

Ljubljana, 11/02/2014



## REPORT

**No. P 16/14-520-2**

Laboratory measurement of airborne sound  
insulation of the single leaf door with fire  
resistance MARINE-MANTA B30

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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 B30.

### 1.2. TEST SPECIMEN DESIGNATION: A-2/14

### 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 40 mm is made of 0,8 mm thick steel sheets on both sides, glued with Promat K84 on insulation core made of 38 mm thick mineral wool KNAUF MHTB 700 (density approx. 150kg/m<sup>3</sup>). 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 : 55 %  
Static pressure: 970 hPa

1.9 DATE OF TEST : 13/01/2014

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



## 2. RESULTS OF THE TEST

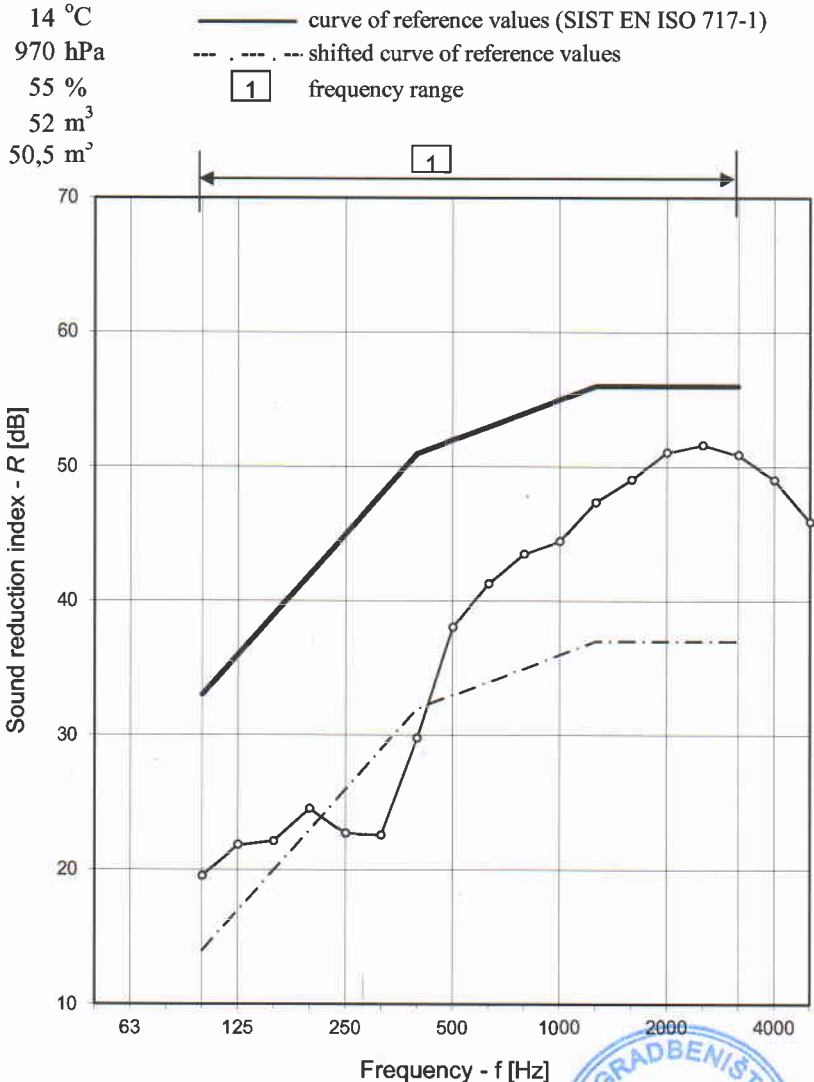
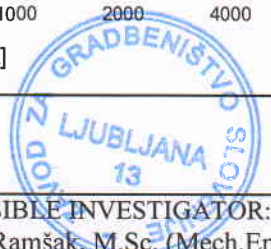
The weighted sound reduction index of the single leaf door with fire resistance MARINE-MANTA B30, calculated according to provisions of the standard SIST EN ISO 717-1 (2013), is:

