

A growing concern for the insurance industry is claims of soot and smoke damage due to wildfires. Some of these fires can affect properties hundreds of kilometers downwind so the potential number of claims can be astronomical. Besides the known risks for respiratory and other health problems, smoke, soot, and char can cause physical damage ranging from settled ash to property damage.

Depending on the type and amount of soot, the remediation can range from simple cleaning to professional cleaning and even the replacement of soft goods (fabrics and carpeting) and/or electronic appliances.

## **What is Soot?**

- Soot is the carbonaceous deposits remaining after incomplete combustion.
- Soot is typically black or gray. Ash on the other hand is typically white or light gray.
- Soot can contain traces of the fuel that caused it allowing us to identify the source.
- Soot and the combustion byproducts associated with it can be harmful.

## **Why is Soot Formed?**

- A fuel burns with less than the optimum oxygen present.
- A fuel burns in windy or turbulent conditions.
- A poor or contaminated fuel burns. Some products generate more soot when they burn than others (i.e. rubber tires vs. paper).

## **What are the Most Common Sources for Residential Soot?**

- Smoking
- Candles
- Fire Places
- Cooking
- Heater malfunctions
- Wildfires nearby
- Interior fires (cooking, appliances, etc.)

Luckily, a relatively inexpensive examination of the property can give a good assessment of the potential loss and possible sources of any observed soot. In most cases, the examination will collect enough information to evaluate the scope validity of the claim.

The onsite examination typically includes the following:

- Interview the residents for history and loss allegations
- Document the property and any visible smoke or soot damage with photographs
- Identify any specific locations of visible soot
- Collect surface samples
- Collect wipe samples in some cases
- Submit samples to the laboratory for analysis

Visual assessments are very important in the examination. For example, localized soot over stoves, fire places, heater vents, and used candles is explainable to those sources and is generally not a covered loss. Generalized soot over all surfaces is more consistent with wildfire or exterior soot sources. Even when the visual evidence is generalized, it is up to the microscopic examination of the surface samples to identify the materials present. EFI Global does not use the “chemical sponge” test which merely wipes off surface contaminants and makes unverifiable assumptions on colour alone. Surface samples are collected with transparent tape and transferred onto microscopic slides for storage, shipping and testing.

# The Importance of Soot and Char Testing

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Surface sampling procedure

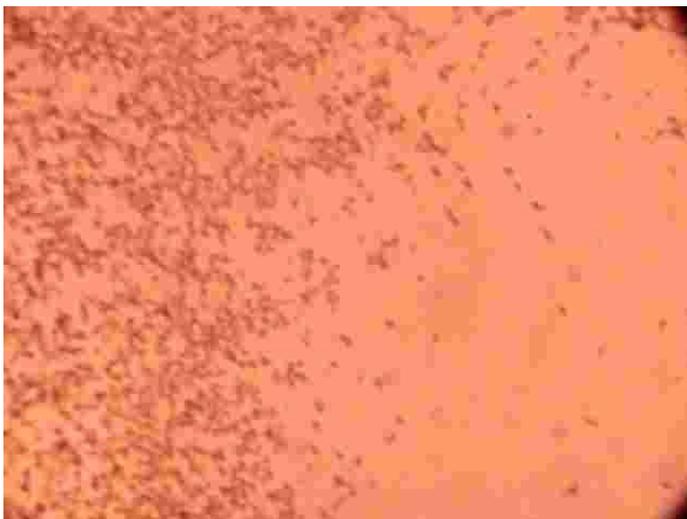


No soot around picture on the wall

The microscopic analysis will show what is present in the sample. The most common particulates identified in surface samples are the following:

- Common household dust (mostly dead skin cells)
- Dirt and sand
- Pet dander and hair
- Pollen and exterior detritus
- Soot
- Mould

Luckily, it is usually fairly easy to distinguish the types. Examples of soot and household “dust” are shown below.



Fine soot particles



Fibres, dirt, and skin cells

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When high levels of apparent soot are present, or they are found in very localized areas, it is often prudent to collect a wipe sample for chemical analysis. The wipe samples are extracted in the laboratory and tested by Gas Chromatography/Mass Spectroscopy (GC/MS). The GC/MS analysis can often identify the source of the soot in wipe samples and the fuel sources. For example, a finding of paraffin wax or cooking oils in the soot is good evidence the source is candles or cooking related. Unfortunately the GC/MS cannot always identify the fuel source because of unknown factors such as the efficiency of the combustion, time, and other household activities such as cleaning or construction.

So when you are assigned an alleged claim for soot damage due to wildfires or other local fires, do not settle for a claim handlers “proof” using a “chemical sponge”. You need to get hard evidence and real samples that can be verified if necessary to properly handle the claim. In those cases, EFI Global (Canada) can be of assistance with multiple locations, hundreds of successfully completed cases and years of experience.

For more information, please contact us via our website, our 24/7 Emergency Line (1-866-530-4086) or email.

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### **24/7 Emergency Line**

**1-866-530-4086**

**Assign a Project in Canada or US via the link below**  
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