Advisory Panel on Venting
NATIONAL FUEL GAS CODE COMMITTEE
ASC Z223 NFPA 54

September 15, 2015
Atlanta Marriott Marquis
Atlanta, GA

James Brewer – Chair
Paul Cabot – Secretary
Laura Montville – NFPA Staff

AGENDA

Advisory Panel on Venting
National Fuel Gas Code Committee
Atlanta Marriott Marquis, Atlanta, GA
September 15, 2015

Tuesday, September 15

1:00 p.m. – 6:00 p.m. .....Panel Discussions

1. Call to Order and Self Introductions
2. Adoption of Agenda
3. Announcements
4. Advisory Panel Membership
5. Public Input
6. Panel Projects
7. New Business
8. Adjourn

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AMERICAN GAS ASSOCIATION
ANTITRUST COMPLIANCE GUIDELINES

Introduction

The American Gas Association and its member companies are committed to full compliance with all laws and regulations, and to maintaining the highest ethical standards in the way we conduct our operations and activities. Our commitment includes strict compliance with federal and state antitrust laws, which are designed to protect this country's free competitive economy.

Responsibility for Antitrust Compliance

Compliance with the antitrust laws is a serious business. Antitrust violations may result in heavy fines for corporations, and in fines and even imprisonment for individuals. While the General Counsel's Office provides guidance on antitrust matters, you bear the ultimate responsibility for assuring that your actions and the actions of any of those under your direction comply with the antitrust laws.

Antitrust Guidelines

In all AGA operations and activities, you must avoid any discussions or conduct that might violate the antitrust laws or even raise an appearance of impropriety. The following guidelines will help you do that:

- ***Do*** consult counsel about any documents that touch on sensitive antitrust subjects such as pricing, market allocations, refusals to deal with any company, and the like.

- ***Do*** consult with counsel on any non-routine correspondence that requests an AGA member company to participate in projects or programs, submit data for such activities, or otherwise join other member companies in AGA actions.

- ***Do*** use an agenda and take accurate minutes at every meeting. Have counsel review the agenda and minutes before they are put into final form and circulated and request counsel to attend meetings where sensitive antitrust subjects may arise.

- ***Do*** provide these guidelines to all meeting participants.

- ***Do not, without prior review by counsel,*** have discussions with other member companies about:

  - ♦ your company's prices for products, assets or services, or prices charged by your competitors

  - ♦ costs, discounts, terms of sale, profit margins or anything else that might affect those prices

  - ♦ the resale prices your customers should charge for products or assets you sell them

  - ♦ allocating markets, customers, territories products or assets with your competitors

  - ♦ limiting production

  - ♦ whether or not to deal with any other company

  - ♦ any competitively sensitive information concerning your own company or a competitor's.

- ***Do not*** stay at a meeting, or any other gathering, if those kinds of discussions are taking place.

- ***Do not*** discuss any other sensitive antitrust subjects (such as price discrimination, reciprocal dealing, or exclusive dealing agreements) without first consulting counsel.

- ***Do not*** create any documents or other records that might be misinterpreted to suggest that AGA condones or is involved in anticompetitive behavior.

We're Here to Help

Whenever you have any question about whether particular AGA activities might raise antitrust concerns, contact the General Counsel's Office, Ph: (202) 824-7072; E-mail: GCO@aga.org, or your legal counsel.

American Gas Association
Office of General Counsel
Issued: December 1997
Revised: December 2008

PANEL LISTING

Z223 ADVISORY PANEL ON EQUIPMENT INSTALLATION

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Gerald Davis
Gregg Gress
Peter Holmes
Ted Lemoff
Andrea Papageorge
Phillip Ribbs
Mike Romano
Robert Stack
Bruce Swiecicki
Franklin Switzer
Robert Wozniak

Z223 ADVISORY PANEL ON PIPING

Tom Crane (Panel Chair)
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Z223 ADVISORY PANEL ON VENTING

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Mike Romano
Jack Scanlon
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AGENDA ITEM 6
PUBLIC INPUT ASSIGNED TO THE VENTING PANEL

The Advisory Panel on Venting is to review the following public input:

a. Chapter 2 (venting specific)
   - PI No. 45 [2.3.5]

b. Chapter 12
   - PI No. 40 [12.3.3]
   - PI No. 39 [12.3.4]
   - PI No. 96 [12.4.3.1]
   - PI No. 57 [12.4.4.1]
   - PI No. 81 [12.4.5.2]
   - PI No. 135 [12.5.2][1]
   - PI No. 139 [12.5.3]
   - PI No. 82 [12.5.4]
   - PI No. 83 [12.6.1.1]
   - PI No. 85 [12.6.1.3]
   - PI No. 136 [12.6.2.5 New]
   - PI No. 84 [12.6.2.4]
   - PI No. 41 [12.6.4.3]
   - PI No. 50 [12.6.5.2]
   - PI No. 49 [12.6.5.4]
   - PI No. 89 [12.7.1]
   - PI No. 90 [12.7.2]
   - PI No. 56 [12.7.3]
   - PI No. 10 [12.9.3]
   - PI No. 93 [12.13.2.1]
   - PI No. 11 [12.17 New]

c. Chapter 13
   - PI No. 86 [13.1.7]
   - PI No. 92 [13.2.16]
   - PI No. 87 [13.2.20]
   - PI No. 88 [13.2.22]
   - PI No. 94 [13.2.23]

[1] See *Public Input Supporting Documents* for submitted materials that can be distributed.

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Public Input No. 45-NFPA 54-2015 [Section No. 2.3.5]

2.3.5 UL Publications.

Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096, www.ul.com.

ANSI/UL 467, *Grounding and Bonding Equipment*, 2013.

ANSI/UL 651, *Schedule 40 and 80 Rigid PVC Conduit and Fittings,* ~~2011.~~ 2014.

