2024 ICC CODE DEVELOPMENT CYCLE UPDATES TO THE 2024 PROPOSED CHANGES TO THE INTERNATIONAL CODES

Update to the 2024 Group A – Consolidated Monograph Updates 3/18/2024

2024-2026 Code Development Cycle, Group A (2024) Proposed Changes to the 2024 *International Codes*

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2024 GROUP A – PROPOSED CHANGES TO THE INTERNATIONAL BUILDING CODE – MEANS OF EGRESS

MEANS OF EGRESS CODE COMMITTEE

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Fairfax, VA

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Manager Influencer Education
dormakaba US
Hockley, TX

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Codes and Standards Development
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See highlighted change to IBC-FS Committee Roster

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~~Yonkers, NY~~

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Central Regional Office
Country Club Hills, IL

See highlighted change to IFGC Committee Roster

2024 GROUP A – PROPOSED CHANGES TO THE INTERNATIONAL FUEL GAS CODE

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Piedmont Natural Gas
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~~Rep: National Association of Home Builders~~
~~President~~
~~Leo Lantz Construction, Inc.~~
~~Glen Allen, VA~~

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Metropolitan Utilities District
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Central Regional Office
Country Club Hills, IL

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American Gas Association
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See highlighted change to IMC Committee Roster

2024 GROUP A – PROPOSED CHANGES TO THE INTERNATIONAL MECHANICAL CODE

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~~Building Official~~
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~~Woodland Park, CO~~

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New Orleans, LA

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Sheet Metal and Air Conditioning Contractors' National Association
Chantilly, VA

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Aquatherm
Sandy, UT

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Mandan
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Pikes Regional Building Department
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Technical Staff
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Central Regional Office
Country Club Hills, IL

See highlighted change to IPC Committee Roster

2024 GROUP A – PROPOSED CHANGES TO THE INTERNATIONAL PLUMBING CODE

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City of Scottsdale
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NYC Department of Buildings
New York, NY

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Plastic Pipe and Fittings Association (PPFA)
Plantation, FL

David Dukich, PE
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Nelson Forensics, LLC
Plano, TX

Ronald George
Plumbing & Mechanical Design Consultant
Plumb-Tech Design & Consulting Services LLC
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~~President~~
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~~Cle Elum, WA~~

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Training Director
Plumbers Local Union No. 27
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Happy Valley, OR

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Uponor
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Plumbers Local One Trade Education Fund,
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VP Regulatory Affairs
PHCC-National Association
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Senior Staff Engineer - Plumbing
International Code Council
Central Regional Office
Country Club Hills, IL

See highlighted change to IFC Committee Roster

TENTATIVE ORDER OF DISCUSSION 2024 PROPOSED CHANGES TO THE INTERNATIONAL FIRE CODE

The following is the tentative order in which the proposed changes to the code will be discussed at the public hearings. Proposed changes which impact the same subject have been grouped to permit consideration in consecutive changes.

Proposed change numbers that are indented are those which are being heard out of numerical order. Indentation does not necessarily indicate that one change is related to another. Proposed changes may be grouped for purposes of discussion at the hearing at the discretion of the chair. Note that some F code change proposals may not be included on this list, as they are being heard by another committee.

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See highlighted change to IMC Committee Roster

TENTATIVE ORDER OF DISCUSSION 2024 PROPOSED CHANGES TO THE INTERNATIONAL MECHANICAL CODE

The following is the tentative order in which the proposed changes to the code will be discussed at the public hearings. Proposed changes which impact the same subject have been grouped to permit consideration in consecutive changes.

Proposed change numbers that are indented are those which are being heard out of numerical order. Indentation does not necessarily indicate that one change is related to another. Proposed changes may be grouped for purposes of discussion at the hearing at the discretion of the chair. Note that some M code change proposals may not be included on this list, as they are being heard by another committee.

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See highlighted change to IPC Committee Roster

TENTATIVE ORDER OF DISCUSSION 2021 PROPOSED CHANGES TO THE INTERNATIONAL PLUMBING CODE

The following is the tentative order in which the proposed changes to the code will be discussed at the public hearings. Proposed changes which impact the same subject have been grouped to permit consideration in consecutive changes.

Proposed change numbers that are indented are those which are being heard out of numerical order. Indentation does not necessarily indicate that one change is related to another. Proposed changes may be grouped for purposes of discussion at the hearing at the discretion of the chair. Note that some P code change proposals may not be included on this list, as they are being heard by another committee.

IPSDC

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See highlighted change to IRC-P Committee Roster

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The following is the tentative order in which the proposed changes to the code will be discussed at the public hearings. Proposed changes which impact the same subject have been grouped to permit consideration in consecutive changes.

Proposed change numbers that are indented are those which are being heard out of numerical order. Indentation does not necessarily indicate that one change is related to another. Proposed changes may be grouped for purposes of discussion at the hearing at the discretion of the chair. Note that some RP code change proposals may not be included on this list, as they are being heard by another committee.

RP1-24
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- P140-24 Part II
- P157-24 Part II
- P160-24 Part II
- P162-24 Part II
- G1-24 Part III

See highlighted change to ISPSC Committee Roster

TENTATIVE ORDER OF DISCUSSION
2024 PROPOSED CHANGES TO THE
INTERNATIONAL SWIMMING POOL AND SPA CODE

The following is the tentative order in which the proposed changes to the code will be discussed at the public hearings. Proposed changes which impact the same subject have been grouped to permit consideration in consecutive changes.

Proposed change numbers that are indented are those which are being heard out of numerical order. Indentation does not necessarily indicate that one change is related to another. Proposed changes may be grouped for purposes of discussion at the hearing at the discretion of the chair. Note that some SP code change proposals may not be included on this list, as they are being heard by another committee.

