



Ljubljana, 11/02/2014



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## REPORT

**No. P 16/14-520-3**

Laboratory measurement of airborne sound insulation of the single leaf door with fire resistance MARINE-MANTA A60

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**Client:** MANTA SEŽANA proizvodnja in trgovina, d.o.o., Cesta na Lenivec 45, SI-6210 SEŽANA.  
**Order/contract:** Order form No. 1/2014/06.01.2014

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**Responsible investigator:**  
Mihael Ramšak, M.Sc. (Mech.Eng.)



**Head of Laboratory:**  
Friderik Knez, B.Sc.(Phys.)

**Director:**  
Assoc. Prof. Dr. Andraž Legat, B.Sc.(Phys.)

**1. TEST DATA****1.1. TEST SPECIMEN**

Single leaf door with fire resistance MARINE-MANTA A60

**1.2. TEST SPECIMEN DESIGNATION: A-3/14****1.3. METHOD OF DELIVERY OF THE TEST SPECIMEN:**

Test specimen was delivered and installed by the client on 13/01/2014

**1.4. DESCRIPTION OF THE TEST SPECIMEN**

Metal door jamb is filled with the rock wool. Door leaf of total thickness 45 mm is made of 0,8 mm thick steel sheets on both sides, glued with Promat K84 on insulation core made of 40 mm thick calcium silicate board Promatect L-500. It incorporates a single point mortise lock (TRIOVING 5136).

NOTE: Composition and dimensions of the layers are based on schematics provided by the client.

**1.5 TEST METHOD**

Measurement of airborne sound insulation according to the standards:  
SIST EN ISO 10140-1, 10140-2, 10140-4 in 10140-5 : 2010.

**1.6 TESTING LOCATION**

The test was carried out in Laboratory for sound insulation measurements at the Slovenian National Building and Civil Engineering Institute.

**1.7 MEASURING EQUIPMENT**

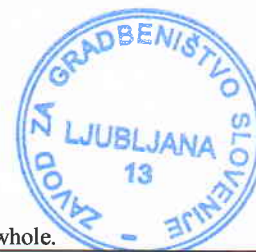
- Acoustic analyser	type 2260 B&K, ID 33401008
- Calibrator	type 4231 B&K ID 12903005
- Omni-directional sound source	type 4296 B&K, ID 52901004
- Amplifier	type 2716 B&K, ID 52901005
- Rotary microphone stand	type 3923 B&K, ID 33401002
- Sound source with amplifier	type 4241 B&K, ID 52901003
- Microphone	type 4189, Serial No. 2395368
- Microphone	type 4189, Serial No. 2395369

**1.8 MEASURING CONDITIONS**

Temperature : 14<sup>o</sup> C  
Relative humidity : 58 %  
Static pressure: 976 hPa

**1.9 DATE OF TEST :** 14/01/2014

**1.10 MEASUREMENT PERFORMED BY:** Davor Radič, Civ.Eng.



## 2. RESULTS OF THE TEST

The weighted sound reduction index of the single leaf door with fire resistance MARINE-MANTA A60, calculated according to provisions of the standard SIST EN ISO 717-1 (2013), is:

$$R_w (C;C_{tr}) = 33 (-1;-2) \text{ dB}$$

The sound reduction indices R corresponding to each one-third octave band are presented in Annex A/1 to this report.

Davor Radič, Civ.Eng.



**LABORATORY MEASUREMENTS OF AIRBORNE SOUND INSULATION ACCORDING TO THE STANDARD SIST EN ISO 10140-2:2010** ANNEX A  
Page: 1/1

MANUFACTURER: *MANTA SEŽANA d.o.o.* SPECIMEN: *A-3/14*  
 CLIENT: *MANTA SEŽANA d.o.o.* MEASURED IN *LAB 1, LAB 2*  
 TEST SPECIMEN DELIVERED AND ASSEMBLED BY: *MANTA SEŽANA d.o.o.* DATE: *14/01/2014*

**TEST SPECIMEN DESIGNATION:**

**Single leaf door with fire resistance MARINE-MANTA A60**

**COMPOSITION OF THE TEST SPECIMEN:**

Dimensions of the door leaf: *length 2145 mm x width 975 mm x thickness 45 mm*

Core: *40 mm thick insulating core made of calcium silicate Promatect L-500, 0,8 mm thick steel sheet on both sides*

Door jamb: *made of 1,5 thick steel metal*

Door gasket: *installed on the door leaf and on the jamb (Sand:172 E3-AFHMA)/Assotech.*

