

ICC PERFORMANCE CODE

PC1-02

101.2.1, 101.2.2

Proposed Change as Submitted:

Proponent: Gregory G. Victor, Glendale Fire Department

1. Add a new item 8 as follows:

8. To provide a reasonable level of safety to fire fighters and emergency responders during emergency operations.

2. Revise as follows:

101.2.2 Fire. Part III of this code establishes requirements necessary to provide an acceptable level of life safety and property protection from the hazards of fire, explosion or dangerous conditions in all facilities, equipment and processes and provisions to assist emergency response personnel.

Proponent's Reason: This proposal clarifies that code officials are concerned about the safety of fire fighters and other emergency responders and that many provisions of this code are intended to apply to fire fighter safety during emergency operations.

Committee Action:

Disapproved

Committee Reason: The *International Performance Code* is unique when compared to the remaining family of prescriptive based I-codes. The format of the code includes general statements such as those found in Section 101.2, followed by the objective, performance statements and functional statements throughout the code. The proposed text is redundant with such provisions and as such is not necessary in the code. The concerns identified in the proposal are explicitly addressed in Chapters 20 and 21 which deal with emergency access and emergency responder safety, respectively.

Assembly Action:

**Approved as Submitted -
Motion Failed**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment 1:

**Rob Geislinger, Parker Fire Protection District,
representing the Fire Marshal's Association of**

Colorado requests Approval as Submitted.

Commenter's Reason: Over the past years we have seen a significant decrease in property loss, injuries and fatalities as a result of fire.

Unfortunately, despite a decrease in the number of fires, firefighter deaths have remained relatively static, indicating that the number of firefighter deaths per fire is increasing. Why is this? While the codes and standards bodies have done an excellent job in improving public safety we have not adequately addressed the safety of our emergency responders who we expect to protect us from disaster.

Although the performance code is unique, as stated in the committee's reason, it is still necessary to emphasize emergency responder safety at least on par with building safety.

Although firefighters and other emergency responders are generally aware of the hazards they face, it is incumbent upon us as builders, design professionals, industry and code officials to promulgate a code that recognizes these specific hazards, and limits them, where possible.

Public Comment 2:

**Gregory Victor, Glendale Fire Department,
representing the Arizona Fire Marshals Association
requests Approval as Modified.**

Modify proposal as follows:

8. To provide ~~a reasonable level of~~ safety to firefighters and emergency responders during emergency operations.

Commenter's Reason: This proposal is a change to the INTENT section of the Code only and does not impose or require any additional requirements beyond the current parameters of the code. This proposal essentially codifies current practice. These additions are not requirements and do not in any way change or alter the body of the code or impose any additional requirements beyond the parameters of the current code. When code officials attempt to interpret, apply and modify provisions of any code it is in the best interests of all involved that there is a complete understanding of what the original intent and purpose of the document was. This proposal simply adds a reference in the intent section in two locations to keep our minds on the intent of the document when we are using it. The IBC General Committee approved this similar language for inclusion in the Building Code. Approving this proposal will bring the performance code into agreement as to the intent of these documents during the design, construction and maintenance of buildings and facilities.

The Committee's reason for disapproval states in part that this language is redundant and not necessary in the code and that the concerns raised are handled in Chapters 20, Emergency Notification, Access and Facilities and Chapter 21, Emergency Responder Safety. Since the Performance Code already deals with these issues, why is there so much opposition to including intent language for these Chapters? If the Committee's reason is correct then there is no need for the entire intent section since all of the concerns are handled in the specific Chapters. I urge your support for this proposal.

Public Comment 3:

Sam Francis, American Forest & Paper Association requests Approval as Modified.

Modify proposal as follows:

- 8. To provide a reasonable level of safety to fire fighters and emergency responders during emergency initial search and rescue operations.

Commenter's Reason: The Performance Code does not bring with it the history and background of the more prescriptive traditional building codes. Its goals and objectives describe its expectations. In that sense, it is proper to state explicitly that it is an expectation of the jurisdiction adopting this code that the performance of the structure will include the protection of the first-responders for the time necessary to search for and assist occupants who are either unaware of the emergency situation or are unable to respond appropriately to it on their own.

PC2-02
101.2 (new)

Proposed Change as Submitted:

Proponent: ICC Code Correlation Committee

Add new text as follows:

101.2.1 Appendices. Provisions in the appendices of this code are provided as guidance only and are not intended to be adopted.

Proponent's Reason. This is one of a series of proposed code changes that intends to clarify the application of appendices related to the ICC Performance Code and the other International Codes. Appendices are not applicable unless specifically referenced in the adopting ordinance. The ICC Codes Correlation Committee feels that, from a style standpoint, the ICC Performance Code should be no different. While the committee ultimately was of the opinion that this was a style issue and under the purview of the ICC Codes Correlation Committee, it was decided that due to the relationship of the appendices to the rest of the code, the membership should decide.

