Construction Exposure Profiles:
Asbestos

PROVINCIAL BUILDING & CONSTRUCTION TRADES COUNCIL OF ONTARIO

Asbestos fibres are a strong and highly heat resistant material used extensively in insulation, building materials, and other products from the 1930s to 1980s. Asbestos was used as insulation of walls, pipes, boilers, and kilns. It was also used in roofing materials, ceiling tiles, floor tiles, and other building materials. Although asbestos was banned in Canada in 2018, it remains an important hazard in the construction trades, where many workers continue to be exposed during asbestos remediation and repair of buildings with asbestos-containing material (ACM).

CAREX Canada estimates that

53,000

Ontario construction workers are exposed to asbestos.

Health Effects

Asbestos causes mesothelioma and cancers of the lung, larynx, and ovaries. It is also strongly suspected of causing colorectal, pharyngeal, and stomach cancer. Asbestos also causes asbestosis, an incurable scarring of the lungs, and other lung diseases such as chronic obstructive pulmonary disease (COPD), and idiopathic pulmonary fibrosis.

Exposure Sources and Construction Trades

Workers in the construction trades are at risk for asbestos exposure when maintaining, renovating, or demolishing older buildings with ACM. Insulators may be in contact with the fibres when replacing insulation in old buildings. Pipefitters and plumbers can be exposed to asbestos when removing old piping and boilermakers can also be exposed when working with older boilers that were insulated with asbestos. Given the extensive use of asbestos in other building materials such as roofing, flooring, ceiling tiles, joint wall compound, and in cement, many building trades workers are still exposed to asbestos.

Occupational Disease Risks

The Occupational Cancer Research Centre's (OCRC) Burden of Occupational Cancer in Ontario report estimates workplace exposure to asbestos causes 160 lung cancers and 35 mesotheliomas each year among Ontario construction workers. The Future Burden of Cancer in Construction project estimates that asbestos will cause 5,960 lung cancer cases in the Ontario construction industry between 2030 and 2060.

Findings in the Table 1 show the percent increase for mesothelioma and asbestosis in specific construction occupations compared to all other workers in the Occupational Disease Surveillance System (ODSS).

Table 1. Increased risk of mesothelioma and asbestosis in specific construction trades occupations compared to all other workers in the ODSS.

	Mesothelioma	Asbestosis
Insulators and related	2482%*	3420%*
Pipefitters and plumbers	488%*	718%*
Boilermakers	236%*	845%*
Painters, paperhangers, and related	159%*	50%
Plasterers and related	131%*	458%*
Construction electricians and repairers	113%*	228%*
Brick and stone masons and tile setters	81%*	304%*
Carpenters and related	73%*	96%*
Welding and flame cutting	65%*	33%
Sheet metal workers	44%	164%*

**Statistically significant*

PROVINCIAL BUILDING & CONSTRUCTION TRADES COUNCIL OF ONTARIO

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In 1986, the Ontario Asbestos Workers Registry was developed to monitor workers who had been exposed to asbestos. The OCRC linked workers in this registry to provincial health records and identified very high risks of cancer and respiratory disease in these workers. They had a 40% increased risk of developing lung cancer, 10 times the risk of mesothelioma, 3 times the risk of COPD, 18 times the risk of asbestosis, and over 11 times the risk of other fibrosis.

Prevention

Asbestos management and disposal in Ontario are regulated. Specialized worker education and training are required before removing or disturbing any materials containing asbestos.

The Infrastructure Health and Safety Association and Government of Canada provide guidelines for risk assessment and control. Ontario Regulation 278/05 specifically covers asbestos on construction projects and in buildings and repair operations. Guidelines may change over time and it is important to consult the appropriate statutes and regulations to remain up to date on government regulations. These regulations also vary across jurisdictions and there is a growing need for a national asbestos management standard in Canada.

