



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 checked="" 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): IBC 420.13 (new); IBC 202; IBC 505.1; IBC 1011.14; IBC 1015.2; IBC 1015.3;
IFC/IBC 907.2.11.1; IFC/IBC 907.2.11.2
(e.g.: Section: R403.2)

Title: Lofts
(e.g: Footings for wood foundations)

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

Proponent: Washington Associations of Building Officials Technical Code Development Committee
(WABO TCD)

Title:

Date: May 28, 2021

3. Designated Contact Person:

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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. (Examples on the SBCC [website](#))

Code(s) IBC & IFC

Section(s) IBC 420.13 (new); 202; 505.1; 1011.14; 1015.2; 1015.3; IFC/IBC 907.2.11.1; IFC/IBC 907.2.11.2

Enforceable code language must be used; see an example [by clicking here](#).
Amend section to read as follows:

IBC Section 202: Add new definitions as follows:

LOFT. An occupiable space on an intermediate level or levels between the floor and ceiling of a dwelling or sleeping unit, provided with a permanent means of egress and open to the main floor on one or more sides.

LANDING PLATFORM. A landing provided as the top step of a *stairway* providing egress from a *loft*.

Add new IBC Section 420.13 as follows:

420.13 Lofts. Where provided, *lofts* shall comply with Sections 420.13.1 through 420.13.4. *Lofts* constructed in compliance with this section shall be considered a portion of the story below. Such *lofts* shall not contribute to either the building area or number of stories as regulated by Section 503.1. The loft floor area shall be included in determining the *fire area*.

Exceptions: *Lofts* with a minimum horizontal dimension of less than 3 feet need not comply with this section.

Lofts meeting either of the following conditions shall comply with the requirements of Sections 505 and 1207.

1. The *loft* floor area exceeds 70 square feet.
2. The *loft* ceiling height exceeds 7' for more than one half of the *loft* floor area.

420.13.1 Loft height. The ceiling height directly below a *loft* shall not be less than 7'-0". The ceiling height above the finished floor of the *loft* shall not be less than 3 feet. Portions of the *loft* with a sloped ceiling measuring less than 3 feet from the finished floor to the finished ceiling shall not contribute to the *loft* floor area.

420.13.2 Loft egress. *Lofts* shall be provided with a permanent means of egress complying with Section 420.13.2.1, 420.13.2.2, 420.13.2.3, or 420.13.2.4. A minimum ceiling height of 3'-0" shall be provided for the entire width of the means of egress from the *loft*.

420.13.2.1 Stairways. *Stairways* providing egress from *lofts* shall comply with Sections 420.13.1.1.1 through 420.13.1.1.6.

420.13.2.1.1 Width. *Stairways* providing egress from a *loft* shall not be less than 17 inches (432 mm) in clear width at or above the *handrail*. The width below the *handrail* shall be not less than 20 inches (508 mm).

420.13.2.1.2 Treads and risers. Risers for stairs providing egress from a *loft* shall be not less than 7 inches (178 mm) and not more than 12 inches (305 mm) in height. Tread depth and riser height shall be calculated in accordance with one of the following formulas:

1. The tread depth shall be 20 inches (508 mm) minus four-thirds of the riser height.
2. The riser height shall be 15 inches (381 mm) minus three-fourths of the tread depth.

420.13.2.1.3 Landings. Intermediate landings and landings at the bottom of *stairways* providing egress from *lofts* shall comply with Section 1011.6, except that the depth in the direction of travel shall be not less than 24 inches (508 mm).

420.13.2.1.4 Landing platforms. A *landing platform* shall be provided at the top of *stairways* providing egress from *lofts*. The *landing platform* shall not be less than 18 inches (508 mm) in width and in depth measured horizontally from and perpendicular to the nosing of the *landing platform*. The *landing platform* riser height to the edge of the *loft* floor, shall not be greater than 18 inches (508 mm) in height.

420.13.2.1.5 Handrails. *Handrails* at *stairways* providing egress from *lofts* shall comply with Section 1011.11.

420.13.2.1.6 Stairway guards. *Guards* at open sides of *stairways*, *landings*, and *landing platforms* shall comply with Section 1015.

420.13.2.2 Ladders. Ladders providing egress from *lofts* shall comply with Sections 420.13.2.2.1 and 420.13.2.2.2.

420.13.2.2.1 Size and capacity. Ladders providing egress from *lofts* shall have a rung width of not less than 12 inches (305 mm), and 10-inch (254 mm) to 14-inch (356 mm) spacing between rungs. Ladders shall be capable of supporting a 300-pound (136 kg) load on any rung. Rung spacing shall be uniform within 3/8 inch (9.5 mm).

