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Sheet 1 of all 10

**CONSTRUCTION TEST CENTER
ICS at "NISI"**

Certificate № 88 LI / 01.10.2014,
issued by EA "BAS" with validity till 01.10.2018.
according to the requirements of BDS EN ISO/IEC 17025:2006
LABORATORY: „BUILDING PHYSICS”

**TEST REPORT
№ 375-5-20 / 14.08.2017**

Product name: Building Structures (Partition, enclosure and distribution structures of buildings and structures) – **Soundproofing system for wall "DECIBEL MUTE 63"**

Manufacturer: DECIBEL Ltd,
Sofia, Vasil Kirkov Str. 8

Assignor: DECIBEL Ltd,
Sofia, Vasil Kirkov Str. 8
The sample was taken and delivered by the contracting authority.

Test method: BDS EN ISO 10140-2:2010 "Acoustics. Laboratory measurement of the sound insulation of building elements. Part 2: Measurement of airborne noise insulation "

Date of sample entry at ICS: int. № 375 / 19.05.2017

Amount of tested samples: Soundproofing system DECIBEL MUTE 33 - 11 m2

Date (period) of tests: from 05.06.2017 to 14.08.2017

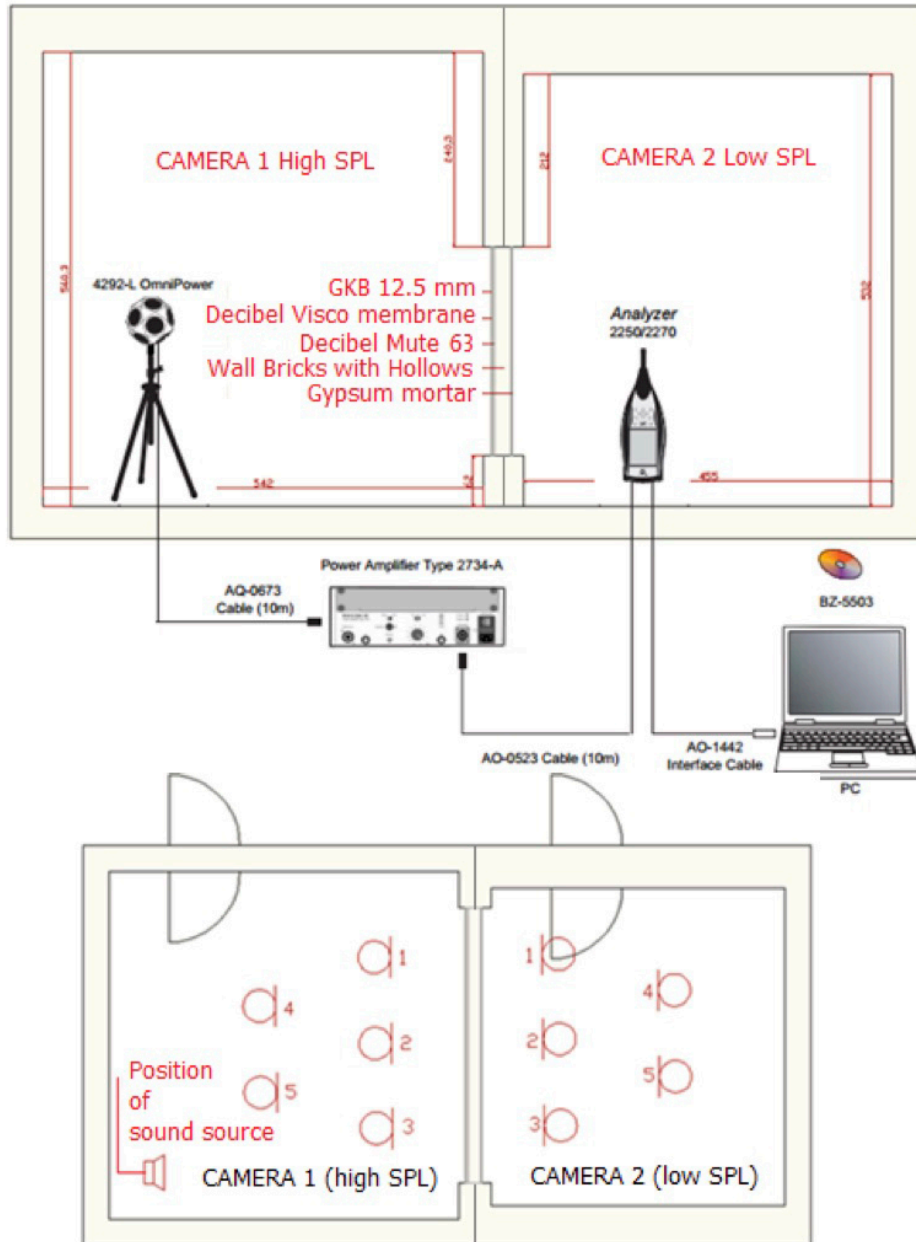
Director ICS:
(Assistant Chief Eng. Tsv. Gyurova)