ANSI/UL 103, *Chimneys, Factory-Built, Residential Type and Building Heating Appliances* , 2010.

UL 378, *Draft Equipment*

ANSI/UL 441, *Gas Vents* , 2010.

ANSI/UL 641, *Type L Low-Temperature Venting Systems* , 2010.

ANSI/UL 959 , *Medium Heat Appliance Factory-Built Chimneys*

ANSI/UL 1738, *Venting Systems for Gas Burning Appliances,Categories II, III and IV* , 1993, Revised 2006.

ANSI/UL 1777, *Chimney Liners* , 2007, Revised 2009.

ANSI/UL 2561, *1400 Degree Fahrenheit Factory-Built Chimneys, 2009, Revised 2013.*

Statement of Problem and Substantiation for Public Input

The proposed change reflect a revision/update to the UL Standard. Additional UL standards proposed for reference into this code.

Submitter Information Verification

Submitter Full Name: RONALD FARR
Organization: UL LLC
Street Address:
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Submittal Date: Mon Jun 15 10:56:53 EDT 2015

Public Input No. 40-NFPA 54-2015 [Section No. 12.3.3]

12.3.3* Ventilating Hoods.

~~Ventilating~~ The use of ventilating hoods and exhaust systems to vent appliances shall be ~~permitted to be used to vent appliances installed in commercial applications and to vent industrial appliances, particularly where the process itself requires fume disposal~~ limited to industrial appliances and appliances installed for commercial applications .

Statement of Problem and Substantiation for Public Input

Admittedly, this revision still suffers from referring to "commercial applications' which is impossible to define, however the revision gets rid of text that does not say what it intends. The intent is to allow hoods to exhaust appliances ONLY if the appliances are industrial or used for commercial applications (whatever those are). The current text literally says that hoods can vent industrial appliances, but does not limit this to industrial appliances. The hoods are not prevented from venting any other type of appliance. The current text also allows hoods to vent appliances used for commercial applications, but does not prevent hoods from venting appliances for any other applications. The last phrase about processes requiring fume disposal is pure fluff, provides no guidance, is not enforceable and is commentary.

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Submittal Date: Thu Jun 04 16:04:42 EDT 2015

Public Input No. 39-NFPA 54-2015 [Section No. 12.3.4]

12.3.4 Well-Ventilated Spaces.

The ~~operation of~~ flue gases from industrial type appliances ~~such that its flue~~ are not required to be vented to the outdoors where such gases are discharged ~~directly~~ into a large and well ~~-~~ ventilated industrial space ~~shall be permitted.~~ .

Statement of Problem and Substantiation for Public Input

This section is a classic case of why "shall be permitted" is bad code language. This section literally says that it is permitted to dump flue gasses into a large well -ventilated space. The text does NOT prevent the flue gases from being dumped into a small poorly ventilated space. Saying that something is permitted usually fails to prohibit what the code intended to prohibit. The intent is that flue gases can be dumped indoors instead of being vented to the outdoors, ONLY in the case where the space is large and well-ventilated (whatever that is)

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Submittal Date: Thu Jun 04 15:50:11 EDT 2015

Public Input No. 96-NFPA 54-2015 [Section No. 12.4.3.1]

12.4.3.1

Mechanical draft systems shall be listed and labeled in accordance with UL 378, *Draft Equipment* and installed in accordance with both the appliance and the mechanical draft system manufacturer's installation instructions.

Statement of Problem and Substantiation for Public Input

UL 378 is the standard for listing draft regulators (automatic dampers), automatic damper controls, draft fans, and similar equipment, intended to assist in maintaining the desired combustion chamber draft in heating equipment.

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Submittal Date: Thu Jul 02 10:09:07 EDT 2015

Public Input No. 57-NFPA 54-2015 [Section No. 12.4.4.1]

~~12.4.4.1~~ –
~~Ventilating hoods and exhaust systems shall be permitted to be used to vent appliances installed in commercial applications.~~

Statement of Problem and Substantiation for Public Input

This section is redundant with 12.3.3. Another proposal attempts to revise the similarly flawed text in 12.3.3.

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Submittal Date: Fri Jun 19 11:39:54 EDT 2015

Public Input No. 81-NFPA 54-2015 [Section No. 12.4.5.2]

12.4.5.2

Where a venting system passes through an above-ceiling air space or other nonducted portion of an air-handling system, it shall conform to one of the following requirements:

(1) The venting system shall be a ~~listed~~ special gas vent, ~~other~~ listed and labeled in accordance with ANSI/UL 1738, *Venting Systems for Gas-Burning Appliances, Categories II, III, and IV* , other system serving a Category III or Category IV appliance, or other positive pressure vent, with joints sealed in accordance with the appliance or vent manufacturer's instructions.

(2) The vent system shall be installed such that no fittings or joints between sections are installed in the above-ceiling space.

(3) The venting system shall be installed in a conduit or enclosure with joints between the interior of the enclosure and the ceiling space sealed.

Statement of Problem and Substantiation for Public Input

ANSI/UL 1738 is the standard for listing special gas vents intended for venting certified Category II, III or IV gas-burning appliances as defined by ANSI Z223.1/NFPA 54, "National Fuel Gas Code."

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Submittal Date: Thu Jul 02 08:30:50 EDT 2015

Public Input No. 135-NFPA 54-2015 [Section No. 12.5.2]

12.5.2 Plastic Piping.

~~Where plastic piping is used to vent an appliance, the appliance shall be listed for use with such venting materials and the appliance manufacturer's installation instructions shall identify the specific plastic piping material~~ Vents for category II, II and IV appliances shall be tested and listed in accordance with UL 1738 .

