

# Airborne Hazards: Asbestos Game Plan



According to workers' comp data, asbestos exposure is the nation's leading cause of workplace death, with mesothelioma, asbestosis and other asbestos-related diseases accounting for more than 1 of every 3 fatality claims accepted by Canadian workers' comp boards since 1996. It's not just a construction hazard. Despite not having been in use since 1990, asbestos containing materials (ACMs) are still present in workplaces across the country—within walls, ceilings, tiles, insulation and even car parts. Thus, for example, an Ontario hospital was fined \$60,000 for failing to ensure that maintenance workers drilling holes into walls and ceilings containing asbestos used drills equipped with a HEPA filter.

## The costs of Asbestos Exposure

In 2011, 427 patients were diagnosed with mesothelioma in Canada. Total costs:

- \$23.2 million in medical bills;
- \$36.8 million in insurance; and
- \$117.8 million in productivity losses.

**Source:** Institute of Work & Health

## The Hazards Posed by Asbestos

Asbestos is a mineral fibre that's resistant to heat, electrical and chemical damage, sound absorption and being torn apart, qualities that made it ideal for use in insulation and reducing noise. Asbestos was also added to cement, plaster and other materials to increase their structural strength. However, what was unknown at the time of its use are the serious health risks asbestos poses to those exposed to it, including:

**Asbestosis:** This is a chronic lung disease resulting from prolonged exposure to asbestos. Asbestos fibres gradually cause the lung to become scarred and stiff, making breathing difficult.

**Lung cancer:** No one knows exactly how asbestos causes lung cancer. But researchers have shown that smokers who inhale asbestos fibres have a much

greater risk of getting lung cancer. Asbestos workers who don't smoke are still at risk of developing lung cancer.

**Mesothelioma:** This disease is a rare but malignant form of cancer affecting the lining of the chest or the abdominal cavity. Mesothelioma is almost always caused by exposure to asbestos.

According to Statistics Canada, the number of nationally reported cases of mesothelioma increased 67% over the last decade-and-a-half, from 276 to 461. And in Québec, exposure to asbestos is the No. 1 cause of workplace-related deaths for workers, according to statistics gathered by Québec's workers compensation board. An estimated 153,000 Canadian workers are exposed to asbestos each year. Asbestos poses the greatest risk to workers in industries that produce and use the mineral, such as mining and milling. But asbestos exposure is also a risk to:

- Construction workers who work in demolition;
- Pipe fitters;
- Insulation workers;
- Boilermakers and repairers;
- Shipyard workers;
- Power plant workers;
- Auto brake mechanics;
- Workers who make products containing asbestos, such as firebricks, fire-retardant paint and asbestos cement; and
- Firefighters and other emergency rescue workers.

According to Health Canada, asbestos poses health risks only when the fibres are present in the air that workers breathe. How exposure to asbestos can affect workers depends on:

- The concentration of asbestos fibres in the air;
- How long exposure to the fibres lasted;
- The frequency of exposure;
- The size of the asbestos fibres inhaled; and
- The amount of time since the initial exposure.

## The Need for an Asbestos Exposure Control Plan

OHS regulations require employers to implement an asbestos exposure control plan (ECP) to protect workers who handle or use asbestos-containing materials or work near operations where ACMs are used. The ECP must include measures to eliminate or at least keep workers' exposure to airborne asbestos fibers below a specific occupational exposure level (OEL), which in most jurisdictions is 0.1 f/cc, i.e., 0.1 respirable asbestos fibers per cubic centimeter of air. (Click here to see the asbestos OEL of your jurisdiction.)

## 14 Things to Include in Your ECP

Although ECP requirements vary slightly by jurisdiction, there are 14 basic elements every ECP should include. Go to the OHS Insider website for a template Asbestos ECP that you can adapt for your workplace.

## 1. Statement of Purpose

Start by describing the purpose of the ECP, i.e., to protect workers from the hazards posed by asbestos exposure. [ECP, Sec. 1].

## 2. Key Definitions

As with many health and safety policies and procedures, there are certain technical definitions you need to clarify in your asbestos ECP, including:

- **Asbestos-containing materials (ACMs):** This definition is critical to determine when the control measures in the ECP are triggered;
- **“HEPA”:** Short for High Efficiency Particulate Air, HEPA filters are a key piece of respiratory protective equipment for workers exposed to asbestos; and
- **“Qualified” or “competent person”:** The credentials an individual must possess to perform key functions of the ECP, such as airborne monitoring, inventorying and development of safe work procedures.

[ECP, Sec. 2].

## 3. Workers Your ECP Is Designed to Protect

Make it clear that the ECP is designed to protect any and all workers who may be exposed to asbestos at your site, including not just your own company’s full- and part-time employees but also:

- Temporary employees placed by an outside agency who work at your site;
- Contract labourers hired to work at your site;
- Volunteers who work at your site for free; and
- Workers of the prime contractors, constructors, contractors and subcontractors (which we’ll refer to collectively as “contractors”) you hire to work with or near ACMs at your site.

