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The ICC and Standard 62.1

This is really good news for ASHRAE and ASHRAE members. Now, the ventilation requirements and procedures in both U.S. model mechanical codes (the UMC and the IMC) match up with those in Standard 62.1-2004 (and those recently published in Standard 62.1-2007).

By Dennis A. Stanke, Member ASHRAE

I recently had an interesting experience—attending the International Code Council (ICC) final actions hearings in Rochester, N.Y., in late May. Picture a large convention-center ballroom full of ICC governmental member representatives (code authorities) and other interested parties having an open discussion on hundreds of proposed changes to the ICC model codes, and representatives of federal, state and local government voting to accept those changes into the ICC Codes. The proposed changes had already been available for public comment last year and had been considered at a hearing last fall. At that hearing, the ICC Code Development Committees recommended action on each proposed change. The proposed changes that received a challenge to committee-recommended action had been available for public comment earlier this year and were the focus of discussion in Rochester, but all proposed changes were subject to voting either in favor of or opposed to previous committee recommendations.

The ICC Final Action Hearings

Voting proceeded in an orderly way. The moderator identified the proposal under consideration and the committee action being considered ("approve as submitted," "approve with modifications" or "disapprove"). The moderator then invited comments (two-minute limit) from the proponent of the proposed change and any others in support of the proposal, followed by comments from any opponents (again a two-minute limit). Proponents were offered the chance to present a rebuttal, and opponents were offered the chance to present a "re-rebuttal." Then, the question was called and registered representatives of federal, state and local government indicated "in favor" of or "opposed" to the proposed action by a show of hands. If the outcome was not visually obvious, the moderator called for a more accurate electronic vote (each voter had a handheld wireless voting device).

While changes to all of the ICC model codes were being arbitrated, I was primarily interested in changes to the International Mechanical Code (IMC). Why? Because in January of 2006, SSPC 62.1 had proposed three changes to the IMC; and the Code Interaction Subcommittee (CIS), part of the ASHRAE Standards Committee submitted these as code change proposals to the ICC. The proposals, identified as M44, M45 and M47, incorporated the ventilation rates and procedures of ANSI/ASHRAE Standard 62.1-2004 in varying degrees of detail. The three proposals were developed and submitted to present a full range of options available for applying the standard in the IMC.

M44, the most detailed option and the first choice of SSPC 62.1 and CIS, proposed to reword Chapter 4, *Ventilation*, extensively. It adds all of the Standard 62.1 ventilation rates from Table 6-1 to Table 403.3 in the

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IMC and replaces the calculations in 403.3.2, *Common Ventilation Systems,* with the Standard 62.1 outdoor air intake flow calculations in the Ventilation Rate Procedure. After the Fall 2006 hearings, the IMC Code Development Committee recommendation for this proposal was "approved as submitted," but it garnered some public comment in opposition, so it was on the agenda for reconsideration in Rochester.

M45 also proposed to add all of the Standard 62.1 Table 6-1 ventilation rates but it did not replace the "common ventilation system" calculations. Instead, it left the older "X-Y-Z" multiple-zone system equation in the IMC. This option (the second-choice option of SSPC 62.1 and CIS) would have been advocated if M44 had been disapproved. Since M44 was preferred by the IMC committee after the Fall 2006 hearings, M45 was disapproved and was not reconsidered in Rochester (because no one submitted a challenge to overturn the committee recommendation for disapproval).

M47, the least detailed option (the third choice of SSPC 62.1 and CIS) proposed merely to add an exception to the requirement to use the existing rates in Table 403.3, allowing designers to comply with the code by meeting the requirements in several ventilation-related sections in Standard 62.1. The exception called out specific sections of the standard, essentially allowing designers to comply using the Ventilation Rate Procedure from the standard. This code change proposal was also recommended for disapproval at the Fall 2006 hearings and was not reconsidered in Rochester.

