


Instytut Techniki Budowlanej

GROUP OF TESTING LABORATORIES
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N°AB 023



AB 023

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THERMAL PHYSICS, ACOUSTICS AND ENVIRONMENTAL DEPARTMENT
THERMAL PHYSICS, ACOUSTICS AND ENVIRONMENTAL LABORATORY

TEST REPORT N° LZF00-02193/22/Z00NZF

The report was prepared only in electronic form.

Client: MILA Sp. z o.o.

Client address: ul. Przejazdowa 6J, 42-200 Częstochowa

Information about test item

Test object: *Composite nonwovens:
acoustic composite r-PET 1000 g/m² and acoustic
laminated r-PET 2400 g/m²*

Receipt date of test item: 04-08-2022

N° of receipt protocol: LZF00-02193/22/Z00NZF

Receipt procedure: *The receipt procedure in accordance with the Procedure
PZ ZLB 18. Test item was sampled by the Client.*

Information about tests

Test commencement date: 05-08-2022

Test completion date: 08-08-2022

Test / Method procedures: *PN – EN ISO 354 : 2005 „Acoustics – Measurement of
sound absorption in a reverberation room”.*

THERMAL PHYSICS, ACOUSTICS AND ENVIRONMENT LABORATORY

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OBJECT DESCRIPTION

Two types of composite acoustic nonwoven fabric were presented for the test. The following information about the samples was provided by the Ordering Party:

- sample 1/LZF00-02193/22/Z00NZF:

acoustic composite r-PET 1000 g/m² made of PES fibers (rPET GRS Certified) with doublesided lamination (PET-CoPET). Surface mass was 1000 g/m², thickness was 7 mm. Trade name: K-IC00-1000-B40 , K-IC10-1000-B40.

Sample dimension: 2710 x 4400 mm

- sample 2/LZF00-02193/22/Z00NZF:

acoustic laminate r-PET 2400 g/m² made of PES fibers (rPET GRS Certified), doublesided lamination (PET-CoPET) with PES powder (LM PET). Surface mass was 2400 g/m², thickness was 11 mm. Trade name: L-IC05- -B40 – “Zibi”.

Sample dimension: 3060 x 3750 mm + 2075 x 1250 mm



sample 1/LZF00-02193/22/Z00NZF (photo ITB) sample 2/LZF00-02193/22/Z00NZF(foto ITB)

TEST RESULTS

Measured parameter	Results		
Sound absorption coefficient	α_w	sound absorption classification	page meas.no.
acoustic composite r-PET 1000 g/m ² sample nr 1/LZF00-02193/22/Z00NZF	$\alpha_w = 0,30$ (H)	D	page 3 501.2022 / 0505.2022
acoustic laminate r-PET 2400 g/m ² sample nr 2/LZF00-02193/22/Z00NZF	$\alpha_w = 0,35$ (MH)	D	page 4 504.2022 / 0505.2022

Enlarged uncertainty at a confidence level of 95% and with a coverage factor of k=2 is 0.04.

The result and its uncertainty apply only to the test samples. The value of the uncertainty cannot be directly attributed to the level of characteristics of the product, because the laboratory doesn't have any knowledge about the variability of its population, but only about the sample to be tested.

When classifying results, a simple acceptance rule will be used without taking into account the variability resulting from measurement uncertainty. (This is related to the risk of incorrect assessment resulting from not taking into account the uncertainty in the assessment. The risk also results from the fact that the laboratory has no knowledge about the variability of the product population, but only about the sample being tested).

