

Explosion or fire involving synthesis gas in the wood drying process

What is the potential risk?

Wood dryers are used to dry wood fibre before it is used in the manufacture of engineered wood products and wood pellets. If the fibre is dried to the point where there is little remaining moisture, the chemicals within the wood fibre oxidize and produce gases such as carbon monoxide and hydrogen. The resulting fuel gas mixture is called synthesis gas (or syngas) and may be flammable or explosive.

If synthesis gas accumulates in sufficient amounts — a situation that can occur in enclosed spaces such as a dryer, combustion chamber, ducts or pipes — it may pose a risk of explosion in the presence of an ignition source and sufficient oxygen.

Workplaces in B.C. that manufacture engineered wood products and wood pellets may be at risk of a fire or explosion due to the buildup of synthesis gas in the wood drying process.

Workers who may be at risk include those who work in facilities with wood drying processes as part of the manufacture of engineered wood products and wood pellets.

What industries may be at risk?

- Pressed board manufacture
- Pellet manufacture

How can I reduce the risk in my workplace?

As an employer, you need to know if there is the potential for the risk identified in this advisory to be present in your workplace. It's your responsibility to regularly inspect your workplace, and to ensure that your safety procedures and practices control the risk. The following information highlights some of the sections of the Occupational Health and Safety (OHS) Regulation and Guidelines that are most relevant to this risk.

Section 4.3 of the Regulation requires that employers must ensure that each tool, machine, and piece of equipment in the workplace is:

- (a) capable of safely performing the functions for which it is used
- (b) selected, used and operated in accordance with the following:
 - (i) the manufacturer's instructions, if available
 - (ii) safe work practices

Part 5 requires employers to control exposure of hazardous substances within the workplace.

Section 5.31 requires employers to ensure that the concentration of flammable gases remains at 20 percent of the lower exposure limit.

Section 5.53 describes employers' duties regarding monitoring of hazardous substances.

For more information on how we identified this risk, visit [worksafebc.com/emergingrisks](https://www.worksafebc.com/emergingrisks).