BCATS

BUILDING, CONSTRUCTION AND ALLIED TRADES SKILLS

Safety

Learning resource

This resource provides guidance for the following BCATS skill standards:

Level 1 – 40540
Use safety practices for a BCATS project or related tasks

Level 2 – 40551
Apply safety controls to maintain a safe BCATS environment

Level 3 – 40569
Contribute to a healthy and safe BCATS environment

BCITO
He Hunga Hanga Mātou
building people

Contents

Building and Construction Industry Training Organisation (BCITO)
Level 5, 234 Wakefield Street
PO Box 2615
Wellington 6140

0800 422 486

www.bcito.org.nz

Introduction

Safety is everyone's responsibility. We all have a role in preventing accidents and harm.

It is important to form safe work habits now so you can take these skills into your working life. This includes wearing and using the correct safety equipment, and other safety controls.

This guide is all about staying safe while working on your Building, Construction, and Allied Trades Skills (BCATS) project.

You'll learn:

- what hazards to look out for and how to deal with them
- your rights and responsibilities when it comes to safety
- how to help create a safe and healthy work environment
- what safety paperwork you might need to fill out.

Every year, incidents in the construction industry happen that could have been avoided.

It is important to always think carefully about how your work could affect your safety, the safety of others, and the environment.

Basic safety rules

- Think about possible hazards and how they can be controlled.

- Always wear suitable PPE in the workplace and make sure other safety controls are in place.

- Keep the workplace tidy and look after the tools, equipment, and machinery you use.

There are a few key steps to go through before you get started at work.

- ☑ Can you see anything that might be dangerous (hazards)?

- ☑ Do you know how to deal with the potential risks from the hazards?

- ☑ Have you told anyone else about the hazards?

Hazards

A hazard is a thing or situation with the potential to cause injury, illness, or death. Hazards change all the time because of:

- where you are working
- the materials and tools you're using
- who you're working with.

Types of hazards

Environmental

You need to protect yourself and others from dangerous substances and situations in the workplace. Make sure to look for possible dangers and tidy up after yourself when you’re finished.

Physical

Lots of things in a workplace can cause physical harm or injury. By always using safe work practices, such as wearing eye protection, you will reduce injuries.

Behavioural

If someone behaves badly or works dangerously, they could harm themselves or others. Always work in a sensible way and avoid fooling around on the job.

Identifying hazards

The first thing you must do before you start work is identify any hazards.

Everyone in the workplace must be able to identify potential hazards and know the controls for them.

There are several ways to do this but your teacher will explain their process to you. It might include any of the following:

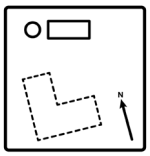
Physical inspection

Before starting work each day, take a look around the workplace for anything unusual.

Check the equipment you will be using to make sure any safety guards are in place and the equipment is in good working order.

Task analysis

Use your project instructions to identify the project tasks you need to carry out and the hazards involved for each task. Think about how likely each hazard is to cause harm.



Area analysis

Using plans of the workplace, divide it into areas (e.g. workshop, storage area, equipment). Then identify any hazards you find in each area.

Step back 5x5

When you get back from a break, take a few moments to check that everything is still where it should be. This is sometimes called the 'take 5 method' – take 5 steps back and 5 minutes to look around the workplace.

If you are unsure or uncomfortable, stop and talk to your teacher.

A hazard could be something simple like not tying back long hair when using machinery.

If this hazard is not controlled, the hair could get caught in the machinery, ripping the hair and scalp off.

The best way to control this hazard is to keep hair tied back and out of the way when working with machinery.

Safety signs

You will often see signs in the worplace to warn people about hazards. The signs are usually coloured to show different meanings.

	Meaning	Shape	Examples
GREEN	Safety or go		  
RED	Stop or no		  
YELLOW	Risk of danger		  
BLUE	Mandatory (do this)		  

Activity

Look around your BCATS workplace and find examples of these signs and labels.

Assessing risk

For each hazard you identify, think:

- how likely is the hazard to cause harm?
- what could happen if the hazard is not controlled?

What is acceptable risk?

Your workplace should have a policy that tells you the acceptable level of risk for different jobs.