Sound absorption in a reverberation room according to PN-EN ISO 354:2005

Measurement of sound absorption coefficient

Client: MILA Sp. z o.o.

ul. Przejazdowa 6J, 42-200 Częstochowa

Test specimen mounted by: NA ITB

Description of the tested specimen:

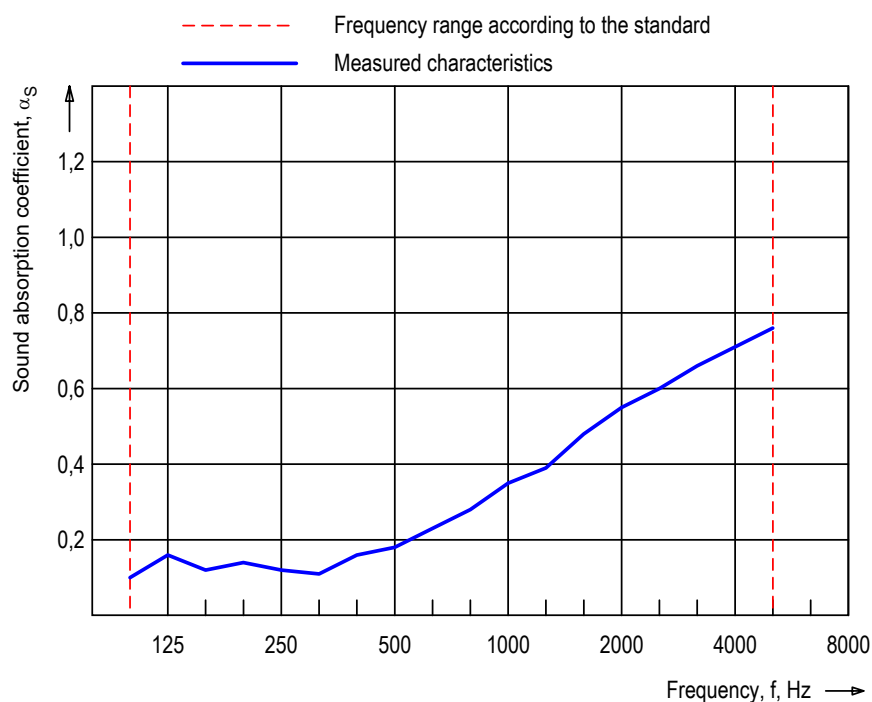
acoustic composite r-PET 1000 g/m²

sample nr 1/LZF00-02193/22/Z00NZF

Frequency f [Hz]	T_1 [s]	T_2 [s]	α_S	α_p
100	7,76	6,03	0,10	0,15
125	7,82	5,30	0,16	
160	6,48	4,99	0,12	
200	6,32	4,78	0,14	0,10
250	6,18	4,86	0,12	
315	6,74	5,29	0,11	
400	7,21	5,01	0,16	0,20
500	7,70	5,09	0,18	
630	7,60	4,63	0,23	
800	7,28	4,16	0,28	0,35
1000	7,24	3,71	0,35	
1250	7,20	3,52	0,39	
1600	6,74	3,06	0,48	0,55
2000	6,03	2,70	0,55	
2500	5,34	2,45	0,60	
3150	4,48	2,13	0,66	0,70
4000	3,70	1,88	0,71	
5000	2,85	1,58	0,76	

PN-EN ISO 11654:1999

$$\alpha_W = 0,30(H)$$

Sound absorption class **D**Area of the tested specimen = 11,92 m²Temperature during measurements of T_1 = 21,4 °C ΔT = -0,3 °CRelative humidity during measurements of T_1 = 60,9 % $\Delta \gamma$ = -0,8 %Volume of the reverberation room = 200.0 m³Total surface area of the reverberation room = 203.0 m²

Number of diffusers = 9

Building Research Institute Group of the Testing Laboratories
Thermal Physics, Acoustics and Environment Laboratory

Test No.: 501.2022 / 0505.2022

Date of analysis: 2022-08-05

Signature: Norbert Bombala

Sound absorption in a reverberation room according to PN-EN ISO 354:2005

Measurement of sound absorption coefficient

Client: MILA Sp. z o.o.

ul. Przejazdowa 6J, 42-200 Częstochowa

Test specimen mounted by: NA ITB

Description of the tested specimen:

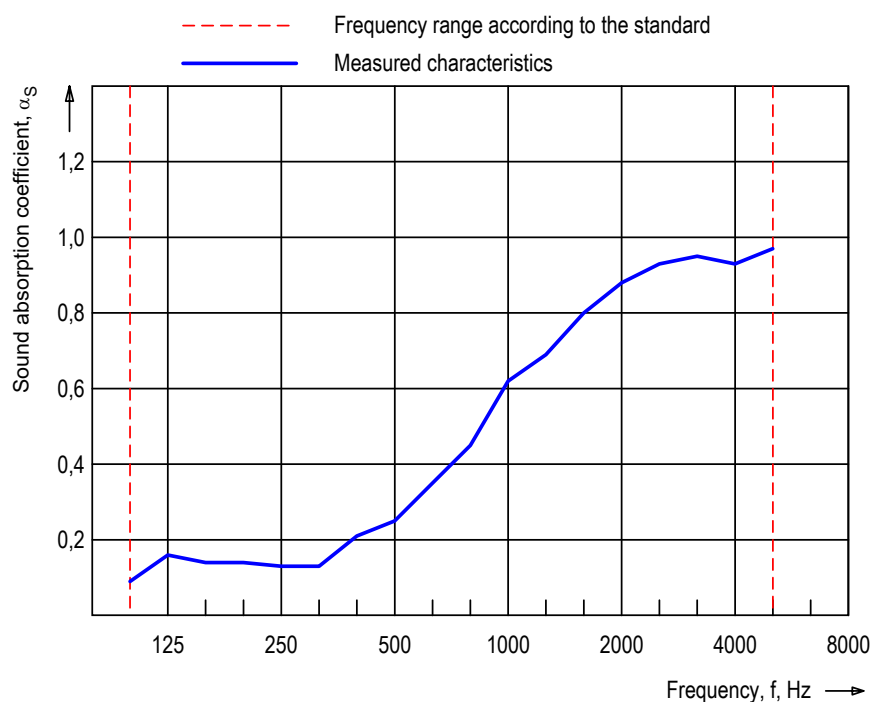
acoustic laminate r-PET 2400 g/m²

sample nr 2/LZF00-02193/22/Z00NZF

Frequency f [Hz]	T_1 [s]	T_2 [s]	α_S	α_p
100	7,76	6,07	0,09	0,15
125	7,82	5,26	0,16	
160	6,48	4,79	0,14	
200	6,32	4,76	0,14	0,15
250	6,18	4,71	0,13	
315	6,74	5,05	0,13	
400	7,21	4,59	0,21	0,25
500	7,70	4,46	0,25	
630	7,60	3,78	0,35	
800	7,28	3,25	0,45	0,60
1000	7,24	2,70	0,62	
1250	7,20	2,51	0,69	
1600	6,74	2,23	0,80	0,85
2000	6,03	2,02	0,88	
2500	5,34	1,86	0,93	
3150	4,48	1,72	0,95	0,95
4000	3,70	1,61	0,93	
5000	2,85	1,40	0,97	

PN-EN ISO 11654:1999

$$\alpha_W = 0,35(\text{MH})$$

Sound absorption class **D**Area of the tested specimen = 12,00 m²Temperature during measurements of T_1 = 21,4 °C ΔT = -2,1 °CRelative humidity during measurements of T_1 = 60,9 % $\Delta \gamma$ = -0,3 %Volume of the reverberation room = 200.0 m³Total surface area of the reverberation room = 203.0 m²