Airborne sound reduction

measured in test rooms for the determination of sound insulation of enclosing structures according to BDS EN ISO 10140-2:2010

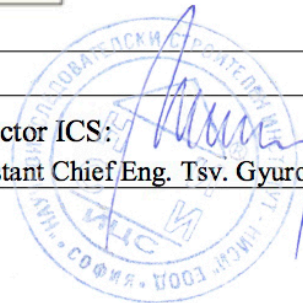
Laboratory set for measurement of sound transmission loss



Test performed by: *K. Glushkova*
 Assistant Chief Eng. K. Glushkova

Head laboratory: *K. Glushkova*
 Assistant Chief Eng. K. Glushkova

Director ICS: *Tsv. Gyurova*
 Assistant Chief Eng. Tsv. Gyurova



Airborne sound reduction

measured in test rooms for the determination of sound insulation of enclosing structures according to BDS EN ISO 10140-2:2010

Tested samples in laboratory set

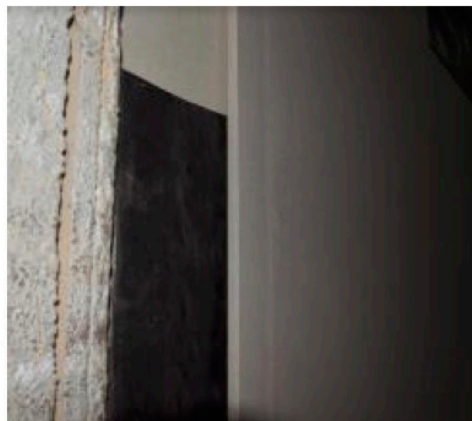
Tested wall with gypsum mortar



Connection between Mute 63 panels and DCIox

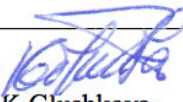


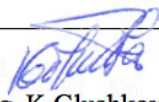
Visco membrane between Mute 63 and GKB



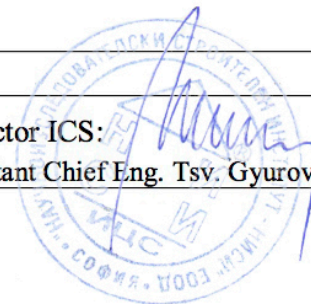
Finished wall with 12.5 mm GKB gypsum board



Test performed by: 
Assistant Chief Eng. K. Glushkova

Head laboratory: 
Assistant Chief Eng. K. Glushkova

Director ICS: 
Assistant Chief Eng. Tsv. Gyurova



Airborne sound reduction

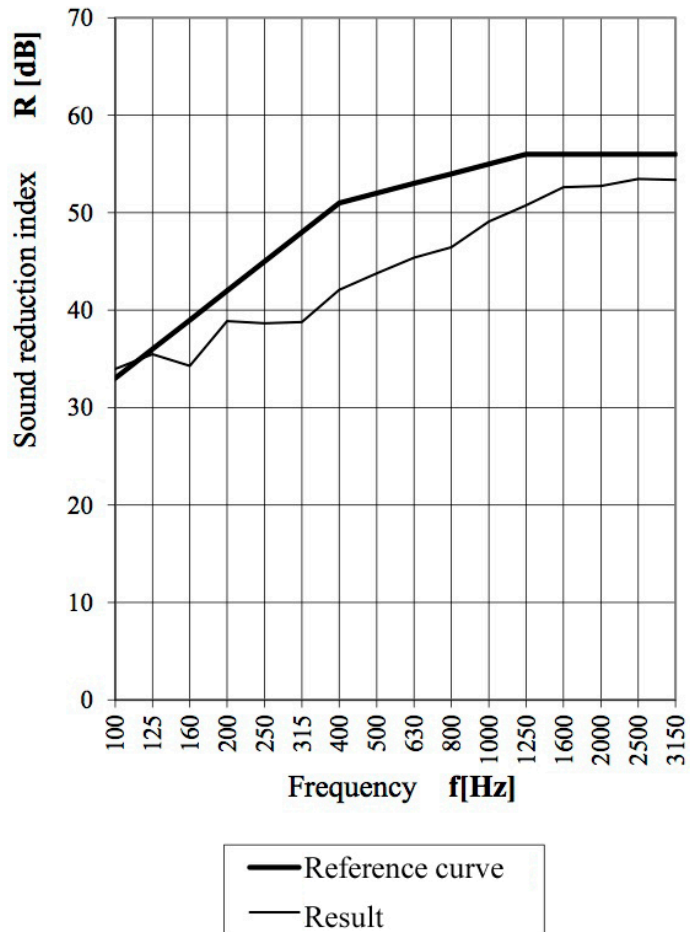
measured in test rooms for the determination of sound insulation of enclosing structures according to BDS EN ISO 10140-2:2010

