

CHAPTER 4 VENTILATION

SECTION 403.3.2 IMC Interpretation No. 19-05 2000 Edition Issued: 12-19-05

403.3.2 Common ventilation system. Where spaces having different ventilation rate requirements are served by a common ventilation system, the ratio of outdoor air to total supply air for the system shall be determined based on the space having the largest outdoor air requirement or shall be determined in accordance with the following formula:

$$Y = \frac{X}{(1 + X - Z)} \quad \text{(Equation 4-1)}$$

Where:

Y = V_{ot} / V_{st} = Corrected fraction of outdoor air in system supply.

X = V_{on} / V_{st} = Uncorrected fraction of outdoor air in system supply.

Z = V_{oc} / V_{sc} = Fraction of outdoor air in critical space. The critical space is that space with the greatest required fraction of outdoor air in the supply to this space.

V_{ot} = Corrected total outdoor airflow rate.

V_{st} = Total supply flow rate, i.e., the sum of all supply for all branches of the system.

V_{on} = Sum of outdoor airflow rates for all branches on system.

V_{oc} = Outdoor airflow rate required in critical spaces.

V_{sc} = Supply flow rate in critical space.



Q: Are the requirements in Section 403.3.2 only applicable when a variable air volume (VAV) air distribution system is used?

A: No. A VAV air distribution system is not required to be used for the provisions of Section 403.3.2 to be applicable. A fixed amount of supply air is permitted and can be supplied to the various spaces throughout the building.
