



THERMAL PHYSICS, ACOUSTICS AND ENVIRONMENT DEPARTMENT
THERMAL PHYSICS, ACOUSTIC AND ENVIRONMENT LABORATORY

TEST REPORT No. LZF00 - 01901/21/R44NZF

This report has been issued in four copies (two for the Client and two for ITB)

Client: Profile VOX Sp. z o.o. Sp. K.
Client's address: ul. Gdynska 143, 62-004 Czerwonak, Poland

Information on the tested item

Tested item: *Linerio panels*
Test item acceptance date: 18-03-2021
Test item acceptance report No.: LZF00-01901/21/R44NZF
Test item acceptance procedure: *ZLB Management Procedure No. 18, product collected by the Manufacturer, received by the Laboratory*

Information on testing

Test start date: 30-03-2021
Test end date: 30-03-2021
Test method/procedure *The tests were conducted in accordance with PN-EN ISO 354:2005 "Acoustics - Measurement of sound absorption in a reverberation chamber".*

THERMAL PHYSICS, ACOUSTIC AND ENVIRONMENT LABORATORY

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TEST ITEM DESCRIPTION

As declared by the Client, the test item was Limerio L-line slats made of extruded polystyrene (XPS) for use as indoor wall cladding.

Dimensions of a single item: 2670x122x21 mm.

Sample dimensions: 3900x2675 mm.

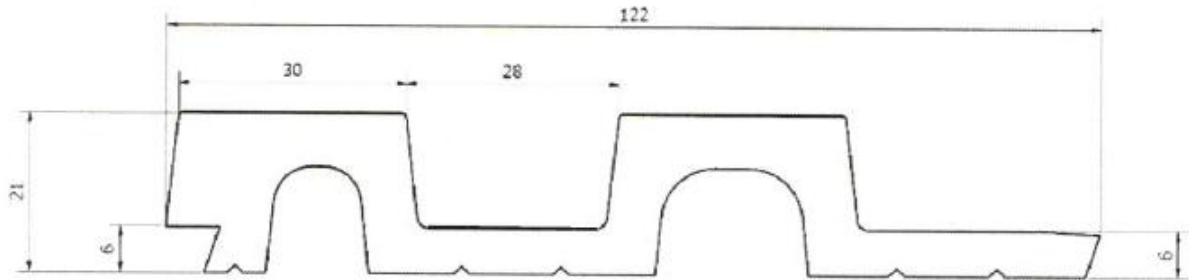


Fig. 1. Cross-section of a single item (supplied by the Client)

TEST RESULTS

Tested characteristic	Test result		
	α_w	absorption class	page measurement No.
Limerio L-line panels Sample No. 1/LZF00 - 01901/21/R44NZF	$\alpha_w = 0.15$ uncertainty of measurement: 0.05	E	p. 3 326.2021 / 245.2021

The expanded uncertainty at the 95% confidence level and with a coverage factor of $k=2$ is given in the table above.

The result and the uncertainty apply only to the samples tested. The value of the uncertainty cannot be directly attributed to the property level of the product, because the laboratory has no knowledge of the population variability. The laboratory's knowledge is limited to that of the tested sample.

In assessing the results, the simple acceptance rule was applied without taking into account variability caused by measurement uncertainty. (This is related to the risk of misjudgement caused by the fact that uncertainty is not taken into account. The risk is further caused by the fact that the laboratory has no knowledge of the product population variability, and its knowledge is limited to that of the tested sample).

