
Coal dust at the work site

OHS information for employers, supervisors, workers and physicians

Coal dust is a hazardous mixture of substances generated from coal. This bulletin introduces key properties and health and safety effects, and points to more information about legal requirements that will apply at work sites where coal dust may be present.

KEY INFORMATION

- Coal dust is a harmful substance. Over-exposure to coal dust can have serious health consequences.
 - Coal dust also poses a serious safety hazard, as it can ignite or explode.
 - If coal dust is or may be present at your work site, health and safety requirements apply.
 - Consult the *Occupational Health and Safety (OHS) Act, Regulation and Code* to make sure you know and comply with all applicable requirements.
-

About coal dust

COAL DUST MEANS ...

“... dust that

- (i) results from the mining, transporting or processing of coal,
- (ii) is of a pure or mixed carboniferous, mineralogical composition, and
- (iii) contains 10 percent or less of free silica calculated by weight;”

OHS Code, Part 1, Section 1

Coal is a brown to black combustible material made from decayed plant matter that has been compressed by rock formations over a long period of time. In Alberta, coal is mainly extracted by surface mining techniques.

Once mined, coal is prepared for use and export by removing non-coal contaminants, then screening, sizing and drying it.

Most workplace exposure to coal dust occurs during mining, but exposure can also occur when coal is cleaned, blended or bulk handled (for instance, at large coal-fired facilities).

Coal dust is a mixture that can contain more than 50 substances. The mineral content depends on the particle size of the dust and the coal seam. The most commonly found minerals in coal mine dust include kaolinite, illite, calcite, pyrite and quartz (silica).

Geologically younger coals (found in Alberta) tend to form fine dust more easily than older coals.

Health effects

Coal dust can cause or contribute to serious respiratory illnesses. Smoking increases the likelihood that a worker will develop the disease or severe symptoms.

CWP (black lung)

Coal workers' pneumoconiosis (CWP) was first identified as a coal miners' disease in the mid-17th century. The disease results in inflammation and scarring of the lungs caused by coal dust in the lungs, and the body's response to the dust. Not everyone who works with coal dust develops CWP, but a diagnosis is usually made on the basis of chest imaging and a history of working with coal.

There are two types of CWP. The diagnosis depends largely on how much scarring exists over how much of an area of lung tissue.

- Simple CWP is often asymptomatic (no symptoms). Cough and shortness of breath may develop in the later stages.
- Complicated CWP (also called progressive massive fibrosis or PMF) is associated with significant decreases in lung function and oxygen-diffusing capacity. Complicated CWP may develop from the later stages of simple CWP.

Silicosis

Because coal mining often exposes workers to silica as well, silicosis can be an outcome of coal dust exposure. Silicosis is caused when respirable crystalline silica particles less than 10 microns in size are inhaled and deposited in the lung. The lung tissue reacts by

developing fibrotic nodules and scarring around the trapped silica particles. If the nodules grow too large and if scarring is extensive, breathing becomes difficult.

Silicosis can be life-altering or fatal.

Workers can also develop a mixed lung disease with features of both silicosis and coal workers' pneumoconiosis.

COPD

Chronic obstructive pulmonary disease (COPD) refers to two diseases: chronic bronchitis and emphysema, and coal dust exposure can be associated with both.

Shortness of breath, chronic cough and increased mucous production are common symptoms of COPD.

Safety effects

Coal dust is highly combustible and can easily ignite under certain conditions.

Coal dust can also pose an explosion risk.

OHS requirements

Eliminate the hazard if you can

Employers must eliminate a hazard if it's [reasonably practicable](#) to do so.

If you can't eliminate the hazard, OHS laws apply

If it's not possible to eliminate coal dust from the workplace, requirements in the Occupational Health and Safety (OHS) Code apply. Learn more in the [Harmful substances in the workplace](#) bulletin.

Note that employers must have a code of practice in place when coal dust is present at a work site above specific quantities. The [Harmful substances in the workplace](#) bulletin includes more information about this requirement, and a sample code of practice outline.

Additional requirements for controlling exposure to coal dust

Part 4 of the OHS Code puts additional requirements in place to control worker exposure to coal dust.

- Section 28 states that employers must:
 - Minimize the release of coal dust into the air.

- Keep coal dust and waste materials containing coal dust from accumulating unnecessarily in work areas.
- Ensure decontamination methods (for the work area, workers, equipment and personal protective equipment) prevent the generation of airborne coal dust.
- Section 29 sets out rules for restricted areas for coal dust work. These include rules about:
 - Authorized access.
 - Required signage (including signs that state eating, drinking and smoking are prohibited in the area).
 - Provision of personal protective equipment used as protective clothing, and ensuring workers' street clothing isn't contaminated.
 - Decontamination before leaving the restricted area.
 - Workers leaving the restricted area for a health and safety emergency.

RESTRICTED AREA MEANS ...

"... an area of a work site where there is a reasonable chance that the airborne concentration of asbestos, silica, coal dust or lead exceeds or may exceed the occupational exposure limit for one or more of the substances;"

OHS Code, Part 1, Section 1

The eight-hour occupational exposure limit for coal dust is 0.4 mg/m³ (anthracite), 0.9 mg/m³ (bituminous) and 0.2 mg/m³ (coal tar pitch volatiles, as benzene solubles).

