

**INITIAL STATEMENT OF REASONS
FOR PROPOSED BUILDING STANDARDS
OF THE CALIFORNIA BUILDING STANDARDS COMMISSION
REGARDING THE 2019 CALIFORNIA BUILDING CODE
CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 2**

(BSC 02/19)

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.

Executive Order B-52-18 directed BSC, in addition to other agencies, to consider for early adoption during the 2019 Intervening Code Adoption Cycle, the provisions put forth by the International Code Council's ad hoc committee on Tall Wood Buildings. This proposal is being made pursuant to that directive. These proposed regulations will update, clarify and improve the building regulations in the California Building Code, which will provide increased protection of public health and safety, worker safety, and the environment and may reduce GHG's by incentivizing the use of cross-laminated timber and other engineered wood products in construction throughout California.

ITEM 1: CHAPTER 1, SCOPE AND ADMINISTRATION

SECTION 110.3.12

Executive Order B-52-18 directs the California Building Standards Commission (BSC) to consider adoption of provisions affecting mass timber, including cross-laminated timber (CLT), originating from International Code Council's (ICC) Tall Wood Building proposal, which has been approved by ICC committee in the 2019 Group B structural provisions and is up for adoption into the 2021 International Building Code (IBC) in October of 2019. ICC's changes sub-divide Type IV construction into Types IV-A, IV-B and IV-C, which, amongst other provisions, provide varying allowances of height and area of structures. The ICC provisions also include requirements for fire protection and special inspection of the mass timber.

This proposal incorporates the ICC changes by requiring special inspection of the mass timber connections. BSC intends to co-adopt this provision with the State Fire Marshal (SFM) and Division of the State Architect (DSA). BSC adoption of this item is dependent upon ICC's ratification of these items and the State Fire Marshal's adoption of these items in this 2019 Intervening Code Cycle and will be withdrawn if not successfully adopted.

Since all the code proposals related to mass timber products are to address new types of building construction that are voluntary, this will not increase the cost of construction but rather provide design options not currently in the code. However, for example, the cost of a special inspection as a percentage of total construction costs for typical pre-fabricated construction elements may range between 0.15% to 0.30%, depending on labor cost and the complexities of the construction in the building.

CAC Recommendation: The BFO/SDLF Ad Hoc Code Advisory Committee recommended Approve as Submitted (AS)

CBSC Response: The CBSC accepts the CAC recommendation.

ITEM 2: CHAPTER 2, DEFINITIONS

MASS TIMBER WALL, LOAD BEARING

As described in Item 1, the added definitions in this proposed item originate from ICC's Tall Wood Building proposal to define mass timber, which is up for adoption into the 2021 IBC in October of 2019. BSC intends to co-adopt this provision with the State Fire Marshal (SFM) and Division of the State Architect (DSA). BSC adoption of this item is dependent upon ICC's ratification of these items and the State Fire Marshal's adoption of these items in this 2019 Intervening Code Cycle and will be withdrawn if not successfully adopted. No fiscal impact will result from the addition of these definitions.

CAC Recommendation: The BFO/SDLF Ad Hoc Code Advisory Committee recommended Approve as Submitted (AS)

CBSC Response: The CBSC accepts the CAC recommendation.

ITEM 3: CHAPTER 17, SPECIAL INSPECTIONS AND TESTS

SECTION 1705.5.7 TABLE 1705.5.7

As described in Item 1 for the adoption of mass timber, this proposal explicitly requires special inspection of the mass timber installation, with an emphasis on connections, and is likewise up for adoption into the 2021 IBC in October of 2019. This proposal codifies requirements for inspections into the California Building Code prior to the publishing of these provisions in the 2021 IBC.

SECTION 1705.11.1 SECTION 1705.11.2 SECTION 1705.12.2 SECTION 1705.12.3

These existing sections are being amended to include conditions that may occur when employing one of the proposed new construction types.

SECTION 1705.20

This proposal incorporates the ICC changes by requiring special inspection of the mass timber connections. BSC intends to co-adopt this provision with the State Fire Marshal (SFM) and Division of the State Architect (DSA). BSC adoption of this item is dependent upon ICC's ratification of these items and the State Fire Marshal's adoption of these items in this 2019 Intervening Code Cycle and will be withdrawn if not successfully adopted.

