

**INITIAL STATEMENT OF REASONS
FOR PROPOSED BUILDING STANDARDS
OF THE STATE FIRE MARSHAL
REGARDING THE 2019 CALIFORNIA ELECTRICAL CODE
CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 3**

(SFM 03/19)

The Administrative Procedure Act (APA) requires that an Initial Statement of Reasons be available to the public upon request when rulemaking action is being undertaken. The following information required by the APA pertains to this particular rulemaking action:

STATEMENT OF SPECIFIC PURPOSE, PROBLEM, RATIONALE and BENEFITS

Government Code Section 11346.2(b)(1) requires a statement of specific purpose of each adoption, amendment, or repeal and the problem the agency intends to address and the rationale for the determination by the agency that each adoption, amendment, or repeal is reasonably necessary to carry out the purpose and address the problem for which it is proposed. The statement shall enumerate the benefits anticipated from the regulatory action, including the benefits or goals provided in the authorizing statute.

Item 1. Chapter 3

Wiring Methods and Materials

ARTICLE 334

**Nonmetallic-Sheathed Cable: Types NM,
NMC, and NMS**

Section: 334.10

Reason:

The State Fire Marshal (SFM) proposal was discussed at the SFM Tall Wood Building (TWB) work group meetings, to address an Executive Order B-52-18 that charged various state agencies to bring in regulations for the use of mass timber in California. The electrical component of the Tall Wood Building (TWB) was suggested by the National Electrical Manufacturers Association representatives to address an oversight to the proposals and to correct the intent of the use for Non-Metallic (NM) cable.

The 2020 National Electric Code (NEC) removed a 3-story limit for NM cable in Section 334.10, replacing the requirement with a reference to building construction type, limiting the use of NM cable to Types III, IV, and V. This effectively will allow NM cable in buildings up to 4- stories. For the 2021 code changes to the International Building Code (IBC), there were 14 proposals to add mass timber buildings into the 2021 IBC, increasing the allowable height of wood structures up to 18 stories. The International Code Council (ICC) membership voted to add new categories of Type IV buildings (mass timber) to include buildings up to 18 stories.

An unintended consequence of this action is to drastically increase the number of floors where NM cable can be installed. A review of the documentation submitted to ICC

revealed detailed analysis of fire control and egress requirements, but no recognition of the impact on wiring methods.

In deliberations for the 2020 edition of the NEC®, Proposal 7-135 was initially rejected by CMP-7, but by the end of the process was accepted into the 2020 edition, which recognized the Type III, IV, and V construction types where NM cable could be installed.

Inherent in those deliberations was the recognition that the prevailing limit on such buildings was 4-stories (with a few rare allowances for 5 and 6 stories). As such, the concept of NM cable in buildings of 18 stories was never discussed or considered. There were certainly safety concerns with the limited increase in height at the time, and those concerns are still relevant today.

To preserve the integrity of National Fire Protection Association's (NFPA) American National Standards Institute (ANSI) approved code development process, the SFM is proposing regulations that reflect the Tentative Interim Amendment (TIA), issued by NFPA within the California Electrical Code. The technical merits of allowing NM cable in buildings higher than 4-stories should be fully discussed and vetted through the regular process at the 2023 NEC code change process.

The alternative will be to allow a different code, developed through a different process, to drastically alter the provisions of the NEC. Acceptance of a TIA will ensure that the NEC® development and change process works as intended.

Emergency Nature: The proposed NFPA TIA intends to accomplish a recognition of an advancement in the art of safeguarding property or life where an alternative method is not in current use or is unavailable to the public.

The safe use of Type NM cable in structures above 3 stories in height was questionable in the deliberations for the 2020 edition of the NEC® code cycle. This is of an emergency nature because, without it, the NEC® is effectively and drastically altered without public input or deliberation by the electrical experts on CMP-6, and would allow installations of unknown safety. The proposed code change is critical in maintaining the current code requirements as approved through the NFPA process.

