



Prepare to work safely in the construction industry

CPCCWHS1001

Introduction

The following information specifies the mandatory work health and safety training required prior to undertaking construction work.

It covers identifying and orally reporting common construction hazards, understanding basic risk control measures, and identifying procedures for responding to potential incidents and emergencies.

It also covers correctly selecting and fitting common personal protective equipment (PPE) used for construction work.



Introduction

The following slides provide a guide to assist while you:

1. Identify health and safety legislative requirements of construction work.
2. Identify construction hazards and risk control measures.
3. Identify health and safety communication and reporting processes.
4. Identify incident and emergency response procedures.





High Risk Work Licence

A high risk work licence is required to operate some machinery, erect scaffolding or undertake dogging or rigging work.

The following require high-risk work licences available for training through approved RTOs:

- cranes
- forklifts
- hoists
- pressure equipment
- reach stackers
- scaffolding
- dogging
- rigging

High Risk Work Licence

High risk work licences are valid for five years and recognised nationally:

- you can work in any state or territory if you have a current HRW licence.
- you need to keep your licence available for inspection which can occur at any time at the workplace.



Risk Management

Risk management is a process for controlling or limiting exposure to risk generated from hazards in the workplace.

This process consists of 5 steps.

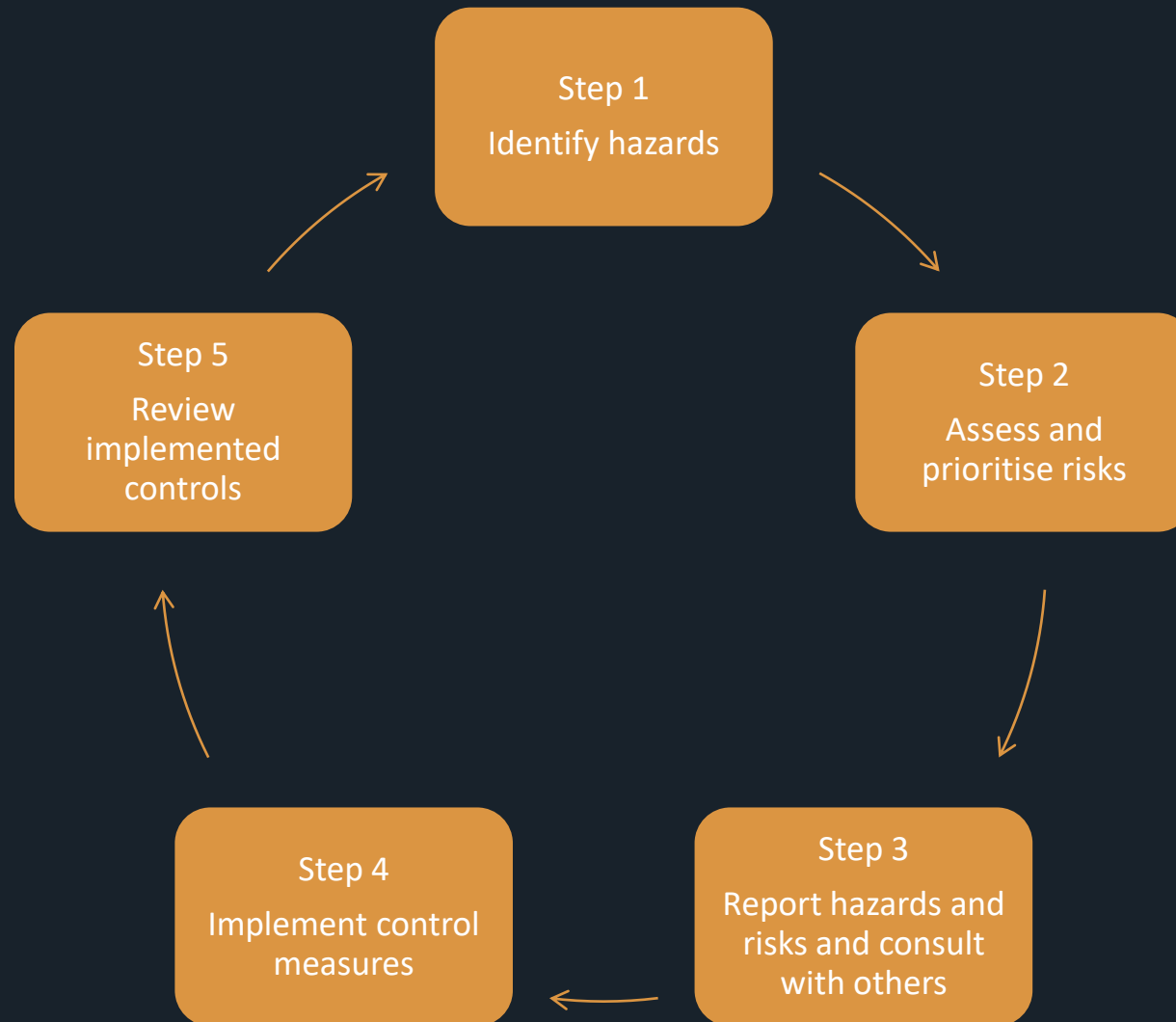
1. Identify hazards
2. Assess risks that may result from a hazard
3. Report hazards and risks and consult with others to select appropriate controls
4. Control hazards
5. Review control measures

Consultation is a process which involves improving and fostering cooperation and developing partnerships between government, employers and workers to ensure Workplace Health and Safety.

Consultation is an effective method for risk analysis



Risk management process



Risk management

Hazard

- A hazard is something with the potential to cause harm (moving car)

Risk

- The likelihood of a hazard causing harm or other consequences (hitting a wall)
- “The effect of uncertainty on objectives”



Risk management process – Step 1

To identify hazards, look at:

Work environment
(such as confined
spaces)

Energy (such as
electricity)

Manual handling
(team or
mechanical)

Noise (compressor
or drop saw)

Substances (such
as chemicals)

History of
incidents,
accidents and near
misses

Plant (forklift or
crane)



Identify hazards – Step 1

Who is responsible to identify hazards in your workplace?



All workers must adhere to the health and safety legislated requirements in the State or Territory they are working. In Queensland, the Act is the Work Health and Safety Act 2011



Risk management process – Step 2

You must assess both the likelihood of the risk occurring and the consequences if it does occur.

Determine the likelihood

Likelihood	
Very Likely	Could happen frequently
Likely	Could happen occasionally
Unlikely	Could happen, but rarely
Very Unlikely	Could happen, but probably never will

Determine the consequences

Consequences			
Extreme	Major	Moderate	Minor
Death or permanent disability	Serious bodily injury	Casualty treatment	First aid only / no lost work time



Workplace risk assessment prioritisation

Likelihood

- 1: Very Likely
- 2: Likely
- 3: Possible
- 4: Unlikely
- 5: Very Unlikely

Consequences

- A: Death or Permanent Disability
- B: Serious Injury
- C: Lost Time Injury
- D: Casualty Treatment
- E: First Aid

Matrix	A	B	C	D	E
1	E	E	H	H	M
2	E	H	H	M	M
3	H	H	M	M	L
4	H	M	M	L	L
5	M	M	L	L	L

Extreme

High

Medium

Low



Risk management process – Step 3

The Principal Contractor must notify serious injuries, illnesses and dangerous events to Workplace Health and Safety QLD within 24 hours.

All injuries, illnesses and dangerous events must be recorded by the principal contractor.

You can report hazards to the following people:

WHS
Representatives

WHS
Committee
members

WHS Officers

Employer



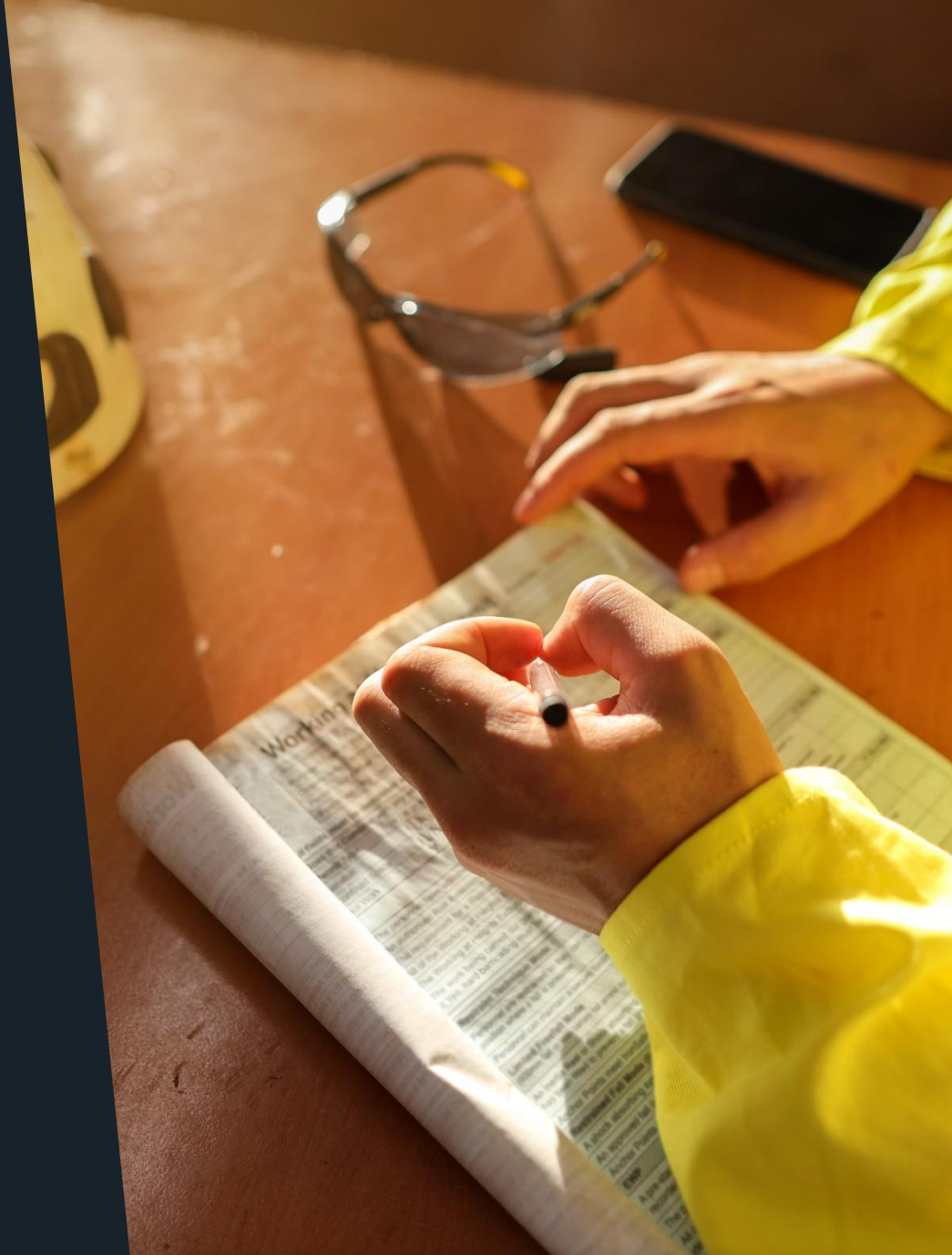
Risk management process

– Step 3

Be sure to report incidents, accidents and near misses to the appropriate person, who may be your supervisor or the WHS representative, even near misses should be reported and recorded to ascertain whether these are common occurrences and control methods required.

