

Electrotechnics & Electronics Department

Noise & Vibrations Testing Laboratory

# TEST REPORT

Number: [REDACTED]

Date: 28.06.2021

Subject: Vibration test of cabin filter

Ordered by: Nordfil LLC

/Name and address/ Alexey Fomin

19<sup>th</sup> Line VO, House 32, Building 3, liter 1  
St. Petersburg, 199106

ORDER		TESTING	
Number	Date	Commenced	Completed
-	30.04.2021	23.06.2021	25.06.2021

Written by:

/First name, last name/

*Zaput*  
/Signature/

Authorized by:

/First name, last name/

*[Signature]*  
/Signature/

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[www.nordfil.ru](http://www.nordfil.ru)

Report contains:

5 pages

CHECKED BY:

KIEROWNIK ZAKLADU  
Elektrotechniki i Elektroniki  
28.06.2021  
mgr inż. Wojciech Sawicz

/Stamp, Date, Signature/

Report to:

Report to:			
N° 1	CUSTOMER	N° 7	
N° 2	[REDACTED]	N° 8	
N° 3	[REDACTED]	N° 9	
N° 4		N° 10	
N° 5		N° 11	
N° 6		N° 12	

### 1. DESCRIPTION AND IDENTIFICATION OF THE TESTED OBJECT

Filter fixed in an HVAC and cabin filter are shown in Fig.1.

Quantity: 1 pc  
 Identification: see in Fig. 1  
 Delivery date: 10.06.2021

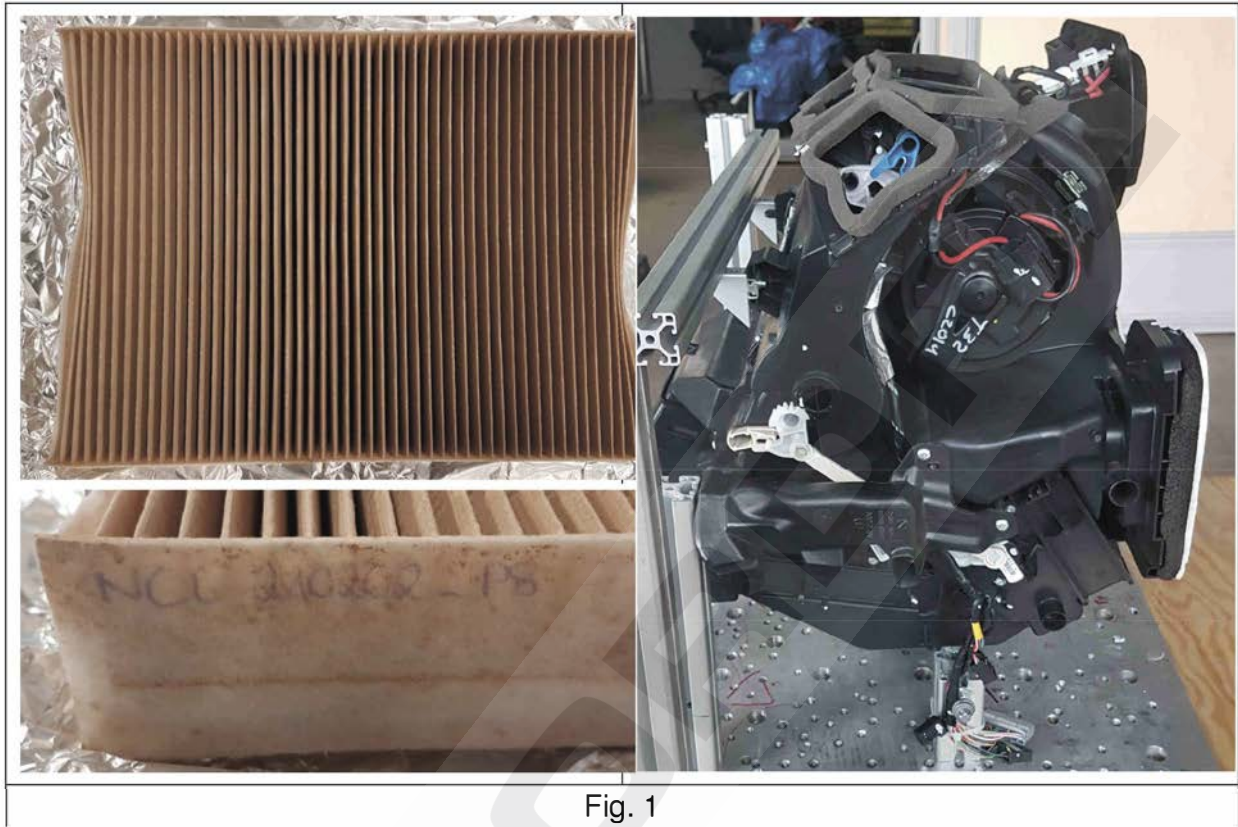


Fig. 1

### 2. RANGE OF THE TEST

Vibration Test according to Client's specification.