Sound absorption in a reverberation chamber according to PN-EN ISO 354:2005
Sound absorption coefficient measurement

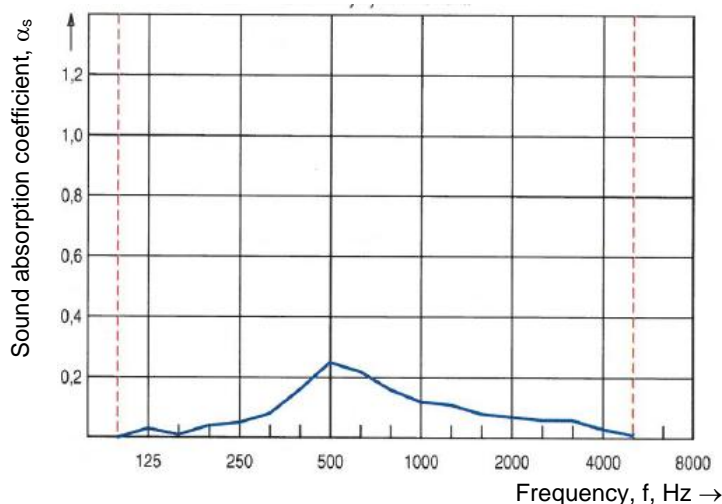
Client: **Profile VOX Sp. z o.o. Spółka Komandytowa**
ul. Gdyńska 143, 62-004 Czerwonak k/Poznań, Poland

Sample installed by: **NA ITB**

Test sample description:
Linerio L-line panels
Sample No. 1/LZF00 - 01901/21/R44NZF

--- frequency range according to the standard
— measured characteristics

Frequency f [Hz]	T_1 [s]	T_2 [s]	α_s	α_p
100	7.70	7.64	0.00	0.00
125	7.73	7.22	0.03	
160	6.39	6.20	0.01	
200	6.29	5.84	0.04	0.05
250	6.28	5.71	0.05	
315	6.96	5.86	0.08	
400	7.35	5.30	0.16	0.20
500	7.81	4.80	0.25	
630	7.80	5.06	0.22	
800	7.49	5.39	0.16	0.15
1000	7.44	5.75	0.12	
1250	7.46	5.96	0.11	
1600	6.78	5.75	0.08	0.05
2000	5.99	5.29	0.07	
2500	5.09	4.63	0.06	
3150	4.20	3.90	0.06	0.05
4000	3.33	3.23	0.03	
5000	2.50	2.48	0.01	



PN-EN ISO 11654:1999

$$\alpha_w = 0.15$$

Absorption class **E**

Test sample surface area = **10.32 m²**
Temperature for T_1 = **20.7°C** $\Delta T = 0.0^\circ\text{C}$
Relative humidity for T_1 = **49.3%** $\Delta\gamma = 0.8\%$

Reverberation chamber volume = **200.0 m³**
Chamber walls surface area = **203.0 m²**
Number of diffusers = **7**

Building Research Institute Testing Laboratories Unit
Thermal Physics, Acoustic and Environment Laboratory

