

Cleaning up burned structures

OHS information for employers

This resource provides health and safety information regarding debris cleanup and demolition of structures involved in wildfires.

KEY INFORMATION

- Ash and burned debris from fires may contain hazardous substances.
- Employers must select respirators appropriate for a site's specific hazards.
- Employers must ensure workers are medically fit to wear respirators and that they are clean shaven before fit testing.

Health risks

Ash and burned debris from structures completely or substantially burned from fires may contain hazardous substances, such as polycyclic aromatic hydrocarbons (PAHs), asbestos and dioxins/furans.

Chemicals that contain crystalline silica are sometimes applied to burned structures to reduce airborne dust. Because these substances may become airborne when the materials are disturbed, cleanup must be done carefully to ensure workers are protected.

The chemical hazards of dust and soot exposure can worsen respiratory diseases, such as asthma, or lead to new symptoms of respiratory disease, such as shortness of breath, wheezing and coughing.

In addition, mental health disorders such as post-traumatic stress injuries, depression and anxiety can result from exposure to dangerous situations. Musculoskeletal injuries related to over-exertion may also occur.

As a result of these risks, employers are required to take all reasonably practicable steps to protect the health and safety of their workers, including taking steps to address poor air quality, ash and burned debris.

A [health screening questionnaire](#) can help determine if workers have medical conditions that would put them at risk of worsening health if they participate in cleanup efforts related to wildfire.

For more information on the health risks of wildfire smoke, see [Wildfire smoke](#).

Asbestos

Before demolishing a building or other structure, employers are required to remove any materials that may potentially release asbestos fibres.

However, there are some situations where it is unsafe to remove asbestos before demolishing a building. An Occupational Health and Safety (OHS) allowance issued in January 2023 allows demolition of a building, in some specific situations, without first removing materials with the potential to release asbestos fibres, as long as the terms and conditions in the allowance are followed.

IMPORTANT

This OHS allowance applies only if a professional engineer has certified that the structural integrity of the building is (or may become) compromised due to abatement activities such that it would create a hazard to workers.

In a situation where a building or other structure has collapsed completely due to fire damage, or there is no standing structure remaining, the requirement to remove asbestos-containing materials prior to demolition is not applicable, since the building or structure is already effectively demolished. In this case, the OHS allowance is not applicable, and mechanical abatement techniques can be used to clean up the debris that may contain asbestos.

OHS allowances enable work site parties to vary from specific provisions of the OHS Code, and gives them the flexibility to either follow the original rule in the OHS Code or follow the allowance. To learn more about this particular asbestos-related allowance and its terms and conditions, see the [OHS allowance for demolition of structurally compromised buildings without first removing asbestos](#).

See also the [Alberta Asbestos Abatement Manual](#) for detailed information pertaining to asbestos abatement.

Selecting respiratory protective equipment

As an employer, you are required to select respirators appropriate for your site's specific hazards. To learn more about respirator selection and use, see the [Respiratory protective equipment: An employer's guide](#).

All respirators must be approved by the National Institute of Occupational Safety and Health (NIOSH) per Section 246 of the OHS Code.

Employers must ensure workers are medically fit to wear respirators and are fit tested. If a tight-fitting respirator is necessary, employers must also ensure workers are clean shaven where the respirator seals to the face before doing a fit test, as well as when workers are using the respirator.

Common cleanup scenarios

Below are three commonly encountered cleanup scenarios, along with guidance on selecting respiratory protective equipment in each scenario:

Contractors and crews are involved in cleanup with direct contact with ash and burned debris

- At a minimum, employers should provide workers with a NIOSH-approved half-face air purifying respirator, with P100/activated carbon combination filter cartridges.
- Cartridges should be replaced at the beginning of each workday or in accordance with the calculated change-out schedule, whichever time period is shorter.
- A powered-air purifying respirator with P100/activated carbon combination filter cartridges is an alternate option for workers involved in manual work. Benefits of these types of respirators include:
 - A higher level of protection.
 - Eye protection.
 - Feeling cooler due to the mechanical air flow.

Contractors and crews involved in cleanup inside and outside of buildings, with no direct contact with ash and burned debris

- At a minimum, employers should supply workers (including volunteers) with NIOSH-approved half-face air purifying respirators with P100 filters or disposable P100 respirators.

Workers are inside buildings but are not involved in cleanup activities (e.g. office staff)

- These workers do not need respiratory protection; however, windows and doors should be kept closed, and air conditioning should be kept on.