Additional Proposed Changes

File Name	Description	Approved
UL_1738_and_appliance_standard_vent_requirements_compare.doc	UL 1738 and Appliance Standards Vent Requirements	

Statement of Problem and Substantiation for Public Input

Sections 12.5.2 and 12.5.3 defer complete responsibility to the appliance manufacturer for the vent product. The Code provisions make no mention of the plastic venting materials or the responsibilities of the vent manufacturer to meet any requirements. This proposal adds a new reference to UL 1738 – Standard for Safety – Venting Systems for Gas-Burning Appliances, Categories II, III, and IV. This is the standard for venting materials, including plastics for this specific application. UL 1738 specifically contains provisions for CPVC and PVC. It also contains some extreme tests which are outside of the temperature ranges for PVC and CPVC. In these cases manufacturers wanting to certify product can rely on clause 6.3 of UL 1738 which notes that only tests applicable to the material in question are required to be performed. This provision permits PVC and CPVC to be certified to UL 1738. In addition there are PP products certified to UL 1738.

There is a comparable standard, ULC S636 that has been referenced in the Canadian B149 Gas Code since 2007. Several manufacturers have PVC, CPVC and PP products certified to ULC S636 and these have been used successfully in Canada since 2007. UL 1738 and ULC S636 have similarities but there are some significant differences therefore this proposal is to only reference UL 1738. Should these standards be harmonized in the future a harmonised standard could be referenced or both UL 1738 and ULC S636.

Currently the appliance standards reference ASTM Drain, Waste, and Vent plumbing standards for plastics (PVC, CPVC and ABS). These standards do not apply to flue gas venting. For example the appliance standards reference ASTM D1785 for PVC. There is a note in the scope of ASTM D1785 related to flue gas venting as follows: “This standard specifies dimensional, performance and test requirements for plumbing and fluid handling applications, but does not address venting of combustion gases.” These plumbing DWV standards fall under the expertise of the ASTM F17 Committee and the F17 Committee is clear that these DWV standards do not apply to flue gas venting. The fact that the appliance industry is taking responsibility for the vent system and specifying a system contrary to requirements the experts in plastics needs to be addressed in the Code.

A comparison document for the current appliance standards venting provision as compared to UL 1738 is attached to this proposal. UL 1738 includes numerous tests not included in the appliance standards, including approximately 25 tests for strength, wind load, and materials. In addition, UL 1738 includes provisions for product specific marking and detailed installation instructions.

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Submittal Date: Mon Jul 06 13:19:42 EDT 2015

Public Input No. 139-NFPA 54-2015 [Section No. 12.5.3]

12.5.3 Plastic Vent Joints.

Plastic pipe and fittings used to vent appliances shall be installed in accordance with the appliance manufacturer's and the vent manufacturers installation instructions. Where primer is required, it shall be of a contrasting color.

Statement of Problem and Substantiation for Public Input

Please see the rationale and background document for proposed change to 12.5.2.

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Public Input No. 82-NFPA 54-2015 [Section No. 12.5.4]

12.5.4 Special Gas Vents.

Special gas vents shall be listed and labeled in accordance with ANSI/UL 1738, *Venting Systems for Gas-Burning Appliances, Categories II, III, and IV* , and installed in accordance with the special gas vent manufacturer's installation instructions.

Statement of Problem and Substantiation for Public Input

ANSI/UL 1738 is the standard for listing special gas vents intended for venting certified Category II, III or IV gas-burning appliances as defined by ANSI Z223.1/NFPA 54, "National Fuel Gas Code."

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Submittal Date: Thu Jul 02 08:37:01 EDT 2015

Public Input No. 83-NFPA 54-2015 [Section No. 12.6.1.1]

12.6.1.1

Factory-built chimneys shall be installed in accordance with the manufacturer's installation instructions. Factory-built chimneys used to vent appliances that operate at positive vent pressure shall be listed for such application. Factory-built chimneys shall be listed and labeled in accordance with ANSI/UL 103, *Chimneys, Factory-Built, Residential Type and Building Heating Appliances,* ANSI/UL 959, *Medium Heat Appliance Factory-Built Chimneys,* or ANSI/UL 2561, *1400 Degree Fahrenheit Factory-Built Chimneys.*

Statement of Problem and Substantiation for Public Input

ANSI/UL 103 is the standard for residential-type and building-heating-appliance chimneys intended for venting flue gases at a temperature not exceeding 1000°F (540°C), under continuous operating conditions. ANSI/UL 959 is the standard for medium-heat-appliance chimneys intended for venting flue gases at a temperature not exceeding 1800°F, under continuous operating conditions. ANSI/UL 2561 is the standard for factory-built 1400°F chimneys intended for venting flue gases at a temperature not exceeding 1400°F under continuous operating conditions.

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Submittal Date: Thu Jul 02 08:45:35 EDT 2015

Public Input No. 85-NFPA 54-2015 [Section No. 12.6.1.3]

12.6.1.3 *

Masonry chimneys shall be built and installed in accordance with NFPA 211, *Standard for Chimneys, Fireplaces, Vents, and Solid Fuel–Burning Appliances*, and lined with approved clay flue lining, a ~~listed~~ chimney lining ~~system,~~ system listed and labeled in accordance with ANSI/UL 1777, *Chimney Liners* , or other approved material that resists corrosion, erosion, softening, or cracking from vent gases at temperatures up to 1800°F (982°C).

Exception: Masonry chimney flues lined with a chimney lining system specifically listed for use with listed appliances with draft hoods, Category I appliances, and other appliances listed for use with Type B vents shall be permitted. The liner shall be installed in accordance with the liner manufacturer's installation instructions. A permanent identifying label shall be attached at the point where the connection is to be made to the liner. The label shall read "This chimney liner is for appliances that burn gas only. Do not connect to solid or liquid fuel–burning appliances or incinerators."