$$R_w (C;C_{tr}) = 37 (-2;-6) \text{ dB}$$

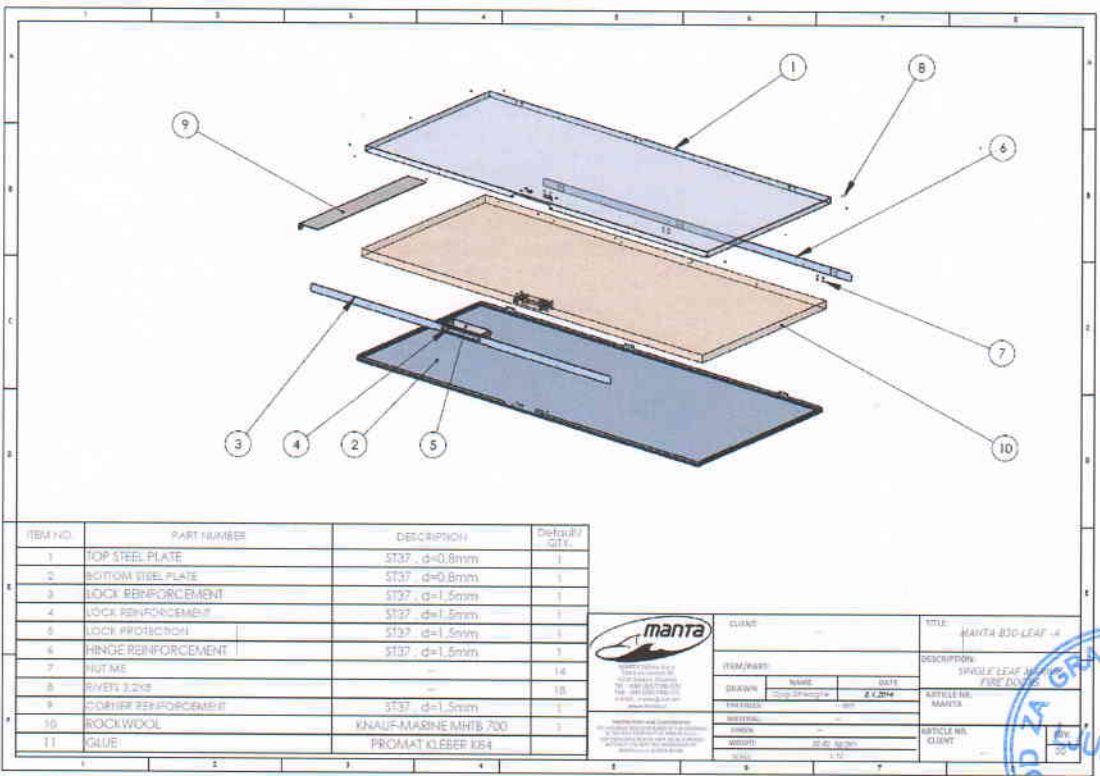
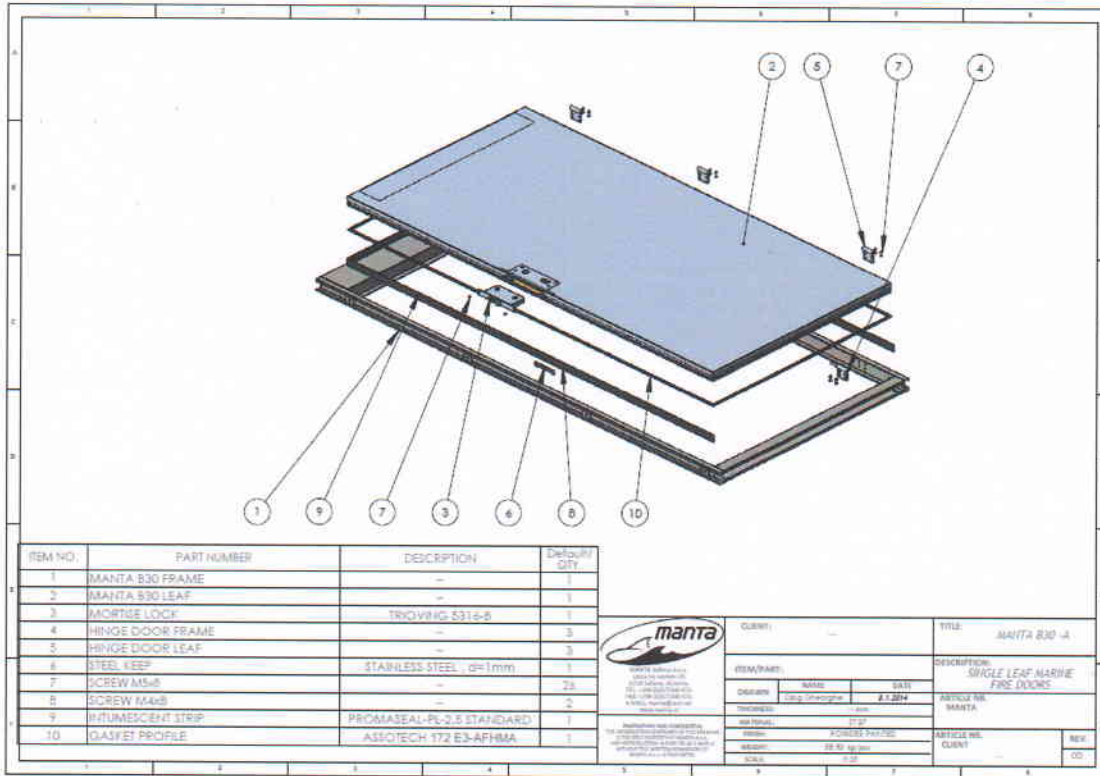
The sound reduction indices R corresponding to each one-third octave band are presented in Annex A/1 to this report.