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2024 PROPOSED CHANGES TO THE INTERNATIONAL BUILDING CODE – MEANS OF EGRESS

E1-24 Part IV: Corrections to Section 603.4.1 in IMC and definition in IPC:

E1-24 Part IV

Proponents: Jeff Grove, Chair, Building Code Action Committee (BCAC) (bcac@iccsafe.org); Andrew Bevis, Chair, Plumbing, Mechanical and Fuel Gas Code Action Committee (pmgcac@iccsafe.org); Robert Marshall, FCAC, FCAC (fcac@iccsafe.org)

2024 International Mechanical Code

603.4.1 Minimum fasteners. Round metallic ducts shall be mechanically fastened by means of not less than three sheet metal screws or rivets spaced equally around the joint.

> **Exception:** Where a duct connection is made that ~~is~~ partially ~~inaccessible~~ cannot be accessed, three screws or rivets shall be equally spaced on the exposed portion so as to prevent a hinge effect.

2024 International Plumbing Code

[M] **READY ACCESS (TO).** That which enables a fixture, appliance or equipment to be directly reached without requiring the removal or movement of any panel or similar obstruction ~~and~~ ~~without the use of a portable ladder, step stool or similar device~~ (see also “Access (to)”).

2024 PROPOSED CHANGES TO THE INTERNATIONAL BUILDING CODE – FIRE SAFETY

FS74-24: The duplicate IMC section has been added:

FS74-24

IBC: 717.5.4; IMC: [BF] 607.5.3

2024 International Mechanical Code

Revise as follows:

[BF] 607.5.3 Fire partitions. Ducts and air transfer openings that penetrate fire partitions shall be protected with listed fire dampers installed in accordance with their listing.

Exception: In occupancies other than Group H, fire dampers are not required where any of the following apply:

1. Corridor walls in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 of the International Building Code and the duct is protected as a through penetration in accordance with Section 714 of the International Building Code.
2. The partitions are tenant partitions in covered and open mall buildings where the walls are not required by provisions elsewhere in the International Building Code to extend to the underside of the floor or roof sheathing, slab or deck above.
3. The duct system is constructed of approved materials in accordance with Section 603 and the duct penetrating the wall complies with all of the following requirements:
   3.1. The duct shall not exceed 100 square inches (0.06 m2).
   3.2. The duct shall be constructed of steel not less than 0.0217 inch (0.55 mm) in thickness.
   3.3. The duct shall not have openings that communicate the corridor with adjacent spaces or rooms.
   3.4. The duct shall be installed above a ceiling.
   3.5. The duct shall not terminate at a wall register in the fire-resistance-rated wall.
   3.6. A minimum 12-inch-long (305 mm) by 0.060-inch-thick (1.52 mm) steel sleeve shall be centered in each duct opening. The sleeve shall be secured to both sides of the wall and all four sides of the sleeve with minimum 11/2-inch by 11/2-inch by 0.060-inch (38 mm by 38 mm by 1.52 mm) steel retaining angles. The retaining angles shall be secured to the sleeve and the wall with No. 10 (M5) screws. The annular space between the steel sleeve and the wall opening shall be filled with rock (mineral) wool batting on all sides.
4. Such walls are penetrated by ducted HVAC systems, have a required fire-resistance rating of 1 hour or less, and are in areas of other than Group H and are in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 of the International Building Code. For the purposes of this exception, a ducted HVAC system shall be a duct system for conveying supply, return or exhaust air as part of the structure's HVAC system. Such a duct system shall be constructed of sheet steel not less than 26 gage in thickness and shall be continuous from the air-handling appliance or equipment to the air outlet and inlet terminals. <u>Nonmetal flexible air connectors shall be permitted in the following locations:</u>
   <u>4.1 At the duct connection to the air handling unit or equipment located within the mechanical room in accordance with Section 603.9 of the International Mechanical Code.</u>

4.2 From an overhead metal duct to a ceiling diffuser within the same room in accordance with Section 603.6.2 of the International Mechanical Code.

FS76-24: The duplicate IMC sections have been added:

FS76-24

IBC: 717.6.2.1.1, 717.6.2.1.2; IMC: [BF] 607.6.2.1.1, [BF] 607.6.2.1.2

2024 International Mechanical Code

Revise as follows:

[BF] 607.6.2.1.1 Dynamic systems. *Ceiling radiation dampers* installed in heating, ventilation and air-conditioning systems that do not automatically shut down ~~designed to operate with fans on~~ during a fire shall be labeled for use in dynamic systems.

[BF] 607.6.2.1.2 Static systems. Static *ceiling radiation dampers* shall only be installed ~~only~~ in systems that automatically shut down in the event of ~~are not designed to operate during~~ a fire.

~~**Exceptions:**~~

~~1. Where a static *ceiling radiation damper* is installed at the opening of a duct, a smoke detector shall be installed inside the duct or outside the duct with sampling tubes protruding into the duct. The detector or tubes within the duct shall be within 5 feet (1524 mm) of the damper. Air outlets and inlets shall not be located between the detector or tubes and the damper. The detector shall be *listed* for the air velocity, temperature and humidity anticipated at the point where it is installed. Other than in mechanical smoke control systems, dampers shall be closed upon fan shutdown where local smoke detectors require a minimum velocity to operate.~~
~~2. Where a static *ceiling radiation damper* is installed in a ceiling, the *ceiling radiation damper* shall be permitted to be controlled by a smoke detection system installed within the same room or area as the *ceiling radiation damper*.~~
~~3. A static *ceiling radiation damper* shall be permitted to be installed within a room where an occupant sensor is provided within the room that will shut down the system.~~

FS102-24: Exception #2 has been replaced

FS102-24

Proponents: William Koffel, Koffel Associates, Inc., Fire Safe North America (wkoffel@koffel.com)

Revise as follows:

1402.5 Vertical and lateral flame propagation. *Exterior walls* on *buildings* of Type I, II, III and IV construction that contain a combustible *exterior wall covering*, combustible insulation or a combustible *water-resistive barrier* shall comply with Sections 1402.5.1 through 1402.5.5, as applicable. Where compliance with NFPA 285 and associated acceptance criteria is required in Sections 1402.5.1 through 1402.5.5, the *exterior wall assembly* shall be tested in accordance with and comply with the acceptance criteria of NFPA 285.