Door threshold: *it is a component of the door jamb*

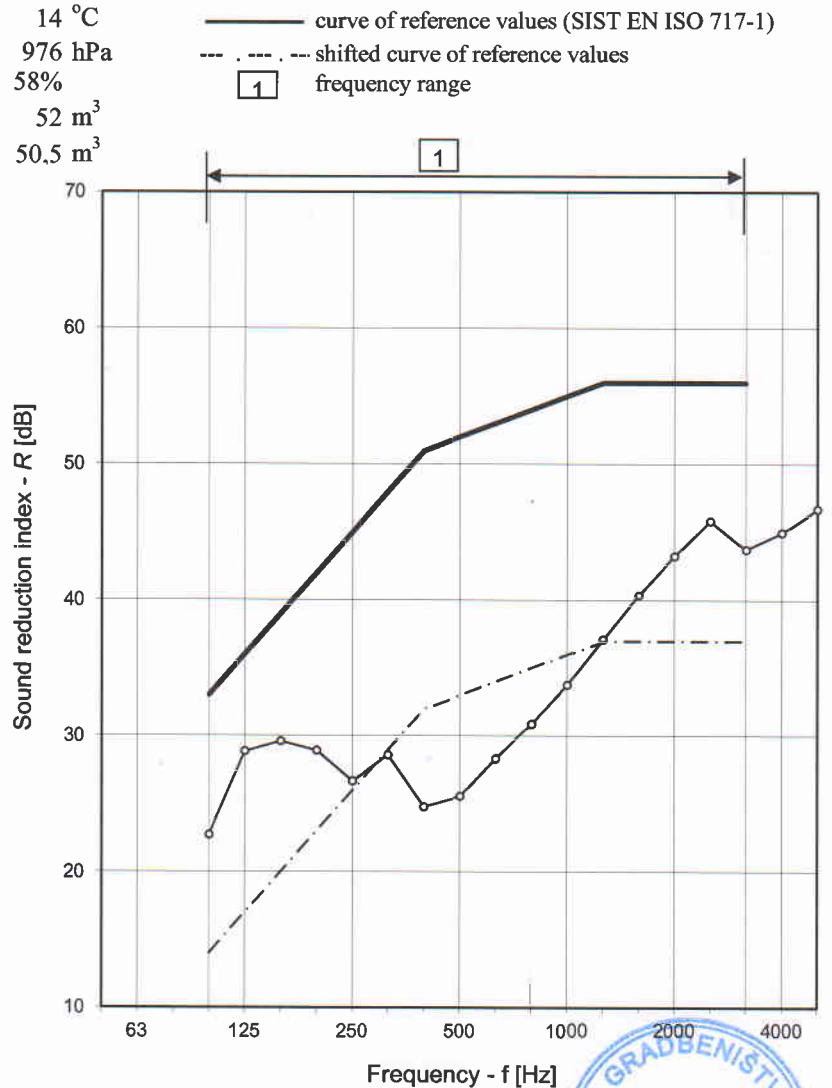
Schematics and photos of the test specimen are presented in annexes B and C to this report.

Test opening and double massive wall were made in accordance with the provisions of the standard SIST EN ISO 10140-5.

**Surface area of the**

test specimen: *2,10 m<sup>2</sup>*  
 Air temperature: *14 °C*  
 Relative air humidity: *976 hPa*  
 Static pressure: *58%*  
 Source room volume: *52 m<sup>3</sup>*  
 Receiving room volume: *50,5 m<sup>3</sup>*

Frequency f Hz	R (third oct.) dB
50	
63	
80	
100	22,7
125	28,8
160	29,6
200	28,9
250	26,7
315	28,6
400	24,8
500	25,6
630	28,4
800	30,9
1000	33,8
1250	37,2
1600	40,4
2000	43,3
2500	45,9
3150	43,7
4000	45,0
5000	46,7



Standard SIST EN ISO 717-1, (2013) :

$R_w(C;C_{tr}) = 33 (-1, -2) \text{ dB}$

Evaluation based on laboratory measurement results.

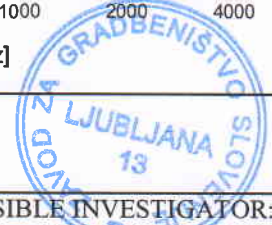
MEASUREMENT PERFORMED BY:

Davor Radič, Civ.Eng.