Response to a public comment at the CAC: The San Diego Area Chapter of the International Code Council sent in a public comment regarding the initial proposed amendment to Section 334.10. It was explained that the use of NM cable is a popular wiring method in residential construction including Type III buildings constructed above podiums. All wood framed buildings in the San Diego area utilize NM cable due to the cost advantage and ease of installation, transportation, deliver and storage. While they fully supported the SFM proposed restrictions for combustible buildings exceeding 6 stories in height, they did not agree on the restrictions for buildings 5 and 6 stories in height.

The California Building Code provides two different methods for measuring the number of stories either above grade plane or above the three-hour horizontal assembly under the special provision of Section 510.2. The public comment gave a posed change and the SFM agreed to the change and modified the proposal at the Green/PEME Code Advisory

Committee (CAC) Hearings. The modified proposal was approved by the CAC and is what is presented in the 45-Day Express Terms.

Item 2. Adoption

The State Fire Marshal is proposing to adopt the following Articles that were missed during the 2018 Triennial Rulemaking Cycle.

Article 90 General Code Provisions

This article is being proposed for adoption for the general use and scope of the code. It was missed in the regular 2018 Triennial rulemaking cycle. The proposal is to correct the oversight.

Article 425 Fixed Resistance and Electrode Industrial Process Heating Equipment

This is a new Article in the 2017 NEC. It was missed for formal adoption by the State Fire Marshal during the 2018 Triennial rulemaking cycle. The proposal corrects the oversight.

Article 691 Large-Scale Photovoltaic (PV) Electric Power Production Facility

This is a new Article in the 2017 NEC. It was missed for formal adoption by the State Fire Marshal during the 2018 Triennial rulemaking cycle. The proposal corrects the oversight.

Article 710 Stand Alone Systems

This is a new Article in the 2017 NEC. It was missed for formal adoption by the State Fire Marshal during the 2018 Triennial rulemaking cycle. The proposal corrects the oversight.

Article 712 Direct Current Microgrids

This is a new Article in the 2017 NEC. It was missed for formal adoption by the State Fire Marshal during the 2018 Triennial rulemaking cycle. The proposal corrects the oversight.

TECHNICAL, THEORETICAL, AND EMPIRICAL STUDY, REPORT, OR SIMILAR DOCUMENTS

Government Code Section 11346.2(b)(3) requires an identification of each technical, theoretical, and empirical study, report, or similar document, if any, upon which the agency relies in proposing the regulation(s).

The SFM used the justification that was provided through the International Code Council (ICC) rulemaking process. The text is included in this document.

STATEMENT OF JUSTIFICATION FOR PRESCRIPTIVE STANDARDS

Government Code Section 11346.2(b)(1) requires a statement of the reasons why an agency believes any mandates for specific technologies or equipment or prescriptive standards are required.

The SFM proposals have prescriptive regulations that recognized national testing standards. Alternates were considered and included where appropriate were the level of safety needed to be maintained.

CONSIDERATION OF REASONABLE ALTERNATIVES

Government Code Section 11346.2(b)(4)(A) requires a description of reasonable alternatives to the regulation and the agency's reasons for rejecting those alternatives. In the case of a regulation that would mandate the use of specific technologies or equipment or prescribe specific action or procedures, the imposition of performance standards shall be considered as an alternate. It is not the intent of this paragraph to require the agency to artificially construct alternatives or describe unreasonable alternatives.

The SFM has determined that no reasonable alternative considered by the SFM or that has otherwise been identified and brought to the attention of the SFM would be more effective in carrying out the purpose for which the action is proposed or would be as effective and less burdensome to affected private persons than the proposed action, or would be more cost-effective to affected private persons and equally effective in implementing the statutory policy or other provisions of law.

REASONABLE ALTERNATIVES THE AGENCY HAS IDENTIFIED THAT WOULD LESSEN ANY ADVERSE IMPACT ON SMALL BUSINESS

Government Code Section 11346.2(b)(4)(B) requires a description of any reasonable alternatives that have been identified or that have otherwise been identified and brought to the attention of the agency that would lessen any adverse impact on small business.