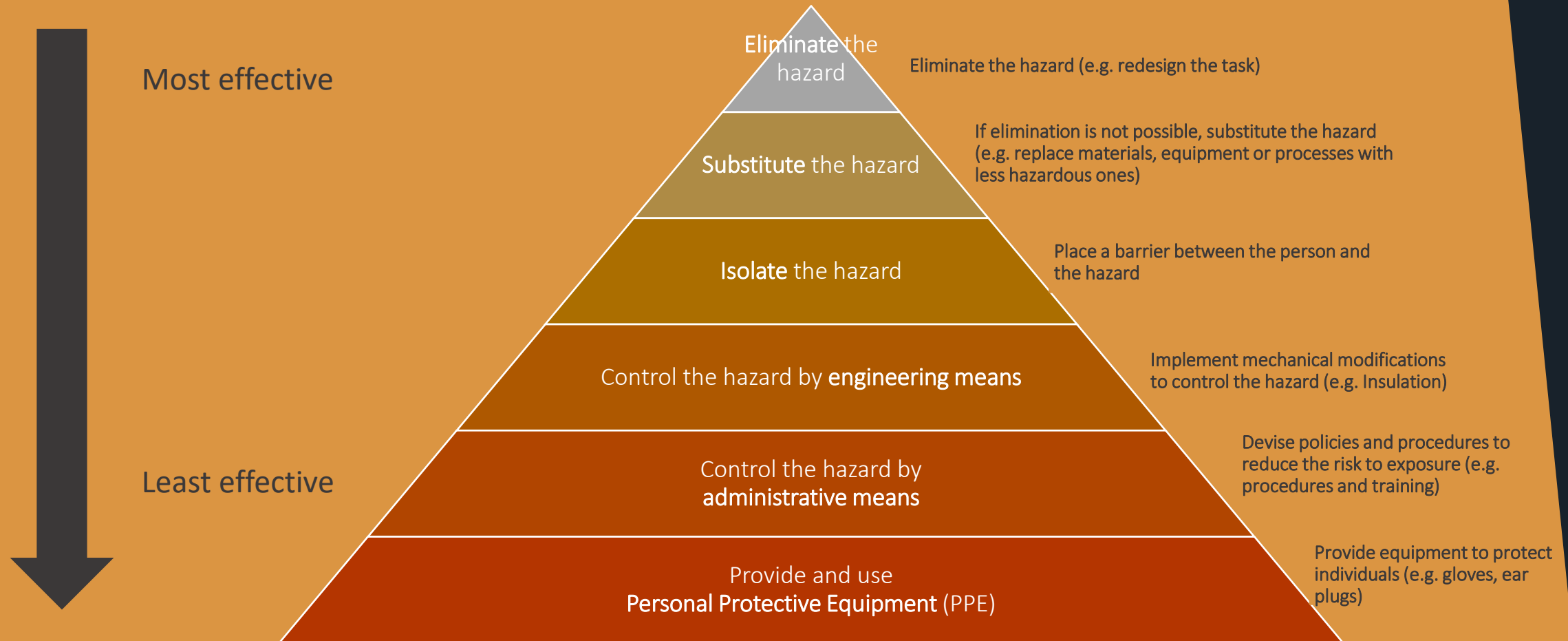
Incidents, whether those that cause injury or those that cause damage to property must be reported and recorded.

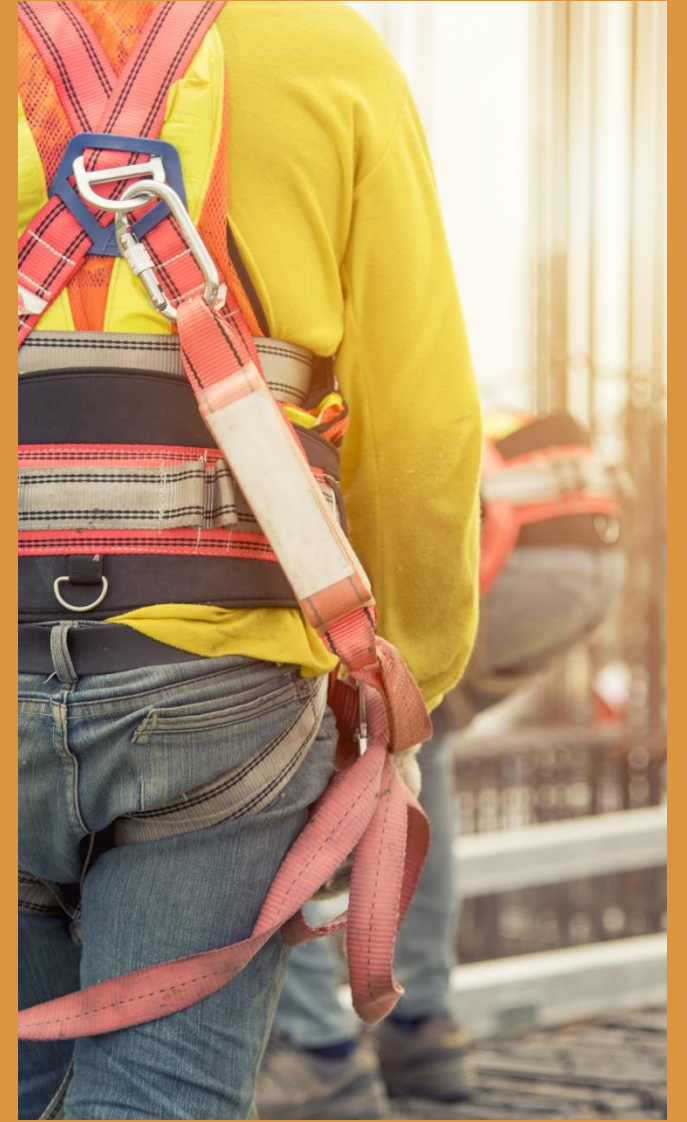
One method is to use a hazard report form



Risk management process – Step 3

The hierarchy of control gives priority to the order in which hazard and risk controls should be implemented





Hierarchy of controls

Elimination

Elimination is to control the hazard at the source

- This is the most effective control measure as it removes the risk by eliminating the hazard or changing the work processes.

