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

Measurement of sound absorption coefficient

Client: **SAINT-GOBAIN Construction Products Polska Sp. z o.o.**
ul. Okrężna 16, 44-100 Gliwice

Test specimen mounted by: **ITBUD, 02-656 Warszawa, ul. Ksawerów 21**

Description of the tested specimen:

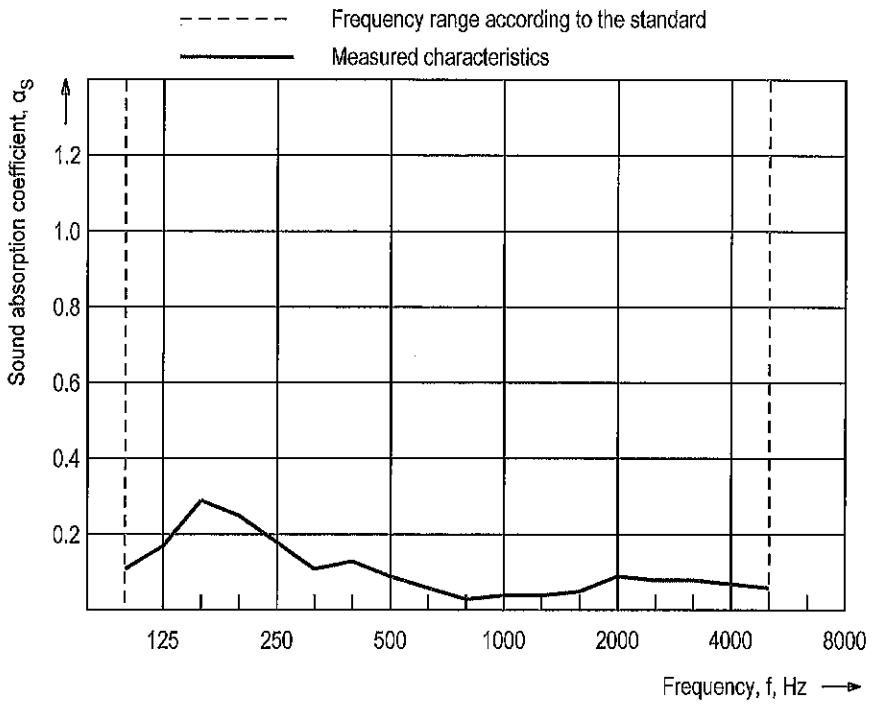
Suspended ceiling - CASOBIANKA plasterboard
without absorbing pad
Type E200 mounting
Dimensions of plaster boards: 600 x 600 x 8 mm
Dimensions of sample: 3000 x 3600 mm
Sample no 3a/LA-00588/2010

Frequency f [Hz]	T_1 [s]	T_2 [s]	α_S	α_p
100	5.76	4.78	0.11	
125	5.63	4.26	0.17	0.20
160	5.08	3.41	0.29	
200	4.67	3.35	0.25	
250	4.21	3.34	0.18	0.20
315	3.68	3.23	0.11	
400	3.92	3.35	0.13	
500	4.46	3.94	0.09	0.10
630	4.68	4.30	0.06	
800	4.81	4.55	0.03	
1000	4.63	4.36	0.04	0.05
1250	4.39	4.14	0.04	
1600	4.13	3.85	0.05	
2000	3.81	3.41	0.09	0.05
2500	3.30	3.03	0.08	
3150	2.70	2.52	0.08	
4000	2.06	1.96	0.07	0.05
5000	1.57	1.52	0.06	

PN-EN ISO 11654:1999

$\alpha_W = 0.10(L)$

Sound absorption class **bez klasy**



Uncertainty of determined
sound absorption coefficient, $U\alpha_S < 0.03$

Area of the tested specimen	= **10.80** m^2			Volume of the reverberation room	= **200.0** m^3
Temperature during measurements of T_1	= **18.1** °C	ΔT = **-0.5** °C		Total surface area of the reverberation room	= **203.0** m^2
Relative humidity during measurements of T_1	= **32.7** %	$\Delta\gamma$ = **-0.1** %		Number of diffusers	= **7**

Building Research Institute Group of the Testing Laboratories
Acoustic Laboratory

Test No.: **185.10 / 82.10**	Date of analysis: **2010-02-11**	Signature: **N.Bombala**

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

Measurement of sound absorption coefficient

Client: **SAINT-GOBAIN Construction Products Polska Sp. z o.o.**
ul. Okrężna 16, 44-100 Gliwice

