



The I-ENG-A Report

Investigative Engineers Association

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Fireplaces & Chimneys Pre-Fab, Maintenance & Sweeps

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Pre-fab or zero-clearance fireplaces are factory built units that have layers of metal creating the firebox with air spaces between the layers for insulation purposes. It is connected to a double or triple walled, metal chimney. These fireplaces come commonly 36-42 inches wide. They include a considerably smaller grate on the floor of the firebox. The sizes of these grates indicate that it is not designed for the larger fires generally associated with masonry fireplaces. A refractory panel lines the inside of the firebox. The unit may also have gas service connected to it to assist in igniting the fire.

Considerations to keep in mind when utilizing one of these units are as follows:

- These units are not constructed to take on the heavy fire loads of their masonry counterparts
- It is recommended that only 3 average sized pieces of wood be used. When these are reduced to embers and ash, more can be added.
- The screen should be kept shut when burning.
- Care should be taken not to let flames rise to the top of the firebox. Excessive flame height may ignite any creosote buildup lining the area.
- The back refractory wall should also be inspected prior to lighting a fire. If it is cracked and split open, it should be

replaced before using the fireplace. This split, if opened, may let direct flame contact the metal wall. This can conduct excessive heat to the wood framing on the outside of the firebox.

- A layer of ash from the previous fire should be allowed to accumulate on the floor. Ash is a great insulator and will assist in reflecting the heat back up, making better use of the heat produced by the fire. This ash will not allow the heat to penetrate the refractory floor and spall or crack it. One inch of ash is enough to do the job.

- Excess ash should be removed and safely discarded. *A note on cleaning the firebox of ash: Embers may be present for days after the fire is thought to have been extinguished. Hundreds of people each year set fire to their home because of failure to remove their products properly. All ash should be placed in a non-combustible container and removed from the home entirely. Place them outside the home in a safe location. Ashes can be placed in your favorite garden; they contain many nutrients that are great for the soil.*

The same rules apply to combustibles; they should be kept a safe distance from the opening. Take care not to close the glass doors when the fire is burning aggressively. The glass doors may shatter as a result, sending glass scattering throughout the room. Also, closed doors limit the combustion air from entering the fireplace and can result in heavy creosote accumulation. This will increase the chances of a

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chimney fire before your next scheduled cleaning.

Next, when should you call for maintenance and whom do you call? The National Fire Protection Association (NFPA) states all fireplaces and chimneys shall be inspected yearly. Cleaning and maintenance should be done as needed. During the annual inspection, the chimney should be checked for damage, creosote accumulation, problems with combustibles in close proximity to the fireplace, and burning practices from the previous year.

Looking inside the fireplace will reveal a history of the burning practices of the users. Are the windows covered in creosote indicating they burn with the glass doors closed? Is the creosote thick and tarry, indicating they are burning "green" or damp wood? Is the refractory wall split in two and the grate damaged from using too much wood?

Early on in the career of a chimney sweep, fireplaces may all look the same. Not too long ago books were unavailable on how to be a chimney sweep. Even with all the resources available today, some businesses are born simply by picking up some

fireplace brushes and rods, and calling themselves chimney sweeps.

Although years ago many sweeps got their start this way, today there is no excuse. There is more to the profession of a chimney sweep than ever imagined. Customers have many questions and concerns related to the use of their fireplace. The answers are available if your sweep has the expertise and training. The National Chimney Sweep Guild is an excellent source of information. The network of experts found in this organization is invaluable. You can learn about draft and what affects it, what type of wood gets the best results, and what is evaluated while conducting an inspection. The National Chimney Sweep Guild offers a program called the Certified Chimney Sweep. It is an in-depth study of fireplaces and chimneys. A study of this program and the NFPA 211 is required for the certification. Consumers are advised to seek this minimum requirement of the chimney sweep you select to evaluate and clean their fireplace.

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