Description of the tested sample: Partition ceramic brick wall with cavities Wienerberger Porotherm N + F with dimensions 375/250/238 mm, double-sided with 15 mm gypsum mortar;

The test sample is installed by: the contractor's specialists under the supervision of a test laboratory specialist.

Area of test sample: 10,92 m²
 Mass per unit area: 223.5 kg/m²
 Air temperature in test rooms: 19 °C
 Air humidity in the test rooms: 80 %
 Volume of the source room: 170 m³
 Volume of receiver room: 119 m³

f, Hz	R, dB
50	-
63	-
80	-
100	34,0
125	35,5
160	34,3
200	38,9
250	38,6
315	38,8
400	42,1
500	43,8
630	45,4
800	46,4
1000	49,1
1250	50,8
1600	52,6
2000	52,8
2500	53,5
3150	53,4
4000	-
5000	-



Weighted airborne sound reduction index according to BDS EN ISO 717-1:2013

$R_w(C;C_{tr}) = 47 (-1;-3) \text{ dB}$

Test performed by: *[Signature]*
 Assistant Chief Eng. K. Glushkova

Head laboratory: *[Signature]*
 Assistant Chief Eng. K. Glushkova

Director ICS: *[Signature]*
 Assistant Chief Eng. Tsv. Gyurova



Airborne sound reduction

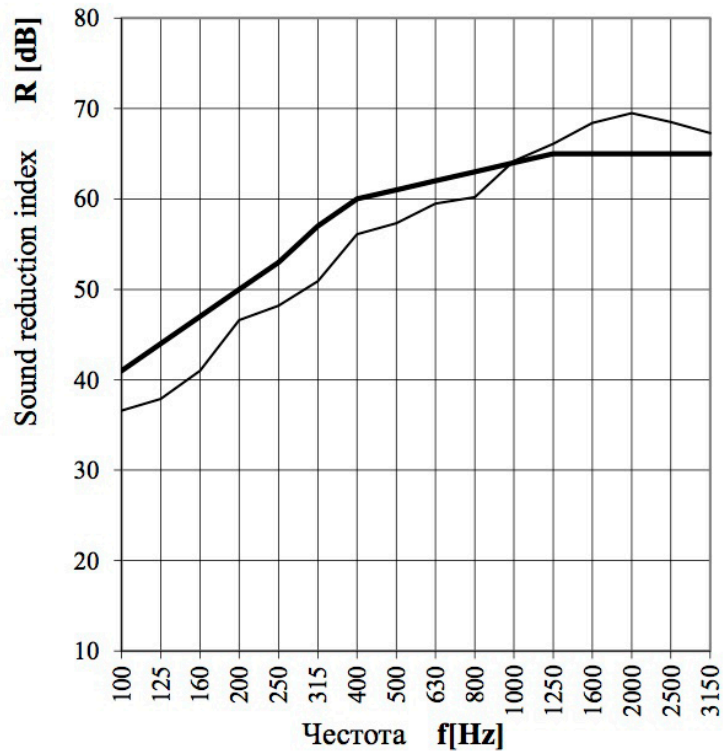
measured in test rooms for the determination of sound insulation of enclosing structures according to BDS EN ISO 10140-2:2010

Description of the tested sample: Partition ceramic brick wall with cavities Wienerberger Porotherm N + F with dimensions 375/250/238 mm, double-sided with 15 mm gypsum mortar; one-sided cladding with soundproofing system for wall "DECIBEL MUTE 63" and one layer of GKB 12.5 mm plasterboard.