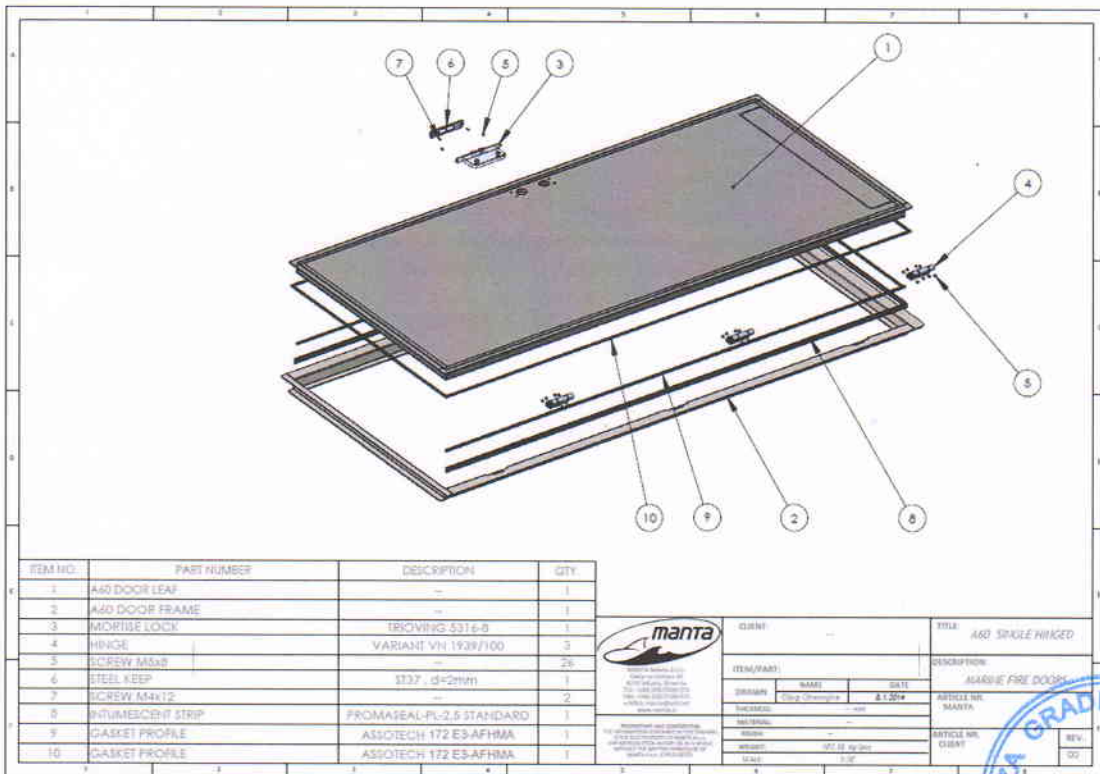
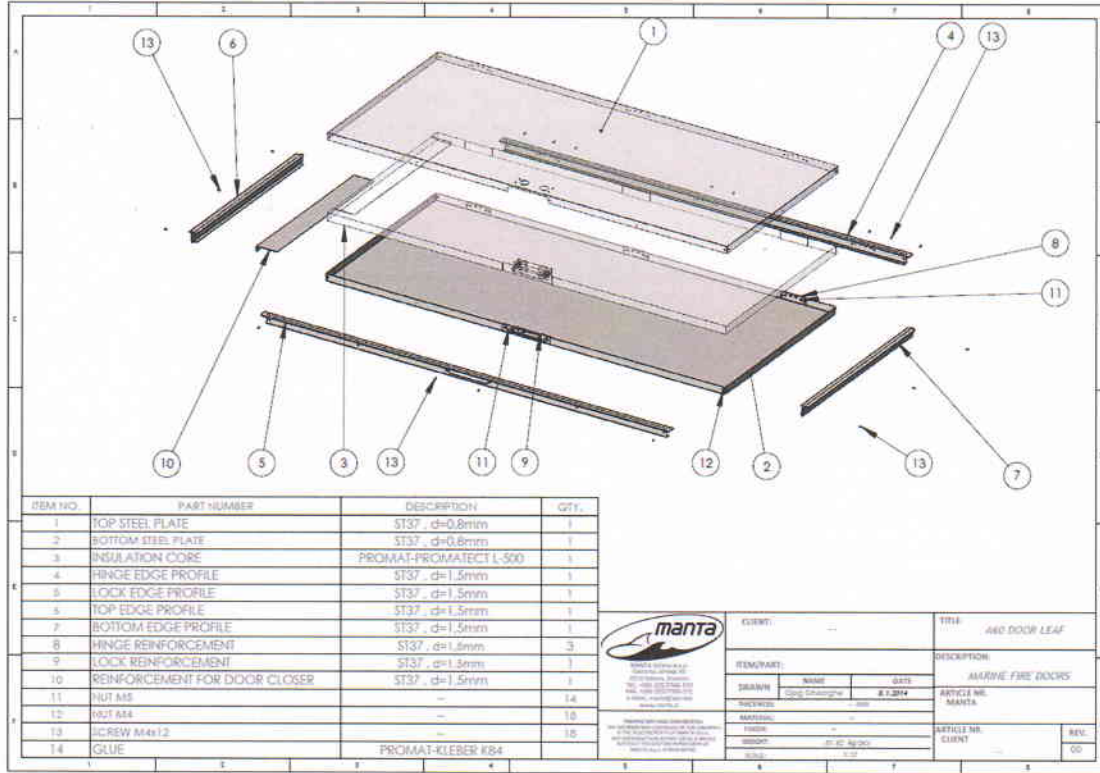
RESPONSIBLE INVESTIGATOR:

Mihael Ramšak, M.Sc. (Mech.Eng.)

