Ask the
INSPECTOR...
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What are some of the different types/ features of wood burning systems that are available?

There are many different types of wood burning systems. Some of the more common types are summarized as follows:

- Masonry fireplaces, found in many homes in Canada, are primarily decorative or aesthetic, and are not considered an efficient means of providing heat to a home.
- Factory-built fireplaces and associated chimneys are manufactured in components for field assembly, and may include ductwork, auxiliary fans, etc.
- Freestanding wood stoves are used to meet all or a portion of home heating requirements. Wood burning cook stoves are similar to free-standing wood stoves but are also specially designed for cooking or baking and may include a tank for heating water.
- Fireplace inserts/hearth mount stoves are installed within or partially within the combustion chamber of a fireplace. Both are usually installed to convert a low-efficiency fireplace into a viable heating appliance. These types of stoves typically require a steel liner to be installed within the existing masonry chimney for safety.

What are some installation requirements for wood burning systems?

The installation requirements for wood burning systems are complex; they are stipulated in different documents, depending on the type of system under consideration, and include:

- Federal and provincial building codes
- Canadian Standards Association (CSA) Standard B365-01 "Installation Code for Solid Fuel Burning Appliance and Equipment"
- Detailed manufacturers' specifications
- Other specific CSA or Underwriters' Laboratories of Canada (UL Canada) standards

The following is a summary of several installation requirements for masonry fireplaces/heaters and chimneys, certified/uncertified wood burning appliances, flue pipes, clearances, and insurance company considerations.

Masonry Fireplaces/Heaters and Chimneys

Masonry fireplaces/heaters and chimneys are required to be constructed in accordance with the federal and provincial building codes. These codes stipulate specific requirements for construction materials, combustion air, liners, clearances between combustion chamber/flue pipe and combustible materials in the home, etc. Unfortunately, it is often difficult to verify proper installation of a completed fireplace given the concealed nature of chimney construction.

Certified Appliances

Certified appliances are identified by a tag attached to the appliance (often at the rear, which makes it very difficult to observe in some cases) that indicates certification of the appliance by one of three agencies in Canada: the CSA, UL Canada or Warnock Hersey Professional Services (WH). Certification is based on previous laboratory testing of the same model of appliance under severe high-firing conditions. The tag indicates that the appliance has met certain minimum requirements and is certified for installation in accordance with the details specified on the tag.

Uncertified Appliances

Appliances that do not have labels are considered to be uncertified. The requirements for installation of an uncertified appliance are specified in CSA B365.1, and are very conservative in order to ensure safety. In many cases the requirements, such as the amount of clearance needed from combustible materials, are so difficult to follow as to make installation impractical, and the appliance is replaced with a certified appliance.

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Flue Pipes

Flue pipes (typically associated with wood stoves or hearth mounts) are required to be installed in accordance with CSA B365.1. Several common pipe requirements include: being constructed of a high temperature material such as steel; upward sloping sections; properly supported sections every meter of horizontal run; properly fastened connections (3 screws per joint); a maximum of 2 90º elbows; and adequate clearance to combustible materials.

Clearance Requirements

Regardless of the appliance type or component under consideration, the primary issue is providing adequate and continuous clearance between the wood burning system and combustible materials (i.e. wood framing/flooring, paneling, etc.) in the home. Sometimes homeowners discount potential safety concerns with inadequate clearances of existing appliances stating, "I've never had a problem with overheating"; however, they may not be aware of pyrolysis. Pyrolysis occurs to wood and other combustible materials when exposed to relatively low levels of heat over a long period of time. As pyrolysis occurs, the ignition temperature of the material decreases and the fire risk is increased. An installation that has been "safe" for years may potentially be a fire hazard, and should be inspected by a qualified inspector/contractor to ensure safety. In many cases, the clearances to combustible materials can be reduced by 33% to 50% with proper installation of masonry or steel "shields."

Insurance Company Considerations

Insurance company requirements should be a consideration in evaluating a wood burning appliance. Insurance companies minimize their risk by ensuring that wood burning appliances are properly installed. In certain cases, upgrades to wood burning systems may be required in order to obtain insurance coverage. You should consult with your insurance company to verify their requirements.

What are some key safety and maintenance considerations for wood burning appliances?

Wood burning appliances should be inspected for cracks, corrosion, proper door/latch operation, etc. regularly by a qualified contractor. Wood burning systems should also be inspected and/or cleaned by a qualified contractor annually or every 60 fires to prevent excessive creosote buildup and to ensure safety. If chimneys are used regularly but not cleaned, creosote may accumulate on the interior of the flue to a thickness that is sufficient to combust and cause a chimney fire.

Other safety considerations are related to potential back drafting of a wood burning system; this could potentially cause dangerous exhaust products such as carbon monoxide to spill into the home from the appliance. Depending on the age and location of the wood burning system in Canada, and the "tightness" of the house in which it is installed, carbon monoxide detectors or heat recovery ventilation units may be required. We recommend checking out your specific requirements with a qualified contractor or your local building department.

Are there any certification programs for wood appliance contractors or inspectors in Canada?

Wood Energy Technical Training (WETT) is a voluntary training and certification program. Members of WETT include wood heat system salespeople, installers, chimney sweeps, and municipal/private building inspectors across Canada. WETT performs a public service by providing a means of distinguishing between people who have formal training in the area of residential wood energy and those who do not. WETT offers different types of certification requirements for salespeople/installers, chimney sweeps and inspectors; requirements consist of a combination of successfully completing initial and ongoing training courses, adequate field experience, and adherence to the WETT Code of Ethics. For further information, contact WETT at www.wettinc.ca.

For further information please contact: