

# Test report A-2019-251-01



Certified quality inspection body according to DIN 4109  
VMFA-SPG-142-97-NRW

DIBt recognition - tests on the test bench

State-approved experts for sound and heat insulation IK-Bau NRW

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33397 Rietberg  
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**Test order** Airborne sound insulation

**Test object** Inspection opening

## Description

PRIMUS AIRPROOF 300 x 300 mm lock

A handwritten signature in blue ink, appearing to read 'AS', is written over a light blue circular stamp.

Aachen, December 19, 2019

(Dr.-Ing. Alexander Siebel)

## Appendices:

TD - Technical documentation for sample setup (1 page)	X
LS - Airborne sound insulation DIN EN ISO 10140-2 (2 pages + 1 page evaluation)	X

The test results refer exclusively to the submitted test items.

The test report may not be published in excerpts without the approval of the test centre.

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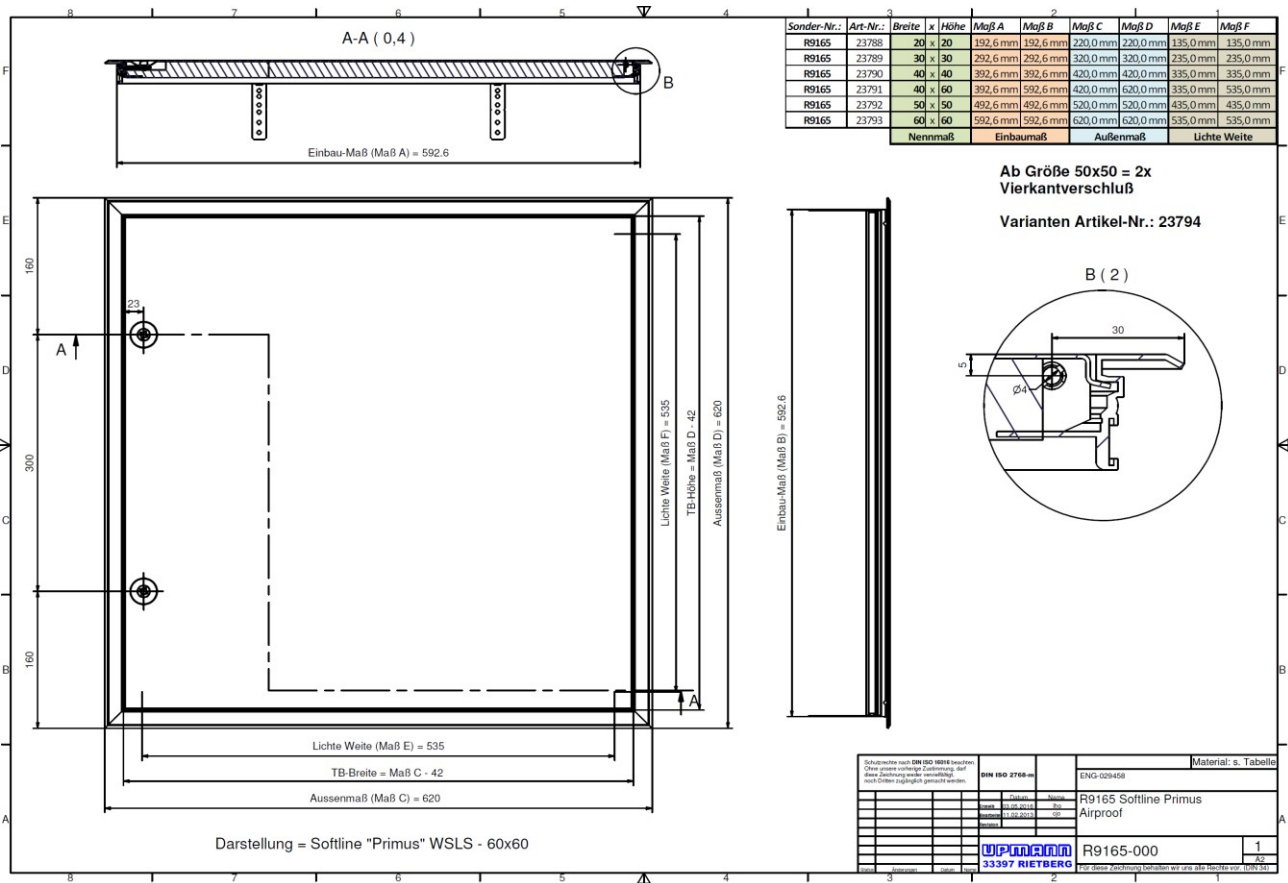
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# Appendix TD - Technical documentation

