May 27, 2008

TO: NSF Task Group on Uniform vs. Zoned downflow.

From: Bill Peters, Nuaire Inc.

**Uniform downflow:**

Measurement of air velocity in a horizontal plane defined 4 in. (10cm) above the bottom edge of the window frame. Measurements are taken on a grid 6 in. (15cm) away from the walls and windows with spacing as close to but no greater than 6 x 6 in. (15 x 15cm) containing a minimum of three rows and seven readings per row. All readings must be within +/- 20% or +/- 16 fpm (.08 mps) whichever is greater of the average downflow velocity. No individual reading shall be less than 30 fpm (.15 mps).

**Zoned downflow:**

Measurement of air velocity on a horizontal plane defined 4 in (10cm) above the bottom edge of the window frame. Measurements are taken on a grid within a manufacturer's defined zone no closer than 6 in. (15cm) from the walls and windows. Each defined zone must have a minimum of 6 readings and no greater than 6 in (15cm) spacing between readings. Readings within the manufacturer's defined zone must be within +/- 20% or +/- 16 fpm (.08 mps) whichever is greater of the average velocity. All zone average velocities must be within +/- 20% or +/- 16 fpm (.08 mps) whichever is greater of the total average zone velocities. No individual reading shall be less than 30 fpm (.15 mps).

Regarding the Alternative downflow certification airflow grid. After thinking about this concept, I’m really not in favor of providing something like this. It’s confusing today and adding more to it is not good for anyone. If we wanted to do anything, I think we could look at reducing the required amount of readings for today’s uniform downflow grid. This might be a better alternative and there is some precedent with the EN standard only requiring 8 readings, although, I don’t think 8 is enough, but maybe some other number.