Examples of controls that can reduce the release, accumulation or generation of coal dust include:

- Wet work methods, such as using water, mist or foam at the source of dust generation, or watering pathways to reduce dust generated by traffic.
- Use of dust suppression products.
- Using high-efficiency particulate (HEPA) filters on air intakes, local ventilation hoods and dust collection systems to collect dust at the source.
 - Note powered mobile equipment doors and windows must be closed, and air conditioning on "recirculate", in order for air filters to be effective.

(Note that Sections 28 and 29 also apply to asbestos, lead and silica.)

Coal dust at the work site

Health assessments for exposed workers

EXPOSED WORKER MEANS ...

“... a worker who may reasonably be expected to work in a restricted area at least 30 work days in a 12-month period;”

OHS Code, Part 1, Section 1

Workers who meet the definition of exposed worker must be evaluated within 30 days of becoming an exposed worker and every two years afterwards with regular health assessments to identify any adverse health effects. Section 40 of the OHS Code requires a physician to interpret and explain key data (including the worker’s chest X-rays, spiograms and exposure history) to the worker within specific time frames after a health assessment. The rules also direct that physicians must keep, and strictly control access to, the health assessment records for at least 30 years.

Workers may refuse (in writing) part or all of a health assessment, but employers must not coerce, threaten or force their workers to refuse.

Employers must schedule (where possible) health assessments during regular work hours, and cannot deduct a worker’s wages, salary or other pay or benefits while the worker taking part in, or traveling to or from, their assessment. Employers must also pay the costs of the health assessment, interpretation and evaluation.

If an exposed worker had a health assessment from a previous employer within the immediately preceding two years, the worker must share the approximate date of that assessment with their current employer as soon as possible.

If you’re a worker who may be exposed to coal dust, or the worker’s employer or physician, consult Section 40 of the OHS Code directly to ensure that you understand and comply with health assessment requirements. *(Note that Section 40 also applies to asbestos and silica.)*

Additional requirements for controlling safety hazards from coal dust

Parts of the OHS Code that may apply to the fire and explosion hazards posed by coal dust include:

- Confined or restricted space requirements in Part 5.
- Emergency preparedness requirements in Part 7.
- Fire and explosion requirements in Part 10.
- General safety requirements in Part 12.
- Mining-specific requirements in Part 36.

CWP and silicosis are notifiable diseases

Under Section 30 of the OHS Act, a physician or other health care professional must [notify](#) an OHS Director of Medical Services when they find a person with a notifiable occupational disease. Notifiable diseases in Alberta include coal workers’ pneumoconiosis and silicosis.

CHECK THE RULES DIRECTLY

Always make sure you consult the *Occupational Health and Safety Act*, Regulation and Code directly to ensure you know all the rules that apply to you and your work site, including in relation to coal dust at the work site.

Note that you can use the Government of Alberta’s [OHS legislation search tool](#) to quickly find and download individual sections of the act, regulation and code. You can also save and share a personalized PDF with information that’s relevant to your workplace.

Contact us

OHS Contact Centre

Alberta toll-free

- 1-866-415-8690

Edmonton region

- 780-415-8690

Deaf or hard of hearing (TTY)

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

Notify OHS of health and safety concerns

alberta.ca/file-complaint-online

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

Website

alberta.ca/ohs

Let us know what you think!

To provide feedback on this publication, visit ohs-pubstore.labour.ab.ca/ch063 and click “Give resource feedback”. For more OHS resources, visit the [OHS Resource Portal](https://alberta.ca/ohs-act-regulation-code).

For more information

Harmful substances in the workplace (GS022)

ohs-pubstore.labour.alberta.ca/gs022

Legal terms 101: “Reasonably practicable” (LGT001)

ohs-pubstore.labour.alberta.ca/lgt001

Notifiable occupational diseases (MG030)

ohs-pubstore.labour.alberta.ca/mg030

Get copies of the OHS Act, Regulation and Code

Alberta King’s Printer

alberta.ca/alberta-kings-printer

OHS

alberta.ca/ohs-act-regulation-code

© 2026 Government of Alberta

This material is for information only. The information provided in this material is solely for the user’s information and convenience and, while thought to be accurate and helpful, it is provided without warranty of any kind. The Crown, its directors, officers, officials, servants, agents, sponsors, employees, contractors, and volunteers will not be liable to you for any damages, direct or indirect, including any personal injury, death, property damage or loss sustained by you, arising out of any cause whatsoever, as a result of your use of the information contained in this material. For confirmation of all legal requirements, refer to the current edition of the *Occupational Health and Safety Act*, Regulation and Code, or other applicable legislation. Further, if there is any inconsistency or conflict between any of the information contained in this material and the applicable legislation, the legislative requirement(s) shall prevail. This material is current to June 2026. The law is constantly changing with new legislation, amendments to existing legislation, and decisions from the courts. It is important that you keep yourself informed of the current law. This material, including copyright and marks under the *Trademarks Act* (Canada), is owned by the Government of Alberta and protected by law. This publication is issued under the Open Government Licence – Alberta. For details on the terms of this licence and commercial or non-commercial use of any materials in this publication, visit open.alberta.ca/licence. Note that the terms of this licence do not apply to any third-party materials that may be included in this publication.

Coal dust at the work site

© 2026 Government of Alberta | Updated June 2026 | [CH063](https://alberta.ca/ohs-act-regulation-code)