Test specimen mounted by: **ITBUD, 02-656 Warszawa, ul. Ksawerów 21**

Description of the tested specimen:

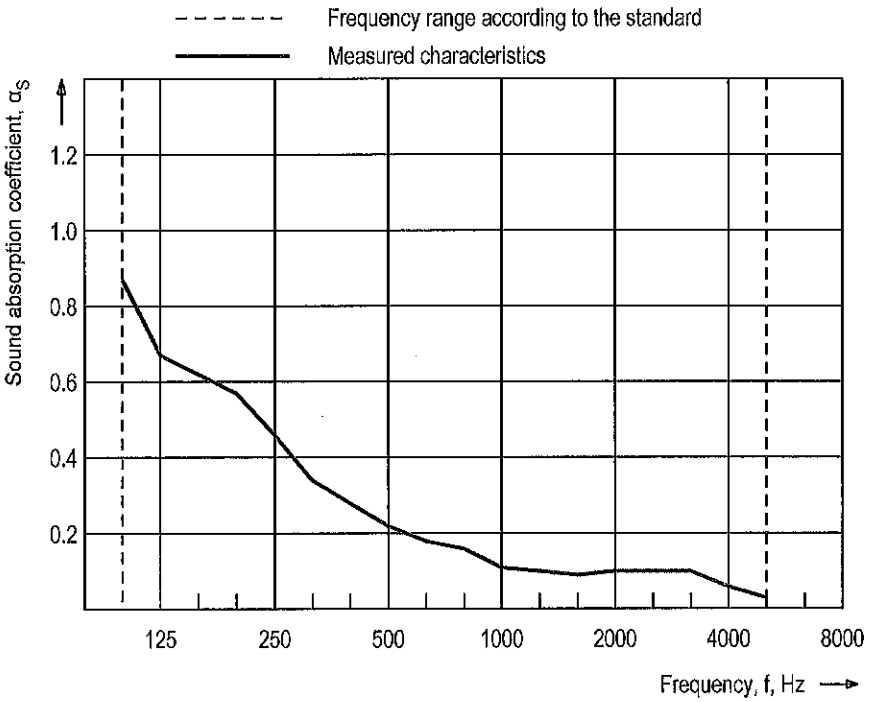
Suspended ceiling - CASOBIANKA plasterboard
with absorbing pad Aku-Płyta thickness 50 mm
Type E200 mounting
Dimensions of plaster boards: 600 x 600 x 8 mm
Dimensions of sample: 3000 x 3600 mm
Sample no 3b/LA-00588/2010

Frequency f [Hz]	T_1 [s]	T_2 [s]	α_S	α_p
100	5.76	2.16	0.87	
125	5.63	2.49	0.67	0.70
160	5.08	2.48	0.62	
200	4.67	2.48	0.57	
250	4.21	2.55	0.46	0.45
315	3.68	2.60	0.34	
400	3.92	2.88	0.28	
500	4.46	3.36	0.22	0.25
630	4.68	3.65	0.18	
800	4.81	3.85	0.16	
1000	4.63	3.94	0.11	0.10
1250	4.39	3.85	0.10	
1600	4.13	3.68	0.09	
2000	3.81	3.38	0.10	0.10
2500	3.30	2.96	0.10	
3150	2.70	2.48	0.10	
4000	2.06	1.98	0.06	0.05
5000	1.57	1.55	0.03	