Redesign the task to **ELIMINATE** the **RISKS** or **HAZARDS**.

For example:

- Contract tasks out to specialists who have appropriate facilities, remove welding fumes by ventilation.



Hierarchy of controls

Substitution

Substitution is to replace materials, equipment or processes with less hazardous ones that have lower risks.

For example:

- Use a machine with better guarding;
- Use a less hazardous chemical that does the same job.





Hierarchy of controls

Isolation

- Isolation is to separate people from the hazard
- Have isolation procedures, barriers, guarding to place a physical barrier up between the person and the hazard

For example:

- Use rubber mats to lift workers off a concrete floor, segregating work processes.

Hierarchy of controls

Redesign by engineering

- Redesign by engineering is to control the hazard
- Change the physical characteristics of the plant or workplace to remove or reduce the risk

For example:

Modify a machine for remote control use, provide mechanical grids, ventilation or insulation.



Hierarchy of controls

Administrative measures

- Administrative measures relate to procedures and training
- Use policies, procedures, signs and training to control risk

For example:

- Review systems of work so that nobody works alone at night;



Hierarchy of controls

Provide and use appropriate PPE

Workplaces provide equipment or clothing designed to protect the worker

For example:

- High visibility work wear
- Hats and long shirts to protect outdoor workers against the sun and ultraviolet radiation
- Hard hat
- Steel capped boots
- Protective glasses
- Earplugs or earmuffs for noise protection
- Harness for use when working at heights



Risk Management process – Step 4

Implement control measures

Undertake activities necessary to allow the measures to function or operate effectively.

Ensure that you:

- Communicate – what control measure will be implemented?
- Provide training and instruction – if required.
- Supervise implementation.
- Maintain the control measures.





Risk Management process – Step 5

Over a period of time, monitor the implemented controls and determine whether:

- The chosen control measures have been implemented and are as planned;
- The chosen control measures are working;
- Are there any new problems.

Site induction

Workers should take part in a site induction before beginning work on the site.

The site induction covers site specific information such as:

Site roles and responsibilities

Basic WHS information including:

- location of amenities and facilities including first aid and first aid officer
- emergency procedures and responding to incidents
- site PPE requirements
- safety procedures
- drug and alcohol policies including smoking
- bullying and harassment policies
- the importance of a clean and tidy worksite
- waste management, storage and removal and environmental protection



Site induction

The site induction may include training and information such as the location and use of chemical spill kits, training and location of fire extinguishers and other firefighting equipment

Induction should provide information on responsibilities for first aid and other first response such as during incidents or structural collapse, vehicle or mobile plant accident, emissions or injury



Signs

There are four basic categories of signs:

Regulatory signs
(prohibition,
mandatory, limitation
or restriction types)

Hazard signs (danger
and warning types)

Emergency
information signs
(exits, equipment,
first aid types)

Fire signs (location of
fire alarms and fire
fighting equipment)



Sign layout

**Red signs mean
“do not”**

**Blue signs mean
“must do”**

**Yellow signs mean
“be aware”**

**Green signs
provide
“information”**



Prohibition (do not) signs



Mandatory (must do) signs

Personal Protective Equipment (PPE) provides your body with basic protection from hazards.



**SAFETY
HELMET
MUST BE WORN**



**HAND
PROTECTION
MUST BE WORN**



**HEARING
PROTECTION
MUST BE WORN**



**DUST MASK
MUST BE WORN**



**EYE
PROTECTION
MUST BE WORN**



**FOOT
PROTECTION
MUST BE WORN**



'Be Aware' – Warning signs



Emergency **Information** signs



Restriction signs



Red circular border, no cross
bar, **white** background

Restriction signs normally have a number placed in them to indicate a limit of some type (e.g. speed limit or weight limit).



Danger hazard signs

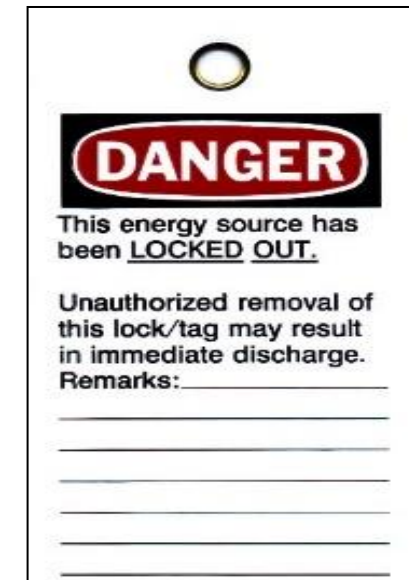


White rectangular background,
white / **red DANGER**, black
border and wording

These signs warn of a particular hazard or hazardous condition that is likely to be life-threatening



Common signs and notices



Lock out tag



Hazardous Substances and Safety Data Sheets (SDS)

Safety Data Sheets must be supplied with hazardous substances. Manufacturers and distributors of hazardous chemicals must prepare the SDS in accordance with the relevant Code of Practice.

