BSR/ASHRAE Addendum ac
to ANSI/ASHRAE Standard 62.1-2016

Public Review Draft

Proposed Addendum ac to Standard 62.1-2016, Ventilation for Acceptable Indoor Air Quality

Second Public Review (October 2018)
(Draft shows Proposed Changes to Current Standard)

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(This foreword is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)

FOREWORD

Informative Appendix C (Summary of Selected Air Quality Guidelines) in 62.1-2016 was deleted in a previous addendum. This proposed addendum adds a new Informative Appendix C with content supportive of changes to the Indoor Air Quality Procedure (IAQP).

[Note to Reviewers: This addendum makes proposed changes to the current standard. These changes are indicated in the text by underlining (for additions) and ~~strikethrough~~ (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the current standard are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed changes.]

Addendum ac to 62.1-2016

Add a new Informative Appendix C as shown below. Re-letter existing appendices as appropriate.

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INFORMATIVE APPENDIX C

C1. SUMMARY OF SELECTED AIR QUALITY GUIDELINES

If the IAQ Procedure is used, acceptable indoor concentrations limits are needed for indoor contaminants. When using this procedure, these concentration limits need to be documented and justified by reference to a cognizant authority as defined in the standard. At present, no single organization develops acceptable concentrations limits for all indoor air contaminants, nor are limits available for all contaminants of potential concern.

The concentration limit for the IAQP compounds can be obtained from cognizant authorities such as USEPA, California EPA, and the Committee for Health Related Evaluation of Building Products (AgBB). Compounds included in the IAQP design need to be included if data were judged sufficient to indicate a compound was likely to be found in buildings at concentrations that were a substantial fraction of the proposed design threshold. The goal is not to include every possible compound that may appear in indoor air, but sufficient numbers of compounds and diversity thereof such that control of the compounds is anticipated to result in air quality that meets the standard's definition of "acceptable."

A summary of considerations is presented below:

1. Is a compound expected to be present in indoor air with reasonable frequency at concentrations relevant to (but not necessarily above) the design target? Specifically, the design Vbz and design features will be controlled by the compounds with the highest emission rates and lowest targets (taking mixtures into account); thus, compounds with low concentrations and high targets will have little or no impact on the calculated Vbz.

2. Is there a design target that has been proposed by a cognizant authority?
3. Does it seem reasonable to expect that product emissions rates may be available for the proposed compound?
4. It there an established sampling and analytical method for the proposed compound?

Occupational exposure limits (e.g., Permissible Exposure Limits and Threshold Limit Values) are not appropriate as Design Targets, as they are not established for acceptable indoor air quality or for typical commercial buildings. In general, they were developed for industrial applications evaluating effects of substances on healthy adult male workers.

C2. GUIDELINE FOR EMISSION RATES

Several published peer-reviewed papers provide a reference for design teams to use to compile reasonable DCs emission rates. A non-exhaustive list of peer-reviewed papers is shown in the references. In addition, there are multiple established certification programs that include empirical measures of emission rates for construction materials as well as finishes, furniture and equipment intended for indoor use. These include 3rd party programs as well as industry trade association programs and programs in support of government regulations (e.g. the AgBB evaluation scheme used in Germany and parts of Europe, also Blue Angel, BIFMA, Green Label, France A+, CDPH Standard Method for testing and evaluation of VOC emissions). Engineers may use the emission rates for the specific materials that a designer is including or considering for use.
Section 6.3.1 requires that emission rates must consider DCs emitted by occupants, DCs emitted by materials and DCs emitted by specific sources and activities within the occupied spaces.

C3. SUBJECTIVE EVALUATION

An occupant survey should be conducted by providing all occupants with an electronic or written survey to the question: "Do you perceive the air quality in your environment to be acceptable or unacceptable? The survey must be anonymous and expressed with neutrally-framed questions. The respondents must base opinion of perception of air quality after 30 minutes residency in the environment. All occupants should be surveyed or at least 50% or 300, whichever is less, randomly selected. A minimum of a 30% response rate is desirable. 6.3.4.2 requires that each zone and differently configured area must be surveyed on its own. The subjective evaluation validates the acceptability of indoor air if 80% of respondents in the area do not express dissatisfaction.

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