Statement of Problem and Substantiation for Public Input

ANSI/UL 1777 is the standard for listing and labeling chimney liners intended for installation (1) as alternate lining systems for fire clay flue linings (as described in ASTM C315, "Standard Specification for Clay Flue Liners and Chimney Pots"), or (2) in the fire clay flue linings in masonry chimneys constructed in accordance with ANSI/NFPA 211, "Chimneys, Fireplaces, Vents and Solid Fuel-Burning Appliances."

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Submittal Date: Thu Jul 02 08:57:29 EDT 2015

Public Input No. 136-NFPA 54-2015 [New Section after 12.6.2.4]

12.6.2.5 Insulation shield.

Where a metal and factory-built chimneys pass through insulated assemblies, an insulation shield constructed of steel having a minimum thickness of 0.0187 inch (0.4712 mm)(No. 26 gage) shall be installed to provide clearance between the chimney and the insulation material. The clearance shall not be less than the clearance to combustibles specified by the chimney manufacturer's installation instructions. Where chimneys pass through attic space, the shield shall terminate not less than 2 inches (51 mm) above the insulation materials and shall be secured in place to prevent displacement. Insulation shields provided as part of a listed chimney system shall be installed in accordance with the manufacturer's installation instructions.

Statement of Problem and Substantiation for Public Input

The IFGC currently requires an insulation shield for vents (502.4) to ensure proper clearance to insulation so as not to cause a fire hazard. The NFGC should also require insulation shields for metal and factory-built chimneys as they also require clearance to insulation and represents a fire hazard when one is not installed.

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Public Input No. 84-NFPA 54-2015 [Section No. 12.6.2.4]

12.6.2.4

Decorative shrouds shall not be installed at the termination of factory-built chimneys except where such shrouds are listed and labeled ~~for~~ in accordance with _ ANSI/UL 103, *Chimneys, Factory-Built, Residential Type and Building Heating Appliances* _ for use with the specific factory-built chimney system and are installed in accordance with the manufacturers' installation instructions.

Statement of Problem and Substantiation for Public Input

The standard used to list and label decorative shrouds for this application is ANSI/UL 103.

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Public Input No. 41-NFPA 54-2015 [Section No. 12.6.4.3]

12.6.4.3

Cleanouts shall be examined ~~to determine that they~~ and where they do not remain tightly closed when not in use, they shall be repaired or replaced .

Statement of Problem and Substantiation for Public Input

The current text requires nothing except an exam and a determination. Nothing is required if the cleanout does not remain tightly closed.

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Submittal Date: Thu Jun 04 16:29:58 EDT 2015

Public Input No. 50-NFPA 54-2015 [Section No. 12.6.5.2]

12.6.5.2

Where one chimney serves gas appliances and liquid fuel–burning appliances, the ~~appliances connected through separate openings or connected through a single opening where joined by a suitable fitting located as close as practical to the chimney~~ chimney shall be sized by an approved engineering method . Where two or more openings are provided into one chimney flue, they shall be at different levels. ~~Where the gas appliance is automatically controlled, it shall be equipped with a safety shutoff device.~~

Statement of Problem and Substantiation for Public Input

The first sentence says that the appliances must connect to separate openings or to a single opening. It doesn't seem to matter. Recall the labeled Christmas decorative light strands that said "FOR INDOOR OR OUTDOOR USE ONLY." The wording "as close as practical" is unenforceable nonsense. People ask about sizing chimneys for multiple fuels and the code is silent. An engineered method is all that exists to my knowledge. Regarding the last sentence, what automatic gas appliance would NOT have a safety shutoff device??

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Submittal Date: Wed Jun 17 18:37:30 EDT 2015

Public Input No. 49-NFPA 54-2015 [Section No. 12.6.5.4]

12.6.5.4

A single chimney flue serving a listed combination gas- and oil-burning appliance shall be sized ~~to properly vent~~ in accordance with the appliance manufacturer's instructions .

Statement of Problem and Substantiation for Public Input

The current text is nothing more than a statement of the obvious. It provides no guidance. If there is such an appliance on the market, it will dictate the sizing of the venting system. Referencing the manufacturer's instructions is certainly more informative than the current text.

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Submittal Date: Wed Jun 17 17:34:33 EDT 2015

Public Input No. 89-NFPA 54-2015 [Section No. 12.7.1]

12.7.1 Installation.

The installation of gas vents shall meet the following requirements:

(1) Gas vents shall be installed in accordance with the manufacturer's installation instructions.

(2) A Type B-W gas vent shall have a listed capacity not less than that of the listed vented wall furnace to which it is connected.

(3) Gas vents installed within masonry chimneys shall be installed in accordance with the manufacturer's installation instructions. Gas vents installed within masonry chimneys shall be identified with a permanent label installed at the point where the vent enters the chimney. The label shall contain the following language: “This gas vent is for appliances that burn gas. Do not connect to solid or liquid fuel–burning appliances or incinerators.”

(4) Screws, rivets, and other fasteners shall not penetrate the inner wall of double-wall gas vents, except at the transition from the appliance draft hood outlet, flue collar, or single-wall metal connector to a double-wall vent.

(5) Type B gas vents shall be listed and labeled in accordance with ANSI/UL 441, *Gas Vents* or ANSI/UL 641, *Type L Low-Temperature Venting Systems* . Type BW gas vents shall be listed and labeled in accordance with ANSI/UL 441, *Gas Vents.* Vents for listed combination gas- and oil-burning appliances shall be listed and labeled in accordance with ANSI/UL 641, *Type L Low-Temperature Venting Systems.*

Statement of Problem and Substantiation for Public Input

ANSI/UL 441 is the standard for gas-vent pipes and related parts intended for installation as Type B or BW gas vents. Gas vents are intended to be installed and used in accordance with ANSI Z223.1/NFPA 54, "National Fuel Gas Code." ANSI/UL 641 is the standard for Type L venting systems for use with gas and oil appliances certified as suitable for venting with Type L venting systems. They may be used also where Type B gas vents are permitted.