Every task should be given a level of acceptable risk. The same type of job might have a different level if the site and situation is different.

Risk Matrix

Likelihood \ Severity of injury	Very minor	Minor	Moderate	Significant	Severe
Very unlikely	low	low	low	moderate	moderate
Unlikely	low	low	low	moderate	moderate
Possible	low	low	moderate	moderate	high
Likely	low	moderate	moderate	moderate	high
Very likely	moderate	moderate	moderate	high	high

HAZARD

A hazard is anything that can cause harm

RISK

A risk is the chance of any harm happening

Controlling hazards

Once you know the level of risk, you must:

- **Eliminate or remove the hazard** – for example, prevent falls by working on the ground; or, if you can't eliminate/remove it,
- **Minimise or reduce the hazard** – for example, use safety guards on tools.

Your work area

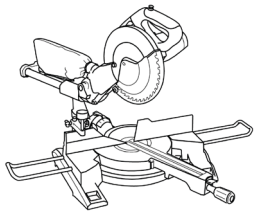
A messy work area creates many hazards. Keep it clean and tidy to prevent the risk of tripping over, slipping etc.

A tidy workplace is a safe place to work.

- Put tools and equipment away after use.
- Keep walkways clear.
- Clean up the workplace and remove rubbish as it builds up.
- Protect yourself and others by setting up warning signs and barriers.

Tools, equipment, and machinery

You must be properly trained before using tools, equipment, and machinery. Using them without being trained can cause you and/or others serious harm. You could also damage the equipment which might be expensive to repair.



You must follow all safety procedures and use the safety guards provided. Each piece of equipment has its own safety procedures.

- Your teacher will need to explain how to use each piece of equipment safely.
- Repeat the instructions and demonstrate the correct actions to your teacher so they know you understand.
- Ask questions if you still don't understand something.

Mental health

Construction workplaces can be full-on and sometimes this can affect the mental health of workers. Poor weather, tight deadlines, or relationship issues can have an impact. Here are some examples of strategies to help keep your mental health strong at work.

- Practise self-care with healthy habits like regular exercise, healthy eating, and getting enough sleep.
- Set boundaries between work and your personal life.
- Find meaning and purpose in your work so you’re happy to go every day.
- Stay connected with your family, friends, and community for support.

Examples of hazards and controls

Your BCATS workplace will have controls in place to minimise or prevent hazards.

It is your responsibility to:

- follow/use the controls
- report any uncontrolled hazards to your teacher right away.

Environmental hazards

Hazard	Potential injuries	Controlling the hazard
Lighting which is too bright or too dim.	Eye strain or limited visibility.	☑ Make sure there is enough light for you to clearly see your work.
Objects that could fall or be tripped over.	Slips, trips, or falls leading to minor bruises and sprains, or more severe injuries like broken bones.	☑ Keep a clean and organised workplace at all times.
Electrical hazards such as: - exposed wires - overloaded circuits - wet conditions around electrical outlets - improper grounding of wires - power tools that are faulty or damaged.	Shocks, electrical burns, or even death.	☑ Keep cords and wires organised. ☑ Avoid wet conditions. ☑ Use circuit breakers. ☑ Check extension cords and other electrical equipment for wear, exposed wires, or damage. ☑ Put faulty electrical equipment out of action and make sure it is labelled as unsafe and locked away until it's repaired. ☑ Safely store all tools after use. ☑ Check and report any issues with tools.
Biological hazards such as: - poor cleaning of work surfaces - unhygienic toilets - contaminated soil.	Infections, stomach illness, and respiratory diseases.	☑ Clean work surfaces. ☑ Wash your hands before and after work. ☑ Wear appropriate PPE. ☑ Remove harmful matter.

