

**TEST REPORT: MEASUREMENT OF THE SOUND
REDUCTION INDEX IN A REVERBERATION ROOM****X5EX092_5A****Ind. 2****“STYLIST II” 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 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: 26/11/2015
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 II” MOVABLE WALL

Manufacturer: **ALGAFLEX**

Customer: **ALGAFLEX** Test report: **X5EX092_5A_Ind. 2**

Description of the test specimen and the test equipment:

Date of the test: 26/11/2015

Testing of elements constituting a movable wall composed of two 16 mm particle boards (laminated coating) lined with two layers of TECSOUND; rock wool filling, thickness 75 mm (45 kg/m³)
Partition mounted on a flat floor

- Test specimen dimensions (L) x (H) (mm): **4680 x 2950**
- Thickness of the test specimen (mm): **120**
- Mass per unit area (kg/m²): **0**
- Area of test opening (m²): **13.8**

Description of the test conditions:

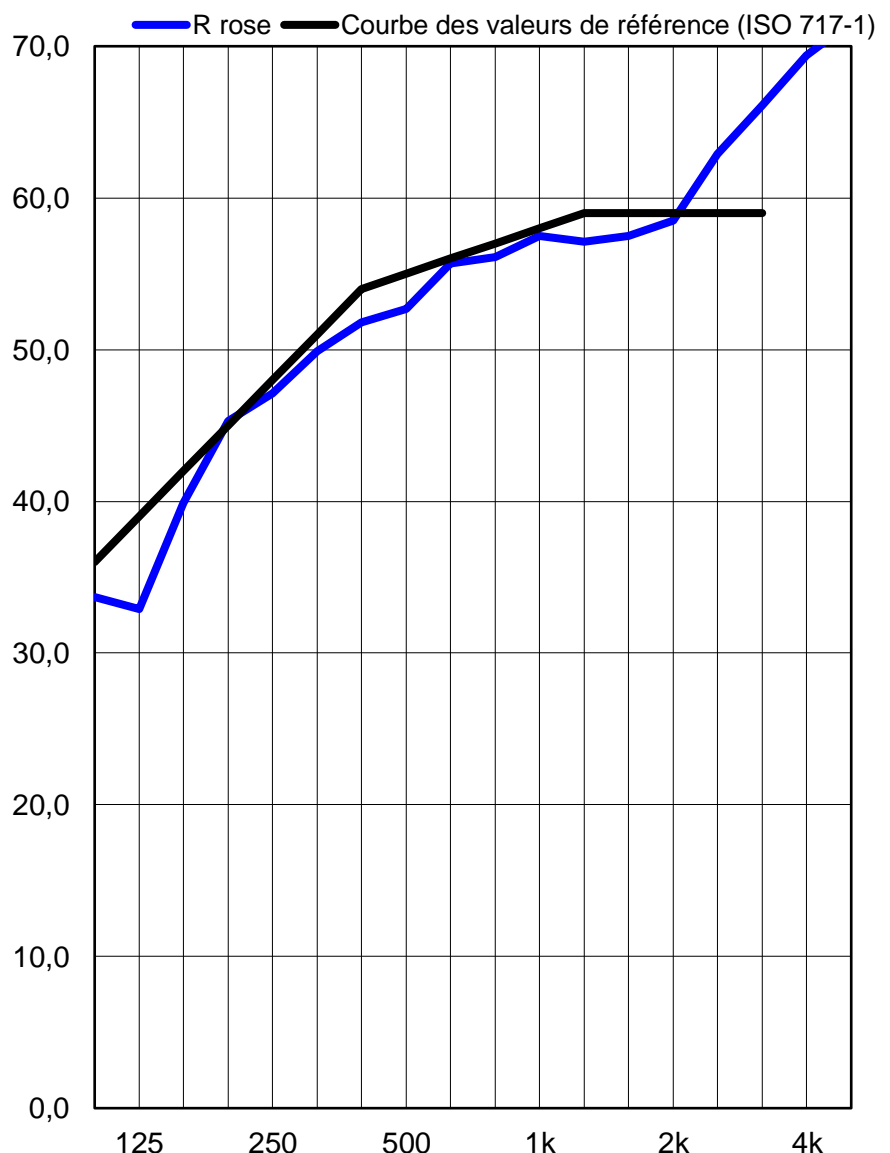
- Temperature in the source room (°C): **15.0**
- Temperature in the receiving room (°C): **15.0**
- Relative humidity in the source room (%): **50.0**
- Relative humidity in the receiving room (%): **50.0**
- Volume of the source room (m³): **57.8**
- Volume of the receiving room (m³): **72.4**

