

Project number: M1-G381X-12049-2017/2

TEST REPORT

**Name of the product(s)
and/or the test:** **Airtightness and ring rigidity test of the BlauFAST air duct system
manufactured by Blauberg Ventilatoren GmbH**

Applicant: **Blauberg Ventilatoren GmbH**
52a Aidenbach str. 81379 München Germany

Name of the test standard(s): **EN 12237:2003; ISO 9969**

Place of the test: **ÉMI Nonprofit Llc.**
1113 Budapest, Diószegi út 37.

18. 12.2017

Test results are relevant for the tested samples only.

The test report may be copied only in full volume without the written consent of Laboratory.

The test report consists of 5 numbered pages and 1 annex.

1. DATA

1.1. Manufacturer of the product:

Blauberg Ventilatoren GmbH
52, Aidenbachstr., D-81379 München, Germany

1.2. Production site

Ventilation Systems, PrJSC.
36, Sobornosty str., 08150, Kyiv region, Boyarka, Ukraine

2. TESTS

Date of the test: 07. 11.2017
Participants on the test: Kornél Iglai
Subject of the test: Determination of the airtightness of the BlauFAST air handling elements manufactured by Blauberg Ventilatoren GmbH

Testing devices applied:

Name of testing device	Measuring range of the gauge (if interpretable)	ID-number of gauge	Controlled state of the gauge
Leakage Tester LT600	(0 – 7000) Pa (0 – 55) l/s	509	calibrated 08. 09.2015

2.1. Measurement of airtightness:

To carry out the tests we made two air duct systems (from pipelines DN 75 and DN 63), which were worked up by the Customer. We carried out the measurement of airtightness on the established system with multiple test presses. The measurements were made according to the EN 12237:2003. Results of the test are included in chapter 3.

Structure of the system(s):

The following test systems were built up under labor conditions.

- System DN63-as: The distributing box is made of metal; the connections are made with plastic quick-fit fittings. The air duct is a flexible plastic pipe. The quick couplings have a rubber seal that is applied with a special paste at the assembly. There are silicon gaskets at the transformer sections. The photos 1 and 2 show the measurement layout.
- System DN75-as: The distributing box is made of metal; the connections are made with plastic quick-fit fittings. The air duct is a flexible plastic pipe. The quick couplings have a rubber seal that is applied with a special paste at the assembly. There are silicon gaskets at the transformer sections. The photos 3 and 4 show the measurement layout.

Required leakage class: „D”
Working pressure $p_{üz}$ [Pa]: - (the air duct system of the manufacturer is classified)

Duration of the test: 300[s]

The systems were built up by: Ventilation Systems, PrJSC.

Manufacturer of the systems: Blauberg Ventilatoren GmbH.



Photo no. 1: system DN63

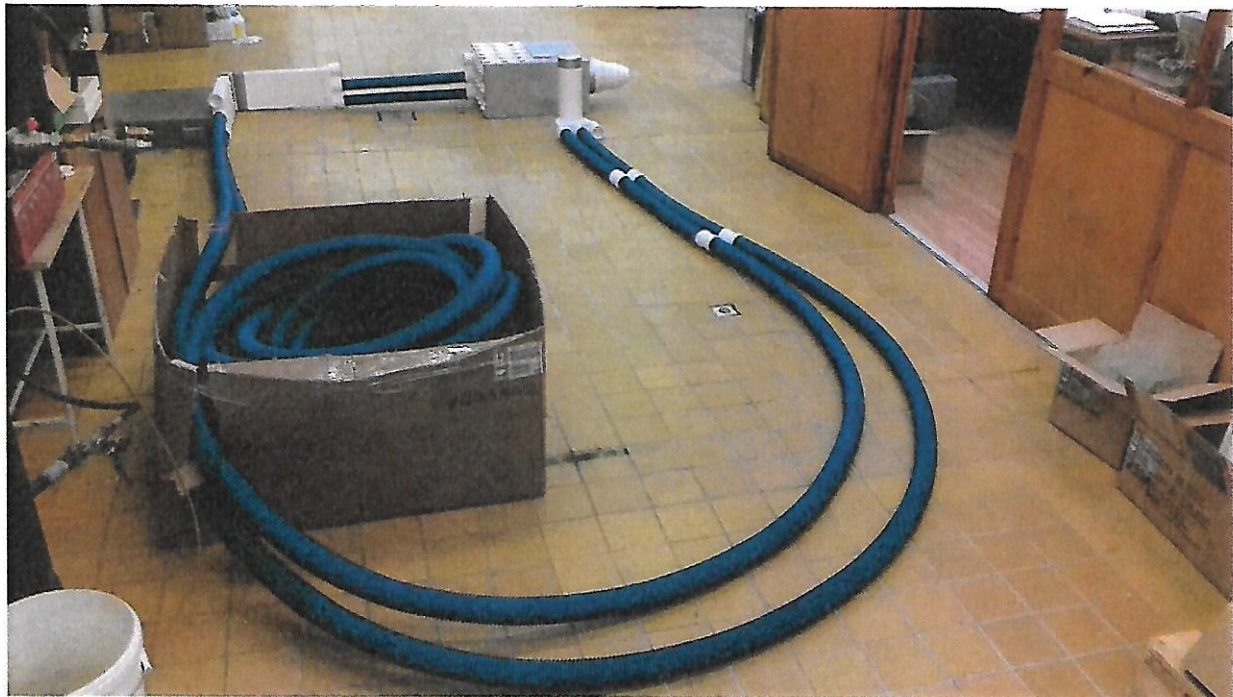


Photo no. 2: system DN63

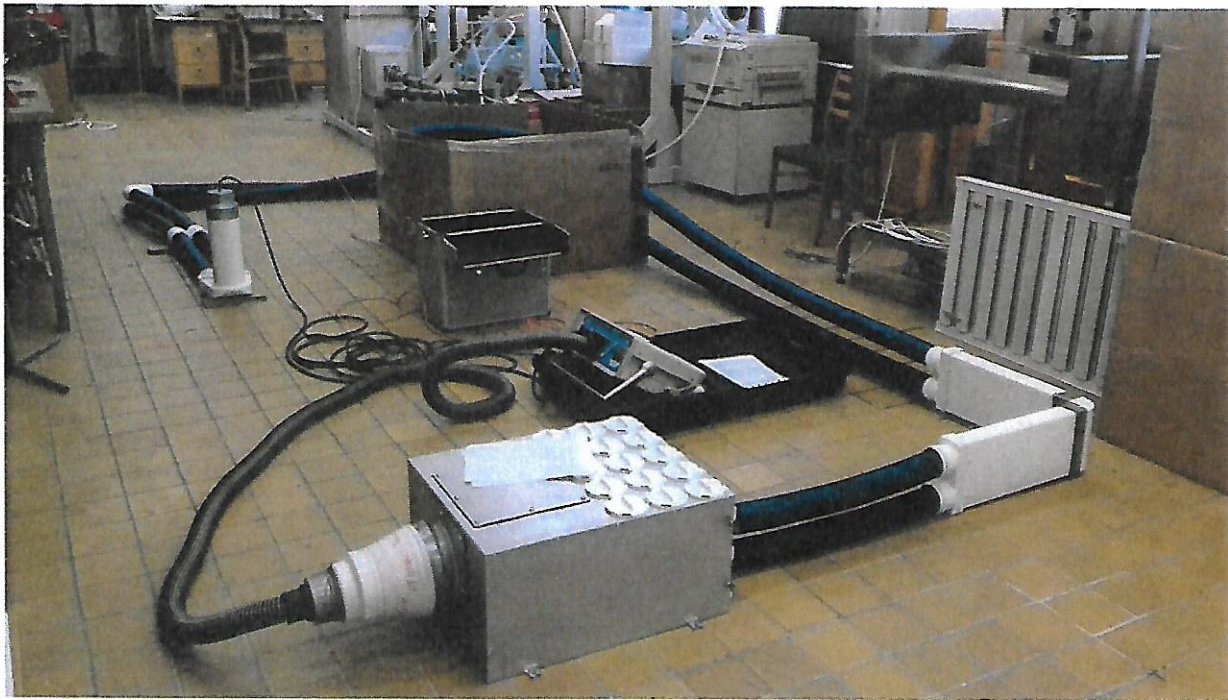


Photo no. 3: system DN75

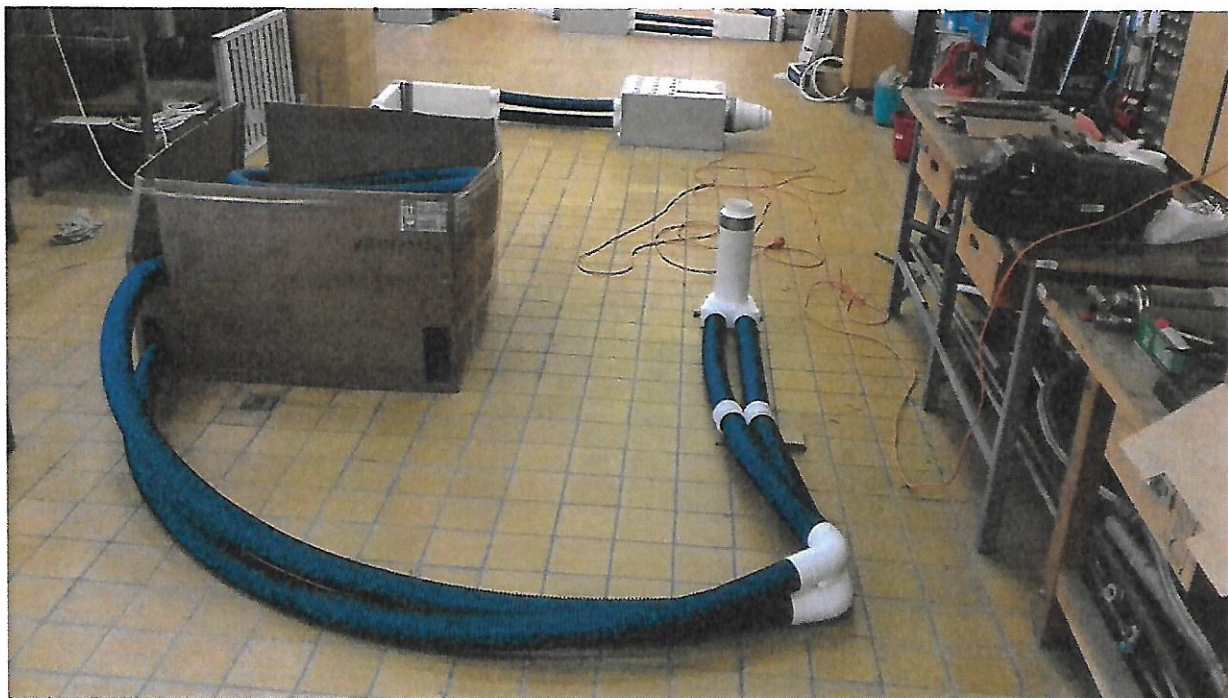


Photo no. 4: system DN75

3. RESULTS

3.1. Measured and calculated data:

System:	Surface: A [m ²]	Connection frame length: L [m]	L/A*: [m ⁻¹]	Test pressure: p _{test} [Pa]	Measured test pressure: P _{test} [Pa]	in case of class „D”		Measured leakage: q _v [l/s]	Leakage class achieved:
						Leakage limit value: f _{max} [l/s/m ²]	Leakage limit value calculated for the system: f _{max} [l/s]		
DN63	13.80	15.81	1.15	500	501	0.057	0.784	0.564	D
				1000	1002	0.089	1.232	0.598	D
				1500	1496	0.116	1.598	0.808	D
				2000	2013	0.140	1.938	1.019	D
				-750	-754	0.074	1.024	0.542	D
DN75	13.70	17.10	1.25	500	500	0.057	0.778	0.490	D
				1000	1000	0.089	1.221	0.776	D
				1500	1503	0.116	1.592	1.065	D
				2000	2003	0.140	1.918	1.394	D
				-750	-749	0.074	1.012	0.699	D

* According to EN 12237:2003 the toleranca of L/A is 1...1.5

Notes:

- We carried out the measurement at test pressure of 1500 [Pa] on request of the customer.
- We did not carry out separate measurement at test pressure of -500 [Pa], since the system reached the „D” airtightness class at test pressure of -750 [Pa].

4. DECLARATION

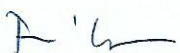
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5. ANNEXES

Test report on ring rigidity no. M1-G381X-12049-2017/1-2 (7. pages)

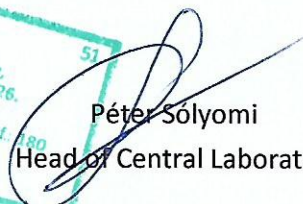
Budapest, December 18, 2017

Test made and the report compiled by:


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