Committee Action: **Disapproved**

Committee Reason: This particular proposal was one of several proposals related to the way in which appendices were referenced within the body of the code. The other related proposals include PC4-02 through PC8-02 and PC14-02. The correlation committee put forth three options 1) have the appendices noted as being guidance only and keep the appendices, 2) Simply remove direct references from the body of the code but keep the appendices or 3) Delete the appendices and all references. The reason for the submittal was to address the differences in format of this code as compared with the other I-Codes.

This particular proposal would simply have noted within Chapter 1 that the appendices were for guidance only and were not intended to be adopted. Several of the appendices are necessary for the application of the code and should not be strictly advisory. Generally, the rest of the proposals were disapproved due to the fact that the appendices were felt to be critical to the application of the code.

See reason for code changes PC4-02 through PC8-02 and PC14-02. Another alternative that was discussed was the concept of moving the more critical appendices into the body of the code. The correlation committee had not provided this option as it would have constituted a technical change, which is outside their scope as a committee.

Assembly Action: **No Motion**

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment

Gary Lewis, City of Summit, NJ, requests Approval as Modified.

Delete and substitute proposal as follows:

1. Add new text as follows:

101.3 Appendices. Provisions in the appendices shall not apply unless specifically adopted.

2. Revise as follows:

103.3.1.8 Special expert. Where the scope of work is limited or focused in an area that does not require the services of a design professional or the special knowledge and skills associated with the practice of architecture or engineering, a special expert may be employed by the owner as the person in responsible charge for the limited or focused activity. It is the intent of this code that the individual shall possess the appropriate qualifications in accordance with Section 103.3.3 characteristics required in Appendix D.

3. Revise as follows:

103.3.2 Design professional qualifications. The principal design professional, architects, engineers and other design professionals in responsible charge for their discipline as a member of a design team shall be responsible and accountable to possess the required knowledge and skills to perform design, analysis and verification in accordance with the provisions of this code and applicable professional standards of practice. It is the intent of this code that these individuals possess the qualification characteristics in accordance with Section 103.3.3, as stated in Appendix D. Qualification statements shall be submitted to the code official for the principal design professional, design professionals and special experts to demonstrate compliance in accordance with Section 103.3.3, Appendix D.

4. Add new text as follows:

103.3.3.9 Computer models. Computer modeling work is required to be conducted under the guidance of a qualified design professional. Knowledge and experience is required in the application of the program limits and the performance-based design objectives for compliance with the objectives of this code.

5. Add new text as follows:

103.3.3 Qualification Characteristics.

103.3.3.1 Principal Design Professional Characteristics. Principal Design Professionals shall possess the following qualifications:

- 1. Registered architect or engineer by the state or

- 2. jurisdiction.
Knowledge of all facets of the project and the underlying principles of the performance-based code and concepts.
- 3. Ability to perform in the role of point of contact and to coordinate activities between the design team members, owner and code official.
- 4. Ability to ensure all elements of submittal to the code official are compatible, coordinated, logical, complete and comprehensive in documentation.

103.3.3.2 Design Professional Characteristics. Design Professionals shall possess the following qualifications:

- 1. Knowledge of underlying principles of performance-based code and concepts.
- 2. Education, training and experience in performance-based engineering design.
- 3. Skill in risk and hazard assessment tools as a design method.
- 4. Ability to utilize performance-based code objectives and to demonstrate compliance through documentation of decision-making and solutions.
- 5. High skill level in engineering disciplines needed in performance-based designs for structural, mechanical and fire protection systems.

103.3.3.3 Special Expert Characteristics. Special experts are those individuals who possess the following qualifications:

- 1. Individual who has credentials of education and experience in an area of practice which is needed to evaluate risks and safe operations associated with design, operations and special hazards.
- 2. Licensing or registration is required when required by a state or jurisdiction for the function to be performed.

103.3.3.4 Competent Reviewers Characteristics. The principal reviewer or code official is responsible to acquire competent reviewers with these characteristics and to utilize registered individuals when required by a state or jurisdiction. These characteristics are applicable to the code official's staff and contract reviewers.

- 1. Knowledge of underlying principles and concepts of performance-based code provisions.
- 2. Education in performance-based engineering principles.
- 3. Competence in risk and hazard assessment tools as a design method.
- 4. Ability to verify design documents, meet analysis and documentation requirements, and to demonstrate that objectives are met.
- 5. High skill level in engineering disciplines needed in performance-based designs for structural, mechanical and fire protection systems.

(Renumber remaining sections accordingly)

6. Revise as follows:

103.3.4.1.1 Required documentation. The documentation for the project shall identify the goals and objectives; the steps undertaken in the analytical analysis; the facility maintenance and testing requirements; and limitations and restrictions on the use of the facility in order to stay within the bounding conditions. When requirements for documentation are specified in applicable engineering and/or design guides, documentation shall be included in the design documents. Computer modeling shall be documented in accordance with Section

103.3.5. documentation shall comply with Appendix E.

7. Add new text as follows:

103.3.5 Computer Model Documentation. The following shall be part of the design documentation when computer models are used in the design of a building or facility.

- 1. Computer program data shall be submitted as part of documentation which shall include but not be limited to the program name, brief description, type of analysis and application, program input and output units and description, and how it is to be used to support the design. Statements of exact mathematical model(s) and accompanying submodel(s), if any, uncertainty, assumptions, limitations, scope of applicability, and a few reproducible simple benchmark cases shall be included.
- 2. Background data shall be submitted to substantiate why particular scenarios are rejected or accepted.

(Renumber remaining sections accordingly)

8. Revise as follows:

103.3.8.4 Technical Opinion. The code official has the authority to require a technical opinion and report from an individual or organization with special expertise to identify and develop methods of protection from special hazards, and to determine the acceptability of technologies, processes, products, equipment, materials and uses applicable to the design, operation, or use of a building or facility. The intent of this code is that the technical opinion and report shall be prepared by a qualified individual in accordance with Section 103.3.3. Appendix D.

9. Revise as follows.

104.3.3 Individually substantiated design methods. Documents that do not meet the criteria for authoritative documents or design guides shall comply with the ~~individually substantiated design method criteria in Appendix C~~ following criteria.

- 1. A process to evaluate design options against the performance objectives and functional statements shall be provided.
- 2. A comparison, signed and sealed by the principal design professional, between the prescriptive requirements and this design method shall be provided.
- 3. Peer review shall be provided.
- 4. Reports prepared by evaluation services shall be documented.
- 5. This method shall not negatively impact the remainder of the building that complies with the prescriptive codes.
- 6. The data substantiating the building performance as a whole shall accompany the design solution.
- 7. This method shall address the actual use of the building including the number of people, fuel load, awareness and mobility of the people, and other relevant factors.

8. The methodology for validation of this method for the project shall be acceptable to the principal design professional and the code official.
9. This method shall be substantiated by a system-based approach using at least two acceptable scenarios to demonstrate compliance with design objectives and code provisions.

10. Delete without substitution

~~Appendix C~~

~~Individually Substantiated Design Methods~~

11. Delete without substitution

~~Appendix D~~

~~Qualification Characteristics for Design and Review of Performance-Based Designs~~

12. Delete without substitution:

~~Appendix E~~
~~Use of Computer Models~~

Commenter's Reason: The rationale for the changes (PC2-02, PC4-02, PC5-02, PC6-02, PC7-02, PC8-02 and PC14-02) brought forth by the Correlating Committee had sufficient merit, but the changes as proposed could not be recommended for approval by the committee as it would have resulted in significant voids in the qualifications of code users and methods. This change seeks to embrace the concerns of the original proponent in moving technical provisions currently found in several of the appendices into new sections of the code itself, deleting them as appendices, and leaving but two of the original appendices along with standard ICC language about the relationship of appendices to the code. No new technical provisions are embodied within this comment, simply a methodology to correlate the ICC Performance Code with the preferred format of the ICC Family of Codes.

An explanation for each part follows:

1. The section was added to be consistent with the other I-Codes as to how appendices are addressed. This would require appendices to be specifically adopted.
2. The direct reference to Appendix D was deleted with a new reference to Section 103.3.3. Section 103.3.3 is a new section formed using the language found in Appendix D.
3. The same reason as Item 2 of this proposal.
4. This section was added to address qualification issues surrounding the use of computer models. This section was based upon language found in Section E102.1, Item 1 of Appendix E.
5. This section is from Appendix D. Essentially all of Appendix D, except for Section D101.1, was included.
6. This section was revised to remove the direct reference to Appendix E with a reference to a new Section 103.3.5, which specifically addresses computer model documentation.
7. This section is based upon Section E102.1, Items 2 and 3 (Note that Item 1 of Section E102.1 was used to create Section 103.3.3.9). See Item 4 of this reason.

8. This section was revised to remove the direct reference to Appendix D. Instead a reference is now made to new Section 103.3.3 which is based upon Appendix D.
9. This section was revised to replace the reference to Appendix C and provide the necessary criteria directly within the body of the code. The language found in this proposed revision includes all language from Appendix C except for Section C101.1, Scope.
10. This Appendix was deleted as the necessary language has been placed within the body of the code.
11. This Appendix was deleted as the necessary language has been placed within the body of the code.
12. This Appendix was deleted as the necessary language has been placed within the body of the code.

It should be noted that in several cases some language from the Appendices, primarily from the scope sections, was not included as it made the language awkward and repetitive. The following sections from the appendices were not included for these reasons: C101.1, D101.1, E101.1 and E103.1.

Also, Appendices A and B were not deleted as they are not directly referenced within the code currently and are still felt important to remain as appendices.

Analysis: The original code change is one of many individual code changes submitted in order to establish the status of the appendices versus the code. Instead of submitting public comments to each individual code change, the commenter has combined the relevant proposals into a single public comment which introduces the salient points of the appendices into the code itself.