Exception: Buildings of Type IV-A, IV-B and IV-C construction that are tested in accordance with CAN/ULC-S134, and comply with the following:

1. Flaming on or in the exterior wall covering does not exceed 16.4 ft (5 m) above the opening.
2. Lateral flame does not spread horizontally to the either edge of the test specimen,
3. Heat flux during the flame exposure on the exterior wall covering does not exceed 35 kW/m measured at 11.5 ft (3.5 m) above the opening.

F36-24: Replace the cost impact with the following:

F36-24

Proponents: Matthew Dobson, VSI, VSI (mdobson@vinylsiding.org)

Cost Impact: Increase

Estimated Immediate Cost Impact: This change could increase the cost of construction and maintenance, as non-combustible mulch can be more expensive than combustible mulch.

Based on a search of multiple retail stores the following averages can be used: $4.00 for 2.0 cu. ft. of wood mulch and $4.00 for 0.5 cu. ft. of pebble landscape rock or pea gravel.

Estimated Immediate Cost Impact Justification (methodology and variables): Typical retail cost of non-combustible mulch (pea gravel) vs. combustible mulch, can range from 2-5 times more expensive.

Estimated Life Cycle Cost Impact: However typical combustible mulch will need to be replaced every 1-2 years vs. non-combustible mulch which may last 10+ years.

Estimated Life Cycle Cost Impact Justification (methodology and variables):
Based on estimated lifecycle of typical combustible mulch vs. non-combustible mulch.

F59-24: Replace the cost impact with the following:

F59-24

Proponents: Jonathan Roberts, UL Solutions, UL Solutions (jonathan.roberts@ul.com)

Cost Impact: Increase

Estimated Immediate Cost Impact: $0 or as explained below.

This proposal allows for the use of either listed or approved (non-listed) battery containment enclosures. The cost for obtaining listed battery containment enclosures may or may not represent an increase over obtaining non-listed battery containment enclosures that have not been independently investigated to applicable product safety standards. Data is not available to accurately estimate the exact cost impact of the proposal, but the factors identified below can be considered in determining cost differentials.

Estimated Immediate Cost Impact Justification (methodology and variables):
Obtaining and maintaining a listing for battery containment enclosures involves both product investigation costs and costs for periodic inspection of production, as required by the definition of “listed”. These costs are often insignificant compared to the overall production, distribution, marketing and installation costs associated with the product. However, the impact of any potential cost increase must be considered against the user and code official safety benefits derived from the proposed changes, as well as additional effort needed to demonstrate or determine compliance.

F63-24: Replace the cost impact with the following:

F63-24

Proponents: Mark Chubb, ManitouNW LLC, ManitouNW LLC (mark.chubb@manitounw.com)

Cost Impact: Increase

Estimated Immediate Cost Impact: The most immediate impact involves limitations on sites where automatic parking systems can be constructed. By prohibiting the installation of these systems in enclosed parking structures and building levels below grade level, building owners wishing to employ these systems will need to dedicate space aboveground to these installations and utilize design strategies that satisfy requirements for open parking structures.

From ChatGPT: The cost of installing an automatic sprinkler system can range from $1.50 to $4.00 per square foot of floor area. This estimate includes the cost of materials (pipes, sprinkler heads, valves, fittings, etc.), labor, permits, engineering/design fees, and any necessary modifications to the building's plumbing system.

Estimated Immediate Cost Impact Justification (methodology and variables): In the absence of definitive guidance regarding the protection of these installations, it must be assumed fire service intervention and manual firefighting will be required to suppress and extinguish fires involving automated parking systems. Fighting fires involving densely spaced automobiles containing thermoplastics, flammable or combustible liquids, and lithium-ion battery systems poses an unreasonable risk of firefighter injuries or deaths were these systems to be installed in full enclosed buildings or below-grade. As such, the safety of fire department personnel required to suppress or extinguish these fires justifies limitations on the location and construction of these systems.

Estimated Life Cycle Cost Impact: The proposal contains no requirements likely to increase lifecycle costs beyond those associated with similar buildings based on construction type and use.

Estimated Life Cycle Cost Impact Justification (methodology and variables): No additional lifecycle costs are anticipated.

F72-24: Standard added & staff analysis replaced

F72-24

Proponents: Scott Brody, Self (sbrody96@gmail.com)

Add new standard(s) as follows:

AASHTO GDHS - 7th edition A Policy on Geometric Design of Highways and Streets

Replace Staff Analysis as follows:

A review of the standard proposed for inclusion in the code, *GDHS - 7th edition, A Policy on Geometric Design of Highways and Streets*, with regard to some of the key ICC criteria for referenced standards (Section 4.6 of CP#28) will be posted on the ICC website on or before March 18, 2024.

F99-24: Replace the cost impact with the following:

F99-24

Proponents: Robert Marshall, FCAC, FCAC (fcac@iccsafe.org); Robert J Davidson, Davidson Code Concepts LLC, Self (rjd@davidsoncodeconcepts.com)

Cost Impact: Increase Estimated Immediate Cost Impact:

This will increase the cost of construction for a small waste transfer and sorting facility, however, because of volume of trash needing sorting the typical facility already crosses the base F-1 12,000 square foot threshold. As a result, that cost impact is minimal if at all in today's waste handling operations world. The real additional cost impact would be the fire detection system, however, this cost is negated by the life-time savings to the facility by providing for detection early enough to prevent the need for fire suppression system activation.

Here is a range of cost per square foot with a square footage max of 12,000 sq ft since there is already a sprinkler threshold there.

Source: https://www.kauffmanco.net/blog/fire-sprinkler-costs/

$2.00-$3.00 a square foot x 12,000 = $24,000- $36,000 dollars for a 12,000 square foot facility

Estimated Immediate Cost Impact Justification (methodology and variables): The actual cost of the protection varies from market to market for materials and for labor, there is no way to give a number with any accuracy that applies everywhere the IFC and IBC are adopted. In theory the difference between a 5,000 square foot facility compared to a 12,001 square foot facility would be 60%, however, the smaller facilities would be the rarity, though located in areas that a loss would have a greater impact.