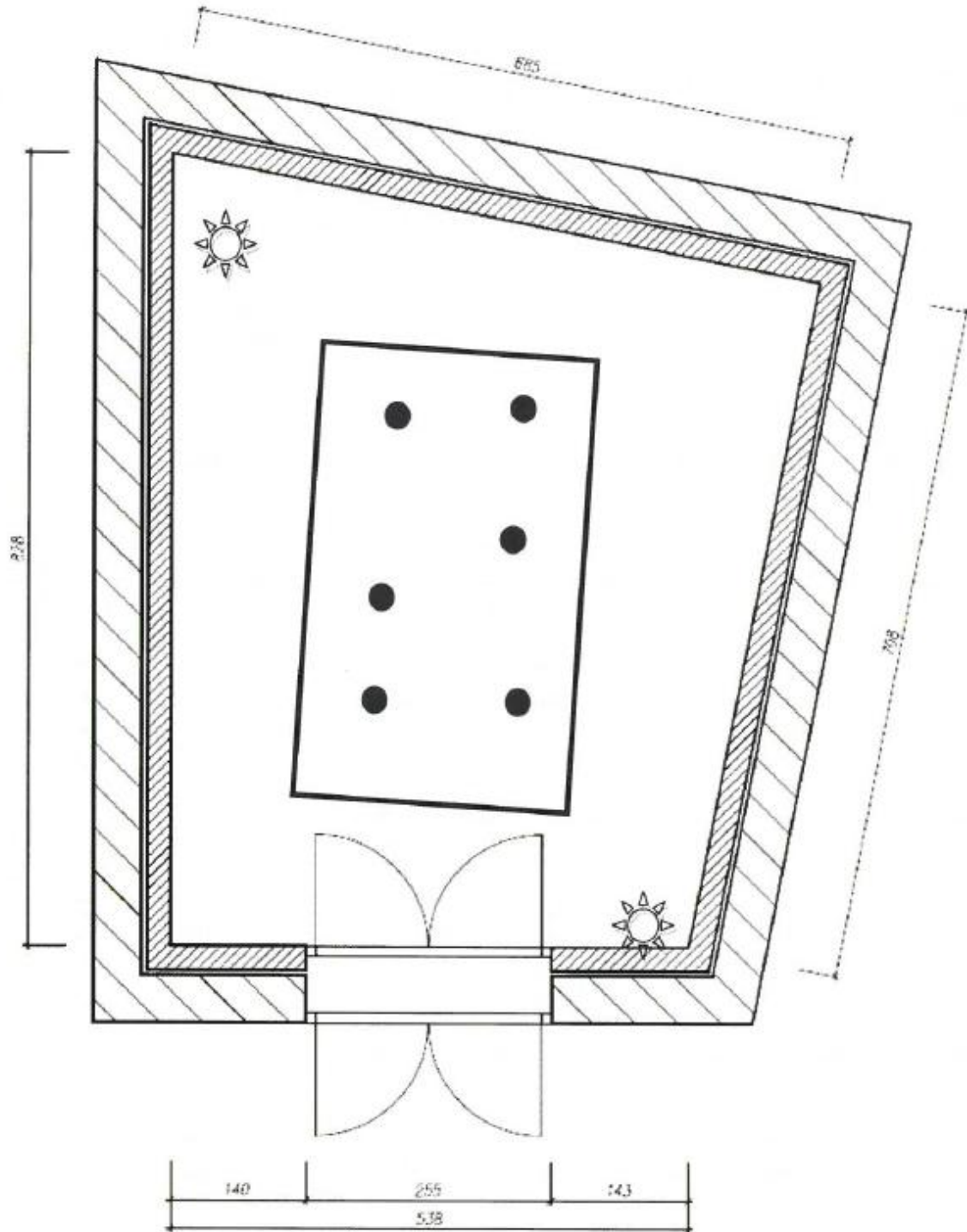
Test No.: **326.2021 / 0245.2021**

Date of analysis: **2021-03-30**

Signature: **Norbert Bombala**

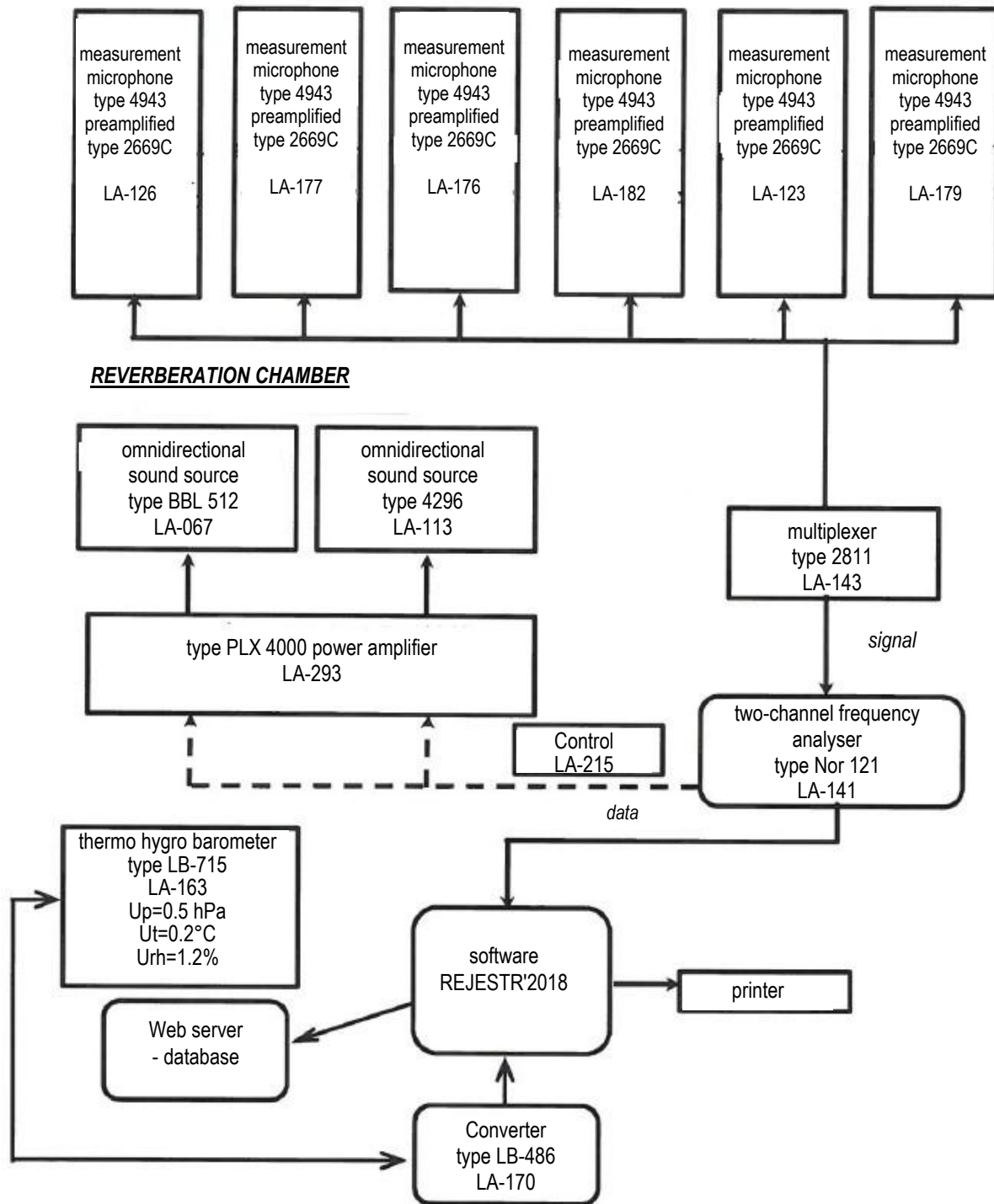
TEST SAMPLE SET-UP ON THE TEST BENCH

Plan view of a reverberation chamber for testing sound absorbing elements



- sound sources
- measuring points

(chamber dimensions in cm)

REVERBERATION TIME MEASURING SYSTEM IN THE LABORATORY

Prior to sound absorption testing, a standard calibration/check of the test track was performed in accordance with Instruction No. 1 "Calibration/check of acoustic test track".

OTHER RELEVANT INFORMATION

The reverberation sound absorption coefficient was measured in a reverberation chamber with a volume of 200 m^3 . The measuring field where the test sample was placed was located in the central part of the floor so that none of its edges was closer than 1 m from the chamber wall surface. The samples were placed on the floor - installation type A according to *PN-EN ISO 354:2005, Annex B*.

The ratios were calculated according to the standard *PN-EN ISO11654:1999 "Acoustics - Sound absorbers for use in buildings - Rating of sound absorption"*.

Person in charge:
dr inż. Elżbieta Nowicka
/-/
Signature

Authorised by:
mgr Łukasz Nowotny
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By authorisation of the LZF Laboratory Manager:
mgr Łukasz Nowotny
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Signature

Warsaw, 20 April 2021

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