



May 8, 2023

Consumer Product Safety Commission
4330 East West Highway
Bethesda, MD 20814

Submitted Electronically

RE: Consumer Product Safety Commission (CPSC) Request for Information (RFI) on Chronic Hazards Associated with Gas Ranges and Proposed Solutions to Those Hazards, Docket No. CPSC-2023-0009

The International Code Council (ICC) is a nonprofit organization of roughly 600 employees, driven by the engagement of its more than 63,000 members, that is dedicated to helping communities and the building industry provide safe, resilient, and sustainable construction through the development and use of model codes (I-Codes) and standards used in design, construction, and compliance processes. Most U.S. states and communities, federal agencies, and many global markets choose the International Codes (I-Codes) to set the standards for regulating construction and major renovations, plumbing and sanitation, fire prevention, and energy conservation in the built environment.

To assist the CPSC in their efforts pertaining to the chronic hazards associated with gas ranges, the ICC is submitting the below information and comments that apply to model building codes and standards (specifically the I-Codes) as outlined in Question 3 of the agency's RFI.

Question 3: Please provide information on proposed solutions related to any chronic chemical hazards, exposures, and risks associated with gas range use.

h. Please provide information on indoor air quality (IAQ) in home environments, both related to and separate from gas ranges.

The following I-Codes and industry standards referenced in the I-Codes provide requirements for indoor air quality in home environments that safeguard public health and safety.

I-Code Sections:

- 2021 International Building Code (Section 1202 Ventilation) – Buildings shall be provided with natural ventilation or mechanical ventilation.
- 2021 International Energy Conservation Code (Section C403 Building Mechanical Systems) – Requirements for mechanical systems and equipment that serve building heating, cooling, ventilation, and refrigeration needs.
- 2021 International Energy Conservation Code (Section R402 Building Thermal Envelope) – Insulation requirements for wall, floor and ceiling assemblies, and air leakage requirements for assemblies and fenestration.
- 2021 International Mechanical Code (Section 403 Mechanical Ventilation) – Mechanical ventilation air requirements.

- 2021 International Mechanical Code (Chapter 5 Exhaust Systems) – Mechanical exhaust system requirements.
- 2021 International Mechanical Code (Section 905 Fireplace Stoves and Room Heaters) – Listing requirements for fireplace stoves and room heaters that can impact indoor air quality.
- 2021 International Plumbing Code (Section 1002 Trap Requirements) – Plumbing trap requirements which provides a barrier between the environment inside a building and its drainage system.

Industry standards referenced in the I-Codes:

- ASHRAE 62.1, *Ventilation for Acceptable Indoor Air Quality*
- ASHRAE 62.2, *Ventilation and Acceptable Indoor Air Quality in Low Rise Buildings*
- ANSI/ACCA 1 Manual D, *Residential Duct Systems*
- ANSI/ASHRAE/ACCA 180, *Standard Practice for Inspection and Maintenance of Commercial Building HVAC Systems*
- ANSI/ASHRAE/ACCA 183, *Peak Cooling and Heat Load Calculations in Buildings Except for Low-rise Residential Buildings*
- ANSI/SMACNA 006, *HVAC Duct Construction Standards—Metal and Flexible*
- US EPA National Ambient Air Quality Standards as required by the Clean Air Act

- a. **Please provide information regarding inclusion, enforcement, and compliance to any requirements in building codes or other local or state laws or regulations for exhaust hoods (internally and externally vented) above or near gas ranges.**

The following sections of the 2021 International Residential Code and 2021 International Mechanical Code address domestic cooking exhaust, the requirements for it to be exhausted, and the rate at which it is required to be exhausted in both single-family and multi-family dwellings. These code requirements put in place the necessary safeguards to address the impact that common pollutants (e.g., nitrogen dioxide, carbon monoxide, formaldehyde) from using gas stoves can have on indoor air quality.

2021 International Residential Code

- **N1103.6 Mechanical ventilation.** Buildings and dwelling units shall be provided with mechanical ventilation.
- **N1103.6.3 Testing.** Mechanical ventilation systems shall be tested and verified to provide minimum ventilation flow rates.
- **M1503.2 Domestic cooking exhaust.** Requirements for domestic cooking exhaust equipment.
- **M1503.2.1 Open-top broiler exhaust.** Exhaust requirements for domestic open-top broiler units.
- **M1503.3 Exhaust discharge.** Domestic cooking exhaust equipment shall discharge to the outdoors through a duct.
- **M1503.5 Kitchen exhaust rates.** Requirements for domestic kitchen cooking appliances equipped with ducted range hoods or down-draft exhaust systems.
- **M1505.1 General.** Local exhaust or whole-house mechanical ventilation system requirements.
- **M1505.4.4 Local exhaust rates.** Minimum airflow rate requirements for local exhaust systems.
- **G2447.1 Cooking appliances.** Listing and labeling requirements for permanently installed cooking appliances including ranges, ovens, stoves, and broilers.
- **G2447.2 Prohibited location.** Prohibition on the installation of commercial cooking appliances in dwelling units or areas where domestic cooking operations occur.
- **G2447.3 Domestic appliances.** Listing and labeling requirements for cooking appliances installed within dwelling units and within areas where domestic cooking operations occur.

2021 International Mechanical Code

- **[A] 102.3 Maintenance.** Maintenance requirements for mechanical systems, both existing and new.
 - **403.3.2.3 Local exhaust.** Local exhaust systems requirements for kitchens, bathrooms and toilet rooms.
 - **501.3 Exhaust discharge.** Mechanical exhaust system requirements.
 - **505.2 Domestic cooking exhaust.** Requirements for domestic cooking exhaust equipment.
 - **505.3 Exhaust ducts.** Domestic cooking exhaust equipment requirements.
 - **505.4 Makeup air required.** Makeup air requirements for exhaust hood systems capable of exhausting in excess of 400 cfm (0.19 m³/s).
 - **505.5 Common exhaust systems for domestic kitchens located in multistory structures.** Requirements for common multistory duct systems that convey exhaust from multiple domestic kitchen exhaust systems.
 - **505.6 Other than Group R.** For other than Group R occupancies, exhaust system requirements for domestic cooking appliances.
- j. **Please provide information on the costs and effectiveness of any other relevant voluntary or mandatory standards (such as for gas ranges or exhaust hoods found in model building codes).**

A poorly ventilated kitchen could be a major source of indoor air pollution in dwelling units, both single- and multi-family units. That is why it is not only important to properly install, operate, and maintain gas ranges and range hoods, but also to provide adequate ventilation and makeup air during their use. By following the installation and maintenance requirements for ranges and range hoods found in the International Codes, the air pollutants associated with gas stove usage are addressed in a manner that ensures indoor air quality. The I-Codes go through an extensive review process every three years by code officials, designers, engineers, academia, and other industry stakeholders incorporating the latest technologies and safety improvements into the codes.

The costs associated with model building code provisions (especially in residential occupancies) are also important to consider so that individuals can afford to live in housing that meets the latest in safety requirements. That is why the purpose of the International Residential Code, as stated in Section R101.3, *“is to establish minimum requirements to provide a reasonable level of safety, health and general welfare through **affordability**.....”*

The International Codes, and the industry standards referenced within them, recognize the importance of providing a high level of indoor air quality, especially when it comes to using gas stoves.

Thank you for the opportunity to provide comments. If you have any questions, please do not hesitate to contact me.

Sincerely,



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