

Chapter Four – Codes and Responsibilities

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What more could you want in an appliance?



This was a real situation! Someone's creation of a "hood" for their toaster oven.

Codes and Responsibilities

Codes and Standards

The construction of buildings is regulated by building codes and supported by standards. Codes define various occupancy characteristics of buildings and establish basic construction features and performance criteria. Standards establish acceptable practices for meeting the minimum criteria and are generally referenced by the codes.

Codes and standards are continually evolving. They lag technology, as they have typically been written after incidents have occurred, research results are available, and new products have been developed, with the exception of product evaluations issued by entities such as the ICC Evaluations Service where innovative products and assemblies are evaluated and code compliance reports issued. The ICC code, and NFPA 96 Standards, development process is on a 3-year cycle, such is also the case for some of the standards referenced in the ICC codes. Other standards have process of development and adoption that can take several years.

It is common in most jurisdictions, that existing buildings are governed by the codes and standards that were adopted at the time of construction. Cooking equipment, exhaust systems, and fire-extinguishing systems are governed by codes and standards in effect at the time of their installation. Conversely, facility operational aspects, fire safety practices, and system maintenance practices are governed by current fire prevention codes and referenced system standards.

In conducting a system failure or performance analysis, an investigator or expert will need to establish at what point in time specific editions of codes and standards were adopted by state and local jurisdictions. It is a never-ending task to keep abreast of applicable codes, but a thorough knowledge of them is critical to understanding the background of a commercial cooking facility and analyzing a fire incident.

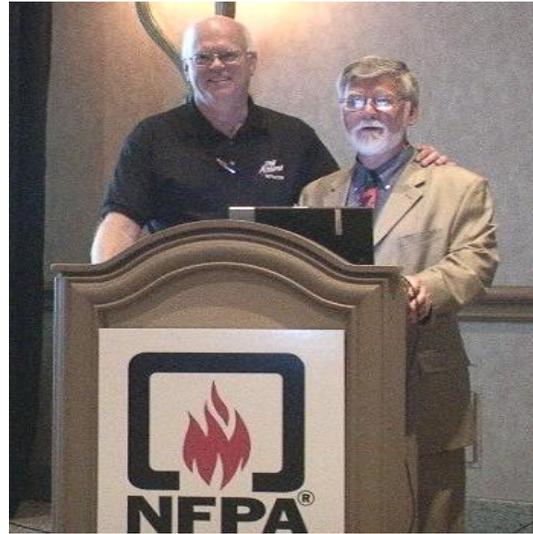
In addition to codes and standards, system design, installation, and maintenance requirements of equipment manufacturers must be followed. These requirements are typically part of the terms of product and system listings by UL or other third party testing agencies.

Inspectors and investigators should always confirm the most current listing information as being what the system's condition should be in. Codes are more than likely years out of date from operating procedures in fire suppression and engineered hood components.

Codes and Standards Organizations

In the U.S. and Canada, state/provincial and local jurisdictions usually adopt a model code with supporting standards. Some jurisdictions make substantial amendments or prepare their own building and fire codes. Once adopted, the code becomes an enforceable legal document administered by various authorities within the jurisdiction. The requirements for commercial cooking facilities are addressed in the building, fire prevention, mechanical, fuel gas, electrical, and life safety codes.

Model codes and standards are developed by various private sector independent standards development organizations.



Phil Ackland and George Zawacki speaking at an NFPA convention in Las Vegas



A fire in this restaurant had nothing to do with the exhaust. The properly installed, double walled duct chase protected the exhaust system.

There are presently two major code development organizations in the US and Canada in reference to commercial kitchens, which offer model codes for state/provincial and local adoption. They are:

- The National Fire Protection Association – NFPA
- The International Code Council – ICC
- ASHRAE 154-2010 Ventilation For Commercial Cooking Operations

These bodies are professional membership associations made up of expert volunteers from industry, government, building and fire officials, as well as professionals from engineering, insurance and other interests. The technical committees of these organizations meet at regular intervals and review changing technologies, construction and other innovations that may affect the building trade or fire safety needs of the community. When dealing with suggested code changes these various bodies have differing procedures and protocols with varying degrees of involvement among interested parties. But all have the primary focus of improving fire safety.

