

AIR PERMEABILITY TEST REPORT

FOR BUILDING: -----

CARRIED OUT FOR: -----

DATE: 04.05.21

TARGET AIR PERMEABILITY: **2.00 ach@50Pa**
(for AECB Retrofit performance standards)

TEST RESULT: **N50 1.36 ach@50pa**
(Q50 1.24 m³/hr/m²@50Pa)

The test result is the average of the Depressurisation and Pressurisation tests.

This building passes the pressure test for AECB Retrofit performance standards

This report is presented to provide the results of the air permeability depressurisation test carried out on the building identified above to assess the level of air tightness in accordance with the applicable Approved Document L1A or L2A of the 2010 Building Regulations for England and Wales, the Technical Booklet Part F1 or F2 in Northern Ireland, or Section 6 of the Domestic or Non-Domestic Handbook in Scotland, AECB Building Standards, Passivhaus Standards

PRODUCED BY:

IAIN RITCHIE
RITCHIE and RITCHIE
t: 0345 6525 800
e: ritchie@ritchieandritchie.co.uk
www.ritchieandritchie.co.uk

Test Reference No.
210504-1835-01

BUILDING LEAKAGE TEST

Ritchie and Ritchie
Air Tightness Testers of Buildings
Based in Cheshire and Yorkshire providing a nationwide service
www.ritchieandritchie.co.uk
e: ritchie@ritchieandritchie.co.uk,
Phone: 0345 6525 800

Date of Test: 04.05.21
Test File: 210504-1835-01D

Technician: IG Ritchie

Customer: ---

Phone:
Fax:

Building Address: Semi-detached dwelling

Test Results at 50 Pascals:

V50: Airflow (m³/h) 248 (+/- 0.6 %)
n50: Air Changes per Hour (1/h) 1.36
w50:
q50: m³/(h*m² Surface Area) 1.24

Leakage Areas:

91.2 cm² (+/- 4.1 %) Canadian EqLA @ 10 Pa or 0.46 cm²/m² Surface Area
46.7 cm² (+/- 6.3 %) LBL ELA @ 4 Pa or 0.23 cm²/m² Surface Area

Building Leakage Curve:

Air Flow Coefficient (Cenv) = 16.6 (+/- 9.5 %)
Air Leakage Coefficient (CL) = 16.7 (+/- 9.5 %)
Exponent (n) = 0.691 (+/- 0.024)
Correlation Coefficient = 0.99650

Test Standard:

EN 13829 Test Mode:

Depressurization

Type of Test Method:

B

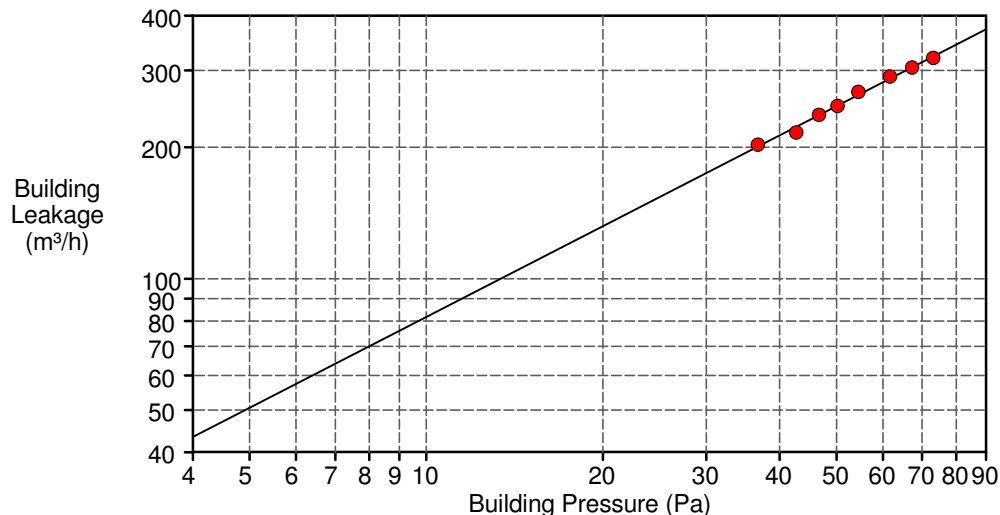
Regulation complied with:

ADL1A

Equipment:

Model 3 Minneapolis Blower Door, S/N 13376

Inside Temperature:	19 °C	Volume:	182 m ³
Outside Temperature:	13 °C	Surface Area:	200 m ²
Barometric Pressure:	99300 Pa	Floor Area:	
Wind Class:	2 Light Breeze	Uncertainty of	
Building Wind Exposure:	Highly Protected Building	Building Dimensions:	5 %
Type of Heating:	n/a	Year of Construction:	2021
Type of Air Conditioning:	n/a		
Type of Ventilation:	Extractors only		



BUILDING LEAKAGE TEST Page 2

Date of Test: 04.05.21 Test File: 210504-1835-01D

Comments

TESTING STANDARDS

Testing has been conducted in accordance with Technical Standard 1 "Measuring air permeability of building envelopes" produced by The Air Tightness Testing and Measurement Association (ATTMA).

Tested by Iain Ritchie, IATS Registration number: 0019
Addr. Becketts, Smithy Lane, Great Budworth, Cheshire, CW9 6HL

Signed:

Date: 04.05.21



EQUIPMENT AND CALIBRATION DETAILS

Energy Conservatory Model 3 Serial No.13376, Calibration date: 27/01/2021
Energy Conservatory Pressure Flow gauge, DG700, Serial No.6451.4.700, Calibration date: 27/01/2021
Barometer: Testo 511 s/n:39111714/411, Calibration date:27/01/2021
Thermometer: KM330 s/n:703721, Calibration date 27/01/2021

TESTING STRATEGY

Maximum allowable design air permeability for AECB accreditation: 2.00 m³/hr/m²@50pa. AECB accreditation requires both De-pressurisation and Pressurisation tests.
This is the De-pressurisation test.

TEST PREPARATION

- fan installed in front doorway
- extractors sealed

BUILDING LEAKAGE TEST Page 3

Date of Test: 04.05.21 Test File: 210504-1835-01D

Comments (Continued)

MAIN LEAKAGE POINTS
- no significant leakages

Data Points: Depressurization - Data Entered Manually

Nominal Building Pressure (Pa)	Fan Pressure (Pa)	Nominal Flow (m ³ /h)	Temperature Adjusted Flow (m ³ /h)	% Error	Fan Configuration
-0.2	n/a				
-73.2	75.0	323	320	-0.8	Ring C
-67.4	68.0	307	305	-0.2	Ring C
-61.8	62.0	293	290	1.1	Ring C
-54.6	53.0	270	268	1.5	Ring C
-50.3	46.0	251	249	-0.1	Ring C
-46.8	42.0	240	237	0.2	Ring C
-42.8	35.0	218	216	-3.0	Ring C
-36.8	31.0	205	203	1.1	Ring C
0.0	n/a				
Test 0 Baseline (Pa):		p01- = -0.5	p01+ = 0.1	p02- = -0.8	p02+ = 0.6

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Date of Test: 04.05.21
Test File: 210504-1835-01P

Technician: IG Ritchie

Customer: ---

Phone:
Fax:

Building Address: Semi-detached dwelling

Test Results at 50 Pascals:

V50: Airflow (m³/h) 247 (+/- 0.3 %)
n50: Air Changes per Hour (1/h) 1.36
w50:
q50: m³/(h*m² Surface Area) 1.24

Leakage Areas:

94.5 cm² (+/- 2.1 %) Canadian EqLA @ 10 Pa or 0.47 cm²/m² Surface Area
49.6 cm² (+/- 3.2 %) LBL ELA @ 4 Pa or 0.25 cm²/m² Surface Area

Building Leakage Curve:

Air Flow Coefficient (Cenv) = 18.4 (+/- 4.8 %)
Air Leakage Coefficient (CL) = 18.3 (+/- 4.8 %)
Exponent (n) = 0.665 (+/- 0.012)
Correlation Coefficient = 0.99902

Test Standard:

EN 13829 Test Mode:

Pressurization

Type of Test Method:

B

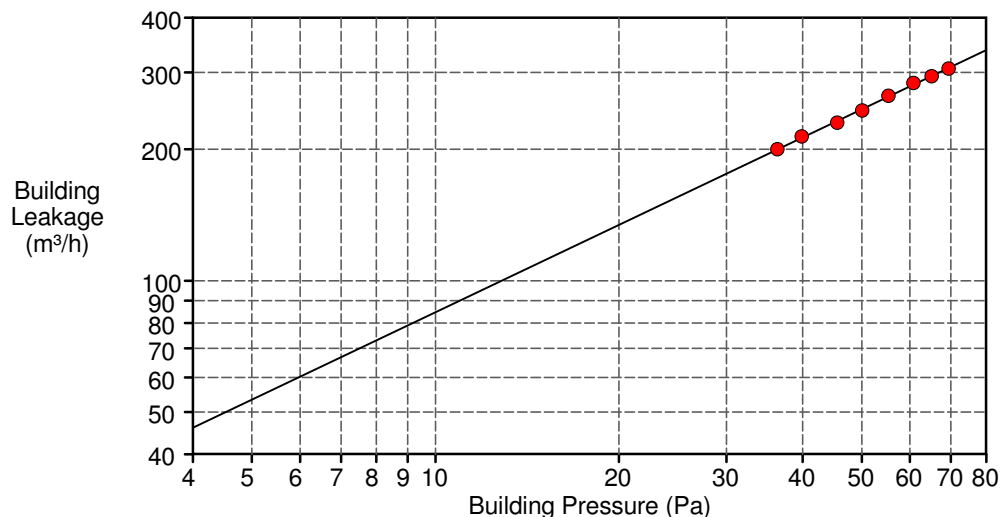
Regulation complied with:

ADL1A

Equipment:

Model 3 Minneapolis Blower Door, S/N 13376

Inside Temperature:	19 °C	Volume:	182 m ³
Outside Temperature:	13 °C	Surface Area:	200 m ²
Barometric Pressure:	99300 Pa	Floor Area:	
Wind Class:	2 Light Breeze	Uncertainty of	
Building Wind Exposure:	Highly Protected Building	Building Dimensions:	5 %
Type of Heating:	n/a	Year of Construction:	2021
Type of Air Conditioning:	n/a		
Type of Ventilation:	Extractors only		



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EQUIPMENT AND CALIBRATION DETAILS

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Thermometer: KM330 s/n:703721, Calibration date 27/01/2021

TESTING STRATEGY

Maximum allowable design air permeability for AECB Retrofit standard: 2.00 m³/hr/m²@50pa. AECB Retrofit standard requires both De-pressurisation and Pressurisation tests.
This is the Pressurisation test.

TEST PREPARATION

- fan installed in front doorway
- extractors sealed

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Comments (Continued)

MAIN LEAKAGE POINTS
- no significant leakages

Data Points: Depressurization - Data Entered Manually

Nominal Building Pressure (Pa)	Fan Pressure (Pa)	Nominal Flow (m ³ /h)	Temperature Adjusted Flow (m ³ /h)	% Error	Fan Configuration
-0.0	n/a				
69.4	66.0	303	306	-0.3	Ring C
65.1	61.0	291	294	-0.1	Ring C
60.8	57.0	281	284	0.9	Ring C
55.3	50.0	262	265	0.4	Ring C
50.1	43.0	243	245	-0.8	Ring C
45.6	38.0	228	230	-0.9	Ring C
39.9	33.0	212	214	0.7	Ring C
36.4	29.0	198	200	0.1	Ring C
0.1	n/a				
Test 0 Baseline (Pa):		p01- = -0.2	p01+ = 0.5	p02- = -0.2	p02+ = 0.3