**15-089**

**1. State Building Code to be Amended:**

International Building Code  State Energy Code

ICC ANSI A117.1 Accessibility Code  International Mechanical Code

International Existing Building Code  International Fuel Gas Code

International Residential Code  NFPA 54 National Fuel Gas Code

International Fire Code  NFPA 58 Liquefied Petroleum Gas Code

Uniform Plumbing Code  Wildland Urban Interface Code

**Section(s): IFC 907.5.2.1.2**

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

**Title: Maximum sound pressure**

(e.g: Footings for wood foundations)

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

**Proponent: Shawn Shepherd**

**Title: Deputy Fire Marshal**

**Date: 2/20/15**

**3. Designated Contact Person:**

**Name: Shawn Shepherd**

**Title: Deputy Fire Marshal**

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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](https://fortress.wa.gov/ga/apps/sbcc/Page.aspx?nid=191))

**Code(s)** \_\_IFC\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Section(s)** \_\_907.5.2.1.2\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Enforceable code language must be used; see an example [by clicking here](https://fortress.wa.gov/ga/apps/SBCC/File.ashx?cid=1803).

Amend section to read as follows:

**907.5.2.1.2 Maximum sound pressure.**

The maximum sound pressure level for audible alarm notification appliances shall be 110 dBA at the minimum hearing distance from the audible appliance. For systems operating in public mode, the maximum sound pressure level shall not exceed 30 dBA over the average ambient sound level. Where the average ambient noise is greater than 95 dBA, visible alarm notification appliances shall be provided in accordance with NFPA 72 and audible alarm notification appliances shall not be required.

1. **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.

Fire alarm systems are required to be designed to produce notification sounds at levels above the ambient sound levels to ensure the notification signal is heard. Many times the design is provided with more audible devices than are needed to achieve this level for a variety of reasons. Reasons consist of the contractor installing more devices so the system is heard every where, to ensure the system passed the sound level test, at the request of the AHJ, and even that it has to be loud enough to make people leave. While done with good intent the end result is a system that does not deliver an effective message to respond to an emergency. Occupants have been known to remove the devices off walls, cover them, tape over them, damage them, silence the system first rather than respond to the event, and ignore them notification signal because it does not effectively communicate.

NFPA 72 states that a sudden increase of 30 dB over ½ a second is considered to cause sudden and potentially dangerous fright. The code and standard allow a maximum sound level pressure of 110 dB. If the maximum sound level is 110 dB minus a 15 dB, the minimum allowable overage above ambient sound level, 95 dB to be the ambient sound level. The sound level is in excess of the expected sound level pressures found in mechanical rooms and industrial occupancies, which are 80 and 85 respectively. Since most occupancies have an ambient level of between 40-55 dB, the minimum sound level for fire alarm systems would be 55-70 dB. If the 30 dB additional is used, the design minimum would be 70-85 dB, which is below the sound level produced by the notification devices themselves.

The code now requires providing the audibility level on the shop drawings and this provision allows the plan reviewer to consider the impacts of audible devices to the minimum audibility level proposed. This code change will provide more effective communication to the occupants through a system designed with proper sound levels.

1. **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 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.

1. **Is there an economic impact:**  Yes      No

Explain:

The notification devices are al ready required to be installed, and this code changes will change the variety of devices installed. Most likely the effect will be a reduction in the number of audible devices installed.

If there is an economic impact, use the Table 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.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Building Type | Construction[[1]](#footnote-1) | | Enforcement[[2]](#footnote-2) | | Operations & Maintenance[[3]](#footnote-3) | |
| Costs | Benefits[[4]](#footnote-4) | Costs | Benefits4 | Costs | Benefits4 |
| Residential | 0 |  |  |  |  |  |
| Single family | 0 |  |  |  |  |  |
| Multi-family | 0 |  | 0 |  | 0 |  |
| Commercial/Retail | 0 |  | 0 |  | 0 |  |
| Industrial | 0 |  | 0 |  | 0 |  |
| Institutional | 0 |  | 0 |  | 0 |  |

Please send your completed proposal to: [sbcc@ga.wa.gov](mailto:sbcc@ga.wa.gov)

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

1. $ / square foot of floor area or other cost. Attach data. **Construction** costs are costs prior to occupancy, and include both design and direct construction costs

   that impact the total cost of the construction to the owner/consumer. [↑](#footnote-ref-1)
2. Cost per project plan. Attach data. **Enforcement** costs include governmental review of plans, field inspection, and other action required for enforcement. [↑](#footnote-ref-2)
3. Cost to building owner/tenants over the life of the project. [↑](#footnote-ref-3)
4. Measurable benefit. [↑](#footnote-ref-4)