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Submittal Date: Thu Jul 02 09:34:53 EDT 2015

Public Input No. 90-NFPA 54-2015 [Section No. 12.7.2]

The termination of gas vents shall comply with the following requirements:

(1) A gas vent shall terminate in accordance with one of the following:

(2) Gas vents that are 12 in. (300 mm) or less in size and located not less than 8 ft (2.4 m) from a vertical wall or similar obstruction shall terminate above the roof in accordance with Figure 12.7.2 and Table 12.7.2 .

(3) Gas vents that are over 12 in. (300 mm) in size or are located less than 8 ft (2.4 m) from a vertical wall or similar obstruction shall terminate not less than 2 ft (0.6 m) above the highest point where they pass through the roof and not less than 2 ft (0.6 m) above any portion of a building within 10 ft (3.0 m) horizontally.

(4) Industrial appliances as provided in 12.3.4 .

(5) Direct vent systems as provided in 12.3.5 .

(6) Appliances with integral vents as provided in 12.3.6 .

(7) Mechanical draft systems as provided in 12.4.3 .

(8) Ventilating hoods and exhaust systems as provided in 12.4.4 .

(9) A Type B or a Type L gas vent shall terminate at least 5 ft (1.5 m) in vertical height above the highest connected appliance draft hood or flue collar.

(10) A Type B-W gas vent shall terminate at least 12 ft (3.7 m) in vertical height above the bottom of the wall furnace.

(11) A gas vent extending through an exterior wall shall not terminate adjacent to the wall or below eaves or parapets, except as provided in 12.3.5 and 12.4.3.

(12) Decorative shrouds shall not be installed at the termination of gas vents except where such shrouds are listed ~~for~~ and labeled in accordance with ANSI/UL 441, *Gas Vents,* for use with the specific gas venting system and are installed in accordance with the manufacturer's installation instructions.

(13) All gas vents shall extend through the roof flashing, roof jack, or roof thimble and terminate with ~~a listed~~ a cap or ~~listed~~ roof assembly listed and labeled in accordance with ANSI/UL 441, *Gas Vents,* .

(14) A gas vent shall terminate at least 3 ft (0.9 m) above a forced air inlet located within 10 ft (3.0 m).

Figure 12.7.2 Termination Locations for Gas Vents with Listed Caps 12 in. (300 mm) or Less in Size at Least 8 ft (2.4 m) from a Vertical Wall.

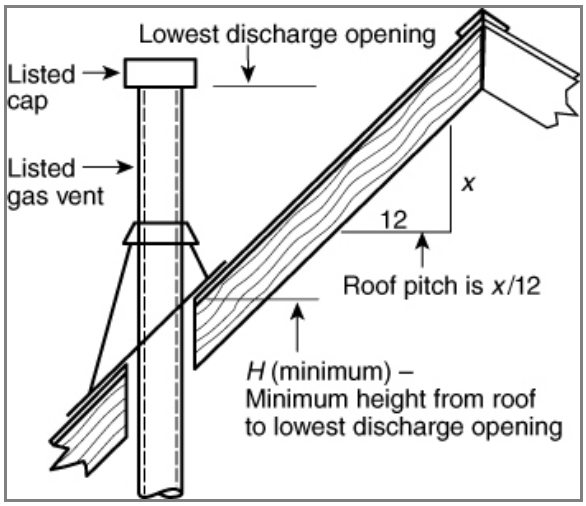

Table 12.7.2 Roof Slope Heights

Roof Slope	H (minimum)	
	ft	m
Flat to 6/12	1.0	0.30
Over 6/12 to 7/12	1.25	0.38

Roof Slope	H_{-} (minimum)	
	ft	m
Over 7/12 to 8/12	1.5	0.46
Over 8/12 to 9/12	2.0	0.61
Over 9/12 to 10/12	2.5	0.76
Over 10/12 to 11/12	3.25	0.99
Over 11/12 to 12/12	4.0	1.22
Over 12/12 to 14/12	5.0	1.52
Over 14/12 to 16/12	6.0	1.83
Over 16/12 to 18/12	7.0	2.13
Over 18/12 to 20/12	7.5	2.27
Over 20/12 to 21/12	8.0	2.44

Statement of Problem and Substantiation for Public Input

ANSI/UL 441 is the standard for gas-vent pipes and related parts intended for installation as Type B or BW gas vents. Gas vents are intended to be installed and used in accordance with ANSI Z223.1/NFPA 54, "National Fuel Gas Code." ANSI/UL 641 is the standard for Type L venting systems for use with gas and oil appliances certified as suitable for venting with Type L venting systems. They may be used also where Type B gas vents are permitted.

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Submittal Date: Thu Jul 02 09:39:53 EDT 2015

Public Input No. 56-NFPA 54-2015 [Section No. 12.7.3]

12.7.3 Size of Gas Vents.

Venting systems shall be sized and constructed in accordance with ~~Chapter~~ 13 ~~or other approved engineering methods and the gas vent and the appliance manufacturers' instructions.~~ sections 12.7.3.1 through 12.7.3.3 and the appliance manufacturer's instructions..

12.7.3.1* Category I Appliances.

The sizing of natural draft venting systems serving one or more listed appliances equipped with a draft hood or appliances listed for use with a Type B gas vent, installed in a single story of a building, shall be in accordance with one of the following:

(1) The provisions of Chapter 13.

(2) Vents serving fan-assisted combustion system appliances, or combinations of fan-assisted combustion system and draft hood–equipped appliances, shall be sized in accordance with Chapter 13 or other approved engineering methods.

(3) For sizing an individual gas vent for a single, draft hood–equipped appliance, the effective area of the vent connector and the gas vent shall be not less than the area of the appliance draft hood outlet or greater than seven times the draft hood outlet area.