F108-24: Replace the cost impact with the following:

F108-24

Proponents: Robert J Davidson, Davidson Code Concepts LLC, Self (rjd@davidsoncodeconcepts.com)

Cost Impact: Increase

Estimated Immediate Cost Impact: This proposal would require the same protection for S-2 parking garages that is required for S-1 occupancies currently. It will increase new construction costs of S-2 parking garages. The exact cost cannot be estimated but $4 per square foot can be used.
Estimated Immediate Cost Impact Justification (methodology and variables):

To provide an exact cost a set of detailed plans for the installation of the automatic sprinkler system in a given parking structure is necessary, then the unit costs for all of the parts required including manhours would need to be calculated for a given cost region, then a cost multiplier would need to be added or subtracted for every other cost region where the I-Codes are applied.

F114-24: Replace the cost impact with the following:

F114-24

Proponents: Jean-Pierre de Tourtoulon, Marioff, Marioff (jean-pierre.detourtoulon@carrier.com)

Cost Impact: Decrease

Estimated Immediate Cost Impact: Current reductions assigned to automatic sprinkler systems not allowed, change in code will have significant impact and make watermist both competitive and a better choice for clients looking for a performance based system

For a commercial or residential building, the cost of installing an automatic sprinkler system can range from $1.50 to $4.00 per square foot of floor area. This estimate includes the cost of materials (pipes, sprinkler heads, valves, fittings, etc.), labor, permits, engineering/design fees, and any necessary modifications to the building's plumbing system. Changing this will reduce costs by 20% but over lifetime of building system will be significantly less expensive. For comparison to an automatic sprinkler system, the cost decrease would be $0.30 to $0.80 per square foot of floor area.

Estimated Immediate Cost Impact Justification (methodology and variables): Current comparison to sprinklers makes watermist over 100% more expensive due to wording of 904.2.1

Small bore stainless pipework helps with coordination, installation and longevity of system. No need to replace every 25 years.

Cost source data: ChatGPT

Estimated Life Cycle Cost Impact: High pressure water mist systems by their design perform equal or better to traditional sprinkler systems, this is the premise of the design and pass fail criteria.

If the system proves it performs better then the damage caused, cleanup cost, impact on business continuity is clearly reduced.

Environmentally speaking 72.5% less water is used to suppress a lithium ion fire so there is 72.5% less water to clean, decontaminate and dispose of to reinstate the business.

High pressure watermist systems with stainless steel pipework outlast all sprinkler systems and with maintenance have no problems with

system degradation

Estimated Life Cycle Cost Impact Justification (methodology and variables): Replacement of sprinkler currently at 20-25 years, not needed with high pressure watermist system

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F116-24: Replace the cost impact with the following:

F116-24

Proponents: James Carver, Self, Southern California Fire Prevention Officer's Association

Cost Impact: Increase

Estimated Immediate Cost Impact: The proposal could have an increase in construction cost for installation of a dedicated function fire alarm system. If the automatic fire extinguishing system is located near the fire alarm control unit or the fire alarm system initiating circuit wiring, there would be no significant cost impact. An example of increased cost would be a strip mall, where the automatic fire extinguishing system is located at one end of the strip mall and the fire alarm control unit is located at the other end. In this case, a 5% increase in system cost could be expected.

Based upon a $1.00-$3.00 estimate from Chat GPT this would increase by $0.05 to $0.15 per sq ft.

Estimated Immediate Cost Impact Justification (methodology and variables): The proposal could have an increased system cost of approximately 5% for the installation of additional fire alarm initiating device circuit wiring to the automatic fire extinguishing system.

Estimated Life Cycle Cost Impact: There is not estimated additional life cycle cost for this proposal.

Estimated Life Cycle Cost Impact Justification (methodology and variables):

There is not estimated additional life cycle cost for this proposal.

F134-24: Replace the cost impact with the following:

F134-24

Proponents: Shane Clary, Bay Alarm Company, Automatic Fire Alarm Association (smclary@bayalarm.com); Maria Marks, Siemens, Siemens (maria.marks@siemens.com); Richard Roberts, Honeywell Building Automation, Honeywell Building Automatation (richard.roberts@systemsensor.com); Jason Webb, Potter Electric Signal, Automatic Fire Alarm Association Codes & Standards Committee (jasonw@pottersignal.com); Scott Lang, Honeywell, Honeywell (scott.lang@honeywell.com)

Cost Impact: Increase

Estimated Immediate Cost Impact: There would be an additional notification appliance circuit or circuits, power for said circuits and the notification appliances. There would be the labor for the work. Labor cost would vary based on the geographic location of the project.

The cost would be less than 1% of the total fire alarm system cost for the building. For example a fire alarm system that had a total cost of $50,000 would have an increase of less than $500.

Estimated Immediate Cost Impact Justification (methodology and variables): This is a percentage based estimate based off of the total cost of the fire alarm and signaling system

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F155-24: Standards added

F155-24

Proponents: Jeff Grove, Chair, Building Code Action Committee (BCAC) (bcac@iccsafe.org); Robert Marshall, FCAC, FCAC (fcac@iccsafe.org)
Add new standard(s) as follows:

2024 International Fire Code

UL
2162-2014 Commercial Wood-Fired Baking Ovens--Refractory Type--with Revisions through August 2019

Add new standard(s) as follows:

2024 International Building Code

UL
2162-2014 Commercial Wood-Fired Baking Ovens--Refractory Type--with Revisions through August 2019

F157-24: Standard added

F157-24

Proponents: Ken Brouillette, Seattle Fire Department, Seattle Fire Department (ken.brouillette@seattle.gov)

Add new standard(s) as follows:

NFPA 150-22 Fire and Life Safety in Animal Housing Facilities Code

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F162-24: Delete the current cost impact and replace with the following:

F162-24

Proponents: Jeffrey Shapiro, International Code Consultants, Lake Travis Fire Rescue (jshapiro@ltfr.org)

Cost Impact:
Increase

Estimated Immediate Cost Impact:

The best estimate is approximately $2.00 to $10.00 a square foot which is the range of cost related to the installation of automatic sprinkler systems in existing buildings.