The SDS includes:

the chemical's identity and ingredients	health and physical <u>hazards</u>	properties and uses	emergency procedures and first aid instructions	safe handling and storage procedures	precautions for use	disposal considerations
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SAFETY DATA SHEET

Hydrogen Sulfide

Section 1. Identification

GHS product identifier	: Hydrogen Sulfide
Chemical name	: hydrogen sulphide
Other means of identification	: Hydrogen sulfide; Hydrogen sulfide (H ₂ S); Sulfuretted hydrogen; Sewer gas; Hydrosulfuric acid; dihydrogen sulfide
Product use	: Synthetic/Analytical chemistry
Synonym	: Hydrogen sulfide; Hydrogen sulfide (H ₂ S); Sulfuretted hydrogen; Sewer gas; Hydrosulfuric acid; dihydrogen sulfide
SDS #	: 001029
Supplier's details	:

Emergency telephone number (with hours of operation)

Section 2. Hazards identification

OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	: FLAMMABLE GASES - Category 1 GASES UNDER PRESSURE - Liquefied gas ACUTE TOXICITY (inhalation) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 AQUATIC HAZARD (ACUTE) - Category 1

GHS label elements

Hazard pictograms



Signal word

Hazard statements

: Danger
: Extremely flammable gas.
May form explosive mixtures with air.
Contains gas under pressure; may explode if heated.
May cause frostbite.
Fatal if inhaled.
Extended exposure to gas reduces the ability to smell sulfides.
May cause respiratory irritation.
Very toxic to aquatic life.

Precautionary statements

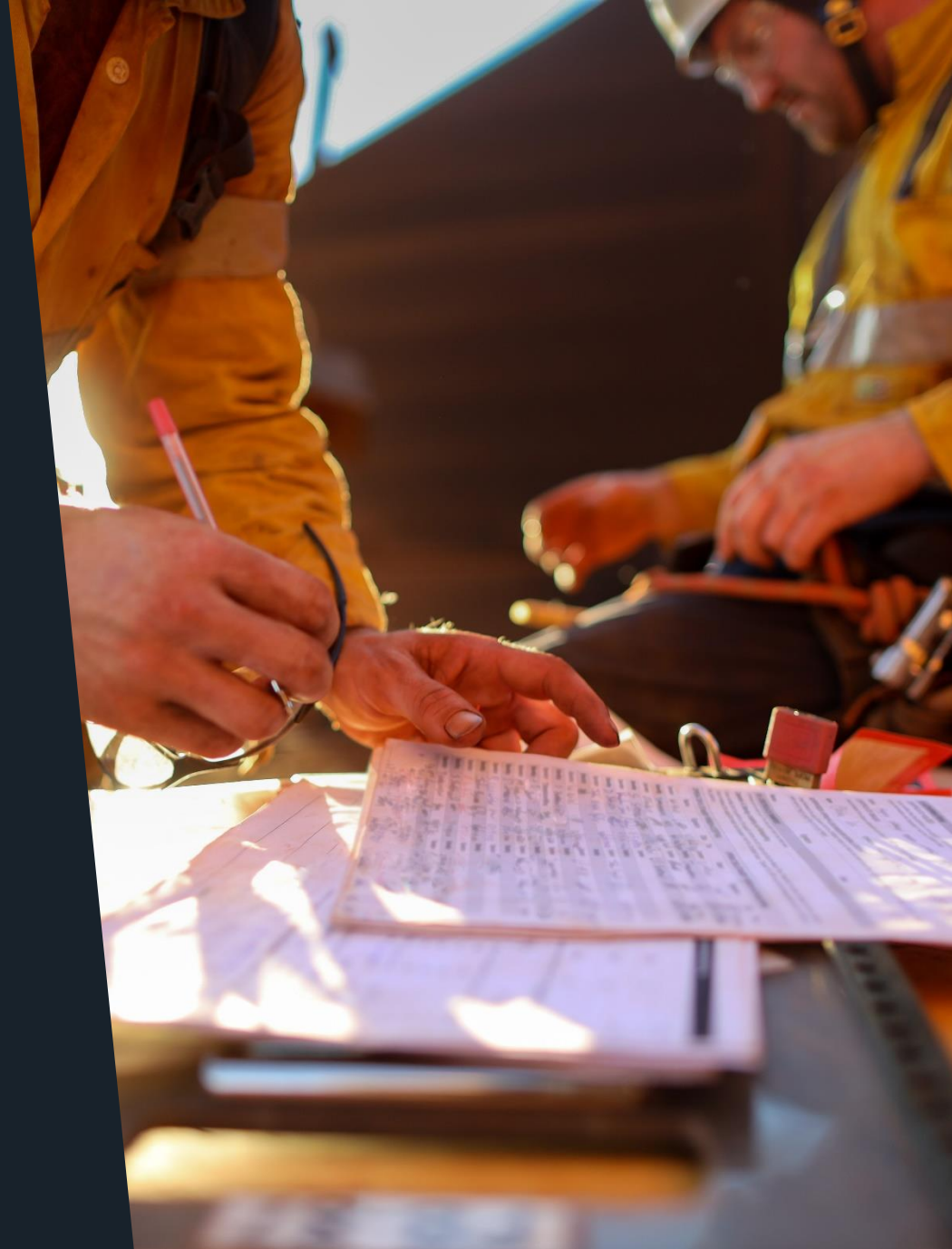
Job Safety Analysis (JSA)

A JSA is a form of risk assessment tool. It is sometimes referred to as a Job Safety & Environment Analysis (JSEA) if environmental components have been included in its content.

Undertaking a JSA prompts those involved in the work task/ activity to complete a review of the work step (analysis of the job), identifying potential hazards, assessing associated risks and outlining control measures that need to be implemented to eliminate or minimise the risk.



Source: www.safetyculture.com.au



Safe Work Method Statement (SWMS)

A Safe Work Method Statement (SWMS) basically sets out the following information:

work activities in a logical sequence	hazards	control measures
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The purpose of a SWMS according to Workcover Queensland is to “help supervisors, workers and any other persons at the workplace to understand the requirements that have been established to carry out the high-risk construction work.”

A SWMS should clearly describe the control measures to be implemented at each job step, allowing those involved to easily carry out works in accordance with the SWMS.