(4) For sizing a gas vent connected to two appliances with draft hoods, the effective area of the vent shall be not less than the area of the larger draft hood outlet plus 50 percent of the area of the smaller draft hood outlet or greater than seven times the smaller draft hood outlet area.

(5) Other approved engineering practices.

12.7.3.2 Vent Offsets.

Type B and Type L vents sized in accordance with 12.7.3.1 (3) or 12.7.3.1 (4) shall extend in a generally vertical direction with offsets not exceeding 45 degrees, except that a vent system having not more than one 60 degree offset shall be permitted. Any angle greater than 45 degrees from the vertical is considered horizontal. The total horizontal distance of a vent plus the horizontal vent connector serving draft hood–equipped appliances shall not be greater than 75 percent of the vertical height of the vent.

12.7.3.3 Category II, Category III, and Category IV Appliances.

The sizing of gas vents for Category II, Category III, and Category IV appliances shall be in accordance with the appliance manufacturer's instructions. The sizing of plastic pipe specified by the appliance manufacturer as a venting material for Category II, III, and IV appliances shall be in accordance with the appliance manufacturers' instructions.

12.7.3.4 Sizing.

Chimney venting systems using mechanical draft shall be sized in accordance with approved engineering methods.

Statement of Problem and Substantiation for Public Input

The text of 12.7.3 is repeated in 12.7.3.1 Literally the current text does not list 12.7.3.1 as an option. (the opening paragraph excludes the subsequent subsections.)

Submitter Information Verification

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Submittal Date: Fri Jun 19 11:06:55 EDT 2015

Public Input No. 10-NFPA 54-2015 [Section No. 12.9.3]

12.9.3

The vent terminal of a direct vent appliance with an input of 10,000 Btu/hr (3 kW) or less shall be located at least 6 in. (150 mm) from any air opening into a building, an appliance with an input over 10,000 Btu/hr (3 kW) but not over 50,000 Btu/hr (14.7 kW) shall be installed with a 9 in. (230 mm) vent termination clearance, and an appliance with an input over 50,000 Btu/hr (14.7 kW) shall have at least a 12 in. (~~300~~ 305 mm) vent termination clearance.

The bottom of the vent terminal and the air intake shall be located at least 12 in. (~~300~~ 305 mm) above finished ground level. I n areas where snow is known to accumulate the vent termination must be protected from blockage and t he bottom of the vent terminal and the air intake shall be located at least 12 in. (305 mm) above the **maximum expected** snow depth as determined by the state or local authority.

The maximum expected snow depth may be determined from historical weather observations available from the National Oceanic and Atmospheric Administration (NOAA). Their National Operational Hydrologic Remote Sensing Center (NOHRSC) Web site http://www.nohrsc.noaa.gov/nsa/ currently provides a 10 year history of **daily snow depth observations** near a specified city and state.

Additional Proposed Changes

File Name	Description	Approved
Low_Direct_Vent_Cropped.jpg	Picture of typical vents passing MASS BOSTON inspection	

Statement of Problem and Substantiation for Public Input

The licensed contractor and inspector complies with NFPA 54 that requires 12" above finished ground (grade). In new construction, 10 years of mulch applied by landscape contractors will leave vent and intake terminals just a few inches above ground.

In climates where snow exists a much higher clearance is required and should be based on the NOAA snow depth history for the locale. The attached pictureof a new installation in Boston, Mass should speak 1000 words. Any normal winter snow will cover this, but the recent Feb 2015 storm(s) made it difficult to keep uncovered. The generated CO was trapped between the snowfall and the house creating a life safety hazard.

Manufacturer's instruction are inadequate and inconsistent making leaving inspectors to rely on judgement rather than regulation. When instructions say "Provide a minimum of 1 foot clearance from the bottom of the exhaust above the maximum expected snow accumulation depth, there is no identified source for that snow depth.

With insufficient height. snow removal may be necessary to maintain clearance." Massachusetts just added requirement for CO detector at and one level above terminal for this reason.

The real problem is nobody knows what "expected snow accumulation level" means, I have consulted with a local expert @ MIT to answer this. The data is buried in NOAA.gov, You can't expect local inspectors to figure this out. Each adopting state should determine this is either no snow, compute a max level, or a table of levels by region/district within the state.I am working with NOAA to provide a simple and reliable source of information.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 11-NFPA 54-2015 [New Section after 12.16]	

Submitter Information Verification

Submitter Full Name: Harvey Parad

Organization: Plan Paradigms Inc

Public Input No. 93-NFPA 54-2015 [Section No. 12.13.2.1]

12.13.2.1

If a draft hood is not supplied by the appliance manufacturer where one is required, a draft hood shall be installed, be of a listed or approved type, and, in the absence of other instructions, be of the same size as the appliance flue collar. Where a draft hood is required with a conversion burner, it shall be of a listed or approved type._ Listed draft hoods shall be listed and labeled in accordance with UL 378, *Draft Equipment.*

Statement of Problem and Substantiation for Public Input

UL 378 is the standard for listing draft regulators (automatic dampers), automatic damper controls, draft fans, and similar equipment, intended to assist in maintaining the desired combustion chamber draft in heating equipment.

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Submittal Date: Thu Jul 02 09:58:59 EDT 2015

Public Input No. 11-NFPA 54-2015 [New Section after 12.16]

DIRECT VENTING THRU ROOF

The bottom of the vent terminal and the air intake shall be located at least 12 in. (305 mm) above roof level. In areas where snow is known to accumulate the vent termination must be protected from blockage and the bottom of the vent terminal and the air intake shall be located at least 12 in. (305 mm) above the **maximum expected** snow depth as determined by the state or local authority.

