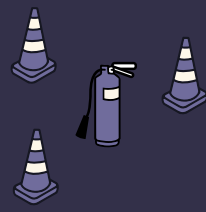


# Fire Safety



Safe work systems should eliminate or minimise the risks of fire. HSAW Regulations require workers to be trained to follow emergency response plans, have the appropriate equipment on hand, and have access to first aid.

## Awareness of hazards:

A fire contains several dangerous features. Energy (heat), chemical (corrosive and toxic elements), and particulate hazards (airborne particles) present immediate dangers to life. Smoke and debris can also reduce visibility and block exits. Fire can heat or ignite chemicals causing explosions and cause structures to fail. Slip, trip, and fall hazards can hinder escape and cause injuries. Hot works should be controlled by a permit to work system, and training in the use of fire extinguishers.

Work areas, entrances, and exits must allow workers to move safely during work and in an emergency. Plans and individual roles may change during the project lifecycle and must be rehearsed.

## Understanding risks:

Fire is a chemical reaction involving heat, fuel, and oxygen. Preventative measures

should eliminate or isolate the heat (ignition), fuel (combustible solids, liquids or gases), and stored oxygen (i.e. oxidisers).

Fire fighters also focus on one of the three elements by cooling, starving, or smothering the fire. Common fire extinguishers that smother fire to remove oxygen are: Dry powder (white band); Carbon dioxide (black band); and Foam (blue band). Fire blankets are also used. Using the right type of extinguisher depends on the type of fire.

Water is only suitable for cooling solid fires and will spread burning liquids or explode with oils and fats. Water will conduct electrical fires.

The risk of injury is always increased when workers are unaware of, or unable to react to, hazards. Health factors include mental impairment, physical immobility, medical incapacitation, or sensory disability.

## Eliminate or minimise risks (examples):

Risk controls focus on either the hazard or the behaviour of workers and others.

- **Eliminate the hazard.** Keep exits clear. Remove rubbish. Smoke free worksites. Substitute the hazard. Flame resistant materials. Substitute hot working methods.
- **Isolate the hazard.** Store and separate hazardous materials as per regulations. Use heat proof pads/stands. Isolation zones around fuel or heat sources (incl. hot works and switchboards). Flashback protectors (welding).
- **Use engineered modifications.** RCD devices/temporary power distribution. Ventilation systems. Sprinkler systems and firefighting equipment.

Focusing on human behaviours include:

- **Administration** of safe systems of work. Planning and training for emergencies. Signage. Hot work permits.
- Residual heat checks after hot works. Switch off electrical equipment. Alarms, heat and smoke detectors. Housekeeping.
- **Personal protection equipment (PPE).** Accessible fire extinguishers/blankets. Torches and whistles.