[ECP, Sec. 4]

## 4. ECP & Responsibilities

Describe the roles and responsibilities of the persons involved in implementing the ECP, including:

- Your company’s officers, directors and other principles who would be considered “employers” under your jurisdiction’s OHS laws [ECP, Sec. 5.1];
- The ECP administrator [ECP, Sec. 5.2];
- The qualified person (described above) [ECP, Sec. 5.3];
- Supervisors [ECP, Sec. 5.4]; and
- Workers [ECP, Sec. 5.5].

## 6. The ACM Inventory

Now we come to the actual control measures, starting with the need to identify the ACMs at your site or facility. Specifically, you need to hire an approved environmental consultant to survey all of the buildings that you own or lease that were built before 1990 (when asbestos use in construction became illegal) and create an inventory of ACMs and other hazardous materials they contain.

Specify that you'll keep the inventory in a place that's accessible to workers and provide a copy of it to all contractors performing physical improvements at sites that involve the risk of disturbance of ACMs [ECP, Sec. 6].

## 7. Risk Assessment

The ECP should provide for having a qualified person perform airborne testing and other measurements to determine exposure levels. In most provinces, the controls required for protection against asbestos exposure depend on the risk classification of the operation involved. Accordingly, require the qualified person to do an assessment and categorize each operation involving asbestos exposure into 1 of 3 classifications:

**"Low risk activities"** in which workers work with or near ACMs but don't need engineering controls or PPE because the operations they perform pose a low risk of exposure to asbestos fibers. Activities can be classified as low risk only if the ACMs aren't cut, sanded, drilled, broken, ground down, fragmented or otherwise disturbed in a way that creates the potential for asbestos fibers to be released [ECP, Sec. 7.1];

**"Moderate risk activities"** which involve work on non-friable asbestos or operations in which friable asbestos may be affected but that pose only a moderate risk of release and exposure [ECP, Sec. 7.2]; and

**"High risk activities"** put workers at high risk of exposure, e.g., ACM removal or encapsulation, using electric tools to cut through ACM or spraying a sealant on a friable ACM [ECP, Sec. 7.3].

List examples of work operations in the description of each classification.

## 8. Controls

When selecting measures to control identified asbestos exposure hazards posed by moderate- and high-risk work activities, follow the standard "hierarchy of controls":

- If reasonably practicable, eliminate or modify the operations so as to eliminate the need to handle, use, cut, move or disturb ACMs [ECP, Sec. 8.1];
- If elimination isn't reasonably practicable, use engineering controls, which may include local exhaust ventilation, wetting or misting the ACMs being worked on, isolating the work area where the operation is being carried out and/or encapsulation [ECP, Sec. 8.2];
- If you can't completely engineer asbestos hazards out of existence, you'll need to implement work/administrative controls, such as air monitoring, posting warning signs, safe work procedures, etc. [ECP, Sec. 8.3]; and
- If engineering and administrative controls are either impracticable or not enough to totally eliminate asbestos hazards, you can use respiratory protection and other PPE as a last resort [ECP, Sec. 8.4].

## 9. Decontamination

Implement decontamination and hygiene measures to protect workers against the risk of what's known as "secondary" inhalation or ingestion which may occur when asbestos on PPE, skin or hair is disturbed, including protocols for removing,

cleaning and disposing of contaminated PPE and clothing [ECP, Sec. 9].

## **10. Training & Education**

Training must be provided by a qualified person before a worker is assigned to a position or location involving hazardous asbestos exposure and reinforced or repeated after workers commit violations or otherwise indicate that they no longer understand or are capable of applying their safety training [ECP, Sec. 10].

## **11. Medical Monitoring**

OHS Regulations of most jurisdictions require employers to perform medical monitoring of workers for signs of illnesses associated with hazardous substances to which they're exposed. Unfortunately, there are currently no established biological exposure indices for mesothelioma, asbestosis and other asbestos illnesses. However, there are tests that can be used for early detection of symptoms associated with asbestos exposure, including annual pulmonary function tests to detect decreased lung functionality and chest x-rays to detect scarring in the lung [ECP, Sec. 11].

## **12. Recordkeeping**

Make sure your ECP provides for keeping the various records and reports required by OHS asbestos regulations, e.g., training, ACM air monitoring, inspection and equipment maintenance records [ECP, Sec. 12].

## **13. Requirements for Contractors**

The ECP should include measures to protect the workers of any contractors hired to perform repairs or operations involving asbestos exposure at your site, starting with providing them the latest version of your ACM inventory. Ordinary contractors and subcontractors should be required to ensure their workers know about and comply with the terms of your ECP; prime contractors in control of work should be required to either adopt your ECP or their own plan suitable for the work and physical environment and that provides at least equivalent protection to workers as your ECP does [ECP, Sec. 13].

## **14. Monitoring**

Last but not least, provide for reviewing your ECP at least once a year and on an immediate basis in response to significant changes in work circumstances or conditions and/or incidents and other red flags suggesting that the policy isn't working and needs to be reviewed. You may have to perform such review in consultation with your JHSC or health and safety representative, depending on your jurisdiction's OHS laws [ECP, Sec. 14].