<b>Description</b>	PRIMUS AIRPROOF lock
<b>Design</b>	inspection flap; air and dust tight
<b>Possible Installation dimensions / wall [mm]</b>	200x200 to 1200x1200
<b>Possible Installation dimensions / ceiling [mm]</b>	200x200 to 1000x1000
<b>Construction</b>	frame AL profile / door leaf edged / door leaf with insert
<b>Material door leaf</b>	steel galvanized + painted
<b>Material frame / frame</b>	AL-profile
<b>Fitting / lock / lock</b>	Al+St / lock
<b>Seal</b>	WLSL insert / Full-surface rear on door leaf / Sealing via frame
<b>Special feature sealing</b>	class 4 / Tested up to 600x600 / Other sizes without test

**Drawing:**



## General Appendix LS for tests of airborne sound insulation in the laboratory test bench

### 1 Test bench description

Test rooms:	Laboratory of SWA GmbH, Hauptstraße 133, 52477 Alsdorf	
Window test bench:	Test opening: 1.25 m x 1.50 m If required: Reduction of the test opening by a sound absorbing element  Solid construction, double-shell size 24 KS walls with mineral fibre Soundproofing dimension: $R_w$ , max = 65 dB	
Transmitter room:	Room 1.07 and / or 1.06	V = See evaluation
Receiving room:	Room 1.05:	V = 52.3 m <sup>3</sup> (4.41 m x 4.46 m x 2.66 m)
<b>Door test bench:</b>	Test opening: 1.01 m x 2.03 m If required: Reduction of the test opening by a sound absorbing element  Solid construction, double-shell size 24 KS walls with mineral fibre Soundproofing dimension: $R_w$ , max = 65 dB	
Transmitter room:	Room 1.04	V = 52.1 m <sup>3</sup> (4.27 m x 4.45 m x 2.74 m)
Receiving room:	Room 1.05:	V = 52.3 m <sup>3</sup> (4.41 m x 4.46 m x 2.66 m)
<b>Wall test bench:</b>	Test opening: 4.45 m x 2.60 m If required: Reduction of the test opening by a sound absorbing element	
Transmitter room:	Room 1.06	V = See evaluation
Receiving room:	Room 1.07:	V = See evaluation
<b>Ceiling test bench:</b>	Test surface: 19 m <sup>2</sup>	
Transmitter room:	Room 1.04	V = 52.1 m <sup>3</sup> (4.27 m x 4.45 m x 2.74 m)
Receiving room:	Room 0.01:	V = 53.6 m <sup>3</sup> (3.95 m x 4.08 m x 3.33 m)
<b>Reference floor:</b>	4.27 m x 4.45 m; S = 19 m <sup>2</sup> 14 cm solid concrete slab with a mass per unit area $m' = 322 \text{ kg/m}^2$	
Flanking walls:	sand-lime brickwork without light facing layers (d = 12cm) with an average surface-related mass $m' \approx 330 \text{ kg/m}^2$	

## 2 Evaluation

The sound levels generated by the dodecahedron are measured in the receiving room. The weighted sound reduction index is determined from the measured values as follows:

$$R_w = L_1 - L_2 + 10 \log (S/A)$$

$$A = 0.16 (V/D)$$

Meaning here:	R	Sound reduction index in dB
	L	Sound pressure level in the transmitter
	1	room in dB
	L	Sound pressure level in the receiving room in dB
	2	Test area in m <sup>2</sup>
	S	Equivalent sound absorption area in the receiving room in m <sup>3</sup>
	A	
	V	Volume of the reception room in m <sup>3</sup>
	T	Reverberation time in the receiving
	R <sub>w</sub>	room in s
		Evaluated sound reduction index

To determine the weighted sound reduction index R<sub>w</sub>, the reference curve provided for this purpose is shifted in 1 dB steps in the measurement curve so that the sum of the most unfavourable deviations comes as close as possible to the value of 32 dB but does not exceed it.

