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TECHNICAL BULLETIN

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Source Document: 19NYCRR 1223 - *Mechanical Code of New York State (MCNYS)*

Topic: Demand Controlled Ventilation

This document is to provide a compliance path for the use of demand controlled ventilation (DCV). DCV is "any" method used to control ventilation that modifies intake rates based on changing "demand". The intention is to control ventilation rates based on occupancy within a predefined space (assuming it varies over time). Because ventilation rates are normally associated with occupancy levels, we conclude that the "demand" for ventilation is due to a measured change in the occupancy level for the space.

Approval is requested to revise the ventilation rate (cfm/ft²) of outside air required by *Mechanical Code of New York State (MCNYS)* Table 403.3 by the use of MCNYS section 105.2, Alternative materials, methods, equipment and appliances and ASHRAE 62, *Ventilation for Acceptable Indoor Air Quality*.

The Commentary for the 2000 *International Mechanical Code* describes the use of the tabular values as "an indirect method of controlling air quality by diluting contaminants to an acceptable level by the introduction of outdoor air." The commentary goes on to say that an engineered ventilation system can be approved by the Code Enforcement Official (CEO) per section 105.2 and "is more of a direct method of controlling air quality" and would be classified as an Indoor Air Quality Procedure in ASHRAE 62, section 6.2 (1989 through 1999 editions).

The design professional is responsible for demonstrating to the CEO that the proposed engineered system will provide air quality at least equivalent to that achievable by the ventilation rate method in MCNYS section 403. A demonstration of equivalence would involve detailed analysis of the anticipated contaminants in the space to be ventilated, the acceptable occupant exposure limits or concentration levels for those contaminants and the means and method to control the contaminants. The design documentation should include all criteria and assumptions regarding occupancy conditions, equipment/system performance and contaminants.

For typical engineering analyses see ASHRAE 62 and its appendices. For official interpretations including typical analyses see: http://xp20.ashrae.org/STANDARDS/62-2001_IC.htm

Section 105.2 of the MCNYS, allows alternative materials, design and methods of construction as follows:

105.2 Alternative materials, design and methods of construction and equipment. The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been approved. An alternative material, design or method of construction shall be approved where the State Fire Prevention and Building Code Council finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code in quality, strength, effectiveness, fire resistance, durability and safety.

The first sentence in this is section allows an alternative design method to be approved by the code enforcement official where the design complies with the intent of the code and is at least equivalent to that prescribed by the code.

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