The test sample is installed by: the contractor's specialists under the supervision of a test laboratory specialist.

Area of test sample: 10,92 m²
 Mass per unit area: 240.1 kg/m²
 Air temperature in test rooms: 18 °C
 Air humidity in the test rooms: 85 %
 Volume of the source room: 170 m³
 Volume of receiver room: 119 m³

f, Hz	R, dB
50	-
63	-
80	-
100	36,6
125	37,9
160	41,0
200	46,6
250	48,2
315	50,9
400	56,1
500	57,3
630	59,5
800	60,2
1000	64,2
1250	66,1
1600	68,4
2000	69,5
2500	68,5
3150	67,3
4000	-
5000	-



— Reference curve
 — Result

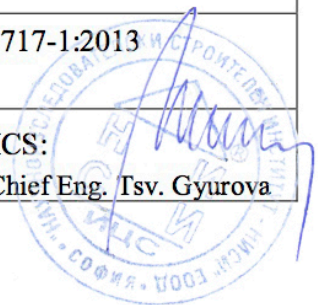
Weighted airborne sound reduction index according to BDS EN ISO 717-1:2013

$$R_w(C;C_{tr}) = 60 (-1;-6) \text{ dB}$$

Test performed by: *K. Glushkova*
 Assistant Chief Eng. K. Glushkova

Head laboratory: *K. Glushkova*
 Assistant Chief Eng. K. Glushkova

Director ICS: *Tsv. Gyurova*
 Assistant Chief Eng. Tsv. Gyurova



Airborne sound reduction

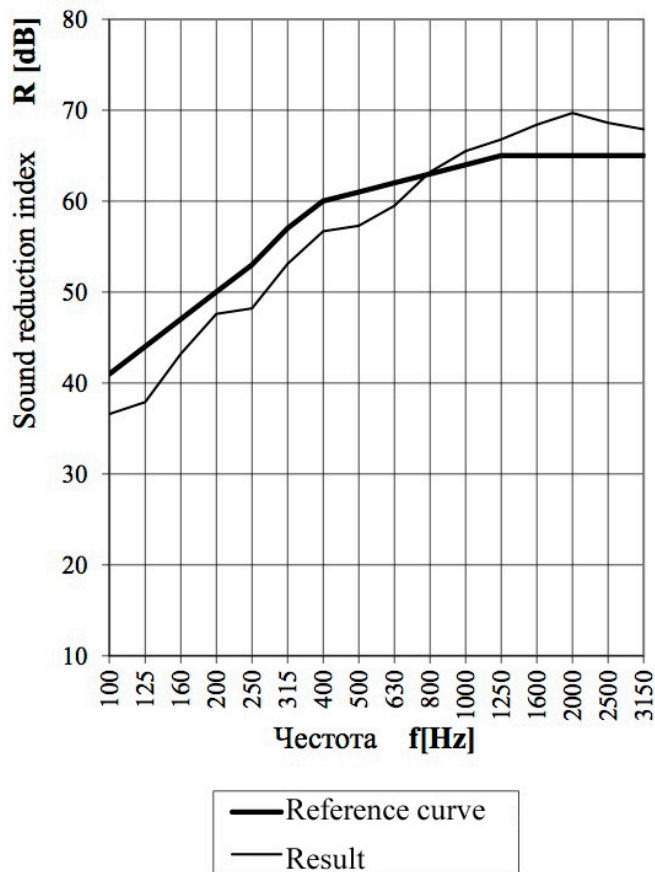
measured in test rooms for the determination of sound insulation of enclosing structures according to BDS EN ISO 10140-2:2010

Description of the tested sample: Partition ceramic brick wall with cavities Wienerberger Porotherm N + F with dimensions 375/250/238 mm, double-sided with 15 mm gypsum mortar; one-sided cladding with soundproofing system for wall "DECIBEL MUTE 63" and one layer of GKB 12.5 mm plasterboard and filled gaps and joints with acoustic mastic DCIant.

The test sample is installed by: the contractor's specialists under the supervision of a test laboratory specialist.

