



STATE OF WASHINGTON
STATE BUILDING CODE COUNCIL

May 2018
Log No. _____

1. State Building Code to be Amended:

- | | |
|---|---|
| <input checked="" type="checkbox"/> International Building Code | <input type="checkbox"/> International Mechanical Code |
| <input type="checkbox"/> ICC ANSI A117.1 Accessibility Code | <input type="checkbox"/> International Fuel Gas Code |
| <input type="checkbox"/> International Existing Building Code | <input type="checkbox"/> NFPA 54 National Fuel Gas Code |
| <input type="checkbox"/> International Residential Code | <input type="checkbox"/> NFPA 58 Liquefied Petroleum Gas Code |
| <input type="checkbox"/> International Fire Code | <input type="checkbox"/> Wildland Urban Interface Code |
| <input type="checkbox"/> Uniform Plumbing Code | |

For the Washington State Energy Code, please see specialized [energy code forms](#)

Section(s): 3102.7

(e.g.: Section: R403.2)

Title: Membrane Structure Loading

(e.g: Footings for wood foundations)

2. Proponent Name (Specific local government, organization or individual):

**Proponent: Washington Association of Building Officials Technical Code Development Committee
(Micah Chappell, chair; Jonathan Siu, technical consultant)**

Title:

Date: 9/10/2024

3. Designated Contact Person:

Name: Jonathan Siu

Title: Technical Consultant

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Renton, WA 98058**

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Cell: same

E-Mail address: jonsiuconsulting@gmail.com

- 4. Proposed Code Amendment.** Reproduce the section to be amended by underlining all added language, striking through all deleted language. Insert new sections in the appropriate place in the code in order to continue the established numbering system of the code. If more than one section is proposed for amendment or more than one page is needed for reproducing the affected section of the code, additional pages may be attached.

Clearly state if the proposal modifies an existing amendment or if a new amendment is needed. If the proposal modifies an **existing amendment**, show the modifications to the existing amendment by underlining all added language and striking through all deleted language. If a new amendment is needed, show the modifications to the **model code** by underlining all added language and striking through all deleted language.

Code(s) IBC Section(s) 3102.7

Enforceable code language must be used.

Amend section to read as follows:

3102.7 Engineering design. The *structure* shall be designed and constructed to sustain ~~dead loads;~~ loads due to tension or inflation; ~~live loads including wind, snow or flood and seismic loads~~ and loads in accordance with Chapter 16.

3102.7.1 Lateral restraint. For *membrane-covered frame structures*, the membrane shall not be considered to provide lateral restraint in the calculation of the capacities of the frame members.

- 5. Briefly explain your proposed amendment, including the purpose, benefits and problems addressed.** Specifically note any impacts or benefits to business, and specify construction types, industries and services that would be affected. Finally, please note any potential impact on enforcement such as special reporting requirements or additional inspections required.

This amendment deletes the incomplete list of loads for which membrane structures need to be designed, leaving a simple pointer to IBC Chapter 16 where all structure loads are addressed.

Section 3102 is intended to apply to permanent membrane structures. (Section 3102.1 points to the IFC for temporary membrane structures.) The current language in Section 3102.7 only requires membrane structures to be designed for dead, live, wind, snow, flood, and seismic loads, in addition to the loads associated with the membrane itself. However, Chapter 16 contains loading criteria for soil/hydrostatic, rain, ice, and tsunami conditions that should be considered in the design of these structures, similar to all other permanent structures. Rather than naming all the load cases, this amendment reduces the list to a pointer to Chapter 16. Note that the requirement to design for membrane tension/inflation loads is retained here, as that loading condition is not explicitly covered in Chapter 16.

- 6. Specify what criteria this proposal meets.** You may select more than one.

- The amendment is needed to address a critical life/safety need.
- The amendment clarifies the intent or application of the code.
- The amendment is needed to address a specific state policy or statute.
- The amendment is needed for consistency with state or federal regulations.
- The amendment is needed to address a unique character of the state.
- The amendment corrects errors and omissions.

- 7. Is there an economic impact:** Yes No

If no, state reason: This amendment only clarifies the application of the code.

If yes, provide economic impact, costs and benefits as noted below in items a – f.

- a. **Life Cycle Cost.** Use the OFM Life Cycle Cost [Analysis tool](#) to estimate the life cycle cost of the proposal using one or more typical examples. Reference these [Instructions](#); use these [Inputs](#). Webinars on the tool can be found [Here](#) and [Here](#)). If the tool is used, submit a copy of the excel file with your proposal submission. If preferred, you may submit an alternate life cycle cost analysis.
- b. **Construction Cost.** Provide your best estimate of the construction cost (or cost savings) of your code change proposal.

\$Click here to enter text./square foot

(For residential projects, also provide \$Click here to enter text./ dwelling unit)

Show calculations here, and list sources for costs/savings, or attach backup data pages

- c. **Code Enforcement.** List any code enforcement time for additional plan review or inspections that your proposal will require, in hours per permit application:
- d. **Small Business Impact.** Describe economic impacts to small businesses:
- e. **Housing Affordability.** Describe economic impacts on housing affordability:
- f. **Other.** Describe other qualitative cost and benefits to owners, to occupants, to the public, to the environment, and to other stakeholders that have not yet been discussed:

Please send your completed proposal to: sbcc@des.wa.gov

All questions must be answered to be considered complete. Incomplete proposals will not be accepted.