Since all the code proposals related to mass timber products are to address new types of building construction that are voluntary, this will not increase the cost of construction but rather provide design options not currently in the code. However, for example, the cost of a special inspection as a percentage of total construction costs for typical pre-fabricated construction elements may range between 0.15% to 0.30%, depending on labor cost and the complexities of the construction in the building.

CAC Recommendation: The GBFO/SDLFAd Hoc Code Advisory Committee recommended Approve as Submitted (AS)

CBSC Response: The CBSC accepts the CAC recommendation.

ITEM 4: CHAPTER 23, WOOD

SECTION 2304.10.1.2

Section 2304.10.1.2 proposes testing and thermal design requirements for fire protection of mass timber framing connections of Types IV-A, IV-B and IV-C heavy (mass) timber construction.

SECTION 2304.11.3

SECTION 2304.11.4

Sections 2304.11.3 and 2304.11.4 proposes the allowance of concealed spaces in mass timber construction under specified rated conditions. There is no fiscal impact as a result of this proposal.

As described in Item 1, the sections in this proposed item originate from ICC's Tall Wood Building Proposal to enhance the use of mass timber, which is up for adoption into the 2021 IBC in October of 2019. BSC intends to co-adopt these provisions with the State Fire Marshal (SFM) and the Division of the State Architect (DSA); however, BSC adoption of this item is dependent upon ICC's successful adoption into the 2021 IBC and the State Fire Marshal's adoption in this 2019 Intervening Code Cycle and will be withdrawn if not successfully adopted.

ITEM 5: CHAPTER 31, SPECIAL CONSTRUCTION

SECTION 3102.3

SECTION 3102.6.1.1

As described in Item 1, the sections in this proposed item originate from ICC's Tall Wood Building Proposal to enhance use mass timber, which is up for adoption into the 2021 IBC in October of 2019. Both sections in this proposal are editorial in that they make reference to Type IV construction as heavy timber with the suffix "HT".

This item has no fiscal or economic impact.

SECTION 3109.2

Pursuant to Health and Safety Code (HS Code) Section 18942 (b), BSC is required to reprint the Swimming Pool Safety Act (Act), found in HS Code Section 115920 et sec, into the California Residential Code, Part 2.5 of Title 24. For several code cycles BSC has also reprinted the Act in the California Building Code, Part 2 for code user convenience.

During the 2019 Triennial Code Adoption Cycle, the Act was carried forward and reformatted to reflect statute numbering and text. HS Code Section 18942 (b) requires a note be included in the reprinting of the Act, indicating the regulations (the Act) are subject to local government modification. This note was inadvertently left out of the 2019 Triennial Code Adoption Cycle BSC rulemaking. BSC proposes this note be added as part of the 2019 Intervening Code Adoption Cycle in order to fully comply with state law. Appendix V in the 2019 California Residential Code, Part 2.5 contains the required note, so change is necessary in that part.

CAC Recommendation: The BFO/SDLF Ad Hoc Code Advisory Committee recommended Approve as Submitted (AS)

CBSC Response: The CBSC accepts the CAC recommendation.

ITEM 6: CHAPTER 35, REFERENCED STANDARDS

ANSI/APA: PRG 320-18

CAC Recommendation: No action was taken by the CAC. During the CAC meeting, public comment was provided by Dennis Richardson, American Wood Council (AWC) that International Code Council (ICC) adopted the updated ANSI/APA PRG 320-18 standard to incorporate heat resistant adhesive into Cross-laminated Timber (CLT) which is critical for use in tall wood buildings. The CAC asked for consideration of this advisement concerning the 2019 CBC, Chapter 35 – Referenced Standards, based on the public comment.

CBSC Response: Upon verification, CBSC concurs with this public comment, and proposes a new amendment for adoption of the ANSI/APA PRG 320-18 standard, in order to support other proposed provisions for CLT.

ASTM: D3498-03(2011)

As described in the Purpose and Rationale in Item 1, the sections in this proposed item originate from ICC's Tall Wood Building Proposal to enhance use mass timber, which is up for adoption into the 2021 IBC in October of 2019. This item adds applicable specification

for adhesives to be used in mass timber.