SWMS should be produced for work which is determined to be “High Risk Construction” under the WHS Regulations.

Source: www.safetyculture.com.au



Confined spaces

A confined space means an enclosed or partially enclosed space that: is not designed or intended to be occupied by a person.



Confined spaces

Under the Australian and New Zealand Standard “Safe working in a confined space” AS/NZS 2865: 2001 – A confined space is “An enclosed or partially enclosed space that is at atmospheric pressure during occupancy and is not intended or designed primarily as a place of work, and – (a) is liable at any time to:–

(i) have an atmosphere which contains potentially harmful levels of contaminant;

(ii) have an oxygen deficiency or excess; or

(iii) cause engulfment; and (b) could have restricted means for entry and exit.

Any personnel entering the confined space must receive training before entering. The training must be documented and undertaken by an RTO. Training must include safe entering, working in and exiting the confined space, as well as cold or hot environments and atmospheric testing



Manual Handling

Manual handling is any work process that requires:

Lifting

Moving

Carrying

Pushing/ pulling

Reaching

Twisting or bending

Holding



Manual Handling

When lifting, do not:

Lift too far out

Twist when lifting from the body

Perform jerky lifts

Continue frequent lifting

Perform heavy lifts

Over stretch



Proper lifting

When lifting:

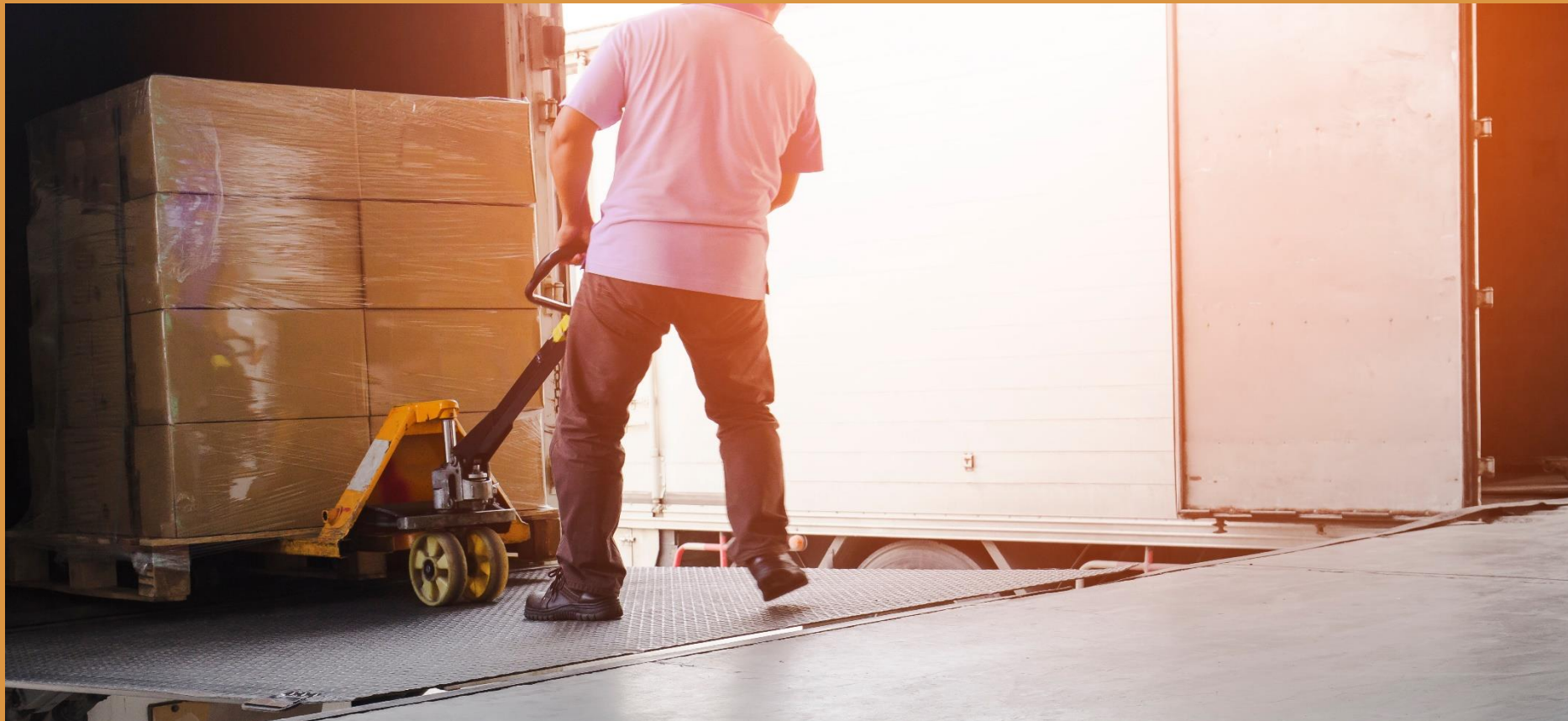
- Plan your lift
- Use a wide, balanced stance
- Get as close as possible to the load
- While lifting, keep your lower back in its normal alignment
- Use your leg muscles to assist the lift
- Pick up your feet to pivot and turn
- Do not twist straight around
- Move your feet as you go
- Lower the load, maintaining the normal alignment of your back, again using your legs
- Ensure a solid contact when lifting
- Use your entire palm, not just your fingers



Manual handling

Other solutions:

- Team lifting
- Using mechanical aid – hand trolley, forklift etc



Asbestos

Asbestos is the generic form for naturally occurring fibrous silicate minerals having a crystalline (clear) structure.

If inhaled, the asbestos fibre or dust can cause:

- Lung cancer (bronchial cancer);
- Asbestosis (scarring of the lungs);
- Mesothelioma (cancer of the lining of the lungs).



