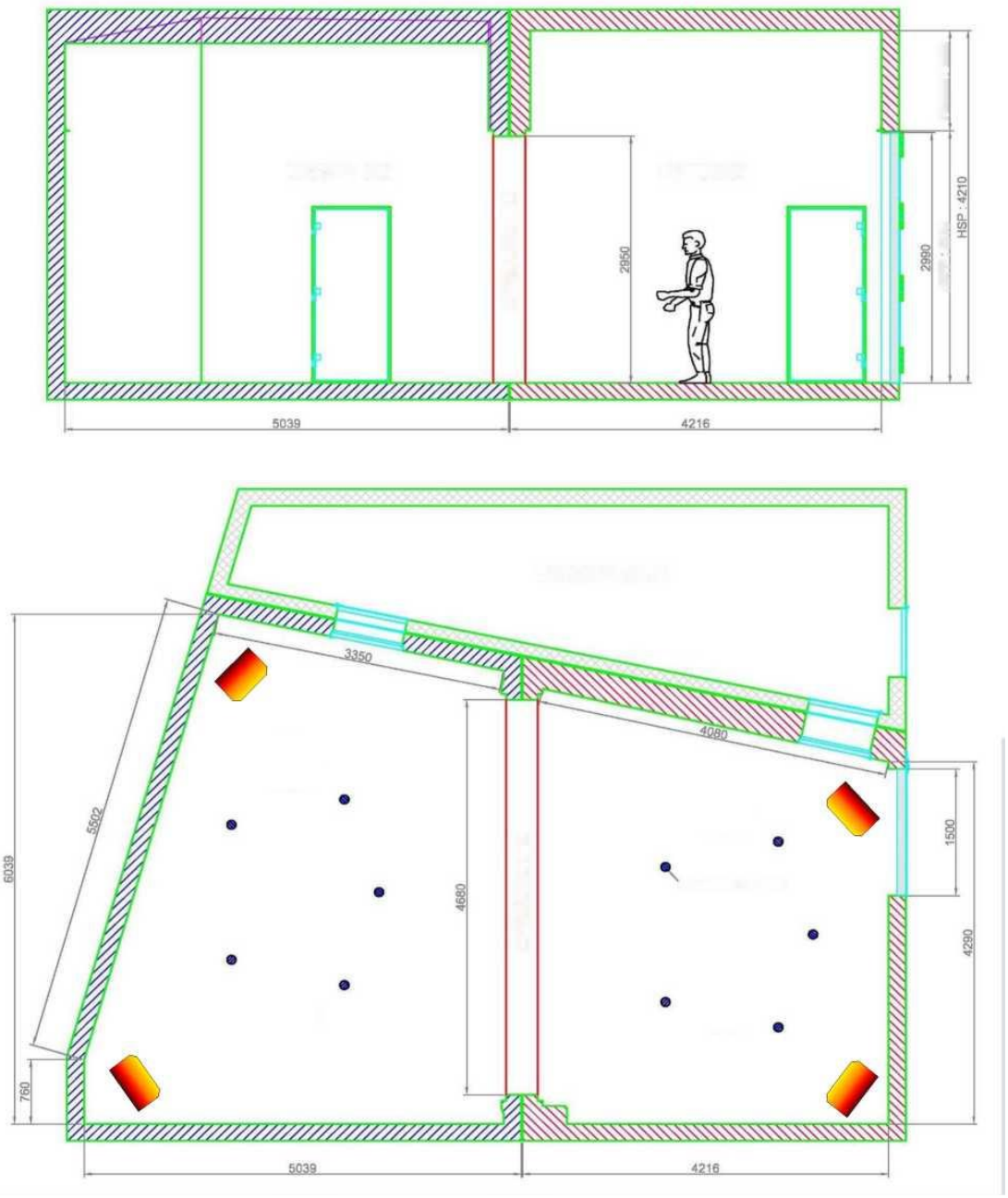
Evaluation according to standard NF EN ISO 140-3
R Pink = 47dB(A)

Evaluation according to standard NF EN ISO 717-1
Rw (C;Ctr) = 50(-4;-10)

Evaluation according to standard ASTM E90-04
STC = 50 dB

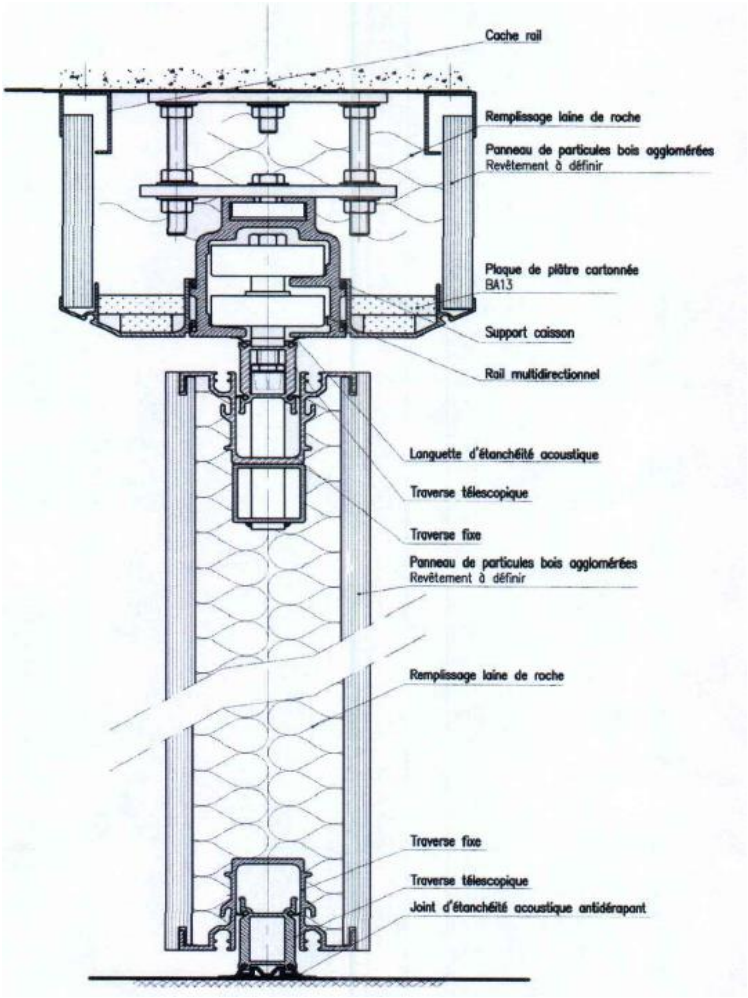
Test technician and Approved by:
P.REBATET

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



Cache rail	Rail cover
Remplissage laine de roche	Rock wool filling
Panneau de particules bois agglomérées	Particle board panel
Plaque de plâtre BA13	BA13 plasterboard
Support caisson	Cabinet support
Rail multidirectionnel	Multidirectional rail
Languette étanchéité acoustique	Sound insulation profile
Traverse mobile	Mobile crossmember
Traverse fixe	Fixed crossmember
Profil aluminium, Finition anodisé naturel	Aluminium profile, natural anodised finish
Traverse fixe	Fixed crossmember
Panneau de particules bois agglomérées	Particle board panel
Remplissage laine de roche	Rock wool filling
Traverse fixe	Fixed crossmember
Traverse mobile	Mobile crossmember
Profil d'étanchéité acoustique	Sound insulation profile
Profil antidérapant	Non-slip profile