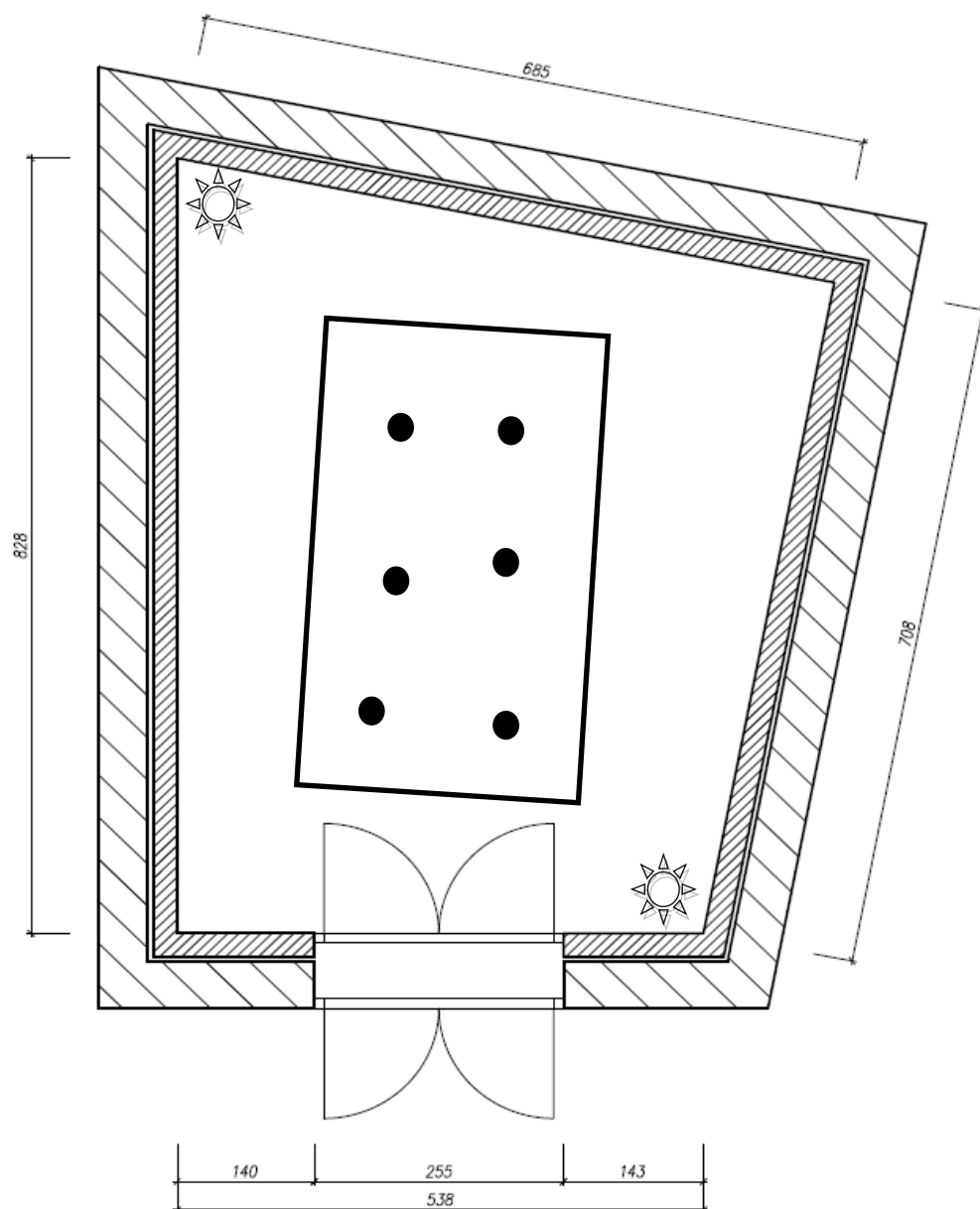
Number of diffusers = 9

Building Research Institute Group of the Testing Laboratories
Thermal Physics, Acoustics and Environment Laboratory