National Fire Protection Association

National Fire Protection Association (NFPA) codes and standards are developed through a consensus process approved by ANSI. The process brings together volunteers representing varied viewpoints and interests to achieve balanced consensus on fire and other safety issues. The NFPA administers the process and establishes rules, within the American National Standards Institute (ANSI) criteria, to promote fairness in the consensus development system. It also seeks research support through such organizations as the Fire Protection Research Foundation and the National Institute of Standards and Technology (NIST) to validate existing and new code requirements.¹

Further, NFPA partners with other code development organizations such as:

- The International Association of Plumbing and Mechanical Officials (IAPMO) who develop the Uniform Mechanical Code
- The Western Fire Chiefs (WFC) to develop the NFPA 1 Uniform Fire Code

Codes relevant to commercial cooking equipment and exhaust systems are:

- NFPA 1 Uniform Fire Code
- NFPA 10 Standard for Portable Extinguishers
- NFPA 17 Standard for Dry Chemical Extinguishing Systems
- NFPA 17A Standard for Wet Chemical Extinguishing Systems
- NFPA 54 National Fuel Gas Code
- NFPA 70 National Electrical Code
- NFPA 72 National Fire Alarm Code
- NFPA 96 Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations
- NFPA 101 Life Safety Code
- NFPA 5000 Building Construction and Safety Code



Obsolete wet chemical 2 piece 1/2 inch nozzles from a pre UL 300 Range Guard system

The electrical outlet under the hood is not enclosed in a grease tight rated enclosure. The filters are non-approved mesh type.(Filter would very difficult to remove). The fire-extinguishing system piping is non-supported, interferes with removal of the filters and nozzles are not correct UL 300 type.

¹ For more information about NFPA codes and standards and the NFPA standards procedure go to NFPA's web site at <http://www.nfpa.org>; select "Codes & Standards."

A Guide for Commercial Kitchen Fires

NFPA Code and Standard Definitions

Code – A standard that is an extensive compilation of provisions covering broad subject matter or that is suitable for adoption into law independently of other codes and standards.²

Standard – A document, the main text of which contains only mandatory provisions using the word “shall” to indicate requirements and which is in form generally suitable for mandatory reference by another standard or code or for adoption into law. Nonmandatory provisions shall be located in an appendix or annex, footnote, or fine-print note and are not to be considered a part of the requirements of a standard.

Note: The decision whether to designate a standard as a “code” is based on such factors as the size and scope of the document, its intended use and form of adoption, and whether it contains substantial enforcement and administrative provisions.

Recommended Practice – A document similar in content and structure to a code or standard but that contains only nonmandatory provisions using the word “should” to indicate recommendations in the body of the text.

Guide – A document that is advisory or informative in nature and that contains only nonmandatory provisions. A guide may contain mandatory statements such as when a guide can be used, but the document as a whole is not suitable for adoption into law.

Shall – Indicates a mandatory requirement.

Should – Indicates a recommendation or that which is advised but not required.



Attendees at a Fire Inspectors Seminar



Inspecting a noncompliant exhaust fan

Equipment Approval and Listing Definitions

Approved – Acceptable to the authority having jurisdiction.

Note: The National Fire Protection Association does not approve, inspect, or certify any installations, procedures, equipment, or materials nor does it approve or evaluate testing laboratories. In determining the acceptability of installations or procedures, equipment, or materials, the “authority having jurisdiction” may base acceptance on compliance with NFPA or other appropriate standards. In the absence of such standards said authority may require evidence of proper installation, procedure, or use. The “authority having jurisdiction” may also refer to the listings or labeling practices of an organization that is concerned with product evaluation and is thus in a position to determine compliance with appropriate standards for the current production of listed items.

Listed – Equipment, materials, or services included in a list published by an organization that is acceptable to the authority having jurisdiction and concerned with evaluation of products or services, that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services, and whose listing states that either the equipment, material, or service meets appropriate designated standards or has been tested and found suitable for specified purpose.

Note: The means for identifying listed equipment may vary for each organization concerned with product evaluation; some organizations do not recognize equipment as listed unless it is also labeled. The authority having jurisdiction should utilize the system employed by the listing organization to identify a listed product.

² Terms are as per the *NFPA Glossary of Terms*. This is available online at <http://www.nfpa.org/assets/files/PDF/definitions.pdf>