## 3 Used standards

Standard: (issue)	Title
DIN EN ISO 10140-1:2016	Acoustics - Measurement of sound insulation performances of building elements under test - Part 1: Rules of application for certain products
DIN EN ISO 10140-2:2010	Acoustics - Measurement of sound insulation performances of building elements being tested - Part 2: Measurement of airborne sound insulation
DIN EN ISO 10140-4:2010	Acoustics - Measurement of sound insulation performances of building elements being tested - Part 4: Measurement methods and requirements
DIN EN ISO 10140-5:2014	Acoustics - Measurement of sound insulation performances of building elements being tested - Part 5: Requirements for test benches and test equipment
DIN EN ISO 717-1:2013	Acoustics - Evaluation of sound insulation performances of buildings and building elements - Part 1: Airborne sound insulation

# Sound level difference according to ISO 10140-2 Appendix LS - $R_w$

Measurement of the airborne sound insulation of components in the test bench

Appendix LS - Sound level difference

Page 1 of 1

Test bench: Window test bench Test date: 02.09.2019

Test setup: PRIMUS AIRPROOF 300 x 300 mm lock

Comments:  $R_w$ , max = 55 dB was determined for the reduced test opening.

Test surface 0.09 m<sup>2</sup>

Air pressure 101.0 kPa

Transmitter room:

Volume: 110.2 m<sup>3</sup>

Temperature: 22.0 °C

Rel. humidity: 55 %

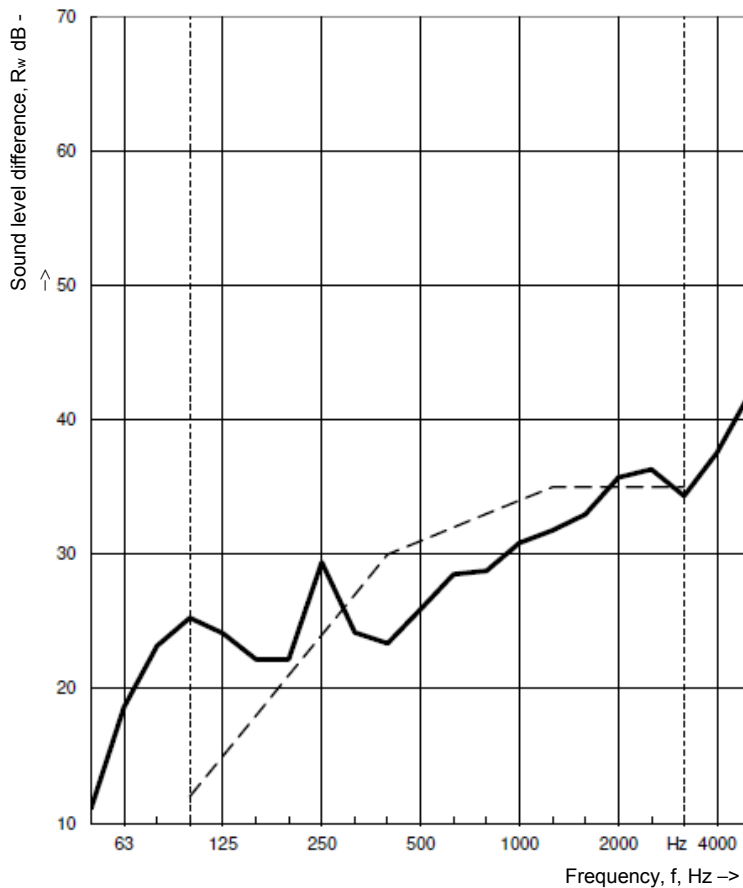
Receiving room:

Volume: 52.3 m<sup>3</sup>

Temperature: 22.0 °C

Rel. humidity: 55 %

Frequency f [Hz]	Terce [dB]
50	11.1
63	18.6
80	23.2
100	25.3
125	24.1
160	22.2
200	22.2
250	29.4
315	24.2
400	23.4
500	25.9
630	28.5
800	28.8
1000	30.8
1250	31.8
1600	33.0
2000	35.7
2500	36.3
3150	34.3
4000	37.6
5000	42.0



----- Assessment area ISO 717-1  
 adjusted movement curve  
 ISO 717-1-----

Evaluation according to ISO 717-1

$R_w$  (C;Ctr) = 31 ( 0 ; -3 ) dB  $D_{n,e,w}$  (C;Ctr) = 51 ( 0 ; -2 ) dB

The determination is based on test bench measurement results obtained in terce bands.

C100-5000 = 0 dB  
 Ctr,100-5000 = -3 dB

No. of the test report: A-2019-251-01



Schall- und Wärmemesstelle Aachen GmbH