The SFM has determined that no reasonable alternative considered by SFM or that has otherwise been identified and brought to the attention of the SFM would be more effective in carrying out the purpose for which the action is proposed or would be as effective and less burdensome to affected on small business than the proposed action, or would be more cost-effective to affected small business and equally effective in implementing the statutory policy or other provisions of law.

FACTS, EVIDENCE, DOCUMENTS, TESTIMONY, OR OTHER EVIDENCE OF NO SIGNIFICANT ADVERSE IMPACT ON BUSINESS

Government Code Section 11346.2(b)(5)(A) requires the facts, evidence, documents, testimony, or other evidence on which the agency relies to support an initial determination that the action will not have a significant adverse economic impact on business.

The impact to business is described in the Economic and Fiscal Impact Statement.

ASSESSMENT OF EFFECT OF REGULATIONS UPON JOBS AND BUSINESS EXPANSION, ELIMINATION OR CREATION

Government Code Sections 11346.3(b)(1) and 11346.5(a) (10)

The Office of the State Fire Marshal has assessed whether or not and to what extent this proposal will affect the following:

A. The creation or elimination of jobs within the State of California.

The Tall Wood Building (TWB) proposals will create the opportunity for the increased use of mass timber. The use of mass timber can deliver significant cost savings. The cost of the materials is the same or higher. The time of construction at the site can be reduced by 20% and the on-site skilled labor is reduced. The regulations may create an increase in the demand for

specialists, designers, and engineers in mass timber. They may also increase the demand for workers in manufacturing plants of mass timber if they are built in California.

- B.** The creation of new businesses or the elimination of existing businesses within the State of California.

The Tall Wood Building proposals will create the opportunity for the increased use of mass timber. The use of mass timber can deliver significant cost savings. The cost of the materials is the same or higher. The time of construction at the site can be reduced by 20% and the on-site skilled labor is reduced. This may increase the mass timber manufactures, designers, and construction firms in California.

- C.** The expansion of businesses currently doing business within the State of California.

The Tall Wood Building proposals will create the opportunity for the increased use of mass timber. This may create the increased use of wood products. Inversely, this may create a reduction in the traditional use of concrete and steel in construction.

This is new to the industry and the expanded use of mass timber is unknown and difficult to calculate for the 18-month effective period of analysis. The manufacturing of the product is currently done in other states. According to the Beck Group, as of 2018 there are five certified manufactures of Cross Laminated Timber (CLT) in the North America. This will provide the incentive to produce CLT in California, but it is unlikely to occur within the 18-month time frame. The proposals may create the opportunity for manufacturing to move into the state, but to what extent is unknown.

- D.** The benefits of the regulation to the health and welfare of California residents, worker safety, and the state's environment.

The SFM worked with various stakeholders to propose regulations that provide an acceptable level of fire and life safety. These proposals include safety in electrical wiring in tall wood buildings.

ESTIMATED COST OF COMPLIANCE, ESTIMATED POTENTIAL BENEFITS, AND RELATED ASSUMPTIONS USED FOR BUILDING STANDARDS

Government Code Section 11346.2(b)(5)(B)(i) states if a proposed regulation is a building standard, the initial statement of reasons shall include the estimated cost of compliance, the estimated potential benefits, and the related assumptions used to determine the estimates.

The SFM did not identify any costs with these regulations.

DUPLICATION OR CONFLICTS WITH FEDERAL REGULATIONS

Government Code Section 11346.2(b)(6) requires a department, board, or commission within the Environmental Protection Agency, the Resources Agency, or the Office of the State Fire Marshal to describe its efforts, in connection with a proposed rulemaking action, to avoid unnecessary duplication or conflicts with federal regulations contained in the Code of Federal Regulations addressing the same issues. These agencies may adopt regulations different from these federal regulations upon a finding of one or more of the following justifications: (A) The differing state regulations are authorized by law and/or (B) The cost of differing state regulations is justified by the benefit to human health, public safety, public welfare, or the environment.

The SFM has determined that there are no comparable federal regulations or statues addressing the fire and life safety requirements as presented in this notice.