After hard work by several SSPC 62.1 committee members and CIS, and after due consideration by ICC hearing attendees in Fall 2006, by the public during public review, and by Final Action Hearings attendees in Rochester, M44 passed. The option most favored by SSPC 62.1 and the CIS—M44—was approved by a large majority.

This is good news for ASHRAE and ASHRAE members. Now, the ventilation requirements and procedures in both U.S. model mechanical codes (the UMC and the IMC) match up with those in Standard 62.1-2004 (and those recently published in Standard 62.1-2007). The model codes are up-to-date with Standard 62.1 requirements, and it is reasonable to expect federal, state and local jurisdictions, who typically adopt these model codes as part of their building regulations, to follow suit in due course.

What else is new?

Speaking of the recently published 2007 version of the standard—now available for purchase from ASHRAE—a few important changes should be mentioned. The new standard incorporates changes that were approved by Addenda 62.1*a*, *b*, *c*, *d*, *e*, *f*, *g* and *h*.

Here's a quick summary of the changes:

Per Addendum 62.1*a*, the Section 5.10 analysis requirements for dehumidifying systems have been clarified to make compliance easier and more uniform. The 2004 standard required analysis of dehumidifying systems at specific conditions, to show a space relative humidity of no more than 65%, but the conditions for the analysis were difficult to define. Now, system performance must be analyzed with outdoor air at the design dew-point condition and with space load (both sensible and latent) at cooling design value, but with solar load in the space set to zero.

Addendum 62.1*b* corrects inconsistencies among occupancy categories in Tables 5-2, 6-1 and 6-4. It also moves all occupancy categories from Table 5-2 into Tables 6-1 and 6-4, which eliminates the need for Table 5-2. These changes also introduce new minimum outdoor airflow requirements for some occupancy categories not previously covered.

Addendum 62.1*c* updates references and text in Appendix B, an informative appendix with selected air quality guidelines. It also adds to and clarifies guidance related to subjective evaluation of indoor air quality. These changes do not impact compliance requirements.

Addendum 62.1*d* updates information related to the National Ambient Air Quality Standards, presented in Table 4-1. This revision adds concentration limits for particulate matter with diameter of 2.5 micrometers and smaller ("fine" particles) to the table. It also adds an eight-hour concentration limit for ozone. (Eventually, the one-hour concentration limit for ozone is expected to be eliminated for the NAAQS.) These changes do not impact compliance requirements.

Addendum 62.1*e* adds a new informative appendix that summarizes the documentation requirements found throughout the body of the standard, providing a single point of reference for designers wishing to comply with the standard. These changes do not impact compliance requirements.

Addendum 62.1*f* changes the scope and purpose of the standard to be consistent with specific requirements already incorporated into the standard by other Addenda. Now, the scope specifically excludes requirements for single-family houses and multiple-family structures of three or fewer stories, removes specific minimum outdoor airflow rates for areas that contain smoking or environmental tobacco smoke (ETS), and excludes thermal comfort requirements. These changes do not impact compliance requirements.

Addendum 62.1*g* requires proper design for buildings that contain both ETS and ETS-free areas. In summary, it requires classification of building areas based on expected presence of ETS, pressurization of ETS-free areas, separation of ETS from ETS-free areas, and cautionary signage for ETS-areas.

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Addendum 62.1*h* adds outdoor airflow requirements for residential spaces in buildings with more than three stories to Table 6-1. It also deletes Tables E-2 and E-3 from Appendix E; now Standard 62.1 no longer includes minimum outdoor airflow requirements for residences and vehicles.

Summary

Both the IMC (2007 Supplement) and the UMC (2006) now require compliance with Standard 62.1-2004 Ventilation Rate Procedure for determining outdoor air intake flow. And Standard 62.1-2007, which adds a few important requirements and many clarifications, is available from ASHRAE. You should be able to purchase your copy at the bookstore in Long Beach!

Dennis A. Stanke is chair of Standing Standards Project Committee 62.1.