Estimated Immediate Cost Impact Justification (methodology and variables):

Please see the following websites for the basis of the square footage costs.

https://www.angi.com/articles/home-fire-sprinklers-are-affordable.htm
https://nfsa.org/wp-content/uploads/2019/08/Retrofit-Guide-July-2019-v6-COLOR.pdf

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F270-24: Standard added

F270-24

Proponents: Kris Jaggari, Nouryon/OPPSD Representative (kris.jaggari@nouryon.com)

Add new standard(s) as follows:

PGS 8-21 Organic Peroxides: Storage -Guidance for the Safe Storage of Organic Peroxides.

2024 PROPOSED CHANGES TO THE INTERNATIONAL FUEL GAS CODE

FG8-24: Proponent information missing

FG8-24

Proponent: Austin Rivera, Centrotherm Exo Systems, Centrotherm Exo Systems

2024 PROPOSED CHANGES TO THE INTERNATIONAL PLUMBING CODE

P25-24: Correction to Section 403.2 in the IPC:

P25-24

2024 International Plumbing Code

Proponents: Julius Ballanco, P.E., JB Engineering and Code Consulting, P.C., Self (jbengineer@aol.com)

Revise as follows:

403.2 ~~Separate~~ Toilet facilities. ~~Where~~ Required plumbing fixtures ~~are required, separate~~ toilet ~~facilities~~ shall be located in all gender toilet rooms or in separate toilet rooms provided for each sex.

~~**Exceptions:**~~

1. ~~Separate toilet facilities shall not be required for dwelling units and sleeping units.~~
2. ~~Separate toilet facilities shall not be required in structures or tenant spaces with a total occupant load, including both employees and customers, of 15 or fewer.~~
3. ~~Separate toilet facilities shall not be required in mercantile *occupancies* in which the maximum occupant load is 100 or fewer.~~
4. ~~Separate toilet facilities shall not be required in business *occupancies* in which the maximum occupant load is 25 or fewer.~~
5. ~~Separate toilet facilities shall not be required to be designated by sex where single-user toilet rooms are provided in accordance with Section 403.1.2.~~
6. ~~Separate toilet facilities shall not be required where rooms having both water closets and lavatory fixtures are designed for use by all persons regardless of sex and privacy is provided for water closets in accordance with Section 405.3.4 and for urinals in accordance with Section 405.3.5.~~

P29-24: Correction to Section 403.2 in the IPC:

P29-24

2024 International Plumbing Code

Proponents: Julius Ballanco, P.E., JB Engineering and Code Consulting, P.C., Self (jbengineer@aol.com)

Delete without substitution:

~~**405.3.2 Public lavatories.** In employee and *public* toilet facilities, the required lavatory shall be located in the same room as the required water closet.~~

P42-24 Part I: Proponent did not display:

P42-24 Part I

2024 International Plumbing Code

Proponents: Justin Cassamassino, ASME, A112 Main Committee (cassamassinoj@asme.org)

P157-24 Part I: Quality Tier column missing from Table 1301.2(1):

P157-24 Part I

Proponents: Andrew Bevis, Chair, Plumbing, Mechanical and Fuel Gas Code Action Committee (pmg-cac@iccsafe.org)

Add new text as follows:

TABLE 1301.2(1)
REQUIRED WATER QUALITY FOR REUSE APPLICATIONS

Use Category	Application	Exposure[a]	Quality Tier[b]
Direct Potable Reuse	Direct Potable Reuse	DC	4
Indirect Potable Reuse (Treatment Follows Reuse Application)	Aquifer Recharge - Direct Injection	IC	2
	Aquifer Recharge - Surface Application	IC	2
	Aquifer Storage and Recovery	IC	2
	Rapid Infiltration Basins	IC	2
	Infiltration/Percolation Lagoons	IC	2
	Raw Water Augmentation	IC	2
	Saltwater Intrusion Barrier	IC	2
	Surface Water Augmentation to a Supply Source	IC	2
Irrigation of Food Crops for Human Consumption (Spray/Drip)	Food crop with processing that destroys pathogens (Restricted Access)	LC	1
	Orchards and Vineyards	AC/LC	4/1
	Water contacts edible portion of food crop (Includes Root Crops)	AC	4
	Water doesn't contact edible portion of food crop (Restricted Access)	IC	2
Irrigation of Crops Not for Human Consumption (Spray/Drip)	Christmas Tree Farms	AC/LC	3/1
	Hemp Crops	AC/LC	3/1
	Fiber crops	AC/LC	3/1
	Fodder /Feed Crop/ Forage Crops	AC/LC	3/1

	Ornamental nursery stock	AC/LC	3/1
	Seed Crops	AC/LC	3/1
	Silviculture / Tree Farms	AC/LC	3/1
	Sod/Turf Crops	AC/LC	3/1
	Tobacco	AC/LC	3/1
Landscape Irrigation (Spray/Drip)	Athletic Fields	AC/LC	3/1
	Cemeteries	AC/LC	3/1
	College and University Campuses	AC/LC	3/1
	Commercial Campuses	AC/LC	3/1
	Golf Courses (Restricted Access)	LC	1
	Golf Courses (Unrestricted Access)	AC/LC	3/1
	Highway/Freeway Medians/ Roadside Vegetation	AC/LC	3/1
	Open Access Land Irrigation	AC/LC	3/1
	Pasture for Milk Producing Animals (Restricted Access)	LC	1
	Pasture for Non-Milk Producing Animals (Restricted Access)	LC	1
	Parks	AC/LC	3/1
	Playgrounds	AC/LC	3/1
	Residential Irrigation	AC/LC	3/1
	Landscape Irrigation (Restricted Access)	LC	1
	Urban Landscaping	AC/LC	3/1
	Schoolyards	AC/LC	3/1
Water Features	Decorative Fountains	AC	3
	Landscape Impoundments (With Fountain(s))	AC	3
	Landscape Impoundments (Without Fountain(s))	LC	1
	Ponds and Lagoons	LC	1
	Recreational Impoundments (Restricted Access)	LC	1
	Recreational Impoundments (Unrestricted Access)	AC	3
	Reservoir Augmentation (Recreational)	AC	3
	Wetland Creation	LC	1
	Wetland Discharge / Application	LC	1
-	Fire Fighting Via Plane	AC	3
	Fire Hydrant Water Supply	AC	3
	Fire Protection systems	AC	3

