AIRFLOW

ECOVENT REGISTERS: AIRFLOW TEST RESULTS

APRIL 2016

THE DIFFERENCE

How does airflow through Ecovent Registers compare to standard registers?

Standard registers are made of stamped metal, and have many sharp edges and slats on the grille opening, which cause a surprisingly high blockage of airflow. Ecovent Registers are designed to minimize these edges while maximizing airflow shown by the data presented in Figures 1-4. Ecovent Registers supply significantly more air at a given pressure than standard registers: in most sizes, Ecovent supplies up to 50% more air.

"Ecovent supplies up to 50% more air."

Registers: 10"x4" wall, ceiling and floor; 10"x6" wall, ceiling and floor; 12"x6" wall, ceiling and floor; 12"x4" wall, ceiling and floor.

Conditions:

- A range of pressures were supplied through an 8-foot long flex duct.
- At the supply, a boot was attached with the applicable register installed.
- A static pressure probe was placed in the airflow, six inches behind the register.
- An anemometer was placed six inches behind the static pressure probe, in a twelve-inch section of ducting.
- Volumetric flow was calculated as the measured airspeed multiplied by the cross sectional area.
- Data for Brand X and Brand Y was taken directly from manufacturer supplied data sheets.

Results: Ecovent registers supply significantly more air at a given pressure than typical registers. In most sizes, Ecovent supplies up to 50% more air.

FIGURE 1:

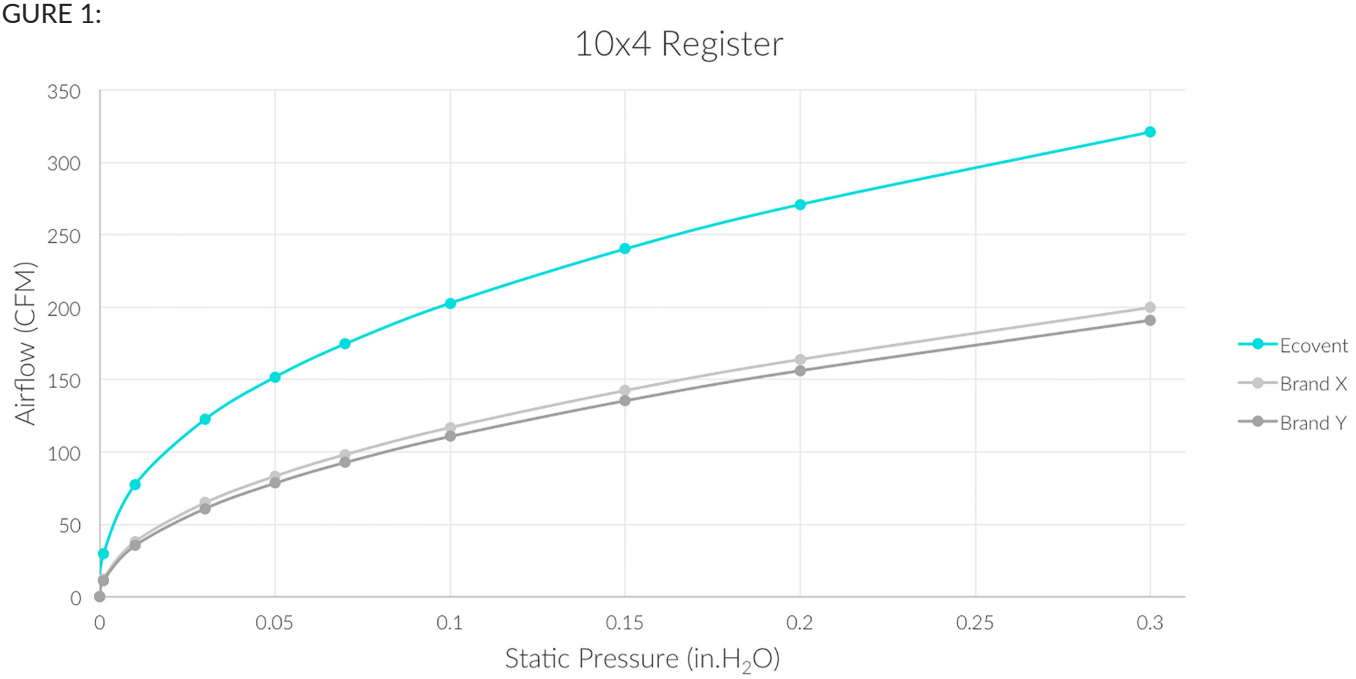


FIGURE 2:

