

CMHC Garbage Bag Airflow Test

There are times when you need to know the airflow from your furnace registers, bathroom exhaust fan or clothes dryer exhaust.

For example, if a house has one cold room in the winter, it is useful to find out if this is because your furnace isn't supplying enough warm air. If you installed a new bathroom exhaust fan, you could use the test to see if it is working properly.

This fact sheet tells you how to do the *CMHC Garbage Bag Airflow Test*. The Test is a quick way to estimate airflow, by determining how long it takes to fill a common plastic garbage bag.

It is not a precise measurement, but it is a vast improvement over no measurement at all.

HOW TO DO THE TEST

Here's how to use the test to measure airflow from a register or exhaust:

1. Tape the mouth of the garbage bag to a bent coat hanger or a homemade ring of cardboard to keep it open (see Figure 1).
2. Crush the bag flat.
3. Place it over the register or exhaust hood (see Figure 2).
4. Count how many seconds it takes for the bag to inflate.
5. Use Table 1 or 2 on the following page to find the airflow from the register or exhaust.

If you want to measure air going out, you can hold an inflated bag against an exhaust grill, and count how many seconds it takes for the bag to deflate. Deflation testing is not as accurate as inflation testing, but it is still a reasonable test. Low airflow is difficult to measure by deflation testing.

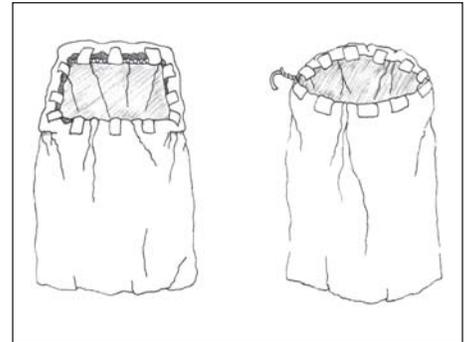


Figure 1 Tape a garbage bag to a ring of cardboard or a bent coat hanger

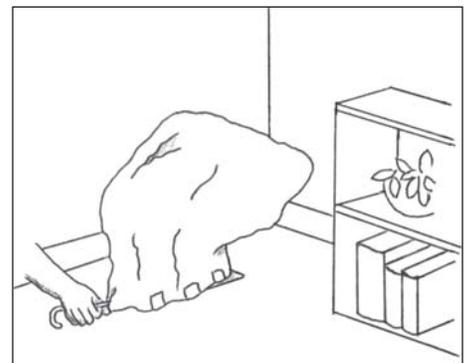


Figure 2 Let the bag inflate over a register

HOW TO USE THE TEST

Using the previous examples, if the measured airflow from a forced-air register is less than 10 L/s, the furnace is delivering only a small amount of heat to a room.

If you install a 100 cfm exhaust fan, and the fan inflates a standard bag in less than two seconds, you have the rated exhaust flow for the fan.

CMHC's *Garbage Bag Airflow Test* is also useful if you have changed your heating or cooling systems, or if you have made major renovations to your house.

Table 1 Small garbage bag (66 x 91 cm [26 x 36 in.])

Time to inflate*	Flow of air into the bag
2 seconds	35 L/s (75 cfm)
4 seconds	20 L/s (40 cfm)
10 seconds	10 L/s (20 cfm)

L/s = litres per second; cfm = cubic feet per minute

* For deflation, add a second. Therefore, 35 L/s would take about three seconds and 20 L/s about five seconds.

Table 2 Big garbage bag (79 x 119 cm [31 x 47 in.])

Time to inflate*	Flow of air into the bag
2 seconds	100 L/s (210 cfm)
4 seconds	50 L/s (105 cfm)
6 seconds	35 L/s (75 cfm)
10 seconds	20 L/s (40 cfm)

L/s = litres per second; cfm = cubic feet per minute

* Deflation times are about the same as inflation times.

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