Life Safety	Non Structural Fire Fighting	AC	3
	Structural Fire Fighting	AC	3
Construction	Concrete and Cement mixing	LC	1
	Dust Control	LC	1
	Equipment Operation (Ex. Cooling Power Equipment)	LC	1
	Material Washing and Sieving	LC	1
	Soil Compaction and Consolidation	LC	1
Process Water	Agricultural Cleaning (Animal Washing & Animal Pens)	AC	3
	Aquaculture	LC	1
	Boiler Feed	LC	1
	Building Washing	AC	3
	Chemical Mixing (Herbicides, Pesticides, Fertilizers)	LC	1
	Commercial Car Washes	AC	1
	Commercial Laundries	AC	3
	Cooling Power Equipment	LC	3
	Cooling systems with aerosolization	AC	1
	Cooling systems with no aerosolization	LC	1
	Dust Control (Roads and Streets)	LC	1
	Flushing Sanitary Sewers	LC	1
	Flushing Toilets and Urinals	AC	3
	Bidets and personal hygiene devices	DC	4
	Frost Protection	LC	1
	Gas Pipeline Testing	LC	1
	Hydro Seeding	AC	3
	Impoundments at Fish Hatcheries	LC	1
	Industrial Oil and Gas Operations	LC	1
Process Water	Industrial Process Water (Possibility of Human Contact or Evaporative)	AC	1
	Industrial Washwater applications	AC	3
	Livestock Drinking Water (Milk Producing)	AC	3
	Livestock Drinking Water (Non-Milk Producing)	AC	3
	Parts Cleaning	LC	1
	Pool Water Makeup	AC	3
	Pressure Washing	AC	3
	Priming Drainage Traps	LC	1

	Road Milling	LC	1
	Ship Ballasting	LC	1
	Snow Making (Commercial / Recreational Use)	AC	3
	Snow Making (Storage)	AC	3
	Stack Scrubbing	LC	3
	Stream Flow Augmentation	LC	1
	Street, Sidewalk, Parking Lot Cleaning (Restricted Access)	LC	1
	Street, Sidewalk, Parking Lot Cleaning (Unrestricted Access)	AC	3
	Vehicle and equipment Washing	AC	3
	Wastewater Treatment (Process Uses)	LC	1
	Window Washing	AC	3

P157-24 Part II: Footnotes missing from Table P3401.2(1):

P157-24 Part II

Proponents: Andrew Bevis, Chair, Plumbing, Mechanical and Fuel Gas Code Action Committee (pmgcac@iccsafe.org)

Add new text as follows:

TABLE P3401.2(1)
REQUIRED WATER QUALITY FOR REUSE APPLICATIONS

a. Where two Exposures and two Tiers are cited, the first refers to spray irrigation and the second refers to drip irrigation (or other subsurface irrigation).
b. Where the equipment manufacturer or the jurisdiction requires a level of free residual disinfectant that exceeds the requirement of the quality Tier indicated, such excess shall be provided.

2024 PROPOSED CHANGES TO THE INTERNATIONAL WILDLAND-URBAN INTERFACE CODE

For ALL the WUIC proposals listed, the cost impacts are being replaced with the following:

WUIC21-24

Proponents: Robert Marshall, FCAC, FCAC (fcac@iccsafe.org)

Cost Impact: Increase

Estimated Immediate Cost Impact: The cost for construction in a Moderate Hazard Fire Severity zone with a conforming water supply provided with the 1.5x required defensible space is estimated to add approximately 1% to the total cost of construction materials for the building.

Key changes are the need for at least a Class B roof, upgraded roof valleys, Underfloor enclosures, protection of gutters and downspouts and addressing attic vents. Construction costs vary between $90-$150 per sq. ft dating back to 2022. A 1% increase in cost would amount to a $1.00 to $1.50 a square foot cost increase.

Estimated Immediate Cost Impact Justification (methodology and variables): This cost information was obtained with a simple search on ChatGPT. It noted that the cost included:

Lumber (for framing)
Concrete (for foundation)
Drywall
Roofing materials
Windows and doors
Flooring materials (e.g., hardwood, tile, carpet)
Insulation
Plumbing fixtures
Electrical wiring and fixtures

HVAC systems but didn't or include labor costs, permits, land acquisition, design fees and other expenses. Since these number date back to 2022 they may have changed as well.

Note that this proposal will increase the cost of construction by the cost of providing IR3 construction in a moderate zone, but only for the structures which would have benefited from providing the 150% distance.

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WUIC22-24

Proponents: Robert Marshall, FCAC, FCAC (fcac@iccsafe.org)

Cost Impact: Increase

Estimated Immediate Cost Impact: Chapter 5 and Table 503.1 are the requirements for newly built structures and subdivisions in areas regulated by the IWUIC. Accordingly, a compliant water supply should always be provided or addressed through approved alternative methods or materials as allowed

by the code. The application of this Table as currently written allows for a reduction in required IR Construction materials when the water supply complies with what is already required by this code,

The cost of construction will be increased based on this proposal as compared to the cost reduction (allowance) that is currently provided. That cost will be based on the difference of IR 3 construction vs. IR 2 or IR 2 vs IR1.

Summarized from ChatGPT: The cost of adding fire mains for a subdivision can vary widely depending on several factors such as the size of the subdivision, the existing infrastructure, local building codes and regulations, terrain, distance to the nearest water source, and the type of fire suppression system being installed. This provides a general estimate. Installing fire mains typically involves laying underground water pipes to supply water for firefighting purposes. Costs may include excavation, piping materials, valves, hydrants, backflow prevention devices, labor, permits, engineering/design fees, and any necessary road or sidewalk repairs.

