



**BSR/ASHRAE Addendum c to
ANSI/ASHRAE Standard 209-2024**

First Public Review Draft

**Proposed Addendum c to Standard
209-2024, Energy Simulation Aided
Design for Buildings except Low-
Rise Residential Buildings**

**First Public Review Draft (November 2025)
(Draft shows Proposed Changes to Current Standard)**

This draft has been recommended for public review by the responsible project committee. To submit a comment on this proposed standard, go to the ASHRAE website at www.ashrae.org/standards-research--technology/public-review-drafts and access the online comment database. The draft is subject to modification until it is approved for publication by the Board of Directors and ANSI. Until this time, the current edition of the standard (as modified by any published addenda on the ASHRAE website) remains in effect. The current edition of any standard may be purchased from the ASHRAE Online Store at www.ashrae.org/bookstore or by calling 404-636-8400 or 1-800-727-4723 (for orders in the U.S. or Canada).

This standard is under continuous maintenance. To propose a change to the current standard, use the change submittal form available on the ASHRAE website, www.ashrae.org.

The appearance of any technical data or editorial material in this public review document does not constitute endorsement, warranty, or guaranty by ASHARE of any product, service, process, procedure, or design, and ASHRAE expressly disclaims such.

© 2025 ASHRAE. This draft is covered under ASHRAE copyright. Permission to reproduce or redistribute all or any part of this document must be obtained from the ASHRAE Manager of Standards, 180 Technology Parkway NW, Peachtree Corners, GA 30092. Phone: 404-636-8400, Ext. 1125. Fax: 404-321-5478. E-mail: standards.section@ashrae.org.

ASHRAE, 180 Technology Parkway, Peachtree Corners, GA 30092

[Note to Reviewers: This addendum makes proposed changes to the current standard. These changes are indicated in the text by underlining (for additions) and ~~striketrough~~ (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 c to Standard 209-2024 – Proposed changes

6.6 Modeling Cycle #6—Design ~~Integration and~~ Optimization

6.6.1 Purpose. ~~Integrate building systems through an optimization process to assist in meeting one or more of the project performance goals by exploring the complex interactions of multiple variables. Apply building performance simulation to explore the impact of complex interactions between design variables on at least one performance objective. Evaluate the trade-offs and synergies between design alternatives and their effect on building performance. Identify the design alternative or set of alternatives that optimally achieve the identified performance objective or objectives.~~

Informative Note: When this cycle is used to demonstrate compliance with the standard, the minimum compliance requirements can be met by performing multi-variant single-objective optimization analysis. In this case, at least one fundamental performance optimization objective is identified and analyzed; for example, minimize energy use or minimize carbon emissions. However, the size, complexity, or stringent performance targets for some projects could warrant a more complex analysis. For example, multi-objective optimization can be used to help balance potentially conflicting objectives, such as balancing low energy consumption with high occupant comfort and cost-effectiveness.

6.6.2 Applicability. When this modeling cycle is used to show compliance with the standard, it shall be completed before the end of the construction document phase.

Informative Note: It is advisable to initiate the process early in the design when many parameters are not fixed, there are higher degrees of freedom, and the opportunity for impact is greatest. The process can continue into later design stages where the input to the model can be updated based on the prevailing state of the design.

6.6.3 Analysis

6.6.3.1 ~~The energy modeler shall~~ Identify one or more optimization objective for the analysis that relates to the performance goals as identified in Section 5.6.

6.6.3.2 ~~The energy modeler shall~~ Identify at least two design variables of interest for a multivariate optimization process.

6.6.3.3 ~~The energy modeler shall~~ Identify the design constraints or test range for each analyzed design variable.

6.6.3.4 Conduct an optimization analysis using the defined optimization objective or optimization objectives, design variable or design variables, and design constraints.

***Informative Note:** An optimization analysis does not guarantee that the global minimum or maximum of the optimization objective will be found, only a local minimum or maximum given the design variables, design constraints, initializing values, and optimization method.*

6.6.4 Reporting. In addition to the general reporting requirements in Section 5.7.3, for each design optimization measure, report the following:

- a. Optimization objective or optimization objectives
- b. Design variable or design variables analyzed
- c. Design constraints or test range for each design variable
- d. Description of the optimization method