Area of test sample: 10,92 m²
 Mass per unit area: 240.8 kg/m²
 Air temperature in test rooms: 18 °C
 Air humidity in the test rooms: 85 %
 Volume of the source room: 170 m³
 Volume of receiver room: 119 m³

f, Hz	R, dB
50	-
63	-
80	-
100	36,6
125	37,9
160	43,2
200	47,6
250	48,2
315	53,1
400	56,7
500	57,3
630	59,5
800	63,2
1000	65,5
1250	66,8
1600	68,4
2000	69,7
2500	68,6
3150	67,9
4000	-
5000	-



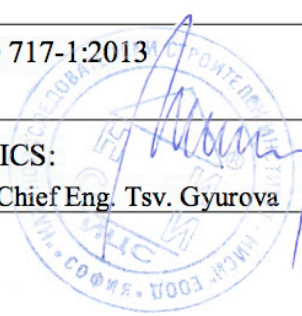
Weighted airborne sound reduction index according to BDS EN ISO 717-1:2013

$R_w(C;C_{tr}) = 62 (-2;-6) \text{ dB}$

Test performed by: *K. Glushkova*
 Assistant Chief Eng. K. Glushkova

Head laboratory: *K. Glushkova*
 Assistant Chief Eng. K. Glushkova

Director ICS: *Tsv. Gyurova*
 Assistant Chief Eng. Tsv. Gyurova



Airborne sound reduction

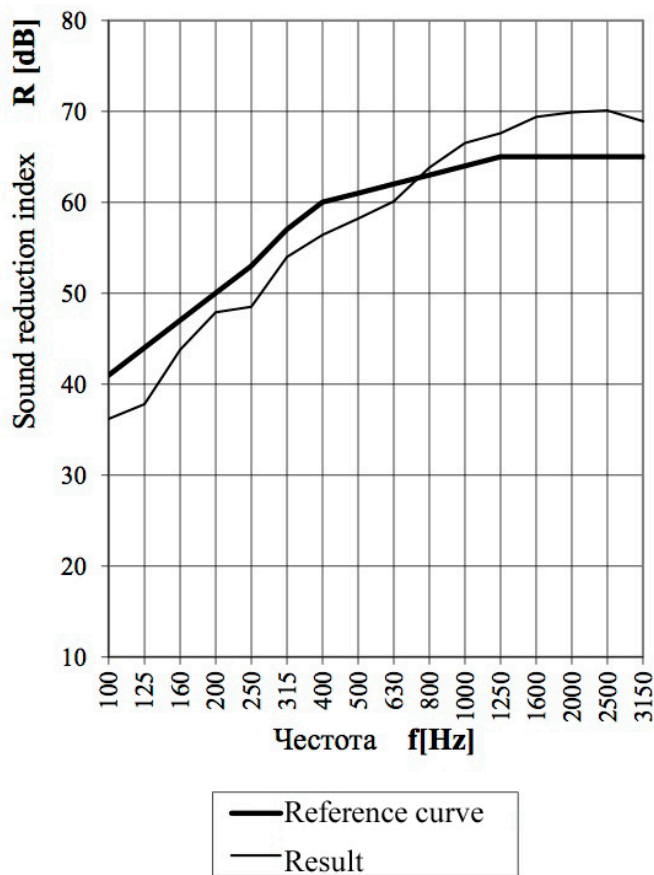
measured in test rooms for the determination of sound insulation of enclosing structures according to BDS EN ISO 10140-2:2010

Description of the tested sample: Partition ceramic brick wall with cavities Wienerberger Porotherm N + F with dimensions 375/250/238 mm, double-sided with 15 mm gypsum mortar; one-sided cladding with soundproofing system for wall "DECIBEL MUTE 63" and one layer of GKB 12.5 mm plasterboard, filled gaps and joints with acoustic mastic DClant and embossing the perimeter of the wall with DCstript.

The test sample is installed by: the contractor's specialists under the supervision of a test laboratory specialist.

