

WHY EXTRACTOR FANS FAIL

It's often the installation,
not the fan.

Four real faults. One simple lesson: if airflow
is not measured, failure can hide in plain
sight.

INSIDE THIS FEATURE

- 01 Wrong fan
- 02 Crushed ductwork
- 03 Slightly unattached duct
- 04 Backwards damper



CALIBRATED AIRFLOW TESTING

It can sound fine. It can look fine. It can still be moving almost no air.

Airflow is affected by the complete installation: the fan, its setting, every bend and joint, the duct material, the external terminal and the route available for replacement air.

01

SOUND

A motor running proves only that the motor has power.

02

RATING

A box figure is not the airflow achieved after installation.

03

MEASUREMENT

A calibrated test confirms what the system actually delivers.

REAL FAULT 01 / FALSE ECONOMY

THE WRONG FAN

BATHROOM TARGET

15 L/s

FAN CAPABILITY

14-15 L/s



01

The installed fan was a very low-cost model with almost no spare capacity.

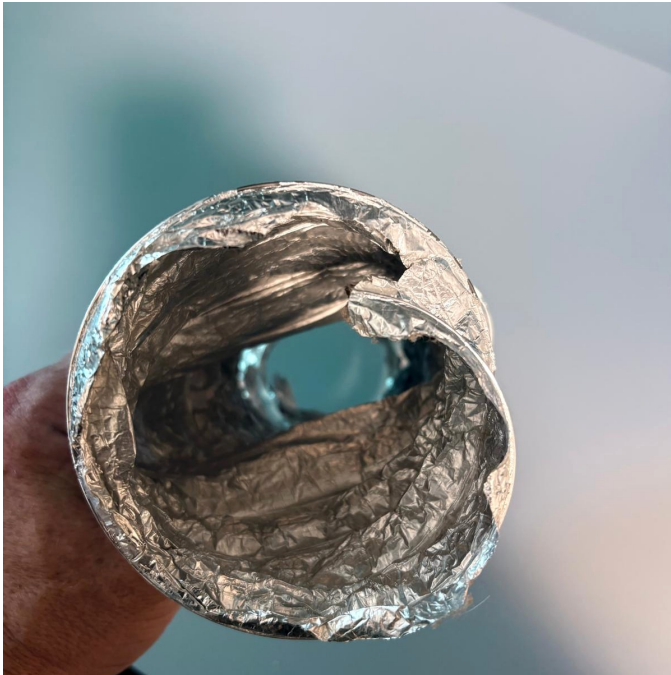
Ductwork, bends, shutters and the outside terminal then added resistance the fan could not overcome.

FALSE ECONOMY

Paying a little more for the right fan can cost far less than future mould, damp and damaged finishes.

A POWERFUL FAN CANNOT BREATHE

Flexible ducting can appear connected while folds, kinks and compression dramatically reduce the free area available for air to move.



02

WHAT THE PHOTO SHOWS

The flexible duct has been crushed and folded in on itself, leaving a much smaller opening than the fan connection.

The restriction increases system resistance. The motor may still run normally, but the airflow reaching the room can fall sharply.

CONNECTED DOES NOT MEAN CLEAR

BETTER PRACTICE

01

SHORT

Keep the route as short as practicable.

02

SMOOTH

Avoid compression, sharp bends and sagging.

03

SUPPORTED

Secure the duct so its full area remains open.

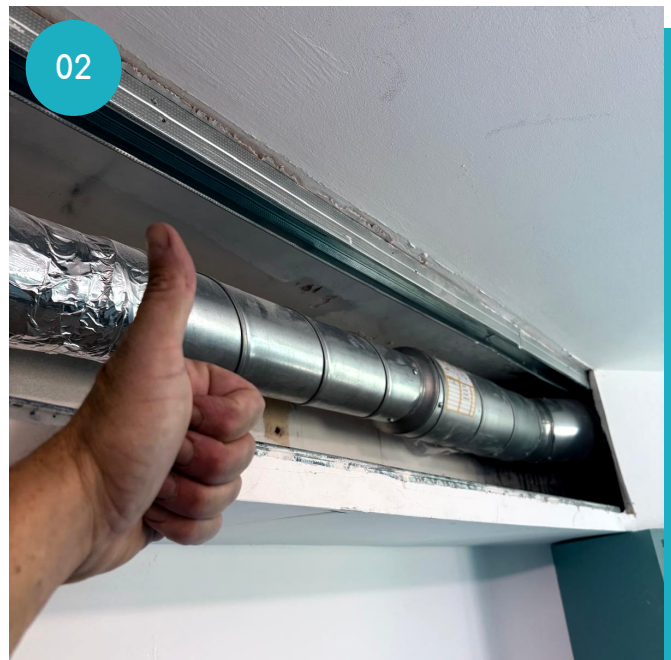
A visual switch-on check will not quantify this loss. A measured airflow test will.

CONNECTED PROPERLY. MEASURABLY BETTER.

