PASADENA PUBLIC HEALTH DEPARTMENT

CLEANING GUIDANCE FOR ASH, SOOT, AND SMOKE AFTER A WILDFIRE

Follow this guidance to safely remove indoor ash, soot, and smoke odor from residential properties after a wildfire. This guidance is not intended for partially burned homes or homes with structural damage that may require a higher level of remediation or demolition.

Protecting health and safety

When cleaning up, it is important to take safety precautions to protect yourself and your property. Ash can irritate the skin, eyes, nose, and throat and may make it difficult to breathe by aggravating asthma and other preexisting respiratory conditions.

Wear personal protective equipment (PPE)

- Wear a well-fitted, NIOSH-approved respirator (such as an N95 or P100) to filter out harmful particles from the air you breathe.
- Wear gloves, safety goggles, long-sleeved shirts, long pants, and closed-toed shoes with socks to avoid contact with ash or debris.

Take precautions

- Wash ash off quickly when it contacts the skin, eyes, or mouth.
- Keep children and pets away from ash and cleanup activities.
- People with a heart or lung disease (including asthma), older adults, and pregnant women are recommended to avoid cleanup activities.
- Wash clothing and shower after cleaning activities.

Worker protections required by law

- California Division of Occupational Safety and Health (Cal/OSHA) regulations require employers to ensure the safety of persons (such as employees, contractors, and domestic service workers) hired to conduct cleanup work, including ash, soot, and debris removal.
- Provide NIOSH-approved and appropriate respiratory protection and personal protective equipment (PPE) free of charge, ensuring it fits properly, and train workers on how to use it correctly.

Cleaning ash and soot

Use a top-to-bottom approach and wet-cleaning methods to effectively remove ash and soot. Do not use harsh chemical cleaners as they can react with the ash. Soap and water are adequate.

Hard surfaces

- Clean all hard surfaces with soap and water including walls and ceilings.
- Wet-wipe windowsills, countertops, personal items, and non-porous furniture.
- Gently sweep floors or use a vacuum with a high-efficiency particulate air (HEPA) filter before wet-mopping. Do not use a typical household vacuum or a shop vacuum, which will send the collected ash into the air.
- Use a vacuum with a HEPA filter to remove ash and soot from electronics, books, and other smaller personal items.
- Throw away collected ash in the regular trash. Use a trash bag, or a double bag, to ensure ash does not re-contaminate the environment when it is picked up.

Porous surfaces

- Wash or dispose of porous items like linens, curtains, clothing, and carpets.
- Remove ash and soot before washing. Take linens and clothes outside and shake into a bag or use a vacuum with a HEPA filter.
- Wash with baking soda and vinegar initially to remove persistent smoke odor, and then again with normal detergent.
- Air dry porous items outside 1-3 days to remove lingering smoke odors.
- Contact a carpet or upholstery cleaning service if ash, soot, or debris is visible and you need guidance or support cleaning the items.

Heating, Ventilation, and Air Conditioning (HVAC) system

- Change the HVAC filter to a high efficiency filter. Choose one with a minimum efficiency reporting value (MERV) 13 rating, or as high a rating as your system fan and filter slot can accommodate.
- Add one-inch foam around the filter edges or tape over any gaps in the filter holder.
- Run the system's fan on recirculation mode as often as possible to trap fine particles.
- Replace filters as they become clogged, or monthly for up to a year after the surrounding area is cleaned.
- Ensure HVAC ducts are properly sealed, maintained, and functioning as desired.

Removing smoke odors

Smoke is a combination of particles, volatile organic compounds (VOCs), and other reactive gases. Some are toxic such as dioxins, benzene, formaldehyde, polycyclic aromatic hydrocarbons (PAHs). These odors diminish over weeks or months through a process called "off gassing". Cleaning, ventilation with fresh air, and the use of an air purifier can speed up the process.

Bring in fresh air

- Open windows and doors to bring in fresh air when outside air quality allows. Check the air quality in the Los Angeles Area at South Coast AQMD.

Filter indoor air

- Use portable air purifiers with HEPA and activated carbon filters to remove particles and odors. It is important to use an air purifier that has both a HEPA and carbon filter to remove the toxic air particles that penetrate deepest into our lungs.
- Run air purifiers until the smells go away, which may take weeks or months.
- Replace the filters according to the manufacturer's instructions, or more frequently depending on use.