END USE CODES & STANDARDS TIP SHEET

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AGA American Gas Association

SGA NATURAL GAS ASSOCIATION

American Public Gas Association

Understanding your local codes and your company's regulations is essential to serving your customers.

QUICK DEFINITIONS

- CHP (Combined Heat and Power, aka Congregation) - Engine driven or central power station that generates electricity and uses the heat produced for other purposes such as space or water heating.
- DOT 49 CFR Part 192 - Federal regulations of minimum safety requirements for the transportation of natural gas by pipeline:(Federal codes simplified)
- End Use Codes and Standards - Regulations adopted by the State or local jurisdiction to judge the acceptability of building construction, including a fuel gas installation.
- Source Energy or Full-Fuel-Cycle Energy - Includes, in addition to site energy use, the energy consumed in the extraction, processing, and transportation of primary fuels such as coal, oil, and natural gas; energy losses in thermal combustion in power-generation plants; and energy losses in transmission and distribution to homes and commercial buildings.
- Site Energy - The use of electricity, natural gas, propane and/or fuel oil by an appliance as metered at the site.
- AHJ (Authority Having Jurisdiction) - An organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure.
- Condensing appliance - An appliance that produces a lower flue temperature such that the water vapor produce during combustion will condense in the appliance or vent (commonly listed as Category IV)
- Non-condensing - An appliance that produces a higher flue temperature such that the water vapor produce during combustion will not condense in the appliance or vent (commonly listed as Category I)

MODEL CODES TO KNOW

Model codes are developed by national consensus committees and are the basis for the end use codes when adopted into law. These model codes are either adopted in whole without change or can contain state or local jurisdiction amendments.
Commonly encountered model codes include:

- National Fuel Gas Code (NFPA 54 / ANSI Z223.1)
- International Fuel Gas Code (IFGC)
- International Residential Code (IRC), Chapter 24—Fuel Gas Provision
- International Energy Conservation Code (IECC) / ASHRAE 90.1
- NFPA 58 Propane Code
- NFPA 52 Vehicular Natural Gas Fuel Systems
- IAPMO – Uniform Plumbing Code (UPC)

DIFFERENT VENTING CATEGORIES

Venting categories apply to furnaces, boilers, and water heaters. The most common categories for listed appliances are:

- **Category I Vented Appliance:** An appliance that operates with a non-positive vent static pressure and with a vent gas temperature that avoids excessive condensate production in the vent.
- **Category IV Vented Appliance:** An appliance that operates with a positive vent static pressure and with a vent gas temperature that can cause excessive condensate production in the vent.

THINGS YOU SHOULD KNOW!

- How to illustrate cost savings most effectively to the customer.
- The fuel gas codes adopted by your jurisdiction and any relevant local or state amendments.
- That NFPA 54/ANSI Z223.1, the IFGC, or the local fuel gas code, does not apply to utility owned components; applicability of these codes begins at the outlet side of the meter.
- An understanding of your company's meter and regulator installation. requirements including:

⇒ Appliance vent termination distance.

⇒ Regulator vent outlet distance from a source of ignition (normally 3 ft.)

THINGS TO THINK ABOUT…

Some items to consider in understanding the service needs when working with a customer who is applying for a new gas service or one who currently has gas service.

- The number of appliances to be installed and the total combined BTU input.
- The type of appliance and whether it is condensing vs. non-condensing to determine the type of venting system(s) required.
- Whether existing fuel gas piping changes and or meter replacement may be needed when adding high input appliances such as pool heaters, generators, or tankless water heaters to an existing gas service.
- Generator electrical load sizing factors including how many circuits are to be supplied and the types of appliances on those circuits. Also the minimum inlet gas pressure required by the generator should be determined to properly size the gas service.

NEVER FORGET …

Safety is #1 to the Natural Gas Industry, so always commit to SAFETY FIRST!

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NATIONAL RESOURCES

- **International Code Council (ICC) |** A member-focused association that is dedicated to developing model codes and standards used in the design, build and compliance process to construct safe, sustainable, affordable, and resilient structures. **www.iccsafe.org**
- **National Fire Protection Association (NFPA) |** Devoted to eliminating death, injury, property, and economic loss due to fire, electrical and related hazards. **www.nfpa.org**
- **International Association of Plumbing and Mechanical Officials (IAPMO) |** The IAPMO Group is a complete service organization, providing code development assistance, industry-leading education, plumbing and mechanical product testing and certification, building product evaluation and a manufacturer-preferred quality assurance program. **www.iapmo.org**
- **American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) |** To advance the arts and sciences of heating, ventilation, air conditioning and refrigeration to serve humanity and promote a sustainable world. **www.ashrae.org**
- **Hearth, Patio & Barbeque Association (HPBA) |** The association includes manufacturers, retailers, distributors, manufacturers' representatives, service and installation firms, and other companies and individuals - all having business interests in and related to the hearth, patio, and barbecue products industries. **www.hpba.org**
- **National Association of Home Builders (NAHB) |** Helps its members build communities with a federation of more than 700 state and local associations, NAHB represents more than 140,000 members. **Be sure to check your state and local Home Builders Association.**
- **GTI Energy |** GTI Energy is the leading research, development and training organization addressing energy and environmental challenges to enable a secure, abundant, and affordable energy future. **www.gti.energy**
- **American Institute of Architects (AIA) |** Advocating for the value of architecture and give architects the resources they need to do their best work. "Our work drives positive change through the power of design." **www.aia.org**
- **Air-Conditioning, Heating & Refrigeration Institute (AHRI) |** Manufacture quality, efficient, and innovative residential and commercial air conditioning, space heating, water heating, and commercial refrigeration equipment and components for sale in North America and around the world, and account for more than 90 percent of HVACR and water heating residential and commercial equipment manufactured and sold in North America. **www.ahrinet.org**
- **National Propane Gas Association (NPGA) |** The national trade association representing the U.S. propane industry. **www.npga.org**
- **Department of Energy (DOE) |** Ensure America's security and prosperity by addressing its energy, environmental and nuclear challenges through transformative science and technology solutions. **www.energy.gov**
- **Energy Efficiency Programs |** Be sure to check your local energy efficiency programs. **www.dsireusa.org**
- **Energy Solutions Center (ESC) |** ESC is a member focused organization of energy utilities and equipment manufacturers that creates educational and marketing materials, case studies, training manuals, decision analysis software, and other tools and resources designed to enhance the success of those utility customer service professionals.
- **The Transport Project |** TTP is a national organization dedicated to the development of a growing, profitable, and sustainable market for vehicles powered by natural gas or biomethane. **https://transportproject.org/**

HOW TO GET INVOLVED IN CODES & STANDARDS

- **Building Energy Codes and Standards (BECS) |** An American Gas Association committee; Jim Ranfone—jranfone@aga.org, Dan Lapato -- DLapato@aga.org, Shannon Corcoran -- scorcoran@aga.org
- **Codes & Standards |** An American Public Gas Association committee; Stuart Saulters— ssaulters@apga.org
- **Codes & Standards |** A Southern Gas Association committee; Garrett Shuman—garrett.shuman@southerngas.org
- **Building Officials Associations |** Be sure to check your state and local Building Officials Associations and ask how you can get involved.
- **State Gas Associations |** Get involved with your state/local associations
- **Codes & Standards Working Group** | TTP's Technology & Development Committee | Paul Sandsted psandsted@transportproject.org

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