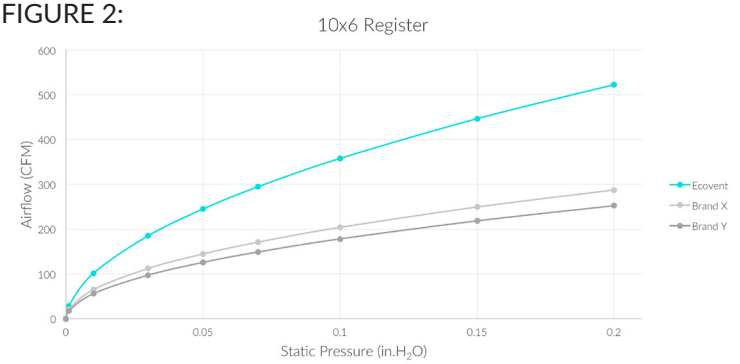


FIGURE 3:

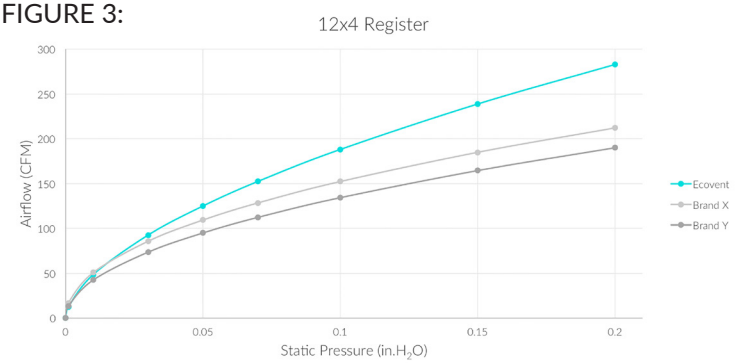
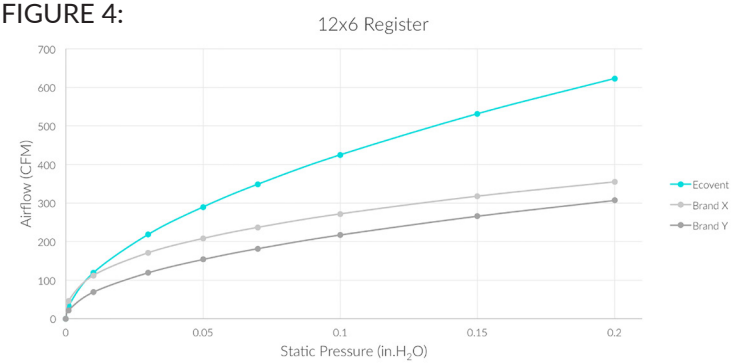


FIGURE 4:



What does the data mean?

As shown in Figures 1-4*, Ecovent Registers provide superior airflow and less backpressure compared to traditional stamped metal vents. Since Ecovent Registers have significantly better airflow performance when open, installing Ecovent will reduce the nominal external static pressure. This provides a healthy margin for redirecting airflow without significantly exceeding the pre-Ecovent ESP. Taking into account that most homeowners manually close off registers to get comfortable, Ecovent is likely to maintain a lower average ESP, while continuously monitoring the pressure at each register, ensuring we never close too many vents.

*Figures 1-4 show the average of data for the three vent types in each size.

THE IMPACT

Why does it matter?

At Ecovent we know that good airflow is critical to the efficiency and longevity of the HVAC equipment. Because Ecovent Registers supply up to 50% more airflow than standard registers, they improve the health of your system while intelligently directing air to the rooms that need it.