

# Energy Design Update<sup>®</sup>

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### A Poor Mans Method of Measuring Airflow

The Canada Mortgage and Housing Corp. (CMHC) has developed a simple, inexpensive way to measure the airflow from furnace registers, bathroom exhaust fans, and clothes dryer exhausts.

CMHC designed the “garbage bag” test for builders, contractors, and homeowners who don’t have access to sophisticated measurement equipment but would like to confirm that registers and bathroom fans are delivering the cubic feet per minute (cfm) they’re supposed to deliver.

As shown in Figures 4 and 5, the test rig is constructed simply by taping the mouth of a garbage bag to a bent coat hanger or a piece of cardboard to keep it open (see Figure 4).

The test is conducted by crushing the bag flat, placing it over the register or exhaust hood, and counting how many seconds it takes for the bag to inflate (see Figure 5). By using Tables 2 and 3, cfm can then be determined.

Obviously, the CMHC garbage bag test isn’t going to give you a precise measurement, but it’s a vast improvement over no measurement at all.

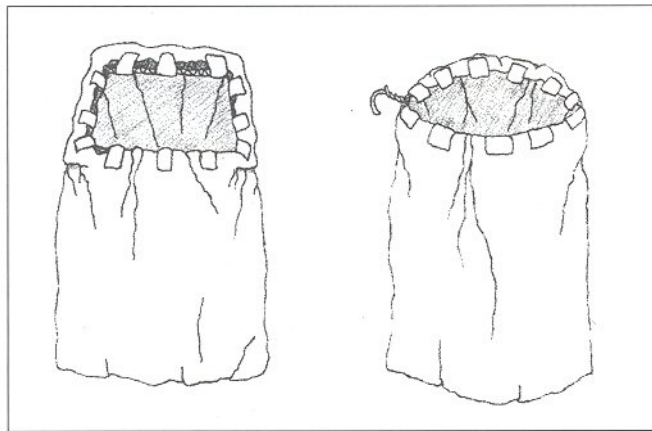


Figure 4 — The test rig is constructed out of a coat hanger or cardboard, which serves as a frame to keep the mouth of the garbage bag open.

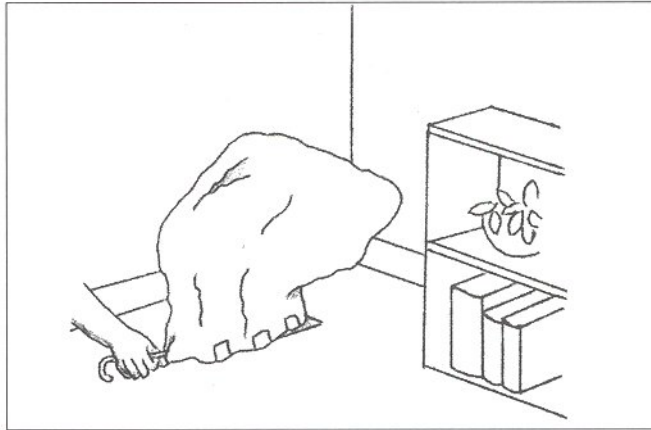


Figure 5 — The bag is crushed flat and then placed over the register or exhaust hood.

Table 2—Small Green Garbage Bag <sup>1</sup>

Time to Inflate <sup>2</sup>	Flow of Air into Bag
2 seconds	75 cfm <sup>3</sup>
4 seconds	40 cfm
10 seconds	20 cfm

<sup>1</sup>Typical garbage bag measuring 26 x 36 inches (66 x 91 cm).

<sup>2</sup>For deflation, add one second. Low airflow is difficult to measure by deflation testing.

<sup>3</sup>cfm = cubic feet per minute

Table 3—Big Orange Garbage Bag <sup>1</sup>

Time to Inflate <sup>2</sup>	Flow of Air into Bag
2 seconds	210 cfm <sup>3</sup>
4 seconds	105 cfm
6 seconds	75 cfm
10 seconds	40 cfm

<sup>1</sup>Typical garbage bag measuring 48 x 79 inches (79 x 119 cm).

<sup>2</sup>Deflation times for big orange bag are about the same as inflation times.

<sup>3</sup>cfm = cubic feet per minute