PN-EN ISO 11654:1999

$\alpha_W = 0.15(L)$

Sound absorption class **E**



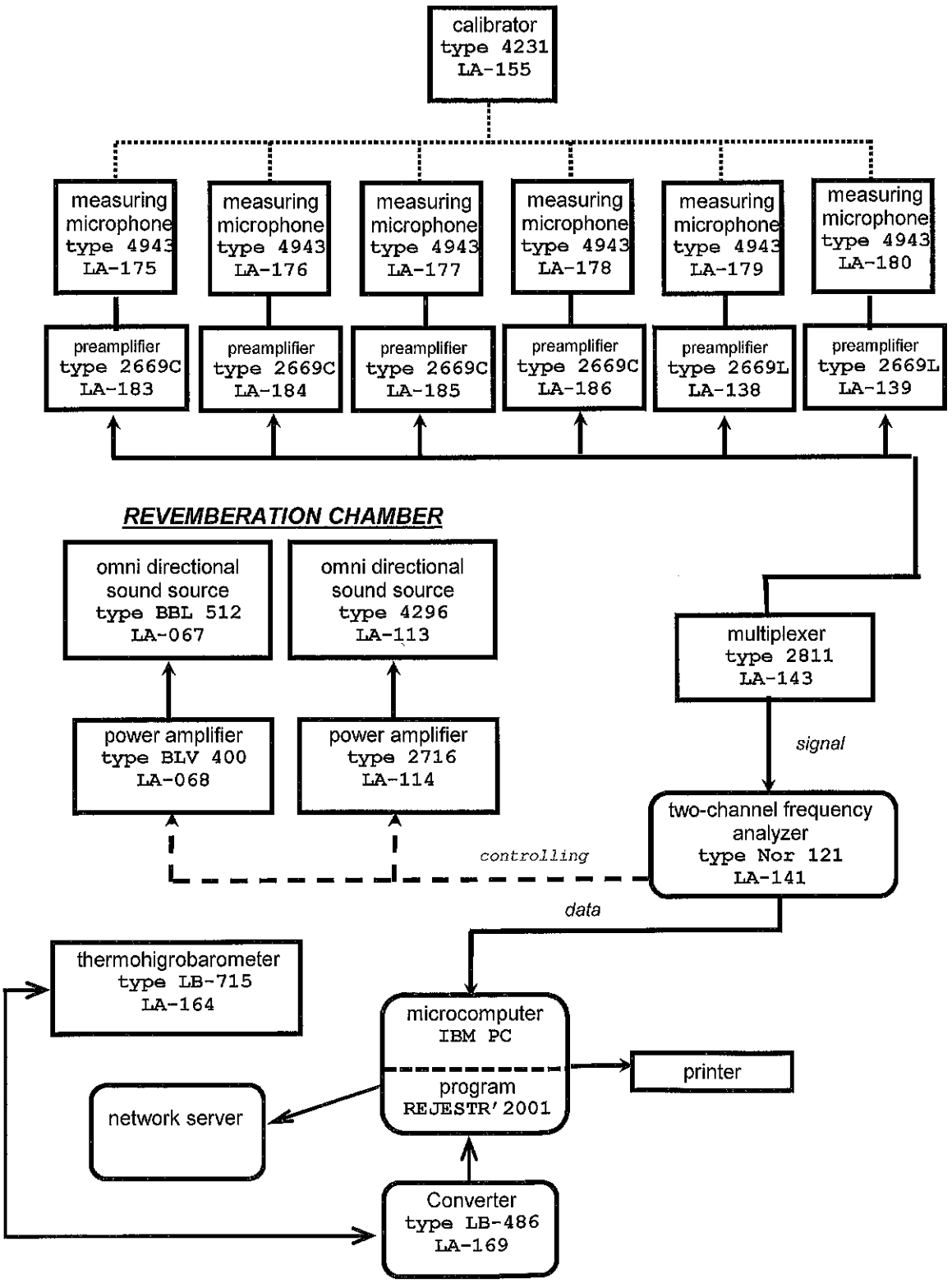
Uncertainty of determined
sound absorption coefficient, $U\alpha_S < 0.03$

Area of the tested specimen	= **10.80** m²			Volume of the reverberation room	= **200.0** m³
Temperature during measurements of T_1	= **18.1** °C	ΔT = **0.4** °C		Total surface area of the reverberation room	= **203.0** m²
Relative humidity during measurements of T_1	= **32.7** %	$\Delta\gamma$ = **1.2** %		Number of diffusers	= **7**

Building Research Institute Group of the Testing Laboratories
Acoustic Laboratory

Test No.: **110.10 / 82.10** | Date of analysis: **2010-01-29** | Signature: **N.Bombala**

TEST EQUIPMENT FOR MEASUREMENT OF REVERBERATION TIME IN LABORATORY



OTHER INFORMATIONS CONNECTED WITH TEST:

Measurements of sound absorption coefficient has been carried out in reverberation room with the volume 200 m^3. Tested sample was placed in central part of floor so that no part of it was closer than 1 m to any edge of the boundary of the room.
The testing equipment used for reverberation time is presented on page 9.
Prior to the measurements, routine calibration/inspection of the measuring system was carried out in accordance with the Instruction No. 1 entitles "Routine Calibration/Inspection of the Acoustic Measuring System".

Responsible for the test:	Authorizing person:
Marianna Mirowska, Ph.D., Eng.	**Marek Niemas, Ph.D., Eng.**
.....	.....
Signature	**Signature**

Warsaw, 3 March 2010 r.