Area of test sample: 10,92 m²
 Mass per unit area: 240.8 kg/m²
 Air temperature in test rooms: 18 °C
 Air humidity in the test rooms: 85 %
 Volume of the source room: 170 m³
 Volume of receiver room: 119 m³

f, Hz	R, dB
50	-
63	-
80	-
100	36,2
125	37,8
160	43,8
200	47,9
250	48,5
315	54,0
400	56,4
500	58,2
630	60,1
800	63,8
1000	66,5
1250	67,6
1600	69,4
2000	69,9
2500	70,1
3150	68,9
4000	-
5000	-



Weighted airborne sound reduction index according to BDS EN ISO 717-1:2013

$R_w(C;C_{tr}) = 63 (-2;-6) \text{ dB}$

Test performed by: *[Signature]* Head laboratory: *[Signature]* Director ICS: *[Signature]*
 Assistant Chief Eng. K.Glushkova Assistant Chief Eng. K.Glushkova Assistant Chief Eng. Tsv. Gyurova



Airborne sound reduction

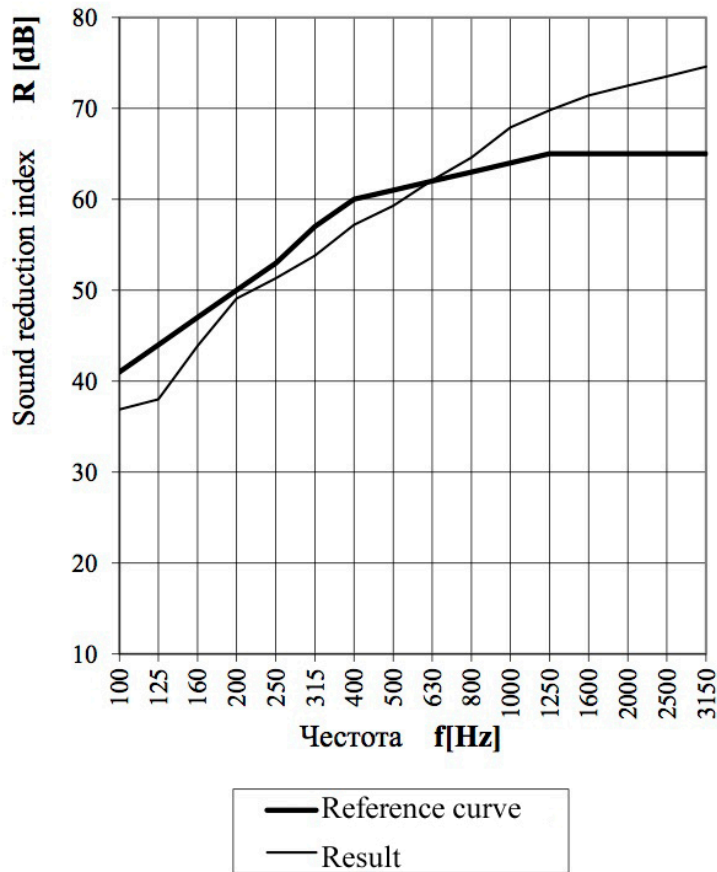
measured in test rooms for the determination of sound insulation of enclosing structures according to BDS EN ISO 10140-2:2010

Description of the tested sample: Partition ceramic brick wall with cavities Wienerberger Porotherm N + F with dimensions 375/250/238 mm, double-sided with 15 mm gypsum mortar; one-sided cladding with soundproofing system for wall "DECIBEL MUTE 63", Visco-elastic membrane Decibel Visco, one layer of GKB 12.5 mm plasterboard, filled gaps and joints with acoustic mastic DClant and embossing the perimeter of the wall with DCstript.

The test sample is installed by: the contractor's specialists under the supervision of a test laboratory specialist.

Area of test sample: 10,92 m²
 Mass per unit area: 244.3 kg/m²
 Air temperature in test rooms: 18 C
 Air humidity in the test rooms: 85 %
 Volume of the source room: 170 m³
 Volume of receiver room: 119 m³

f, Hz	R, dB
50	-
63	-
80	-
100	36,9
125	38,0
160	43,9
200	49,1
250	51,3
315	53,8
400	57,2
500	59,3
630	62,1
800	64,6
1000	67,9
1250	69,8
1600	71,4
2000	72,5
2500	73,5
3150	74,7
4000	-
5000	-



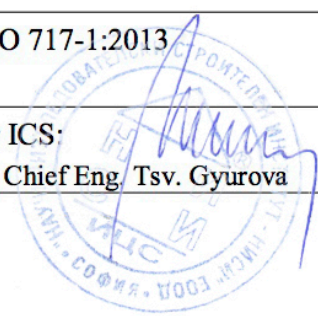
Weighted airborne sound reduction index according to BDS EN ISO 717-1:2013