420.13.2.2.2 Incline. Ladders shall be inclined at 70 to 80 degrees from horizontal.

420.13.2.3 Alternating tread devices. *Alternating tread devices* providing egress from *lofts* shall comply with Section 1011.14.

420.13.2.4 Ships ladders. Ships ladders providing egress from *lofts* shall comply with Sections 1011.15.

420.13.3 Guards at Lofts. *Guards* shall be located along open sides of *lofts* and shall be constructed in accordance with Section 1015.

Exception: *Guard* heights shall comply with Section 1015.3, or are permitted to be one half of the provided ceiling height, whichever is less.

420.13.4 Smoke Alarms. Single- or multiple-station smoke alarms shall be installed in all *lofts* in accordance with Section 907.2.11.1 or 907.2.11.2.

Modify IBC Sections 505.1, 1011.14, 1015.2, 1015.3, 907.2.11.1 and 907.2.11.2 as follows:

505.1 General. *Mezzanines* shall comply with Section 505.2. *Equipment platforms* shall comply with Section 505.3.

Exception: Mezzanines in dwelling units and sleeping units shall be permitted to comply with Section 420.13.

1011.14 Alternating tread devices. *Alternating tread devices* are limited to an element of a means of egress in any of the following locations:

1. ~~buildings~~ of Groups F, H and S from a mezzanine not more than 250 square feet (23 m) in area and that serves not more than five occupants;
2. ~~in buildings~~ of Group I-3 from a guard tower, observation station or control room not more than 250 square feet (23 m) in area ~~and~~.
3. For ~~for~~ access to unoccupied roofs.
4. Group R dwelling units and sleeping units from lofts.

Alternating tread devices used as a means of egress shall not have a rise greater than 20 feet (6096 mm) between floor levels or landings.

1015.2 Where required. *Guards* shall be located along open-sided walking surfaces, including mezzanines, equipment platforms, *aisles*, *stairs*, *ramps* and landings that are located more than 30 inches (762 mm) measured vertically to the floor or grade below at any point within 36 inches (914 mm) horizontally to the edge of the open side. *Guards complying with Section 420.13.3 shall be located along open sides of lofts.* *Guards* shall be adequate in strength and attachment in accordance with Section 1607.9.

Exceptions: *Guards* are not required for the following locations:

[No change to Exceptions]

1015.3 Height. Required *guards* shall be not less than 42 inches (1067 mm) high, measured vertically as follows:

1. From the adjacent walking surfaces.
2. On *stairways* and stepped *aisles*, from the line connecting the leading edges of the tread nosings.
3. On *ramps* and ramped *aisles*, from the *ramp* surface at the guard.

Exceptions:

1. For occupancies in Group R-3 not more than three stories above grade in height and within individual *dwelling units* in occupancies in Group R-2 not more than three stories above grade in height with separate *means of egress*, required *guards* shall be not less than 36 inches (914 mm) in height measured vertically above the adjacent walking surfaces.

2. For occupancies in Group R-3, and within individual *dwelling units* in occupancies in Group R-2, *guards* on the open sides of *stairs* shall have a height not less than 34 inches (864 mm) measured vertically from a line connecting the leading edges of the treads.

3. For occupancies in Group R-3, and within individual *dwelling units* in occupancies in Group R-2, where the top of the *guard* serves as a *handrail* on the open sides of *stairs*, the top of the *guard* shall be not less than 34 inches (864 mm) and not more than 38 inches (965 mm) measured vertically from a line connecting the leading edges of the treads.

4. *Guards* at lofts shall be permitted to comply with Section 420.13.3.

4.5. The *guard* height in assembly seating areas shall comply with Section 1030.17 as applicable.

5.6. Along *alternating tread devices* and ships ladders, *guards* where the top rail serves as a *handrail* shall have height not less than 30 inches (762 mm) and not more than 34 inches (864 mm), measured vertically from the leading edge of the device tread nosing.

6.7. In Group F occupancies where *exit access stairways* serve fewer than three stories and such *stairways* are not open to the public, and where the top of the *guard* also serves as a *handrail*, the top of the *guard* shall be not less than 34 inches (864 mm) and not more than 38 inches (965 mm) measured vertically from a line connecting the leading edges of the treads.

907.2.11.1 Group R-1. Single- or multiple-station smoke alarms shall be installed in all of the following locations in Group R-1:

1. In sleeping areas.

2. In each loft constructed in accordance with Section 420.13.

23. In every room in the path of the means of egress from the sleeping area to the door leading from the sleeping unit.

34. In each story within the sleeping unit, including basements. For sleeping units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.