Davor Radič, Civ.Eng.

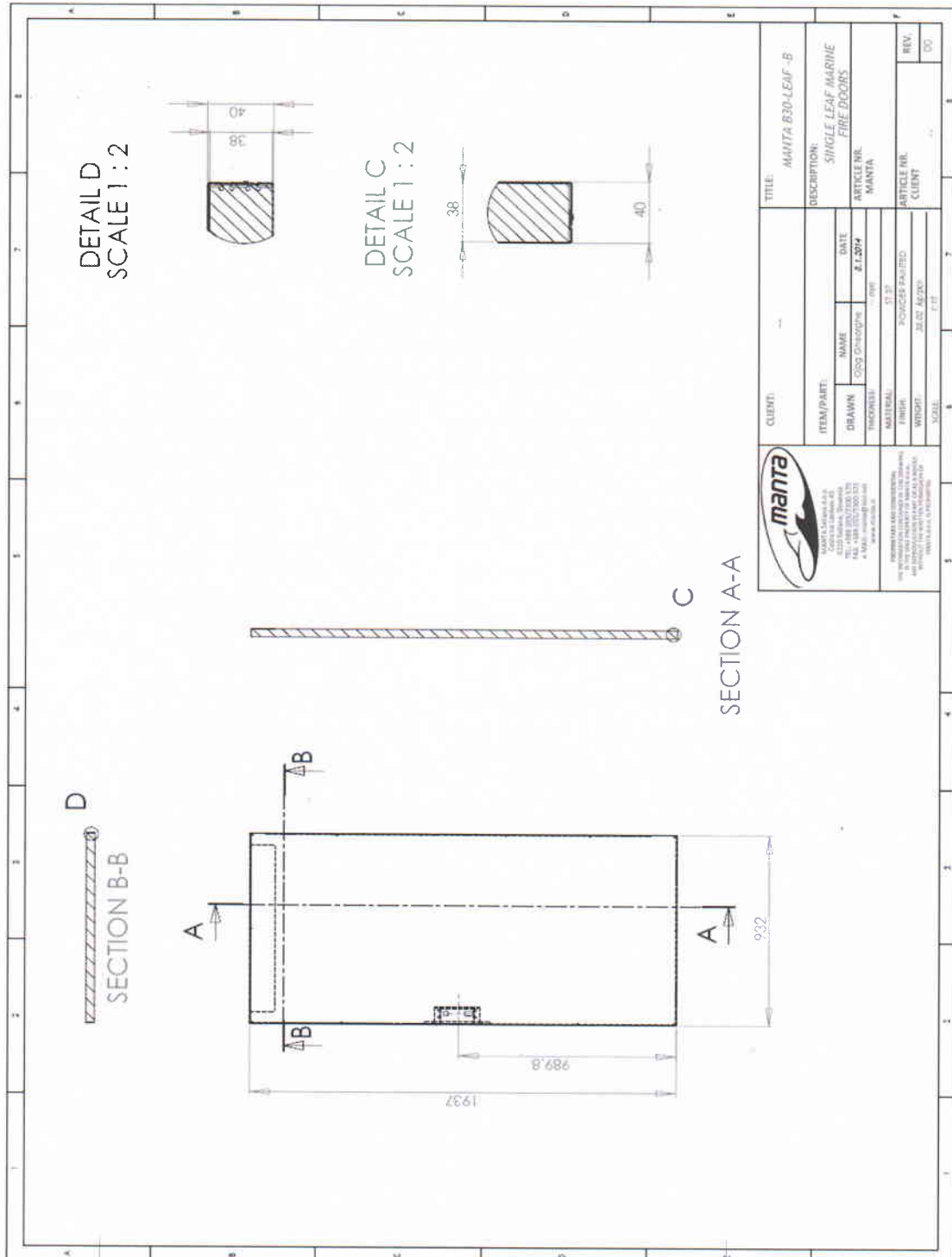


LABORATORY MEASUREMENTS OF AIRBORNE SOUND INSULATION ACCORDING TO THE STANDARD SIST EN ISO 10140-2:2010		ANNEX A Page: 1/1																																													
MANUFACTURER:	MANTA SEŽANA d.o.o.	SPECIMEN:	A-2/14																																												
CLIENT:	MANTA SEŽANA d.o.o.	MEASURED IN	LAB 1, LAB 2																																												
TEST SPECIMEN DELIVERED AND ASSEMBLED BY:	MANTA SEŽANA d.o.o.	DATE:	13/01/2014																																												
TEST SPECIMEN DESIGNATION: <b>Single leaf door with fire resistance MARINE-MANTA B30</b>																																															
COMPOSITION OF THE TEST SPECIMEN: Dimensions of the door leaf: <i>length 1937 mm x width 932 mm x thickness 40 mm</i> Core: <i>38 mm thick stone wool KNAUF MHTB 700, density approximately 150kg/m<sup>3</sup> 0,8 mm thick steel sheet on both sides</i> Door jamb: <i>made of 1,5 thick steel metal</i> Door gasket: <i>installed on the door leaf and on the jamb (Sand:172 E3-AFHMA)/Assotech.</i> Door threshold: <i>it is a component of the door jamb</i> 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:	970 hPa																																														
Static pressure:	55 %																																														
Source room volume:	52 m <sup>3</sup>																																														
Receiving room volume:	50,5 m <sup>3</sup>																																														
