February 16, 2022

From: Mike Moore, Stator LLC, Representing Broan-NuTone

To: WSBCC

Re: CR-102

Dear WSBCC:

Please consider these five proposals modifying CR-102 to correct errors and to help clarify the intent of the code:

Proposal 1: Modify the new DOAS definition in WSEC Section C202.4-D as follows:

DEDICATED OUTDOOR AIR SYSTEM (DOAS). A ventilation system that supplies 100 percent outdoor air primarily for the purpose of ventilation ~~and~~ without requiring operation of ~~is a separate system from the zone~~ a space-conditioning system fan for outdoor air delivery.

Rationale: Modifications to the proposed definition are intended to clarify that an outdoor air ventilation system's duct work can be integrated with a heating or cooling system's duct work and still be considered a DOAS, provided that the operation of the heating or cooling system's fan is not interlocked with the operation of the outdoor air ventilation system. An example of such a system is an HRV or an ERV that is ducted to the supply trunk of a dwelling unit's space conditioning system, whose operation does not automatically trigger the operation of the space conditioning system's air handler. This configuration can be used to assist with outdoor air distribution while minimizing fan energy use and first-costs of ducting.

Proposal 2: Modify the new DCKV definition in WSEC Section C202.4-D as follows:

DEMAND CONTROL KITCHEN VENTILATION (DCKV). A system that provides automatic, continuous control over exhaust hood and, where provided, makeup air fan speed in response to ~~temperature, optical, or infrared (IR)~~ one or more sensors that monitor cooking activity or through direct communication with cooking appliances.

Rationale: Modifications to the proposed definition are intended to make the definition less prescriptive and more broadly applicable for its intended purpose. For example, some DCKV systems operate while using TVOC sensors or other air quality sensors that are not listed in the definition. Rather than list all of the sensor types that could be used in the definition, the definition could simply address "one or more sensors that monitor cooking activity." The modification also recognizes that not all DCKV systems are necessarily provided with makeup air. Makeup air requirements are determined within the mechanical code and should not be triggered by application of a definition within the energy code.

Proposal 3: Modify C403.3.5.2 as follows:

C403.3.5.2 DOAS fan power. For a DOAS that does not have at least one fan or fan array with fan electrical input power ≥ 1 kW, the total combined fan power shall not exceed 1 watt per cfm of outdoor

air as calculated in accordance with Equation 4-10 using design maximum airflows and external static pressures. For a DOAS with at least one fan or fan array with fan electrical input power ≥ 1 kW, the DOAS shall comply with the fan power limitations of Section C403.8.1. DOAS total combined fan power shall include all supply, exhaust and other fans utilized for the purpose of ventilation. This fan power restriction applies to each DOAS in the permitted project, but does not include the fan power associated with the zonal heating and cooling equipment.
Exception: DOAS complying with C403.8.4

Rationale: This exception is needed to avoid conflict with Section C403.8.4, which establishes minimum fan efficacy requirements for low-capacity ventilation fans.

Proposal 4: Modify Table C403.8.4 to correct the following error in the footnote:

For SI: ~~1 cfm/ft = 47.82 W~~1 cfm = 0.47 L/s.

Rationale: The SI conversion is not correct.

Proposal 5: Modify C403.4.1.7 as follows:

C403.4.1.7 Demand responsive controls. ~~All t~~Thermostatic controls for heating or cooling systems shall be provided with demand responsive controls capable of increasing the cooling setpoint and decreasing the heating setpoint by no less than 4°F (2.2°C). The thermostatic controls shall be capable of performing all other functions provided by the control when the demand responsive controls are not available. Systems with direct digital control of individual zones report to a central control panel shall be capable of remotely increasing the cooling setpoint and decreasing.

Rationale: This modification would clarify that thermostatic controls on ventilation systems need not comply with this provision. An example is a smart ventilation system control that modulates the ventilation airflow based on outdoor temperatures with the objective of shifting ventilation operation away from the peak load conditions to save energy while maintaining acceptable indoor air quality.

Thank you for your consideration.

Sincerely,

Mike Moore
Stator LLC