The maximum expected snow depth may be determined from historical weather observations available from the National Oceanic and Atmospheric Administration (NOAA). Their National Operational Hydrologic Remote Sensing Center (NOHRSC) Web site http://www.nohrsc.noaa.gov/nsa/ currently provides a 10 year history of **daily snow depth observations** near a specified city and state.

Statement of Problem and Substantiation for Public Input

Please see NFPA 54 public input #10.
It occurred to me that the scope of 12.9.3 is direct "WALL" vents, but manufacturer of high efficiency furnaces, boilers, and instant hot water heaters allow venting thru the roof.
For lack of a better way to do this, created a new section for ROOF DIRECT VENT.
The term direct vent dates back to the days where this meant not using a chimney. Today it typically means high efficiency condensing, with plastic intake and exhaust. Through the wall or roof does not matter.

SO if there is a way in my input #10 of saying "above finished ground OR roof), then simply forget this input.

If this does require a separate section, then 12.3.5 may need to reference it.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 10-NFPA 54-2015 [Section No. 12.9.3]	

Submitter Information Verification

Submitter Full Name: Harvey Parad
Organization: Plan Paradigms Inc
Affilliation: MA Master Plumber 10188, former (retired) electrical engineer & PE
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Submittal Date: Tue Mar 31 10:17:11 EDT 2015

Public Input No. 86-NFPA 54-2015 [Section No. 13.1.7]

13.1.7 * Corrugated Chimney Liners.

~~Listed corrugated~~ Corrugated metallic chimney liner systems listed and labeled in accordance with ANSI/UL 1777, *Chimney Liners,* and installed in masonry chimneys shall be sized by using Table 13.1(a) or Table 13.1(b) for Type B vents, with the maximum capacity reduced by 20 percent (0.80 × maximum capacity) and the minimum capacity as shown in Table 13.1(a) or Table 13.1(b). Corrugated metallic liner systems installed with bends or offsets shall have their maximum capacity further reduced in accordance with 13.1.3. The 20 percent reduction for corrugated metallic chimney liner systems includes an allowance for one long radius 90 degree turn at the bottom of the liner.

Statement of Problem and Substantiation for Public Input

ANSI/UL 1777 is the standard for listing and labeling chimney liners intended for installation (1) as alternate lining systems for fire clay flue linings (as described in ASTM C315, "Standard Specification for Clay Flue Liners and Chimney Pots"), or (2) in the fire clay flue linings in masonry chimneys constructed in accordance with ANSI/NFPA 211, "Chimneys, Fireplaces, Vents and Solid Fuel-Burning Appliances."

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Submittal Date: Thu Jul 02 09:11:00 EDT 2015

Public Input No. 92-NFPA 54-2015 [Section No. 13.2.16]

13.2.16 Multistory B Vents Required.

Where used in multistory systems, vertical common vents shall be Type B double wall and shall be installed with ~~a listed~~ a vent cap listed and labeled in accordance with ANSI/UL 441, *Gas Vents* ..

Statement of Problem and Substantiation for Public Input

ANSI/UL 441 is the standard for gas-vent pipes and related parts intended for installation as Type B or BW gas vents. Gas vents are intended to be installed and used in accordance with ANSI Z223.1/NFPA 54, "National Fuel Gas Code." ANSI/UL 641 is the standard for Type L venting systems for use with gas and oil appliances certified as suitable for venting with Type L venting systems. They may be used also where Type B gas vents are permitted.

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Public Input No. 87-NFPA 54-2015 [Section No. 13.2.20]

13.2.20 * Corrugated Chimney Liners.

~~Listed corrugated~~ Corrugated metallic chimney liner systems listed and labeled in accordance with ANSI/UL 1777, *Chimney Liners,* and installed in masonry chimneys shall be sized by using Table 13.2(a) or Table 13.2(b) for Type B vents, with the maximum capacity reduced by 20 percent (0.80 × maximum capacity) and the minimum capacity as shown in Table 13.2(a) or Table 13.2(b). Corrugated metallic liner systems installed with bends or offsets shall have their maximum capacity further reduced in accordance with 13.2.6 and 13.2.7. The 20 percent reduction for corrugated metallic chimney liner systems includes an allowance for one long radius 90-degree turn at the bottom of the liner.

Statement of Problem and Substantiation for Public Input

ANSI/UL 1777 is the standard for listing and labeling chimney liners intended for installation (1) as alternate lining systems for fire clay flue linings (as described in ASTM C315, "Standard Specification for Clay Flue Liners and Chimney Pots"), or (2) in the fire clay flue linings in masonry chimneys constructed in accordance with ANSI/NFPA 211, "Chimneys, Fireplaces, Vents and Solid Fuel-Burning Appliances."

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Submittal Date: Thu Jul 02 09:18:13 EDT 2015

Public Input No. 88-NFPA 54-2015 [Section No. 13.2.22]

13.2.22 Chimneys and Vent Locations.

Table 13.2(a) through Table 13.2(e) shall be used only for chimneys and vents not exposed to the outdoors below the roof line. A Type B vent ~~or listed~~ or chimney lining system ~~passing~~ listed and labeled in accordance with ANSI/UL 1777, *Chimney Liners,* passing through an unused masonry chimney flue shall not be considered to be exposed to the outdoors. A Type B vent passing through an unventilated enclosure or chase insulated to a value of not less than R8 shall not be considered to be exposed to the outdoors. Where vents extend outdoors above the roof more than 5 ft (1.5 m) higher than required by Table 12.7.2, and where vents terminate in accordance with 12.7.2 (1)(b), the outdoor portion of the vent shall be enclosed as required by this paragraph for vents not considered to be exposed to the outdoors, or such venting system shall be engineered. Table 13.2(f), Table 13.2(g), Table 13.2(h), and Table 13.2(i) shall be used for clay tile lined exterior masonry chimneys, provided all the following conditions are met:

(1) The vent connector is Type B double wall.