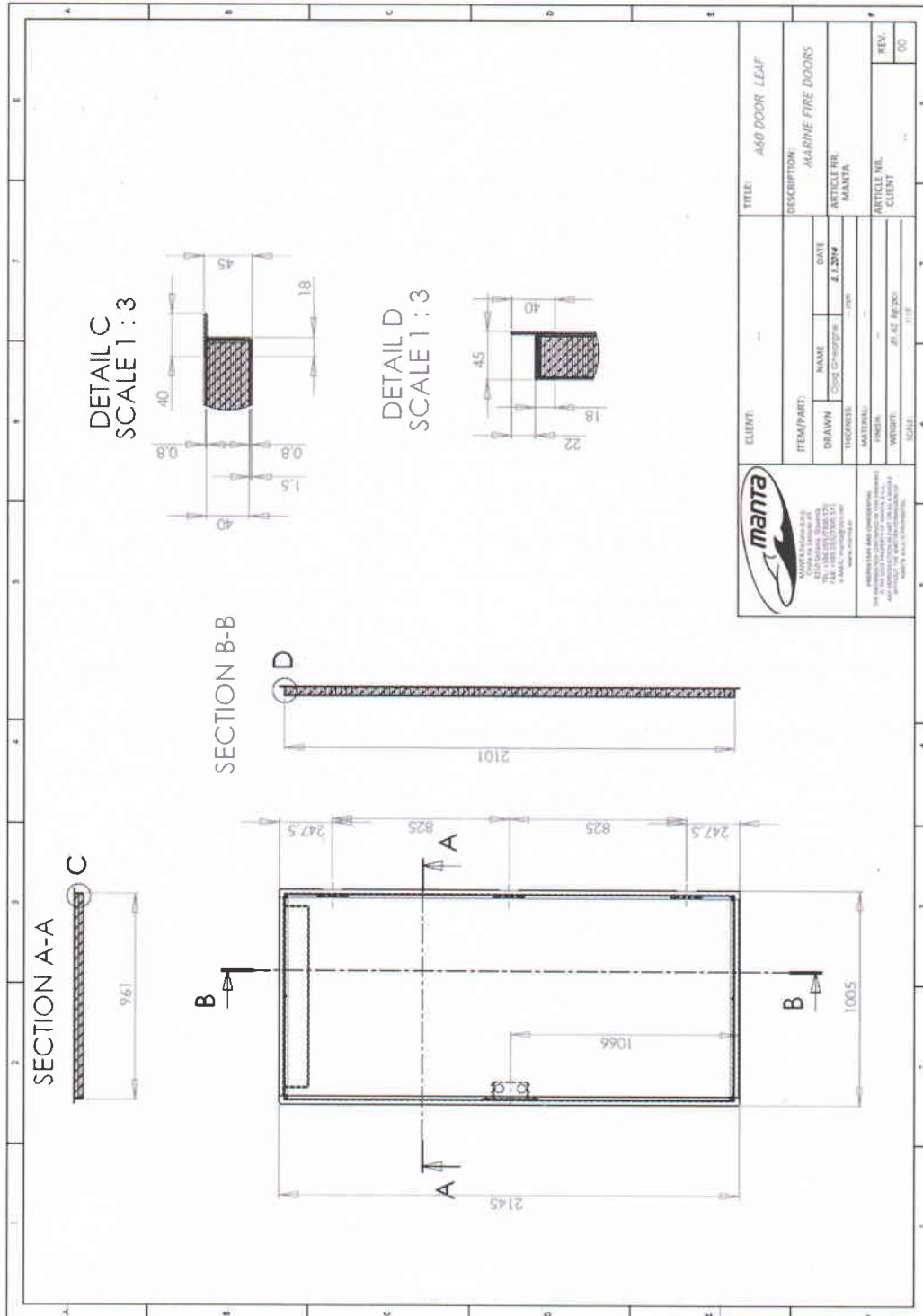
Results of the test refer only to the tested specimen. This report may only be reproduced as a whole.



LAYOUT OF THE TEST SPECIMEN







Note:

Layout based on a schematics provided by the client. The conformity of the tested panel to the manufacturer's plan has not been verified in detail.



Photo of the specimen-source room (Lab.1)



Photo No. 27655d-11

Detailed view at the hinge



Photo No. 27655d-15

Photo of the specimen-receiving room (Lab.2)



Photo No. 27655d-09

Detailed view at the threshold



Photo No. 27655d-12