Asbestos awareness

If you suspect a substance contains asbestos:

Don't
disturb it

Report it
to your
supervisor

Get it
tested

Have a
qualified
person
remove it



Electrical safety

The risk of death or injury from electricity is strongly linked to where and how it is used. For example, the risks are generally higher if it is used:

- Outdoors or in damp surroundings—equipment may become wet and may be at greater risk of becoming damaged.
- In cramped spaces with earthed metalwork. For example, inside a tank or bin it may be difficult to avoid receiving an electrical shock if an electrical fault develops

Electrical equipment must:

- be regularly tested and tagged
- routinely checked and inspected before and after use
- use RCDs as instructed by workplace or manufacturer



Excavation and the use of Plant and equipment

Operators of plant and machinery must undergo training in safe and correct use of the plant and machinery.

Hazards of using plant include:

- Underground and overhead services and electricity
- Roll over
- Tip and fall
- Traffic and pedestrians
- Unplanned collapse and the need for shoring
- dust
- noise
- cold and wet environments
- sun exposure

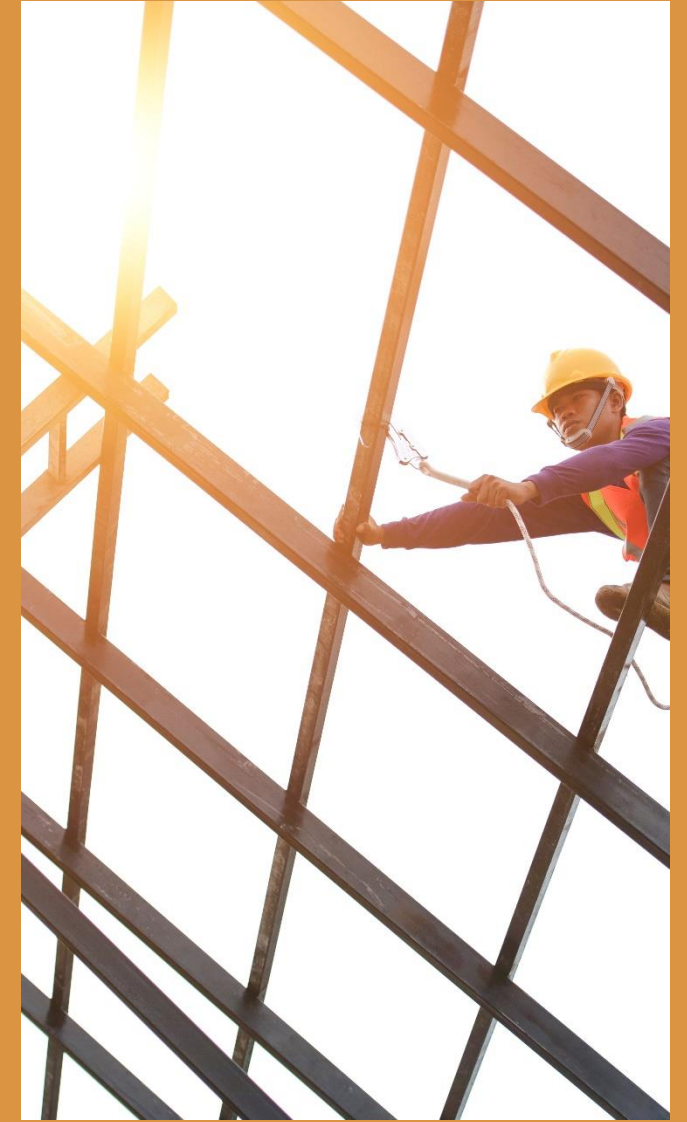


Working at heights

Working at heights involves the greatest risk of falls. Workers who work at heights on bridges, on scaffolding, on roof tops and other heights, must be provided with sufficient training as well as fall prevention equipment.

Training for working at heights, including handling tools and machinery safely, helps to prevent the cause of injury to others should the tools or machinery fail.





Emergency response

Every work site should have emergency plans and procedures in place to deal with dangerous events, accidents, incidents and emergencies.

Workers must adhere to workplace safety policies and procedures when dealing with construction emergencies such as structural collapse, toxic or flammable vapour emissions, vehicle or mobile plant accidents and injury to personnel. Emergency procedures have been written for incidents.

As an example:

Chemical spills should be cleaned up using an appropriate spill kit following policies and procedures

All incidents and near misses must be reported to the relevant safety officer so that the cause can be established, and preventative measures applied.



Emergency personnel

Emergency personnel follow set procedures to get all persons on site out of danger to a determined collection point in the event of an incident

They are often identifiable by a coloured helmet and known as wardens



Fire Emergency–R.A.C.E.

Remove any people in immediate danger
(only if safe to do so)

Alert people of the emergency

Confine smoke and fire – Close doors and windows
to contain fire (only if safe to do so)

Evacuate to the assembly area



Fire triangle

For a fire to thrive and spread, it requires three things:



