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BLOWER DOOR TEST REPORT

Save money and protect the environment

TEST LOCATION

Premises Tested:	Barry Fingleton	**Test Operator:**	Steve Melling
	Cullenagh	**Date of Test:**	25th July 2008
	Portlaoise	**Building Type:**	Two Storey
	Co. Laois	**Structure:**	Integrated Concrete Form (ICF)

Test Result	**Air Changes/Hour @ 50 Pa ACH/hr**	**1.095**

BUILDING SPECIFICATIONS

Construction	Year of Construction	2007
	External walls	ICF 300mm
	Roof	Pitched
	Floor	Solid Concrete
Dimensions	Floor Area m^2	172
	Volume m^3	913
	Envelope m^2	538
Heating System	Gas	
Ventilation System	Heat Recovery unit	

BLOWER DOOR FAN TEST APPARATUS

Blower Fan and Instrumentation	Retrotech 2000 series
Software	Door Fan 3.0 Zone Leakage Analysis Software (Version 3.163)
System	Certificate Number: 3032
Fan Serial	S00667 expires 03-04-2013
Flow Gauge Serial	099255B expires 03-04-2009

Test Code: 2
Performed On: 2008/07/25
Operator Position: In the Room
Direction(s): Test both directions
Test Standard: EN 13829

Temporarily Sealed Openings:

- **All windows/Doors closed.**
- **Cooker Extraction Fan**
- **Heat Recovery Inlet and Outlet sealed from inside the Unit.**
- **Chimney Sealed**

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ENVIRONMENTAL CONDITIONS

		Before		After
Barometric Pressure		101325 Pa		101325 Pa
Relative Humidity		65%		72%
Wind Speed		0.5m/s		0m/s
Inside Temperature		26 °C		25 °C
Outside Temperature		23 °C		23 °C
Static Pressure	P01+	0.0 Pa	P02+	0.13 Pa
	P01-	-0.67 Pa	P02-	-0.82 Pa
	P01	-0.67 Pa	P02	-0.73 Pa

RESULTS

The average of the positive and negative zero-flow pressure difference ΔP01 values were recorded over a period of 30 seconds. In compliance with IS EN 13829:2000 all values were within the 5 pa limit as prescribed by the standard for 'before and after' test measurements.

Static pressure points gathered before test.

-0.74	-0.57	-0.5	-0.72	-0.74	-0.75	-0.75	-0.43	-0.84	-0.61

Depressurise Fan Range - Ring C4, from 50Pa to 10Pa

Room Pressure (Pa):	-50.44	-41.68	-34.04	-29.34	-24.15	-20.28	-17.67	-14.81	-13.06	-10.44
Corrected Room Pr (Pa):	49.74	40.98	33.34	28.64	23.45	19.58	16.97	14.11	12.36	9.74
Flow Pressure (Pa):	171.10	131.54	102.62	82.31	64.26	51.09	40.14	32.35	25.73	19.94
Corrected Flow Pr (Pa):	171.1	131.5	102.6	82.3	64.3	51.1	40.1	32.4	25.7	19.9
Measured Flow (m^3/h):	986.3	857.0	752.2	670.6	590.3	525.0	464.1	416.2	370.6	326.1
Best Fit Flow (m^3/h):	984.0	861.5	747.7	673.6	587.3	518.9	470.4	414.2	378.3	321.3
Error (%):	.2	-.5	.6	-.5	.5	1.2	-1.3	.5	-2.1	1.5

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Pressurise Fan Range - Ring C4 , from 50Pa to 10Pa

Room Pressure (Pa):	49.43	41.12	33.26	28.39	23.37	19.27	16.53	14.36	11.74	9.81
Corrected Room Pr (Pa):	50.13	41.82	33.96	29.09	24.07	19.97	17.23	15.06	12.44	10.51
Flow Pressure (Pa):	226.51	180.52	140.59	114.65	93.39	74.00	59.04	51.06	38.14	33.78
Corrected Flow Pr (Pa):	226.5	180.5	140.6	114.7	93.4	74.0	59.0	51.1	38.1	33.8
Measured Flow (m³/h):	1014.1	891.7	776.3	692.1	620.9	546.4	479.4	444.4	374.6	356.7
Best Fit Flow (m³/h):	1013.0	894.3	775.2	697.0	612.1	538.3	486.5	443.5	388.9	346.4
Error (%):	.1	-.3	.1	-.7	1.4	1.5	-1.5	.2	-3.8	2.9

Static pressure points gathered after test

-0.44	0.13	-0.46	-0.09	-0.74	-1.71	-1.37	-0.89	-1.36	-0.36

DATA ANALYSIS

	Slope (n)	Intercept (C)	Correlation (%)
Best Fit: Least Squares		(m³/h)	
Depressurize	0.5452	298.4698	86.26
Pressurize	0.5089	369.9343	93.23
Average	0.5271	334.202	89.75

		Units	Depressurize	Pressurize	Average
Air Flow Coefficient	(CL)	(m³/h)	67.289	68.883	
Air flow Exponent	(n)		0.6867	0.6867	
Confidence Factor		(%)	99.96	99.94	
Flow@ 50 Pa		(m³/h)	987.6	1011	999.4
Air Changes/Hour @ 50 Pa	(ACH)	(/hr)	1.082	1.11	**1.095**
Air Permeability@ 50 Pa		(m³/h.m²)	1.84	1.88	1.86
Specific Leakage Rate @ 50 Pa	(SLR)	(m³/h.m²)	5.74	5.88	5.81

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BENCHMARKS

Air Changes/Hour @ 50 Pa	ACH/hr
Passive House Standard	0.6
Tested Dwelling/Building	**1.095**
Input - Dwelling Energy Assessment Procedure (DEAP)	1.095

Air Permeability@ 50 Pa	($m^3/h.m^2$)
Building Regulations Part-L	10.0
Tested Dwelling/Building	**1.86**

COMMENTS

Door Fan 3.0 Zone Leakage Analysis Software (Version 3.207)
By: Retrotec Energy Innovations Ltd (Canada).

This software conforms to the EN 13829 testing standard