- If workers have concerns about respiratory irritation or begin to experience symptoms, or if air filtration systems are not working, employers should provide a respirator. An N95 respirator would be acceptable.

OTHER RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT FOR WORKERS WITHIN THE WORK PERIMETER

- Workers should not have any exposed skin. Use impermeable protective coveralls and gloves. Tape gloves to the sleeves of coveralls.
- Rubber steel-toed boots that can be easily cleaned, with coveralls extended over boots, not tucked inside.
- Protective eyewear with side shields or goggles (not required by equipment operators if windows of equipment can be kept closed). Tight fitting chemical goggles are best to protect eyes from irritant gases if a half-face respirator is used.
- If a full face-piece respirator is used, protective eyewear is not required.

How to ensure safe removal of debris

Information regarding safe debris removal procedures is provided in the following sections. In addition to following safe debris removal procedures, employers must also comply with other applicable provisions (for example, first aid, excavating, etc.) that are specified in the OHS Code.

Employers should also conduct occupational monitoring during work to help evaluate work procedures and personal protective equipment. See [Asbestos exposure in demolition and renovation](#) for more information.

Procedures for safe debris removal

- Cordon off the work area with perimeter taping or other barriers.
- Ensure waste materials are thoroughly soaked with water before disturbing them. Additional wetting may be required once the bonding encapsulate surface is broken in order to ensure the materials underneath are wet.
- Remove materials using machines. Workers in excavating equipment should keep windows closed and air conditioning systems on.
- Waste bins should be lined with polyethylene sheeting or a similar material. This will facilitate cleaning, and is important because waste materials can be alkaline (i.e. have a high pH).
- When transporting waste to a disposal site, the waste must be secured and covered.

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Procedures for safe decontamination

- Provide workers with site-specific decontamination training prior to the start of work.
- Provide an area just outside the work perimeter where workers can wash their face and hands and take off personal protective equipment. The area should include disposal bins for used coveralls, gloves, and respirator cartridges, as well as an area to clean boots and respirators. The area should be supplied with clean water and a water/mild detergent solution.
- Equipment and tires of vehicles transporting waste out of area should be cleaned before being moved to a new area. For excavators, the key areas to be cleaned are tires and scoops.
- Wipe down the interior of excavators with a wet cloth at the end of each work day, and park them with their windows closed.
- Workers must not bring any equipment or protective clothing home or to their housing accommodations unless it has been cleaned.
- A clean area (such as a trailer) should be provided for workers to eat, drink and have their breaks. Soiled/used protective equipment should not be brought into this area.
- Workers must decontaminate themselves before eating, drinking or using tobacco products.
- Because heat stress may become a hazard, ensure workers are trained to recognize the signs of heat stress, ensure they have plenty of drinking water available, and implement a work/rest schedule.
- If a worker's skin comes into contact with debris, the affected area should be washed with clean water and soap as soon as possible.

Superseded

Contact us

OHS Contact Centre

Anywhere in Alberta

- 1-866-415-8690

Edmonton and surrounding area

- 780-415-8690

Deaf or hard of hearing (TTY)

- 1-800-232-7215 (Alberta)
- 780-427-9999 (Edmonton)

Notify OHS of health and safety concerns

alberta.ca/file-complaint-online.aspx

Call the OHS Contact Centre if you have concerns that involve immediate danger to a person on a work site.

Report a workplace incident to OHS

alberta.ca/ohs-complaints-incidents.aspx

Website

alberta.ca/ohs

Get copies of the OHS Act, Regulation and Code

Alberta King's Printer

alberta.ca/alberta-kings-printer.aspx

OHS

alberta.ca/ohs-act-regulation-code.aspx

For more information

Alberta Asbestos Abatement Manual (ASB001)

ohs-pubstore.labour.alberta.ca/asb001

Asbestos exposure in demolition and renovation (ASB004)

ohs-pubstore.labour.alberta.ca/asb004

Hazard assessment and control: A handbook for Alberta employers and workers (BP018)

ohs-pubstore.labour.alberta.ca/bp018

Respiratory protective equipment: An employer's guide (PPE001)

ohs-pubstore.labour.alberta.ca/ppe001

Wildfire smoke (FI007)

ohs-pubstore.labour.alberta.ca/fi007

Wildfire recovery: Sample health screening questionnaire (FI005)

ohs-pubstore.labour.alberta.ca/fi005

Wildfire recovery work including fire-damaged structures (FI010)

ohs-pubstore.labour.alberta.ca/FI010

Best practice: Working safety in the heat and cold (GS006)

ohs-pubstore.labour.alberta.ca/gs006

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