Classifying fires



Class A- Ordinary Combustibles

Examples: Wood, paper, plastic, rubber, cloth

Class B- Flammable Liquids

Examples: grease, gasoline, oil, solvents

Class C- Flammable Gases

Examples: L.P.G, Acetylene, natural gas

Class D- Flammable metals

Examples: Magnesium, aluminum, sodium

Class E- Electrical fires

Examples: switchboards overloading

Class F- Cooking fat and oils

Examples: Cooking oils and fats usually found in industrial kitchens



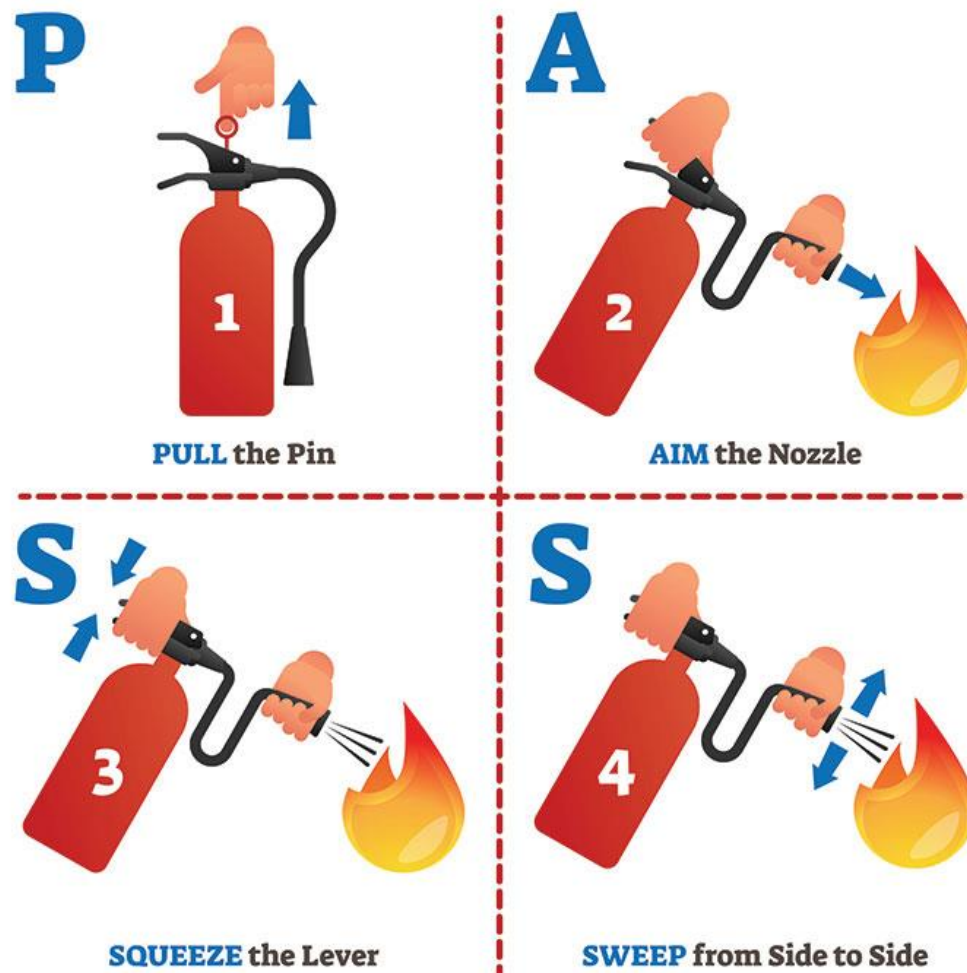
Types of Fire, Class and Suitability

Pre 1997	Current	Extinguishing Agent		A Wood, paper, plastic	B Flammable & Combustible Liquids	C Flammable Gases	E Electrically Energized Equipment	F Cooking Oils and Fats	Comments	D Metal Fires
		Water		✓	✗	✗	✗	✗	Dangerous if used on flammable liquid, energized electrical equipment and cooking oil/fat fires	Use only special purpose extinguishers and seek expert advice
		Wet chemical		✓	✗	✗	✗	✓	Dangerous if used on energized electrical equipment	
		Foam		✓	✓	✗	✗	Limited	Dangerous if used on energized electrical equipment	
		Powder	(ABE)	✓	✓	✓	✓	✗	Look carefully at the extinguisher to determine if it is a BE or ABE unit as the capability is different	
			(BE)	✗	✓	✓	✓	✓		
		Carbon Dioxide		Limited	Limited	✗	✓	✗	Not suitable for outdoor use or smoldering deep seated A class fires	
		Vaporising Liquid		✓	Limited	Limited	✓	✗	Check the characteristics of the specific extinguishing agent. 5 yearly servicing must be done by ODS & SGG licensed persons	
		Fire Blanket		Limited	Limited	✗	✗	✓	*Fire blankets may be used as a thermal barrier against radiated heat and to control a fire in clothes being worn by a person	



P.A.S.S . Procedure

HOW TO USE A FIRE EXTINGUISHER



Fire

Fire extinguishers

- Should meet Australian standard AS1841.6.
- Should undergo routine inspection

Fire blankets

- Fire blankets are made from 2 layers of woven glass fibre fabric and an inner layer of fire-retardant film. They work by cutting off the oxygen supply to the fire.
- Fire blankets are used to extinguish a small fire or to wrap around a person in case of a fire.

Hose reels and mains

- Fire hose reels are found at some workplaces and are permanently connected to a water supply and consist of a main turn on/off valve, hose guide, and a hose with a nozzle.
- These hose reels are used for Class A fires – e.g. Paper, Textiles, Wood, Most Plastics and Rubber.



First Aid

First aid personnel:

- Need to hold a current Provide First Aid certificate
- Deliver treatment only to the level they are trained
- Undertake initial treatment of onsite injuries
- Pass information regarding a casualty's condition to emergency services when required
- Keep all treatment information confidential.



Summary

This presentation is a guide to help you as you develop the skills and knowledge that will enable you to:

- demonstrate basic duty of care, and the roles, rights and responsibilities of business owners and workers in relation to working safely while undertaking construction work
- understand basic principles of risk management, including the definition of hazard and risk and managing risk according to the following five steps in order:
 - identify hazard
 - assess risk
 - consult and report
 - control hazard
 - review
- knowledge of basic procedures for accessing first aid
- construction hazards
- construction work that requires a high-risk work licence
- types, purpose and use of PPE
- construction incidents
- safe meanings and symbols associated with construction safety signs, symbols and tags

Re-visit this information as you need to strengthen your knowledge of using simple strategies for work-related learning.



Questions?



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