Physical hazards

Hazard	Potential injuries	Controlling the hazard
Noise from machinery and tools.	Hearing loss or fatigue.	☑ Wear safety earmuffs/earplugs. ☑ Limit time in noisy areas.
Dust from sawing wood and other materials.	Breathing issues if inhaled over time.	☑ Wear dust masks and use the extraction system.
Flying objects or splashes hitting the eyes.	Loss of vision.	☑ Wear safety glasses/goggles when using a grinder. ☑ Wear a welding helmet for arc welding.
Chemicals, such as paints, varnishes, glues, solvents, cleaning materials.	› Skin or eye irritation › Burns › Poisoning › Headaches, dizziness, or collapse.	☑ Use protective clothing. ☑ Safely store chemicals with lids on and labels clearly visible. ☑ Make sure the workplace is well ventilated.
Ergonomic hazards, caused by poor lifting techniques or overuse of tools or machines.	› Back injury › Occupational overuse syndrome (or 'repetitive strain injury').	☑ Take regular breaks ☑ Adjust and maintain good posture. ☑ Stop actions if you start to feel sore.

Behavioural hazards

Hazard	Potential injuries	Controlling the hazard
Risky and dangerous behaviour.	Falls or physical injury.	☑ Report risky/dangerous behaviour to the teacher.
› Violence/bullying/intimidation › Stress/fatigue › Workload.	Anxiety, mental health issues.	☑ Report bullying to the teacher. ☑ Take regular breaks from work that needs intense concentration.

Do you have what you need to work safely?

- ☑ Are all the hazards and controls on your list?
- ☑ Are you using all the PPE that is needed?
- ☑ Are you prepared if something goes wrong?

Personal protective equipment (PPE)

Keeping everyone safe at work is super important and Personal Protective Equipment (PPE) helps make that happen.

Wearing PPE isn't just a rule, it's a smart move. It helps make sure everyone goes home safe at the end of the day.

By following PPE guidelines, you are demonstrating a commitment to health and safety and preparing yourself for future work.

ALWAYS
wear hi-vis clothing in the workplace to make sure you can easily be seen.

Wear a hard hat to protect yourself from falling objects.

NEVER
wear sandals or jandals in the workplace because they offer little to no protection to your feet.

PPE in the workplace

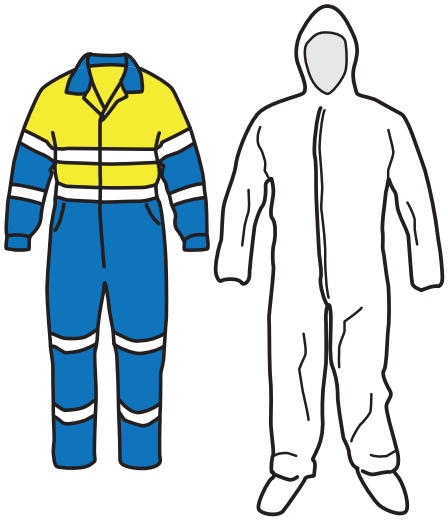
PPE is anything used or worn by a person to minimise health or safety risks. It is used to protect the eyes, lungs/breathing, hearing, hands, body, and feet of people who work and move around the workplace.

Professionals working in construction have their own PPE and they do not share it with anyone else. In a BCATS workshop you will probably have to share everything except your shoes. Because of this, you need to make sure the PPE you use is clean and safe before you use it and clean it every time you've finished using it.

Store all PPE in a clean and safe location with easy access.

The next few pages have descriptions of some of the common PPE in construction workplaces.

Protective clothing



Protective clothing is designed to help keep the person wearing it protected and comfortable. Wear protective clothing that is best for the conditions and type of work.

- **Outdoors** – prepare for all conditions with wet weather gear, sunblock and hat. Hi-vis is used on site so you can be seen.
- **Dirty and dusty jobs** – use bib overalls, dust coats or complete overalls.
- **Machine operation** – wear close-fitting clothing and avoid baggy sleeves; tie hair back and make sure hoodie strings are tucked inside the clothing.
- **Welding** – wear face protection and overalls to protect from heat and sparks; a welding jacket can be used for extra protection.
- **Spray painting or fibre-glassing** – needs overalls for complete body protection from paint, over-spray, and chemicals; also use appropriate breathing protection.

Foot protection

Safety shoes and boots have steel caps, strong leather uppers and non-skid soles. Steel caps protect your feet from falling objects, sparks, kicking or tripping over hard objects, or standing on sharp things.

