



Establishing the size of the air test required for the building to be tested

This is relatively simple, as the size of the fan determines how much air the fan can blow into the building in 1 second. The air blown in equals the air leaking out and linking this to the requirements of Part L2 enables HRS to determine whether a PORTAfan, MIDIfan or MEGAfan is required.

Examples of air test rigs for different size buildings:

Building of 1000m² floor area, assume 2 storeys, 20*25m on plan and average 10m wall height.

Envelope area	= Area of ground floor	=	500
	+ Area of roof	=	500
	+ Area of walls	=	900
Envelope area		=	1,900 m ²

Assuming the building is just complying with the worst acceptable standard of Part L and is leaking at 10m³/(h.m²) at 50 Pascals.

$$\begin{aligned} \text{The total volume of air leaking out of the building} &= 1,900 * 10 \\ &= 19,000 \text{ m}^3 \cdot \text{hour}^{-1} \\ &= 5.3 \text{ m}^3 \cdot \text{second}^{-1} \end{aligned}$$

ATTMA TS1 states that the air test rig should provide a minimum of 80% of the volume flow rate. The air test rig must have a volume flow rate up to 80% of 5.3 m³.second⁻¹, 4.24 m³.second⁻¹.

The HRS PORTAfan has been calibrated to BS848 with a volume flow rate between 2.0 – 4.0 m³.second⁻¹.

NOTE: The photograph adjacent shows 4 PORTAfans built into a double doorway.

The HRS PORTAfan has been calibrated to BS848 with a volume flow rate between 2.0 – 4.0 m³.second⁻¹.



Retail Air Test

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Building of 5000m² floor area, assume 50*100m on plan and average 8m wall height.

Envelope area	= Area of ground floor	=	5,000
	+ Area of roof	=	5,000
	+ Area of walls	=	2,400
Envelope area	=		12,400m ²

Assuming the building is just complying with the worst acceptable standard of Part L and is leaking at 10m³/(h.m²) at 50 Pascals.

The total volume of air leaking out of the building = 12,400 * 8 = 99,200 m³.hour⁻¹ = 27.5 m³.second⁻¹

ATTMA TS1 states that the air test rig should provide a minimum of 80% of the volume flow rate. The air test rig must have a volume flow rate up to 80% of 27.5 m³.second⁻¹, 22.0 m³.second⁻¹

The HRS MIDIfan has been calibrated to BS848 with a volume flow rate between 2.5 – 33.0 m³.second⁻¹.

The HRS MIDIfan has been calibrated to BS848 with a volume flow rate between 2.5 – 33.0 m³.second⁻¹.



Air Tightness Test - MIDI fan

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Building of 15,000m² floor area assume 150*100m on plan and average 12 m wall height; including 3 storey office areas.

Envelope area	= Area of ground floor	=	15,000
	+ Area of roof	=	15,000
	+ Area of walls	=	6,000
Envelope area		=	36,000 m ²

Assuming the building is just complying with the worst acceptable standard of Part L and is leaking at 10m³/(h.m²) at 50 Pascals. The total volume of air leaking out of the building = 36,000 * 10 = 360,000 m³.hour⁻¹ = 100 m³.second⁻¹.

ATTMA TS1 states that the air test rig should provide a minimum of 80% of the volume flow rate. The air test rig must have a volume flow rate up to 80% of 100 m³.second⁻¹, 80 m³.second⁻¹.

The HRS MEGAfán has been calibrated to BS848 with a volume flow rate between 20 – 85 m³.second⁻¹.

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Megafan Air Test—IKEA, Leeds

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