BELGIAN BUILDING RESEARCH INSTITUTE
INSTITUTION RECOGNISED BY APPLICATION OF THE DECREE-LAW OF 30 JANUARY 1947

All tests in this report are executed according to the ISO 9001 certified Quality management system of the BBRI

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TEST REPORT

Laboratory **Air Quality and Ventilation**	**O/References**	DE 633X203 VE 293/3/EN/EXT Page 1/5

Date of order of the extension	30-06-2014	**Samples registration**	N-2014-10-012
		Date of reception of samples	07-02-2014
Date of issue of the report	02-06-2014	**Date of the test**	12-03-2014
Test carried out	Measurement of the casing leakage of a damper or valve		
References	NBN EN 1751:2014 Ventilation for buildings - Air terminal devices - Aerodynamic testing of dampers and valves		

This test report contains 5 pages and may only be reproduced in its entirety.
Each page of the report has been stamped (in red) by the laboratory and initialed by the head of laboratory.
The results and findings are only valid for the tested samples.

☐ *No sample*
☐ *Sample(s) subjected to destructive test*
☒ *Sample(s) to be removed from our laboratories 30 calendar days after sending of the report,* save in the case of a further written request.

C.S.T.C. W.T.C.B. VE

In charge of the tests
Philippe Voordecker

Head of laboratory
Christophe Delmotte, Ir.

Test procedure

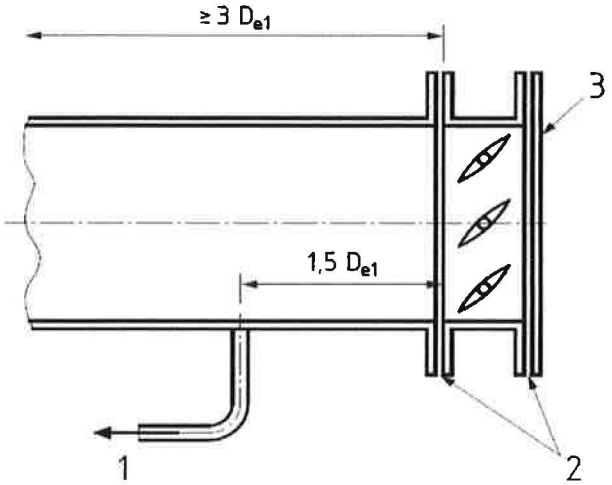
The determination of the casing leakage of a damper or valve is carried out according to NBN EN 1751:2014 «Ventilation for buildings - Air terminal devices - Aerodynamic testing of dampers and valves».

The test installation comprises the following:
- an adjustable air supply incorporating an air flow rate measuring device;
- a pressure measuring device;
- an airtight test duct which supports the damper or valve subject to the test;
- a blanking plate for the damper or valve.

The test is carried out by subjecting the casing of the damper or valve to a pressure of 2000 Pa. The pressure is then lowered in stages. The air flow rate is recorded at each of the pressure stages.

If temperature and barometric pressure are different from the standard conditions (20 °C and 101325 Pa), the measured airflows are corrected accordingly.

Normalized values are determined through a linear regression.



Key

1 to manometer
2 sealed joints
3 blanking plate

Principle of test installation according to NBN EN 1751:2014

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Description of the sample
Iris damper with a nominal diameter of 200 mm (IRIS 200)

Date of test: 12-03-2014

Measuring devices:	Calibration:	Organization:
Platon GTLK	22-05-1989	Platon
Airflow TA460-P	18-06-2013	TSI Airflow
Testo 720 n°5	13-11-2013	CSTC-WTCB
Airflow TA460-P	18-06-2013	TSI Airflow

Measurement conditions:			**Reference casing area:**		
Air temperature	20,6	°C	Perimeter of the damper	0,628	m
Barometric pressure	101420	Pa	Reference area	0,628	m²

Measured values

Static pressure p_s (Pa)	Leakage air flow $q_{vL\ meas}$ (l/s)
200	0,009
400	0,014
600	0,018
800	0,023
1000	0,028
1200	0,033
1400	0,035
1600	0,040
1800	0,043
2000	0,047

Corrected values

Case leakage air flow q_{vLCA} (l/s.m²)
0,015
0,023
0,029
0,037
0,045
0,052
0,056
0,064
0,068
0,074