The cost of installing fire mains for a subdivision could range from $50,000 to $200,000 or more per mile of pipe, depending on various factors. Based upon the information obtained from ChatGPT an estimate of cost per structure has been developed. This estimate assumes a relatively straightforward installation with minimal obstacles. So assuming a subdivision of 20 house subdivision with generous spacing is about .1 mile distance. $5000-$20,000 for the subdivision based upon that distance. For each home an overall cost of $250-$1000 per structure. However, since they will have a conforming water supply as currently shown in the table they will not be required to upgrade the ignition resistant construction type.

It's important to note that these costs can vary significantly based on local conditions, regulations, and specific project requirements.

Estimated Immediate Cost Impact Justification (methodology and variables): The cost of construction will be increased based on this proposal as compared to the cost reduction (allowance) that is currently provided. That cost will be based on the difference of IR 3 construction vs. IR 2 or IR 2 vs IR1. That cost would typically not exceed 1-2% of overall construction cost, but is variable based on the size of the building and the choice of building materials chosen to comply.

WUIC23-24

Proponents: Kevin Scott, KH Scott & Associates LLC, self (khscottassoc@gmail.com)

Cost Impact: Increase

Estimated Immediate Cost Impact: This proposal will increase the cost of construction, but only for structures which would have benefited from providing the 150% increase in the defensible space requirements. However, the construction increase will be offset by the one-third reduction in labor for annual pruning and trimming of the vegetation within the defensible space. Utilizing ignition-resistant construction materials will increase the construction cost for the exterior walls, deck and roof by 15%

- Exterior walls: For typical wood-framed exterior walls with standard materials such as 2x4 or 2x6 studs, plywood or OSB sheathing, house wrap, siding (vinyl, wood, or fiber cement), insulation, and interior drywall, the cost can range from $15 to $30 per square foot of wall area. Therefore resulting in an increase ranging from $1.5 dollars to $3.00 a square foot.
- Decks: The cost of building a deck can vary widely based on factors such as size, materials (pressure-treated wood, composite decking, etc.), design complexity, and site conditions. On average, the cost of building a deck can range from $20 to $50 per square foot. Therefore, resulting in an increase ranging from $2.0 dollars to $5.00 a square foot.

- Roofs: Roofing costs depend on factors such as the type of roofing material (asphalt shingles, metal, tile, etc.), roof slope, complexity of the roof design, and regional labor rates. On average, the cost of roofing can range from $3 to $10 per square foot for materials and installation. Therefore, resulting in an increase ranging from $0.30 dollars to $1.00 a square foot.

Estimated Immediate Cost Impact Justification (methodology and variables):
The cost estimates for exterior walls, decks and roofs were obtained from ChatGPT.

WUIC27-24

Proponents: Robert Marshall, FCAC, FCAC (fcac@iccsafe.org)

Cost Impact: Increase

Estimated Immediate Cost Impact: Eliminating the option of allowing single-pane tempered that has been in the IWUIC since 2003, will increase costs for manufacturers shifting to provide multilayered glazed panels with at least one tempered pane. Multilayered glazed panels are readily available in the industry and being installed to meet other code requirements. However, this proposal will increase the cost per lite of glass (minimum of on tempered pane); and, when that cost is aggregated to the overall cost of the window, it is estimated to be at least 20% more than annealed glass and the actual cost depends on the size and complexity of the fenestration project.

Based upon a typical window size and a house with 20 windows and a typical cost range of $700-$1,000 per installed window, this would be about a $2,800-$4,000 total increase.

Further, multilayered glazed panels (i.e. insulating glazing), with at least one tempered pane is a makeup that is not designed for meeting full safety glazing requirements in hazardous locations. This new makeup for the IWUIC is available from only some manufacturers that have been meeting California Code requirements for the last five California code cycles.

The proposal provides for options to meet the exterior glazing requirements laid out. If the NFPA or UL testing option is chosen, there will be an increase in cost associated with this testing because it is not currently a common approach that manufacturers utilize.
Estimated Immediate Cost Impact Justification (methodology and variables):
The above cost estimate was determined from: https://www.forbes.com/home-improvement/windows/floor-to-ceiling-windows-cost/

For manufacturers who have not been manufacturing product for California requirements, the cost will be higher to comply with multilayered glazed panels with at least one tempered pane than for those manufacturers who have been producing this product at a greater rate for California compliance.

One of the options to meet the exterior glazing requirements will be an increase in cost for manufacturers to proceed with the testing to either the UL or NFPA standard; however, many may choose to utilize the other options that are currently in the IWUIC, eliminating that cost increase.

WUIC28-24

Proponents: Jennifer Hatfield, J. Hatfield & Associates, Fenestration & Glazing Industry Alliance (formerly AAMA) (jen@jhatfieldandassociates.com); Cesar Lujan, Window & Door Manufacturers Association (clujan@wdma.com)

Cost Impact: Increase

Estimated Immediate Cost Impact: Eliminating the option of allowing single-pane tempered that has been in the IWUIC sine 2003, will increase the costs for manufacturers shifting to provide multilayered glazed panels with at least one tempered pane. However, multilayered glazed panels are readily available in the industry and being installed to meet other code requirements. This proposal will increase the cost per lite of glass (minimum of one tempered pane); and, when that cost is aggregated to the overall cost of the window, it is estimated to be at least 20% more than annealed glass and the actual cost depends on the size and complexity of the fenestration project.
Based upon a typical window size and a house with 20 windows and a typical cost range of $700-$1,000 per installed window, this would be about a $2,800-$4,000 total increase.
Further, multilayered glazed panels (i.e. insulating glazing), with at least one tempered pane is a makeup that is not designed for meeting full safety glazing requirements in hazardous locations. This new makeup for the IWUIC is available from only some manufacturers that have been meeting California Code requirements for the last five California code cycles.
The proposal provides for options to meet the exterior glazing requirements laid out. If the NFPA standard or UL standard testing option is chosen, there will be an increase in cost associated with this testing because it is not currently a common approach that manufacturers utilize.

Estimated Immediate Cost Impact Justification (methodology and variables):
The above cost estimate was determined from: https://www.forbes.com/home-improvement/windows/floor-to-ceiling-windows-cost/

For manufacturers who have not been manufacturing product for California requirements, the cost will be higher to comply with multilayered glazed panels with at least one tempered pane than for those manufacturers who have been producing this product at a greater rate for California compliance.