(2) At least one appliance is draft hood equipped.

(3) The combined appliance input rating is less than the maximum capacity given by Table 13.2(f) (for NAT ± NAT) or Table 13.2(h) (for FAN ± NAT).

(4) The input rating of each space-heating appliance is greater than the minimum input rating given by Table 13.2(g) (for NAT ± NAT) or Table 13.2(i) (for FAN ± NAT).

(5) The vent connector sizing is in accordance with Table 13.2(c).

Statement of Problem and Substantiation for Public Input

ANSI/UL 1777 is the standard for listing and labeling chimney liners intended for installation (1) as alternate lining systems for fire clay flue linings (as described in ASTM C315, "Standard Specification for Clay Flue Liners and Chimney Pots"), or (2) in the fire clay flue linings in masonry chimneys constructed in accordance with ANSI/NFPA 211, "Chimneys, Fireplaces, Vents and Solid Fuel-Burning Appliances."

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Submittal Date: Thu Jul 02 09:27:37 EDT 2015

Public Input No. 94-NFPA 54-2015 [Section No. 13.2.23]

13.2.23 Draft Hood Conversion Accessories.

Draft hood conversion accessories for use with masonry chimney venting listed Category I fan-assisted appliances shall be listed and labeled in accordance with UL 378, *Draft Equipment* , and installed in accordance with the listed accessory manufacturer's installation instructions.

Statement of Problem and Substantiation for Public Input

UL 378 is the standard for listing draft regulators (automatic dampers), automatic damper controls, draft fans, and similar equipment, intended to assist in maintaining the desired combustion chamber draft in heating equipment.

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AGENDA ITEM 6 – PANEL PROJECTS
VENTING PANEL
ITEMS FROM NOVEMBER 18-19, 2014, COMMITTEE MINUTES

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1. 12.3.2(3) – Hot Plates And Laundry Stoves
2. 12.5 - L Vents
3. 12.6.2 – Chimney Cap
4. 13.1 & 13.2 – Charging Statement

AGENDA ITEM 7 – PANEL PROJECTS
VENTING PANEL
ITEMS FROM NOVEMBER 18-19, 2014, COMMITTEE MINUTES

ISSUE: 12.3.2(3) – HOT PLATES AND LAUNDRY STOVES

12.3.2 Appliances Not Required to be Vented. The following appliances shall not be required to be vented.

(1) Listed ranges

(2) Built-in domestic cooking units listed and marked for optional venting

(3) Listed hot plates and listed laundry stoves

…

BACKGROUND: The committee removed hot plates and laundry stoves from chapter 10, but we left them in 12.3.2(3). We should clean this up in the next edition.

COMMITTEE ACTION/MOTION: Approved to venting panel for consideration.

PANEL ACTION/MOTION:

AGENDA ITEM 7 – PANEL PROJECTS
VENTING PANEL
ITEMS FROM NOVEMBER 18-19, 2014, COMMITTEE MINUTES

ISSUE: 12.5 - L VENTS

12.5 Type of Venting System to Be Used.

12.5.1 The type of venting system to be used shall be in accordance with Table 12.5.1.

12.5.2 Plastic Piping. Where plastic piping is used to vent an appliance, the appliance shall be listed for use with such venting materials and the appliance manufacturer's installation instructions shall identify the specific plastic piping material.

12.5.3 Plastic Vent Joints. Plastic pipe and fittings used to vent appliances shall be installed in accordance with the appliance manufacturer's installation instructions. Where primer is required, it shall be of a contrasting color.

12.5.4 Special Gas Vent. Special gas vent shall be listed and installed in accordance with the special gas vent manufacturer's installation instructions.

BACKGROUND: NFPA 54 does not include a statement that L vent can be used in place of B vent. Should it?

COMMITTEE ACTION/MOTION: Approved to venting panel for consideration.

PANEL ACTION/MOTION:

AGENDA ITEM 7 – PANEL PROJECTS
VENTING PANEL
ITEMS FROM NOVEMBER 18-19, 2014, COMMITTEE MINUTES

ISSUE: 12.6.2 – CHIMNEY CAP

12.6.2 Termination.

12.6.2.1 A chimney for residential-type or low-heat appliances shall extend at least 3 ft (0.9 m) above the highest point where it passes through a roof of a building and at least 2 ft (0.6 m) higher than any portion of a building within a horizontal distance of 10 ft (3 m).

12.6.2.2 A chimney for medium-heat appliances shall extend at least 10 ft (3 m) higher than any portion of any building within 25 ft (7.6 m).

12.6.2.3 A chimney shall extend at least 5 ft (1.5 m) above the highest connected appliance draft hood outlet or flue collar.

12.6.2.4 Decorative shrouds shall not be installed at the termination of factory-built chimneys except where such shrouds are listed and labeled for use with the specific factory-built chimney system and are installed in accordance with manufacturers' installation instructions.

BACKGROUND: The Code does not have a requirement for a chimney cap. Caps are required for vents and SWMP. Should a requirement for a chimney cap be added?

COMMITTEE ACTION/MOTION: Approved to venting panel for consideration.

PANEL ACTION/MOTION:

AGENDA ITEM 7 – PANEL PROJECTS
VENTING PANEL
ITEMS FROM NOVEMBER 18-19, 2014, COMMITTEE MINUTES

ISSUE: 13.1 and 13.2

13.1 Additional Requirements to Single Appliance Vent Table 13.1(a) Through Table 13.1(f)

13.2 Additional Requirements to Multiple Appliance Vent Table 13.2(a) Through Table 13.2(i)

BACKGROUND: Create a charging statement to reference the vent tables.

COMMITTEE ACTION/MOTION: Approved to venting panel for consideration.

PANEL ACTION/MOTION: