

NCDOI **OSFM** Evaluation Services

Scope of DOI White Paper: The Purpose of this document is to provide clarification on North Carolina State Code requirements to Code Enforcement Officials (CEO) who are agents for the Authority Having Jurisdiction (AHJ).

DOI File Number: WP-025-10

Edition Date: June 16, 2010

Revision Date: November 14, 2012

Subject of White Paper: **Process for Submission and Consideration of Alternate Material, Design, or Method of Construction or Equipment**

Table of Contents:

1.0 Intent	1
2.0 Code References Related to Alternate Material, Design or Methods	1
3.0 Information which may be Requested by the Code Enforcement Official	2
A. General Information	2
B. Submittal Information	2
C. Documentation	3
D. Recommendation	4
4.0 Results	4

1.0 Intent

- A. The technical codes are not intended to inhibit innovative ideas, new technologies or new materials or products, which meet the intent of the NC State Building Codes. Consequently, when an owner, contractor, or designer desires to use a different method of design, construction, equipment, or materials from that which is prescribed by Code, they can submit an “Alternate Material, Design or Methods”* proposal to the Code Enforcement Official (CEO).

* Often referenced as an “AMM request”

- B. The CEO does not have legal authority to allow someone to build to a lesser standard than that which is required by minimum Code. However, the CEO can evaluate a request to determine if the proposed material, design, or method provides, at minimum, the equivalent level of protection for quality, strength, effectiveness, fire durability, and safety as required by the intent of the Code. Approval of an alternate material, design, or methods proposal by the CEO is not intended to represent a “variance” to or “lesser than” minimum standards required by the Codes.

2.0 NC State Building Code References related to Alternate Material, Design or Methods

- A. 2012 North Carolina Administrative Code and Policies (NCACP): Section 105
- B. 2012 North Carolina Building Code (NCBC): Section 104 references the “North Carolina

Administrative Code and Policies” (See Section NCACP-105).

- C. 2012 North Carolina Fire Prevention Code (NCFPC): Sections 104.7-104.9
- D. 2012 North Carolina Plumbing Code (NCPC): Section 105
- E. 2012 North Carolina Mechanical Code (NCMC): Section 105
- F. 2012 North Carolina Fuel Gas Code (NCFGC): Section 105
- G. 2012 North Carolina Energy Code (NCEC): Section 102
- H. 2012 North Carolina Residential Code (NCRC): Section R104 references the “North Carolina Administrative Code and Policies” (See Section NCACP-105).

3.0 Information which may be Requested by the Code Enforcement Official - The CEO approving an alternate material, design or methods proposal is taking sole responsibility for his determination that the proposal is equivalent to or better than the minimum code requirements.

A jurisdiction may have a standard application form that is to be submitted as a part of a request for a CEO to properly review and evaluate an alternate material, design, or methods proposal. If the jurisdiction does not have a form, the applicant should provide the following information in writing, along with any other documentation requested by the CEO, for review by the CEO to substantiate that the minimum level for protection of public health, safety, and welfare, as required by the Codes, continues to be maintained:

A. General Information:

- 1. Identify the project name, date of request, and project site/street address/lot number. Provide the name of the owner, designer of record and contractor (if applicable) and the contact person for each entity, including their telephone number(s), fax number, email address and mailing address.
- 2. If the applicant is not the owner, designer of record or the contractor, identify the applicant’s association with the project and provide the telephone number(s), fax number, email address and mailing address.
- 3. The CEO representing the Authority Having Jurisdiction may require additional information specific to the project, such as development permit type, tract and lot number, etc., and/or other documentation as required before evaluating the proposal.
- 4. Before submitting the request, confirm the number of copies that are required by the AHJ.

B. Submittal Information:

- 1. Describe the alternate material, design, or method request being proposed.
- 2. Identify the Code(s) and Code Section(s) for which the alternative is being requested. Describe why the applicant is not able to comply with the prescriptive Code provision and what hardship or extreme difficulty requires the need to modify the Code provision.
- 3. Explain how the proposal continues to maintain the spirit and the intent of the Code, i.e., how the applicant justifies that the request is, at minimum, equivalent to the level of protection which is prescribed in the Code? Compare the proposed request with the code requirements in terms of suitability, quality, effectiveness, quality, fire durability, safety, structural strength, and any other impacts affecting the building or its users.

