



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): 2024 IBC Section 504.4.1

Title: Stair enclosure pressurization increase

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

Proponent: Eric Vander Mey, PE

Title: Principal

Date: 9/19/2024

3. Designated Contact Person:

Name: Eric Vander Mey

Title: Delta E Consulting

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E-Mail: ericv@deltaeconsulting.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) **2024 International Building Code (IBC)**
Section(s) **504.4.1**

Enforceable code language must be used.
Amend section to read as follows:

Base language in black text is from 2021 WSBC Amendment
See revisions proposed below with track changes in blue text

504.4.1 Stair enclosure pressurization increase. For Group R-1, R-2, and I-1 Condition 2 Assisted living facilities licensed under chapter 388-78A WAC and residential treatment facilities as licensed by Washington state under chapter 246-337 WAC located in buildings of Type VA construction equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1, the maximum number of stories permitted in Section 504.4 may be increased by one provided the interior exit stairways and ramps are pressurized in accordance with Sections 909.6.3 and 909.20. Legally required standby power shall be provided in accordance with Sections ~~909.11~~909.20.6.2 and 2702.17 for buildings constructed in compliance with this section and be connected to stairway ~~shaft enclosure~~ pressurization equipment, elevators and lifts used for accessible means of egress (if provided), elevator hoistway pressurization equipment (if provided) and other life safety equipment as determined by the authority having jurisdiction. For the purposes of this section, legally required standby power shall comply with 2020 NEC NFPA 70 Section 701.12, options (C), (D), (E), (F), (H) or (J) or subsequent revised section number(s).

Sections below provided for reference no changes.

[F] 909.6.3 Pressurized stairways and elevator hoistways.

Where *stairways* or elevator hoistways are pressurized, such pressurization systems shall comply with Section 909 as smoke control systems, in addition to the requirements of Sections 909.20 of this code and 909.21 of the *International Fire Code*.

[F] 909.11 Standby power.

Smoke control systems shall be provided with standby power in accordance with Section 2702.

909.20 Smokeproof enclosures. P

Where required by Section 1023.12, a *smokeproof enclosure* shall be constructed in accordance with this section. A *smokeproof enclosure* shall consist of an *interior exit stairway* or *ramp* that is enclosed in accordance with the applicable provisions of Section 1023 and an open exterior balcony or pressurized *stair* and pressurized entrance vestibule meeting the requirements of this section. Where access to the roof is required by the *International Fire Code*, such access shall be from the *smokeproof enclosure* where a *smokeproof enclosure* is required.

909.20.4 Stairway and ramp pressurization alternative. P

Where the *building* is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, the vestibule is not required, provided that each *interior exit stairway* or *ramp* is pressurized to not less than 0.10 inch of water (25 Pa) and not more than 0.35 inches of water (87 Pa) in the *shaft* relative to the *building* measured with all *interior exit stairway* and *ramp* doors closed under maximum anticipated conditions of stack effect and wind effect.

909.20.5 Pressurized stair and vestibule alternative.

The provisions of Sections 909.20.5.1 through 909.20.5.3 shall apply to *smokeproof enclosures* using a pressurized *stair* and pressurized entrance vestibule.

909.20.6 Ventilating equipment. P

The activation of ventilating equipment required by the alternatives in Sections 909.20.4 and 909.20.5 shall be by *smoke detectors* installed at each floor level at an *approved* location at the entrance to the *smokeproof enclosure*. When the closing device for the *stairway* and *ramp shaft* and vestibule doors is activated by smoke detection or power failure, the mechanical equipment shall activate and operate at the required performance levels. *Smoke detectors* shall be installed in accordance with Section 907.3.

909.20.6.1 Ventilation systems.

Smokeproof enclosure ventilation systems shall be independent of other *building* ventilation systems. The equipment, control wiring, power wiring and ductwork shall comply with one of the following:

1. Equipment, control wiring, power wiring and ductwork shall be located exterior to the *building* and directly connected to the *smokeproof enclosure* or connected to the *smokeproof enclosure* by ductwork enclosed by not less than 2-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both.
2. Equipment, control wiring, power wiring and ductwork shall be located within the *smokeproof enclosure* with intake or exhaust directly from and to the outside or through ductwork enclosed by not less than 2-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both.
3. Equipment, control wiring, power wiring and ductwork shall be located within the *building* if separated from the remainder of the *building*, including other mechanical equipment, by not less than 2-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both.

Exception:

1. Control wiring and power wiring located outside of a 2-hour *fire barrier* construction shall be protected using any one of the following methods:
 - 1.1. Cables used for survivability of required critical circuits shall be *listed* in accordance with UL 2196 and shall have a *fire-resistance rating* of not less than 2 hours.
 - 1.2. Where encased with not less than 2 inches (51 mm) of concrete.
 - 1.3. *Electrical circuit protective systems* shall have a *fire-resistance rating* of not less than 2 hours. *Electrical circuit protective systems* shall be installed in accordance with their listing requirements.

909.20.6.2 Standby power.

Mechanical vestibule and *stairway* and *ramp shaft* ventilation systems and automatic fire detection systems shall be provided with standby power in accordance with Section 2702.

909.20.6.3 Acceptance and testing.

Before the mechanical equipment is *approved*, the system shall be tested in the presence of the *building official* to confirm that the system is operating in compliance with these requirements.

[F] 2702.2.17 Smoke control systems.

Standby power shall be provided for smoke control systems as required in Sections 404.7, 909.11, 909.20.6.2 and 909.21.5.

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.

Correct reference from 909.11 to 909.6.2 as section 909.20 is referenced in previous sentence as the applicable section.

Correct “shaft” to “enclosure” to match title of section.

Correct 2020 NEC to NPFA 20 to correlate to other IBC section references to NFPA 70, National Electric Code.

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: [Corrects errors and omissions only.](#)

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.