$R_w(C;C_{tr}) = 65 (-3;-7) \text{ dB}$

Test performed by: *K. Glushkova*
 Assistant Chief Eng. K. Glushkova

Head laboratory: *K. Glushkova*
 Assistant Chief Eng. K. Glushkova

Director ICS: *Tsv. Gyurova*
 Assistant Chief Eng. Tsv. Gyurova



Test results:

Row №	Airborne noise insulation and weghted noise index, R_w (C ; C_{tr}) of the tested products	Measuring unit	Testing method	№ and identification of the sample	Result of testing, uncertainty	Values and tolerance of the characteristics	Conditions of examination
1	2	3	4	5	6	7	8
1	Partition ceramic brick wall with cavities Wienerberger Porotherm N + F with dimensions 375/250/238 mm, double-sided with 15 mm gypsum mortar	dB	BDS EN ISO 10140-2:2010	184	47 (-1; -3)	Not declared by the manufacturer	Standart
2	Partition ceramic brick wall with cavities Wienerberger Porotherm N + F with dimensions 375/250/238 mm, double-sided with 15 mm gypsum mortar; one-sided cladding with soundproofing system for wall "DECIBEL MUTE 63" and one layer of GKB 12.5 mm plasterboard.	dB	BDS EN ISO 10140-2:2010	193	60 (-1; -6)	Not declared by the manufacturer	Standart
3	Partition ceramic brick wall with cavities Wienerberger Porotherm N + F with dimensions 375/250/238 mm, double-sided with 15 mm gypsum mortar; one-sided cladding with soundproofing system for wall "DECIBEL MUTE 63" and one layer of GKB 12.5 mm plasterboard and filled gaps and joints with acoustic mastic DClant.	dB	BDS EN ISO 10140-2:2010	194	62 (-2; -6)	Not declared by the manufacturer	Standart
4	Partition ceramic brick wall with cavities Wienerberger Porotherm N + F with dimensions 375/250/238 mm, double-sided with 15 mm gypsum mortar; one-sided cladding with soundproofing system for wall "DECIBEL MUTE 63" and one layer of GKB 12.5 mm plasterboard, filled gaps and joints with acoustic mastic DClant and embossing the perimeter of the wall with DCstript.	dB	BDS EN ISO 10140-2:2010	194	63 (-2; -6)	Not declared by the manufacturer	Standart
5	Partition ceramic brick wall with cavities Wienerberger Porotherm N + F with dimensions 375/250/238 mm, double-sided with 15 mm gypsum mortar; one-sided cladding with soundproofing system for wall "DECIBEL MUTE 63", Visco-elastic membrane Decibel Visco, one layer of GKB 12.5 mm plasterboard, filled gaps and joints with acoustic mastic DClant and embossing the perimeter of the wall with DCstript.	dB	BDS EN ISO 10140-2:2010	195	65 (-3; -7)	Not declared by the manufacturer	Standart

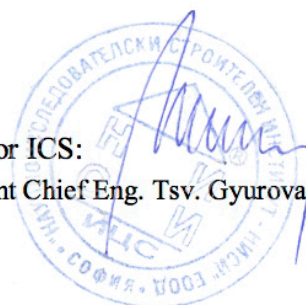
Test performed by:



Head laboratory:



Director ICS:




Assistant Chief Eng. K.Glushkova

Assistant Chief Eng. K.Glushkova


Assistant Chief Eng. Tsv. Gyurova

Note:

1. An integral part of the test report is attachment 1 with detailed test data.
2. The measurement was carried out with acoustic equipment of the Bruel and Kaer company - Denmark:
 - sound calibrator type 4230 - calibration certificate № 267-EIA / 18.12.2012
 - Microphone type 4943 - calibration certificate № 269-EIA / 18.12.2012;
 - Building acoustics analyzer type 2250;
 - Microphone preamplifier type 2734;
 - noise source type 4229;

Head laboratory "Cph": 
(Assistant Chief Eng. K.Glushkova)

Director ICS: 
(Assistant Chief Eng. Tsv. Gyurova)

Test performed by: 
Assistant Chief Eng. K.Glushkova

If necessary, the test report may include opinions and interpretations of certain tests (**conclusions are not allowed**) only in accordance with the requirements of p.5.10.5 of BDS EN ISO / IEC 17025: 2006.