One of the options to meet the exterior glazing requirements will be an increase in cost for manufacturers to proceed with the testing to either the UL 9 or NGPA 257 standard; however, many may choose to utilize the other options that are currently in the IWUIC, eliminating that cost increase.

WUIC36-24

Proponents: Milad Shabanian, Insurance Institute for Business & Home Safety (mshabanian@ibhs.org); T. Eric Stafford, Insurance Institute for Business and Home Safety (testafford@charter.net)

Cost Impact: Increase

Estimated Immediate Cost Impact: This modification to the code will raise construction costs by introducing two stipulations for exterior walls.

According to research performed by IBHS and Headwaters Economics in 2022 [3], replacing a wooden composite cladding of a 1-hr fire rated wall assembly with fiber cement lap siding would increase the construction cost $1.38 per square foot in northern California. To attain a 1-hour fire-rated wall assembly for a wall constructed with noncombustible siding, the addition of 5/8-inch type X gypsum sheathing behind the siding is necessary, incurring an additional cost of approximately $0.40 per square foot.

Estimated Immediate Cost Impact Justification (methodology and variables): The existing code mandates that exterior walls should be built with either a one-hour fire-resistant rated assembly or an ignition-resistant exterior surface. In contrast, the proposed amendment will necessitate exterior walls to be constructed with both a one-hour fire-resistant rated assembly and an ignition-resistant exterior surface where provisions of Section 603 (defensible space requirement) are not met.

Bibliography

[3] Headwaters Economics and Insurance Institute for Business & Home Safety, 2022, Construction costs for a wildfire-resistant home, California Edition. https://headwaterseconomics.org/wp-content/uploads/2022_HE_IBHS_WildfireConstruction.pdf

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WUIC37-24

Proponents: Milad Shabanian, Insurance Institute for Business & Home Safety (mshabanian@ibhs.org); T. Eric Stafford, Insurance Institute for Business and Home Safety (testafford@charter.net)

Cost Impact: Increase

Estimated Immediate Cost Impact: This code change proposal may increase the construction cost only where the underfloor area height is enough to be usable and 1-hour rated columns or walls covered on the exterior with combustible materials having a flame spread index more than 25 when tested in accordance with ASTM E84 (Figure 1). In such a case, the siding material will need to be removed or replaced with an ignition-resistant building material (noncombustible, FRTW, IR material) having a flame spread index less than 25.

According to research performed by IBHS and Headwaters Economics in 2022 [1], replacing a wooden composite cladding with fiber cement lap siding would increase the construction cost $1.38 per square foot in northern California.

Estimated Immediate Cost Impact Justification (methodology and variables):

Bibliography

[1] Headwaters Economics and Insurance Institute for Business & Home Safety, 2022, Construction costs for a wildfire-resistant home, California Edition. https://headwaterseconomics.org/wp-content/uploads/2022_HE_IBHS_WildfireConstruction.pdf

Figure 1. Usable unenclosed underfloor areas.

WUIC44-24

Proponents: Milad Shabanian, Insurance Institute for Business & Home Safety (mshabanian@ibhs.org); T. Eric Stafford, Insurance Institute for Business and Home Safety (testafford@charter.net)

Cost Impact: Increase

Estimated Immediate Cost Impact: This code change proposal will increase the construction cost where it expands the scope of these sections through eliminating the limitation of the ground slope. However, the code change will reduce construction costs by proposing exceptions for unenclosed underfloor areas. It will also increase the construction cost in IR Class 3 construction where the code change will mandate additional requirements for protecting underfloor areas with 1/8-in noncombustible mesh screen or 6-in metal flashing.

According to research performed by IBHS and Headwaters Economics in 2022 [1], constructing an unenclosed underfloor area with a wall constructed with noncombustible cement board siding instead of a wall with wooden composite siding will increase the construction cost $1.38 per square foot.

Estimated Immediate Cost Impact Justification (methodology and variables):

Bibliography

[1] Headwaters Economics and Insurance Institute for Business & Home Safety, 2022, Construction costs for a wildfire-resistant home, California Edition. https://headwaterseconomics.org/wp-content/uploads/2022_HE_IBHS_WildfireConstruction.pdf

WUIC66-24

Proponents: Matthew Dobson, VSI, VSI (mdobson@vinylsiding.org)

Cost Impact: Increase

Estimated Immediate Cost Impact: This change could increase the cost of construction and maintenance, as non-combustible mulch can be more expensive than combustible mulch.
Based on a search of multiple retail stores the following averages can be used: $4.00 for 2.0 cu. ft. of wood mulch and $4.00 for 0.5 cu. ft. of pebble landscape rock or pea gravel.

Estimated Immediate Cost Impact Justification (methodology and variables): Typical retail cost of non-combustible mulch (pea gravel) vs. combustible mulch, can range from 2-5 times more expensive.

Estimated Life Cycle Cost Impact: However typical combustible mulch will need to be replaced every 1-2 years vs. non-combustible mulch which may last 10+ years.

Estimated Life Cycle Cost Impact Justification (methodology and variables):
Based on estimated lifecycle of typical combustible vs. non-combustible mulch.

WUIC70-24

Proponents: Robert Marshall, FCAC, FCAC (fcac@iccsafe.org)

Cost Impact: Increase

Estimated Immediate Cost Impact: $0 for new construction. This proposal does not impose any new or additional cost to initial construction. However, there are new requirements for the maintenance and/or repair of wildfire mitigation measures that are already required for new construction. Maintenance and repair costs are variable and specific cost estimates could vary significantly over the lifespan of a building or property.

Estimated Immediate Cost Impact Justification (methodology and variables): This proposal will impose additional costs related to ongoing maintenance, repair or replacement of features that were required for initial construction and site approval but do not increase the cost of initial construction.

Estimated Life Cycle Cost Impact: Maintenance and repair costs are variable and specific cost estimates could vary significantly over the lifespan of a building or property. Costs may necessitate purchase of replacement materials, labor (which could by DIY) and increase as time goes by.