Test results:

f (Hz)	R (dB)	
	per 1/3 octave	per octave
100	33.7	34.6
125	32.9	
160	39.9	
200	45.3	47.0
250	47.1	
315	49.9	
400	51.8	53.1
500	52.7	
630	55.7	
800	56.1	56.9
1 k	57.5	
1.25 k	57.1	
1.6 k	57.5	59.1
2 k	58.5	
2.5 k	62.9	
3.15 k	66.1	68.4
4 k	69.4	
5 k	71.6	

Evaluation according to standard NF EN ISO 717-1
R_w (C;Ctr) = 55(-2;-7)

Evaluation according to standard ASTM E90-04
STC = 56 dB



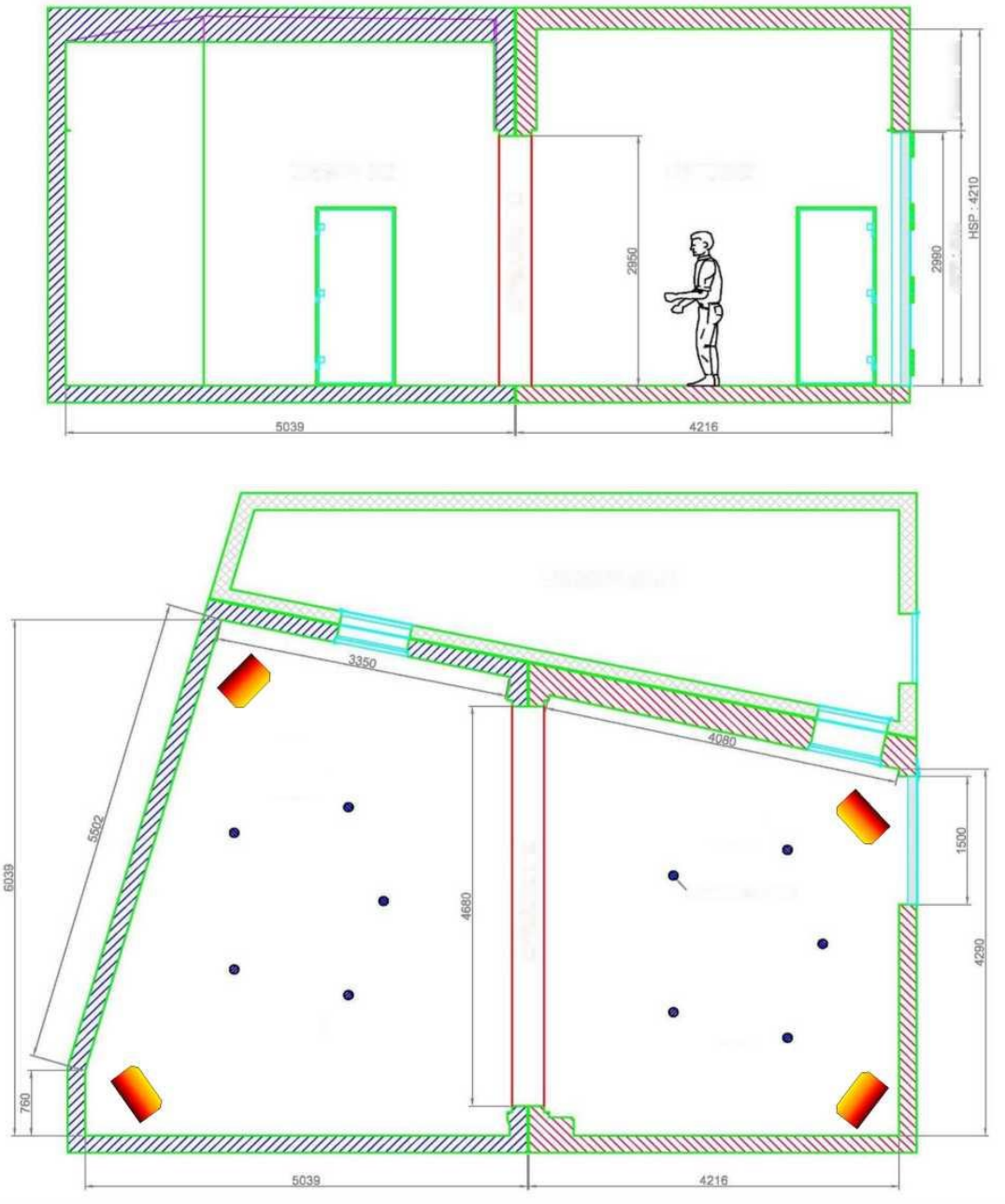
Test technician:
R.BAIXAS



Approved by:
P.REBATET

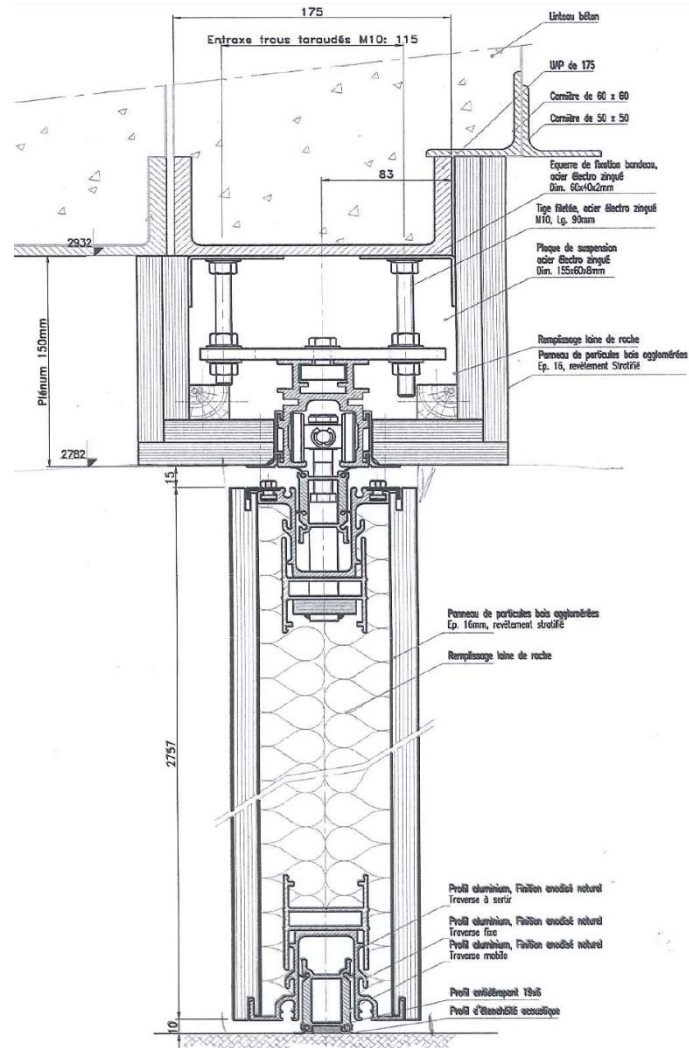


APPENDIX 1: TEST ROOM



- 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



<p>Entraxe trous taraudés M10: 115 Plénum 150mm Linteau béton UAP de 175 Cornière de 60x60 Cornière de 50x50 Equerre de fixation bandeau, acier Electro zingué Dim. 60x40x2mm Tige filetée, acier électro zingué M10, Lg. 90mm Plaque de suspension acier électro zingué Dim. 155x60x8mm Remplissage laine de roche Panneau de particules bois agglomérées Ep. 16, revêtement Stratifié Panneau de particules bois agglomérées Ep. 16mm, revêtement stratifié Remplissage laine de roche Profil aluminium, Finition anodisé naturel Traverse à sertir Profil aluminium, Finition anodisé naturel Traverse fixe Profil aluminium, Finition anodisé naturel Traverse mobile Profil antidérapant 19x6 Profil d'étanchéité acoustique</p>	<p>Centre-to-centre distance of M10 threaded holes: 115 Plenum 150 mm Concrete lintel UAP 175 60x60 angle iron 50x50 angle iron Board fastening bracket, electrogalvanized steel Dim. 60x40x2 mm Threaded rod, electrogalvanized steel M10, length: 90 mm Suspension plate, electrogalvanized steel Dim. 155x60x8 mm Rock wool filling Particle board panel Thickness 16, laminate coating Particle board panel Thickness 16 mm, laminate coating Rock wool filling Aluminium profile, natural anodised finish Crossmember for crimping Aluminium profile, natural anodised finish Fixed crossmember Aluminium profile, natural anodised finish Mobile crossmember Non-slip profile 19x6 Sound insulation profile</p>
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

APPENDIX 3: PHOTOGRAPH OF THE TEST SPECIMEN



Photograph taken on the source side



Photograph taken on the receiving side