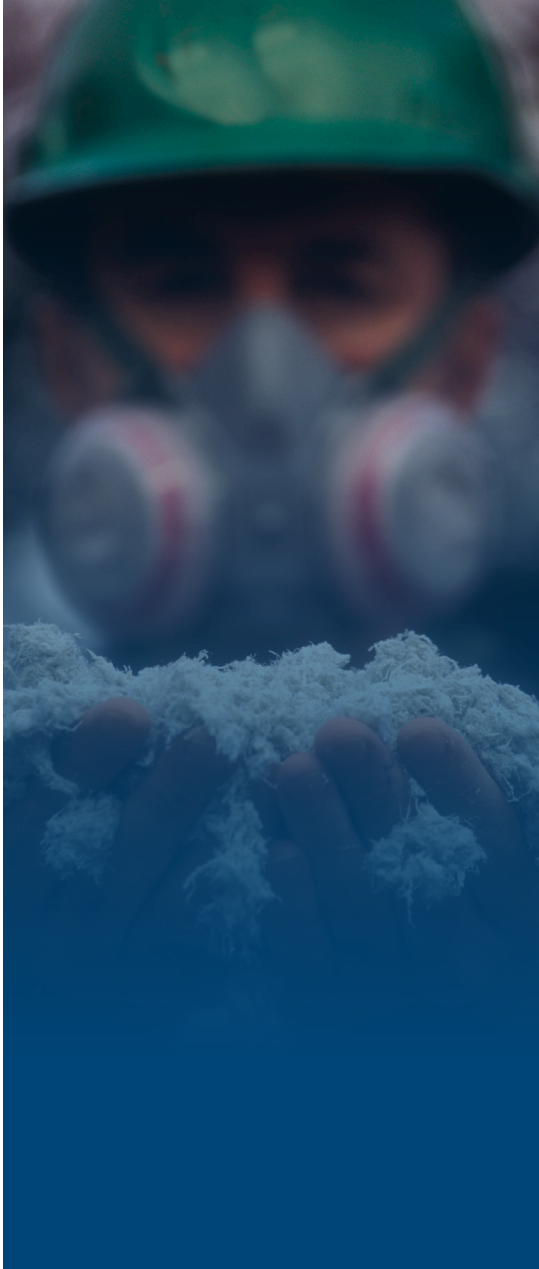
Work involving asbestos and ACM can be categorized into three types of asbestos activities: Type 1 (low), Type 2 (moderate) and Type 3 (high). Employers are required to complete an asbestos work report once a year for each worker that is involved in Type 2 or Type 3 activities, which is submitted to the Ontario Asbestos Workers Registry. When a worker has accumulated 2, 000 hours of asbestos exposure, the equivalent of one full year of employment, the worker is notified and will likely receive a medical examination.

To reduce exposure to asbestos, the most effective methods are through the use of engineering controls, such as local exhaust ventilation equipped with high-efficiency particulate air (HEPA) filters, water and wetting agent spray systems, and sealing off work areas. Administrative controls, such as cleaning policies for the workplace equipment and clothing, training, and exposure monitoring, can also be effective. Personal protective equipment (PPE), which may include fit-tested respirators, protective suits, goggles, boots, and gloves, must be used appropriately. PPE should be clean, disinfected, and correctly disposed as per manufacturer's instructions. For a more complete set of control measures see the resources section.

Although there are controls in place, past asbestos exposure and prevention of new exposure in workers from pre-existing ACM will remain a challenge for many years to come. Diseases such as mesothelioma and asbestosis take a long time to develop from initial exposure to asbestos and can vary based on many factors, further highlighting the importance of monitoring and reporting worker asbestos exposure.

This profile was prepared by the Occupational Cancer Research Centre in collaboration with the Ontario Building Trades Council with funding from the Ontario Ministry of Labour, Immigration, Training and Skills Development.

OCRC Occupational Cancer Research Centre



Resources

Ontario Ministry of Labour, Immigration, Training and Skills Development - Guide to the Regulation respecting Asbestos on Construction Projects and in Buildings and Repair Operations:
https://www.ontario.ca/document/guide-regulation-respecting-asbestos-construction-projects-and-buildings-and-repair

Infrastructure Health & Safety Association - Asbestos Controls for Construction, Renovation, and Demolition:
https://www.ihsa.ca/PDFs/Products/Id/DS037.pdf

Occupational Health and Safety Act. O. Reg. 278/05: Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations:
https://www.ontario.ca/laws/regulation/050278

Canadian Centre for Occupational Health and Safety. Asbestos – control strategies for workplaces:
https://www.ccohs.ca/oshanswers/chemicals/asbestos/control.html

Government of Canada - technical guide to asbestos exposure management programs:
https://www.canada.ca/en/employment-social-development/services/health-safety/reports/asbestos-exposure-management-programs.html

To access this fact sheet and other health and safety and prevention information please visit:
www.obtworkplaceresource.com/health-safety