4. If applicable, provide a set of project drawings, specifications and any other construction documents necessary to evaluate the request.
5. For commercial projects, all construction/building data information relevant to the request should be provided, and preferably in the applicable section(s) of Appendix B (2012 Building Code Summary for all Commercial Projects). If there is a question on what information needs to be provided, recommendation is to contact the AHJ for guidance.

C. Documentation that may accompany request:

1. As proof of compliance, the CEO may require tests, test reports, and/or specific analysis that are specified in the Code. The laboratory shall be accredited (for the specific test method under consideration) by the International Accreditation Services, Inc. (IAS). The web site link for the list of IAS accredited laboratory laboratories is <http://www.iasonline.org/More/search.html>.
2. Other required documentation may include manufacturer's information (details/cut sheets, shop drawings, installation requirements, specifications, etc.), calculations, MSDS sheets, verification of installer credentials, and/or other information as required by the CEO for review to confirm compliance.
3. In addition, a product may require special inspection to verify proper installation. Special inspections are addressed in the NCACP-107.5 and NCBC-Chapter 17.
4. Specific tests may not be listed in the Code, particularly for some innovative methodologies. In the absence of recognized and accepted test methods listed in the Code, the CEO can specify and approve what test(s) are appropriate to confirm Code compliance. The CEO may require jurisdictional approval of the testing laboratory or the North Carolina registered professional hired by the applicant to perform the test, research, analysis and an evaluation report. The report shall be submitted to the CEO for consideration.
5. A report by a design professional may be a useful tool to the CEO in reviewing an AMM proposal. For additional information on design professionals, see the NCDOT Evaluation Services white paper "*Recommended Standards for Reports and Letters Submitted by Design Professionals*" on the NCDOT website at http://www.ncdot.com/OSFM/Engineering_and_Codes/Documents/evaluations_2012/Recommended%20Standards%20for%20Engineering%20Reports%20July%202012_.pdf
6. Another consideration by the CEO may be that the performance resulting from the proposed alternate can be compared to the performance required by the Code.
 - a. Using prescribed code requirements as a baseline for comparison, it can then be demonstrated in the evaluation whether a proposed alternate offers the intended level of performance. Consequently, a comparison of safety provided can be used as the basis for establishing that the proposed alternate is equivalent to what is required by the Code.
 - b. Because performance based methods can be the most complex level of an AMM, a partnership is recommended among the AHJ, the designer, and the owner to define level of performance before analysis and design commences.
7. Cost:

- a. All tests and/or analysis by a testing laboratory or other agency or a North Carolina registered professional are **not** to be performed at the expense of the Authority Having Jurisdiction.
 - b. If the AHJ does not have the expertise on staff to make a thorough and competent review of the request, a third party review process may be utilized. Any cost associated with a third party review shall be **paid** by the applicant.
- D. Recommendation: The applicant should highlight in the request any non-Code required design elements of the building and/or its systems that exceed minimum code requirements, as they may contribute to evidence that the request could be, at minimum, equivalent to the prescribed Code requirement. Specific examples may include items such as non-required emergency generators being provided, greater than required hourly rated separation, non-required smoke detection throughout, non-required NFPA 13 sprinkler system throughout, exceeding minimum number of required exits, reduced travel distance, etc.

4.0 Results

- A. An alternate material, design or methods proposal can be approved or denied or can be approved with conditions by the Code Enforcement Official. Regardless of the outcome, the decision shall only apply to the specific project for which the proposed alternate was submitted. If conditions or the design changes during the course of the project, the AMM must be resubmitted to the CEO for re-evaluation to ensure that it continues to comply with the intent of the applicable NC State Building Codes.
- B. Approval or denial or approved with conditions by the CEO shall be issued in writing to the applicant.
- C. Documentation of any approved alternate material, design, or method and any condition(s) of that approval by a CEO, as the agent for the Authority Having Authority, is a public record and vitally important. Deviations from the prescriptive codes that may be noted in a building later may result in legal action or a complaint to the NC Code Officials Qualification Board. The CEO must be prepared to provide such documentation or risk a finding of negligence or misconduct. Rules regarding preservation of public records are available from the NC Department of Cultural Resources.

This Document does not imply that the Code Enforcement Official must approve any specific material, design, or method.