Correctly attaching ductwork that had been left slightly unattached increased the measured extract rate from 14 L/s to 18 L/s.



SLIGHTLY UNATTACHED / 14 L/s



ATTACHED / 18 L/s

BEFORE

The slightly unattached duct delivered 14 L/s.

AFTER

A proper connection delivered 18 L/s.

MEASURED GAIN

Airflow increased by 4 L/s.

IMPROVEMENT

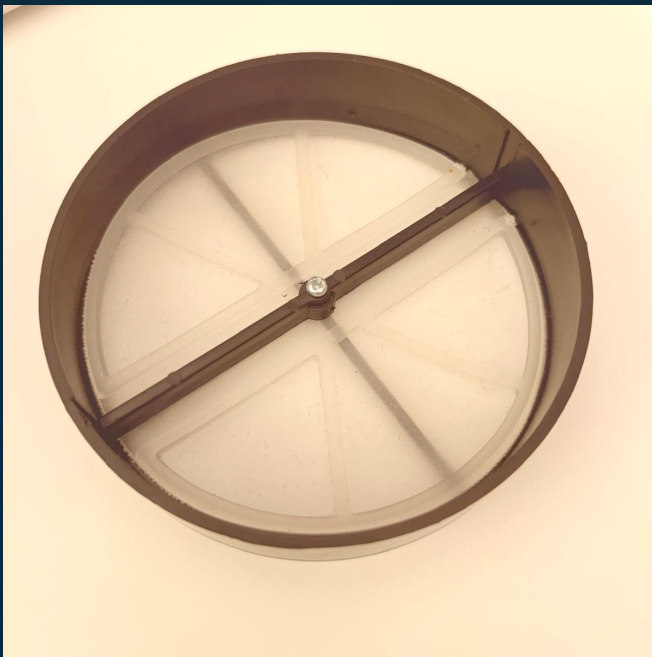
That is approximately 29% more airflow.

THE SIMPLE RULE

Every connection matters. Attach, support, seal - then measure.

RUNNING. EXTRACTING NOTHING.

The fan motor could be heard, but a backdraught damper supplied with its flaps assembled backwards was blocking the airflow.



CLOSED FACE



HOW THE FLAPS SHOULD OPEN

MEASURED RESULT

BEFORE

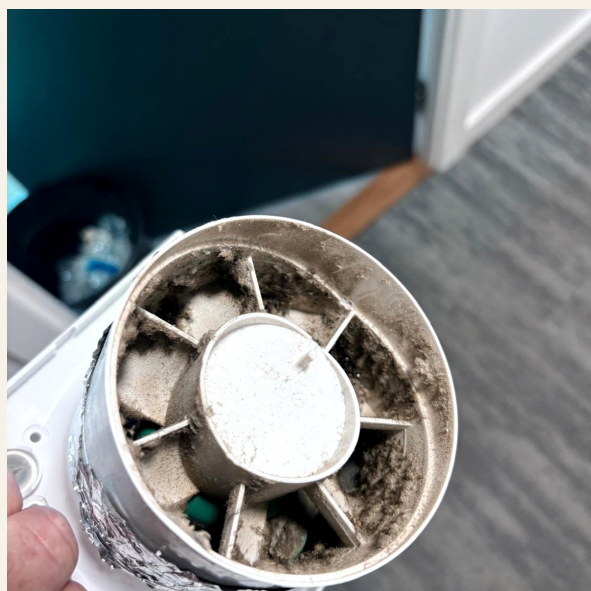
0 L/s

DAMPER CORRECTED / BOOST

29 L/s

The motor was running, but the backwards flaps stopped the airflow completely. Once corrected, the same system delivered 29 L/s on boost.

WHAT AIRFLOW TESTING REVEALS



03

RESTRICTION BUILDS UP

Dust and debris around the impeller and casing can reduce airflow and increase noise.

Terminals, shutters, insect screens and paint can create further resistance outside.

A PROPER TEST CAN IDENTIFY

- Wrong fan or setting
- Blocked external terminal
- Poor replacement air
- Crushed or disconnected duct
- Backwards or jammed shutter
- Heavy contamination

THE AIRTIGHTNESS UK DIFFERENCE

We do more than record pass or fail.

We use calibrated measurements and practical investigation to help find the cause - before moisture, mould and damp become the expensive part of the story.

PART F AIRFLOW TESTING / COMMISSIONING / DIAGNOSTICS

A FAILED READING IS THE START. NOT THE END.

Our job is not simply to record that a fan has failed. We investigate why it failed, identify the restriction or installation fault, and measure again after it has been corrected.

01

MEASURE

Establish the airflow actually being delivered.

02

DIAGNOSE

Check the fan, setting, duct route, connections, shutters, terminal and replacement air.

03

VERIFY

Retest after correction and show the measured improvement.

REAL RESULTS FROM SITE

0 to 29 L/s

Damper corrected / boost

14 to 18 L/s

Duct correctly attached

BOOK PART F TESTING OR DIAGNOSTIC SUPPORT

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