

“411”

INFORMATION PLEASE...

Technical Data for Fire, Smoke and Water Damage

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Furnace Puffbacks

The heating season is upon us. Many furnaces are being turned on for the first time since the final spurts of cold weather last season. There will undoubtedly be a flurry of problems ranging from units that do not work at all to the unfortunate “furnace puffback.” A professional restoration company will have the knowledge to effectively handle this occurrence.

The term “furnace puffback” refers to the sudden “explosion” (really “expulsion”) of soot into the dwelling caused by a malfunction in the heating system. The malfunction is usually an uncontrolled explosive ignition in the fire chamber and can be caused by a number of different problems.

“Puffback” has become a familiar term and is applied to any furnace disorder that results in soot being deposited into the living area of a structure.

Correct furnace operation is designed to combine fuel and oxygen in a

balanced mixture that provides efficient and controlled combustion. The results are the (almost) complete combustion of the fuel that provides a steady flame, while producing only extremely small smoke particles. These particles are carried by the hot exhaust gases and are discharged from the dwelling through the chimney.

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When the rate of combustion slows, but fuel injection continues at the same rate, sudden and violent combustion can occur. This combustion causes a vibration throughout the heating system so powerful that it can cause accumulated soot residue within the system (especially the ducts) to dislodge. The soot is then picked up by the air stream of forced air systems and distributed through the vents into the living areas.

Hot water systems do

not prevent this occurrence although the flow of particles is obviously a bit different. In those systems, the soot residue produced will follow the normal convection currents that run along/beside the hot water pipes and thereby travel throughout the home. The particles are then deposited and distributed to areas far from the point of origin.

The soot residue that is deposited as a result of a “furnace puffback” is usually an oily, sticky film that often has a petroleum base. The

odor is sometimes overwhelming. As a result of the normal convection currents plus the pressurization caused by the explosive combustion that occurred, the soot is often found in every nook and cranny throughout the structure.

You often find residue not only on the obvious, exposed items and furniture, but it is also discovered inside closets and cabinet drawers. The residue can force itself into closets affecting the

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clothing and personal articles within. A professional restorer will be able to perform a thorough inspection and evaluate the best methods of properly cleaning the structure and contents.

A professional restoration business will know that the heating system will need to be properly serviced by trained HVAC technicians. The duct system will also require cleaning prior to restarting the system.

Cross-contamination due to negligence is simply not acceptable. With a proper evaluation by a professional restoration company, these potential problems will be avoided.

Due to the oily residue, it is necessary to utilize alkaline degreasers and wet cleaning methods to remove as much of the soot as is possible. Often times these cleaning agents are very aggressive, and the structure will require further steps in order to return it to its pre-loss condition.

A heavily pigmented sealer will need to be applied

to "seal" the remaining stains and prevent them and related odors from returning. A professional restoration business will be able to properly evaluate these situations.

Homeowners often feel devastated after a furnace puffback, which is always unexpected. The professional restorer understands this reaction and has trained staff to help the homeowners to deal with the situation. They will assist in reassuring the homeowner and will be able to take charge of the situation. The need for professional cleaning and other services will be communicated in a way that the homeowner will understand each and every phase of the project. The expected results and any potential concerns will be discussed so that there will be no surprises.

Immediate response to a puffback by a trained professional restoration business will help to reduce not only the cost of the claim but the anxiety and tensions that may result. By properly performing a thorough and de-

tailed inspection of the premises and testing the various cleaning method that may need to be performed, a plan of action can be appropriately determined and implemented.

The goal of the professional restoration business is for the home to be returned to its pre-loss condition as quickly as possible and for the homeowners to be able to resume their normal lives.

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