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Normalized values

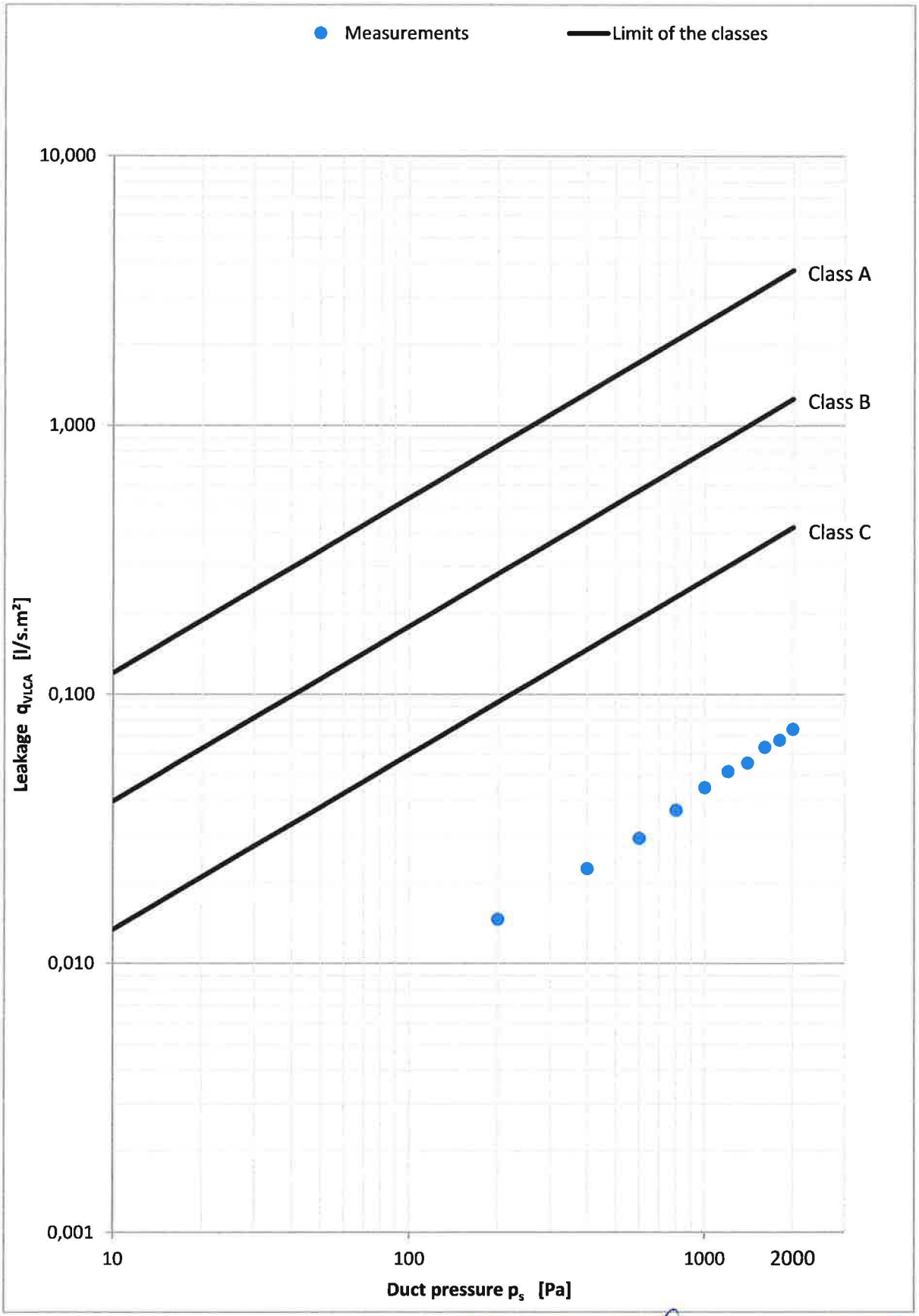
Classification of case leakage: Class C

Static pressure (Pa)	Leakage air flow (l/s)
250	0,010
500	0,017
1000	0,028
1500	0,037
2000	0,046

Flow rate / pressure characteristic

$q = C\ \Delta p^n$ (l/s)

$C =$ 0,000195 (l/s. Pa^n)
$n =$ 0,7186 (-)


Measurements
Limit of the classes
10,000
1,000
0,100
0,010
0,001
Class A
Class B
Class C
Leakage q_{VLCA} [l/s.m²]
10
100
1000
2000
Duct pressure p_s [Pa]

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C.S.T.C.
W.T.C.B.
VE