### 3. RUN OF THE TESTS

#### 3.1 Vibration test preparation

The clogged filter was weighed before it was fixed in an HVAC and mounted on the vibration jig. The vibration test was performed along Z, X and Y axes – sample on vibration stand is presented in Figs. 2..4 (pages 2..3). The clogged filter was weighed again after vibration test.

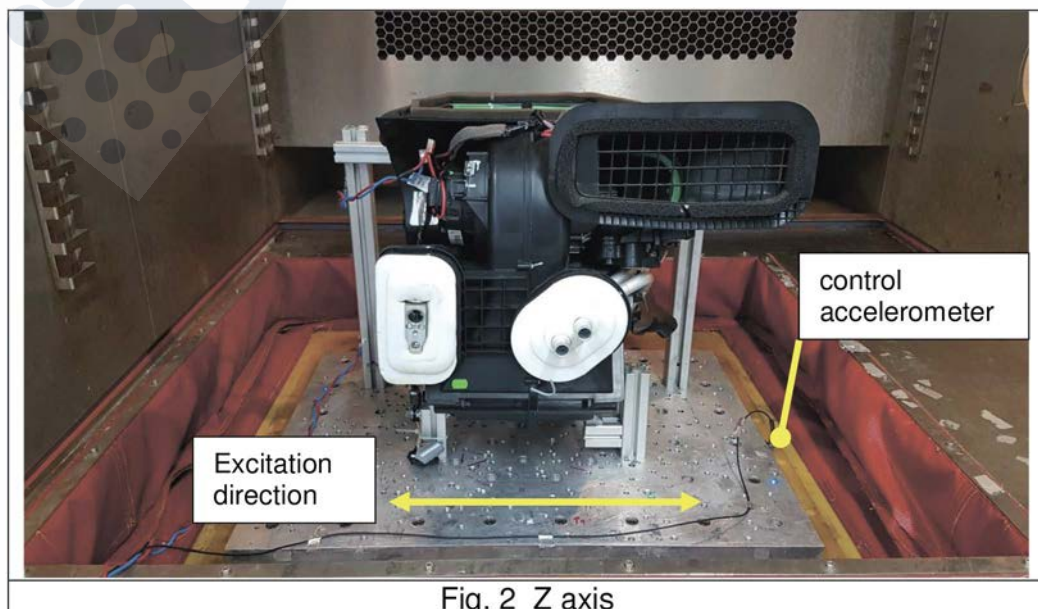


Fig. 2 Z axis

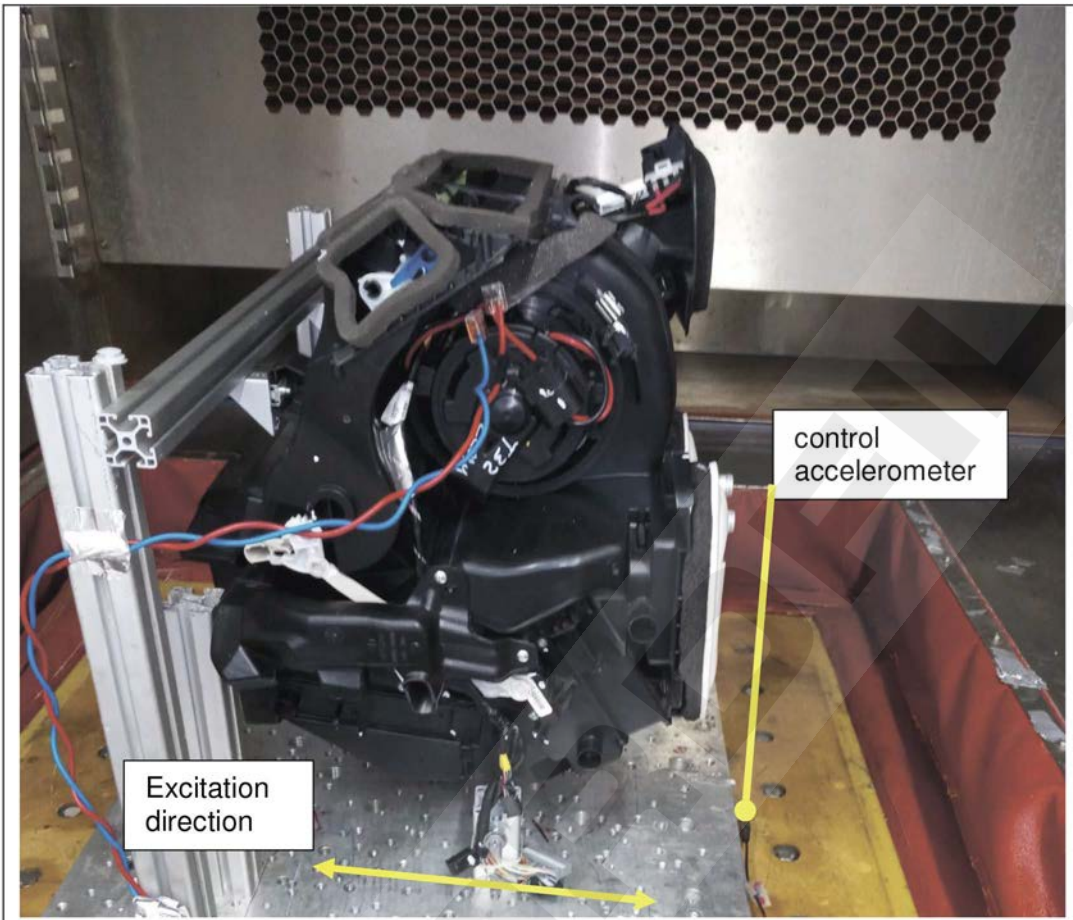


Fig. 3 X axis

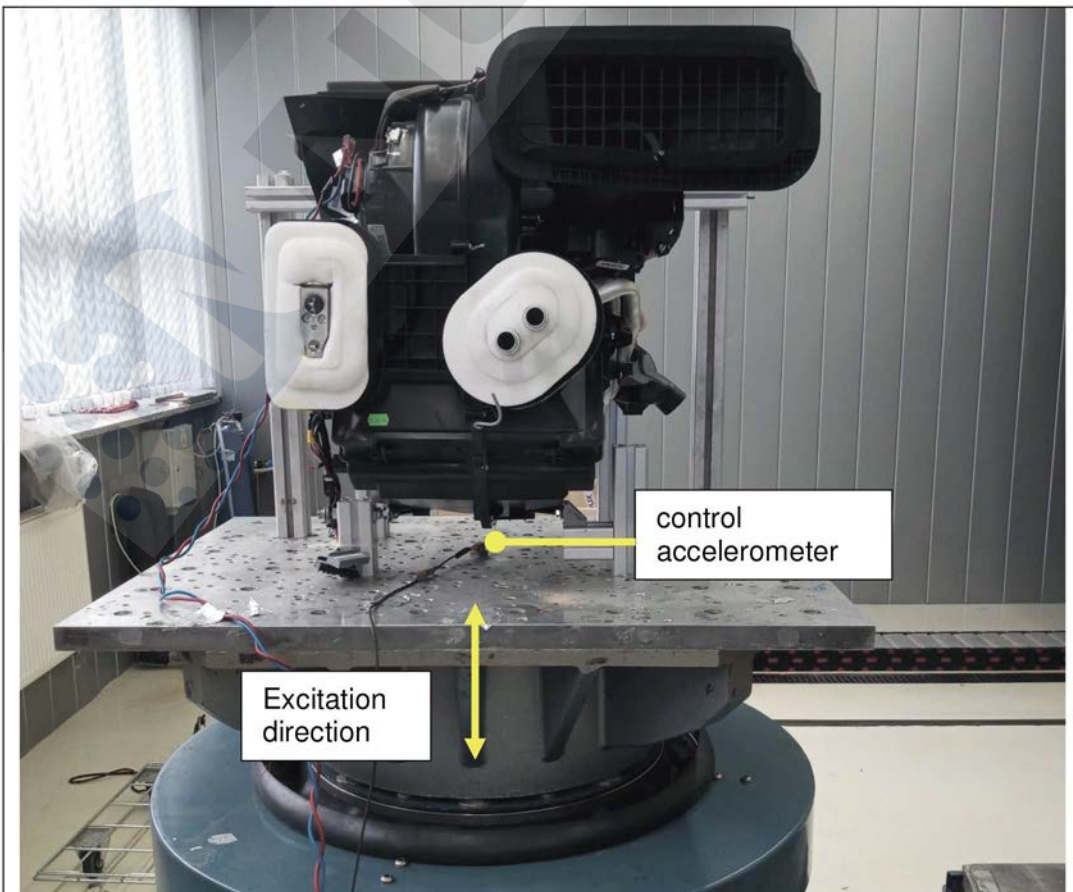


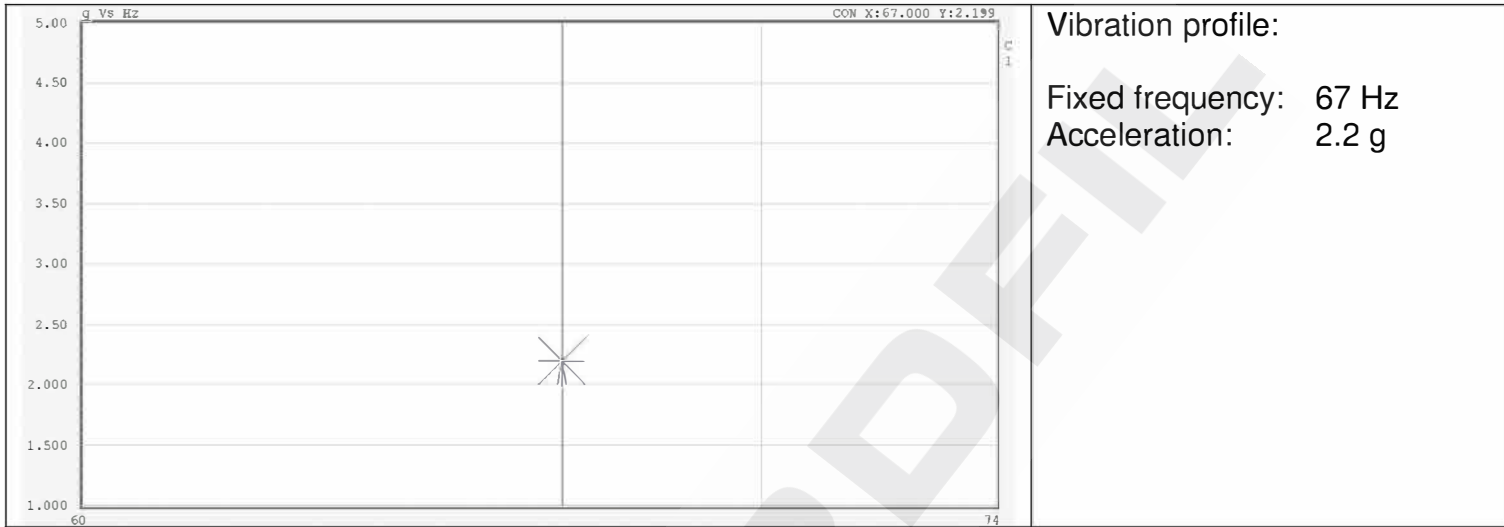
Fig. 4 Y axis

### 3.2 Vibration Test

Test parameters:

- vibration profile: as in Table 1,
- test duration: 6 min per each axis,
- power: 13 V during 5 minutes of vibration test – for each axis,
- test temperature: 23 °C ± 1 °C.

Table 1



### 4. TESTS RESULTS

Any visible damage (crack, deformation) wasn't observed after vibration test. The object after vibration test is shown in Fig. 5. Weight of the clogged filter before and after test is shown in table 2.

Table 2

Object	Weight, g	
	Before vibration test	After vibration test
Clogged filter	94,70	94,31



Fig. 5 Filter after vibration test

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#### 4.1 Test equipment

Identification number	Device	Calibration date	Next calibration
X/0540/BE	Electrodynamic shaker Unholtz-Dickie H560B-16-3	12.2020	12.2021
I/0723/BE	Vibration calibrator PCB 394C06	07.2019	07.2021
I/0673/BE	Accelerometer Endevco type 65HT+10 sn 12823	08.2019	08.2021
B/1170/BMT	Scale WPS3100/C nr 70372/2000	10.2020	10.2022
L/0535/BE	Thermo-hygrometer	07.2019	07.2021

End of the Test Report