907.2.11.2 Groups R-2, R-3, R-4 and I-1. Single- or multiple-station smoke alarms shall be installed and maintained in Groups R-2, R-3, R-4 and I-1 regardless of occupant load at all of the following locations:

1. On the ceiling or wall outside of each separate sleeping area in the immediate vicinity of bedrooms.

2. In each room used for sleeping purposes.

3. In each loft constructed in accordance with Section 420.13.

34. In each story within a *dwelling unit*, including *basements* but not including crawl spaces and uninhabitable attics. In *dwelling*s or *dwelling units* with split levels and without an intervening door

between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.

Modify IFC Sections 907.2.11.1 and 907.2.11.2 as follows:

907.2.11.1 Group R-1. Single- or multiple-station smoke alarms shall be installed in all of the following locations in Group R-1:

1. In sleeping areas.
2. In each loft constructed in accordance with Section 420.13 of the International Building Code.
23. In every room in the path of the means of egress from the sleeping area to the door leading from the sleeping unit.
34. In each story within the sleeping unit, including basements. For sleeping units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.

907.2.11.2 Groups R-2, R-3, R-4 and I-1. Single- or multiple-station smoke alarms shall be installed and maintained in Groups R-2, R-3, R-4 and I-1 regardless of occupant load at all of the following locations:

1. On the ceiling or wall outside of each separate sleeping area in the immediate vicinity of bedrooms.
2. In each room used for sleeping purposes.
3. In each loft constructed in accordance with Section 420.13 of the International Building Code.
34. In each story within a *dwelling unit*, including *basements* but not including crawl spaces and uninhabitable attics. In *dwelling*s or *dwelling units* with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.

- 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 proposal introduces “lofts” into the Building Code. The concept is taken from Section R327 of the WA State Residential Code. Some key concepts embedded in the proposal:

- Lofts are only allowed in dwelling or sleeping units (see definition). Something that looks like a loft but is not within a dwelling or sleeping unit is not a loft.
- Lofts must have a permanent means of egress (see definition). An area that looks like a loft but is not provided with a permanently affixed stair, ladder, alternating tread device, or ships ladder is not a loft.

- Lofts are intended to be small, and are allowed to have lower ceiling heights than normal habitable spaces (see 420.13 and 420.13.1). Lofts meeting dimensional requirements of habitable space must meet all the habitable space requirements.
- In order to provide adequate safety for multiple uses including sleeping, a smoke alarm is required in all lofts (IFC/IBC 907.11.2.1 and 907.11.2.2.). Note that because these lofts are in dwelling or sleeping units (R occupancies) regulated by the IBC, the units will be provided with automatic fire sprinklers, negating the need for emergency escape and rescue openings directly from sleeping areas.

Lofts have been proposed and used in several jurisdictions for many years in order to put “extra” space to use. For example, the space on top of a bathroom located in an area with a high ceiling could be used as the sleeping area. However, there is nothing in the code that regulates them. This proposal is intended to provide a reasonable balance between flexibility and safety for these types of spaces.

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

Explain:

There will be additional construction costs including the cost for one extra smoke alarm and guards for each loft. The addition costs will depend on the size and number of lofts in the dwelling unit. Smoke alarms cost less than \$20 each. Based on the price of deck guard systems, the materials for a pre-manufactured loft guard system will cost between \$15-\$40 a linear foot. Installation costs will be in addition to the material costs. Note, however, that because lofts are optional, it can be argued that this is not an increase in cost of construction.

Although there is an increased cost, there is also a benefit of being able to increase the usable living area per dwelling or sleeping unit, and this increase would greatly offset the small increased cost. This is especially important for increasing usable space in very small units, which have been increasingly popular with the importance of sustainability and living more simply. Not only would this allow more living space within a new multifamily building, but would also encourage alteration of existing dwelling and sleeping units rather than demolition and new construction.

Housing affordability has also become increasingly important in recent years due to the impacts of the recession. This proposal allows for densification of multi-family residential housing, allowing for additional occupiable space including sleeping areas within the same building footprint. With sustainability also comes micro-housing and affordability of housing, an important impact to the state’s economic priorities.

If there is an economic impact, use the tool below to estimate the costs and savings of the proposal on construction practices, users and/or the public, the enforcement community, and operation and maintenance. If preferred, you may submit an alternate cost benefit analysis.

Provide your best estimate of the construction cost (or cost savings) of your code change proposal? (See OFM Life Cycle Cost [Analysis tool](#) and [Instructions](#); use these [Inputs](#). [Webinars on the tool can be found Here and Here](#))

\$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

List any code enforcement time for additional plan review or inspections that your proposal will require, in hours per permit application:

Minimal increase in time for plan review and inspections.

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.