Test No.: 504.2022 / 0505.2022

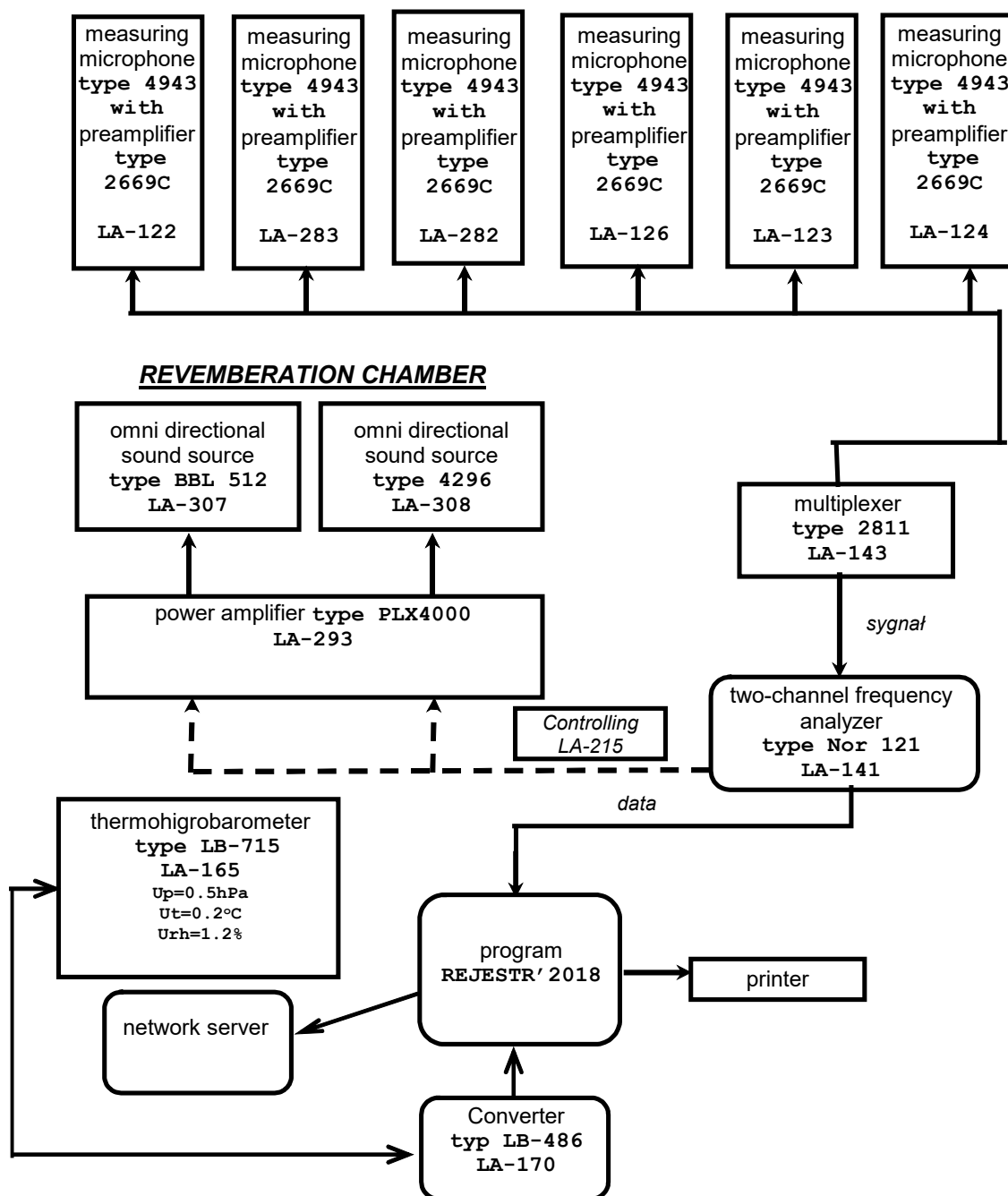
Date of analysis: 2022-08-08

Signature: Norbert Bombala

SAMPLE SET-UP IN THE TEST ROOM

-  - sound source
 - measuring points

(dimension are given in cm)

REVERBERATION TIME MEASUREMENT SYSTEM IN LABORATORY

OTHER INFORMATION CONCERNING TEST

The measurements of the sound absorption coefficient were made in a reverberation chamber with a cubature of 200 m³. The measurement field on which the test sample was placed is in the middle of the floor so that no edge is closer than 1 m from the surface of the chamber walls. The side edges of the sample were covered with sound reflecting material. Samples were laid on surface, according to mounting type A in *Appendix B of PN-EN ISO 354:2005*.

The indexes were calculated according to PN – EN ISO 11654:1999 „*Acoustics – Sound absorbers for use in buildings – Rating of sound absorption*”.

**Person in charge for the tests
and translation:
mgr Hanna Turkowska**

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Signature

**Person authorizing the report:

mgr Łukasz Nowotny**

.....
Signature

**Head of the laboratory LZF:
Agnieszka Winkler – Skalna Ph.D. eng.**

.....
Signature

**Warsaw, September 2nd, 2022
(date of translation October 31st, 2022)**

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The end