

Steam Hazards: Don't Get Burned



KNOW THE HAZARDS AND CONTROLS



Common in production plants, steam systems produce steam at high temperatures and pressures, making it extremely hazardous. In fact, when water reaches its boiling point of 100 C and evaporates into steam, that steam holds approximately nine

times the energy of the boiling water. That, combined with the fact that steam can be heated beyond 100 C, is why steam burns are so severe.

Potential Types of Steam Hazards

- **Burns** can result in injury and even fatalities.
- **Explosions** can cause severe damage to equipment, as well as serious injury or death.
- **Corrosion** from steam can weaken equipment and result in leaks.
- **Mechanical failures**, such as ruptured pipes, malfunctioning valves and broken seals.
- **Chemical hazards** from boiler treatment chemicals.
- **Fire hazards** when steam systems come into contact with flammable materials or there is a malfunction.

Ways to Mitigate Steam Hazards

- **Ensure workers receive proper training**, including how to use equipment, handle chemicals and respond to emergencies.
- **Ensure appropriate PPE is worn**, such as heat-resistant gloves along with wrist gauntlets, safety goggles and protective clothing.
- **Regularly inspect equipment** for wear and tear, leaks and corrosion.
- **Automate steam production systems**, when possible, to reduce workers' direct contact.
- **Ensure proper handling, storage and disposal of hazardous materials**, such as boiler treatment chemicals.



DID YOU KNOW?

In the last decade, steam-related incidents in Alberta* included:

- 290 injury claims
- 222 burns
- 72 lost time claims
- \$1.7 m financial impact (claim costs)

Resources

Share and discuss these resources at your next safety meeting.

ESC Safety Alerts

- [Worker Injured Using Steam Wand](#)
- [Steam Hose Failure Burns Worker](#)

Websites

- [Learn About Steam](#) (Spirax Sarco)
- [Steam Theory](#) (TLV)



*Data from the Workers' Compensation Board of Alberta