This item has no fiscal or economic impact as it is an industry standard.

CAC Recommendation: The BFO/SDLF Ad Hoc Code Advisory Committee recommended Approve as Submitted.

CBSC Response: The CBSC accepts the CAC recommendation.

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).

ICC's Code Proposal report, Rationale, and 2019 Public Comment Agenda

Findings from the State Fire Marshal Workshops in compliance with Executive Order B-52-18.

2018 IBC: International Building Code.

ASCE 7-16: Minimum Design Loads and Associated Criteria for Buildings and Other structures with Supplement No. 1

ASCE 41-17: Seismic Evaluation and Retrofit of Existing Buildings

ACI 318-14: Building Code Requirements for Structural Concrete and Commentary.

AWC NDS-18: National Design Specification (NDS) for Wood Construction.

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 proposed amendments do not contain any mandates for specific technologies or equipment or prescriptive standards. Use of mass timber and CLT is an optional type of construction, and specifications for CLT are included in the 2019 California Building Code.

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.

BSC considered the findings from the State Fire Marshal Workshop in compliance with Executive Order B-52-18 and did not identify nor determine any reasonable alternatives to these regulations pertaining to use of mass timber.

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.

No alternatives were identified that would lessen any adverse impact on small business. Small businesses will not experience an adverse impact due to these amendments.

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.

BSC has determined that the change in the code is strictly voluntary and not a mandate. However, based on an analysis published in the 2019 Group B Public Comment Agenda by International Code Council's ad hoc Committee on Tall Wood Buildings (available from the Building Standards Commission or at the [International Code Council's website](http://cdn-web.iccsafe.org/wp-content/uploads/2019-ICC-PUBLIC-COMMENT-AGENDA-compressed-2019-upload-upload.pdf) ([//cdn-web.iccsafe.org/wp-content/uploads/2019-ICC-PUBLIC-COMMENT-AGENDA-compressed-2019-upload-upload.pdf](http://cdn-web.iccsafe.org/wp-content/uploads/2019-ICC-PUBLIC-COMMENT-AGENDA-compressed-2019-upload-upload.pdf)), a typical residential or office building of typical floor plates an estimate of special inspection costs may range from \$1,000 to \$2,000 per floor. Another approach to the cost of special inspection is a percentage of total construction costs; for typical pre-fabricated construction elements the cost of special inspection may range between 0.15% to 0.30%, depending on labor cost and complexities of the construction in the building. Facts, evidence, documents, testimony, or other evidence upon which BSC relied to support its initial determination of no effect pursuant to Government Code Section 11346.5(a)(8) is available for inspection by the public. The public may submit information, facts, or documents either supporting BSC's initial determination or finding to the contrary.

During the development of these regulations, the SFM hosted many public workshops with industry, stakeholders, and the public. At no time was there any evidence proposed that would suggest a significant statewide adverse economic impact on business.

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 BSC 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.
These regulations may result in the creation of jobs within the mass timber industry in the State of California.
- B.** The creation of new businesses or the elimination of existing businesses within the State of California.
These regulations may result in new business within the mass timber industry in the State of California.

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

These regulations may result in the expansion of businesses currently doing business within the mass timber industry in the State of California.

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

These proposed regulations will update, clarify and improve the building regulations in the California Building Code, which will provide increased protection of public health and safety, worker safety, and the environment and may reduce GHG's by incentivizing the use of cross-laminated timber and other engineered wood products in construction throughout California.

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 proposed changes to the regulations are made pursuant to Executive Order B-52-18, as well as to provide clarity and have unknown fiscal impact to the cost of compliance in the application and implementation of the California Building Code related to the voluntary use of mass timber products. These proposed regulations will update, clarify and improve the building regulations in the California Building Code, which will provide increased protection of public health and safety, worker safety, and the environment and may reduce GHG's by incentivizing the use of cross-laminated timber and other engineered wood products in construction throughout California.

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.

BSC is not affiliated with the EPA or Resources Agency; and these proposed regulations do not duplicate or conflict with federal regulations. BSC did participate in State Fire Marshal workgroup to assess use of mass timber in tall building construction. The proposed standards are a result of the findings from the workshop.