<table border="1"> <thead> <tr> <th>Frequency f Hz</th> <th>R (third oct.) dB</th> </tr> </thead> <tbody> <tr><td>50</td><td></td></tr> <tr><td>63</td><td></td></tr> <tr><td>80</td><td></td></tr> <tr><td>100</td><td>19,5</td></tr> <tr><td>125</td><td>21,8</td></tr> <tr><td>160</td><td>22,2</td></tr> <tr><td>200</td><td>24,6</td></tr> <tr><td>250</td><td>22,7</td></tr> <tr><td>315</td><td>22,6</td></tr> <tr><td>400</td><td>29,8</td></tr> <tr><td>500</td><td>38,1</td></tr> <tr><td>630</td><td>41,3</td></tr> <tr><td>800</td><td>43,6</td></tr> <tr><td>1000</td><td>44,5</td></tr> <tr><td>1250</td><td>47,4</td></tr> <tr><td>1600</td><td>49,1</td></tr> <tr><td>2000</td><td>51,1</td></tr> <tr><td>2500</td><td>51,7</td></tr> <tr><td>3150</td><td>50,9</td></tr> <tr><td>4000</td><td>49,0</td></tr> <tr><td>5000</td><td>45,9</td></tr> </tbody> </table>	Frequency f Hz	R (third oct.) dB	50		63		80		100	19,5	125	21,8	160	22,2	200	24,6	250	22,7	315	22,6	400	29,8	500	38,1	630	41,3	800	43,6	1000	44,5	1250	47,4	1600	49,1	2000	51,1	2500	51,7	3150	50,9	4000	49,0	5000	45,9			
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LAYOUT OF THE TEST SPECIMEN



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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.

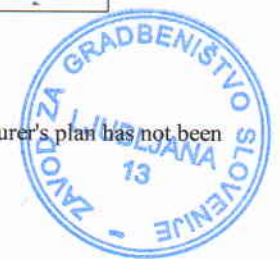


Photo of the specimen-source room (Lab.1)



Photo No. 27655d-08

Detailed view at the lockset



Photo No. 27655d-07

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



Photo No. 27655d-09