Hand protection

There are lots of different kinds of gloves available.

Whichever gloves you choose, make sure they fit and aren't too loose.

Leather gloves

Protect against cuts and burns.

Leather or reinforced poly-cotton gloves

Provide protection from sharp edges and rough surfaces when handling timber and other materials.

PVC gloves

Protect against chemicals.

Cotton gloves

Protect finished surfaces from marks caused by oils in your skin.

Hearing protection

Loud noise is common in BCATS workplaces, but you can reduce the risk of noise by:

- always wearing hearing protection
- limiting how long you're exposed to loud noise
- always letting others know you're going to start work that will be noisy
- using barriers to block sound
- keeping your distance from noisy tools.

You can protect your ears by wearing:

- **ear plugs inside your ears.** These are disposable and a good choice when you're wearing safety goggles and/or a hard hat. However, they create extra waste and can be unhygienic when put in with dirty hands. If you use ear plugs, make sure they sit properly in your outer ear – a poor fit will not provide enough protection.
- **ear protectors that fit over your ears.** These are easy to fit and generally offer better protection than earplugs. Ear protectors are rated as classes 1 to 5. The higher the number, the greater the level of protection. Some hard hats/safety helmets come with ear protection attached.

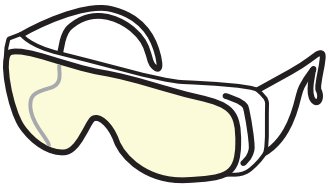
Eye protection

You need to use the right protection for your eyes to reduce the chance of an injury. In most cases, this means wearing safety glasses or goggles.

You also need to wear eye protection when working close to someone who is creating a hazard (e.g. grinding steel).

Safety glasses should have wide vision, provide ultraviolet (UV) protection, be scratch-resistant, and have side shields.

Protective face masks can also provide extra coverage against hazards like flying sparks, splinters, dust, chemicals, and concrete chips.



Respiratory protection

'Respiratory' describes anything related to how we breathe. Toxic dust and fumes that can be produced in the BCATS workplace have the potential to make breathing difficult.

Good ventilation to produce airflow in the workplace is an important starting point.

Where it is not possible to remove all fumes and dust, use respiratory equipment to protect your lungs. The type you use depends on the work and existing hazard. Masks and respirators are strapped securely around the head, forming a seal to protect from dust.

Skin protection

You need to protect your skin from damage caused by the sun, and from chemicals found in materials such as concrete, paint, and solvents. Skin injuries and conditions can lead to irritation, infection, and permanent damage.

Sun

Sunburn is uncomfortable and has dangerous long-term side effects. Protect yourself when you are outside working for long periods by wearing suitable clothing, a hat, and sunscreen.

Chemicals and irritants

Dermatitis and other allergic reactions can result from contact with a skin irritant (e.g. MDF dust, solvents). Skin can go red, swell, itch, or develop blisters and cracking if left untreated. The best treatment for allergies is to avoid contact.

- Ask to be moved to another job.
- Wear gloves and apply barrier cream.
- Wash affected areas regularly to get rid of any dirt or contamination.
- Use hand lotion to replace lost skin oils.

Case study

A worker was left with permanent eye damage after being struck on the face by a high tension wire that snapped on a work site. The victim, who was a trainee, had seen others including supervisors not using protective eyewear during fencing jobs and neither the victim nor their supervisor had been wearing safety glasses at the time of the incident.

The company was held responsible after this incident and was charged a fine of $240,000 as well as $62,185 in reparations to the victim.
The maximum penalty is a fine of up to $1.5 million.

(Source: WorkSafe, 6 March 2023: www.safetynews.co.nz /eye-injury-result-companys-safety-oversights)

Make a final check before you get started.

- ☑ Do you know how to use each piece of equipment or tool?

- ☑ Have you inspected the tools and equipment to make sure they are in working order and safety guards are in place?

- ☑ Is the workplace tidy and ready for the job to begin?

Safe work practices

So far in this resource, we have looked at identifying hazards and knowing how they will be controlled. You also need to be prepared to use safe work practices to protect yourself and others.

Examples of how you might do this include:

- clearly communicating what you are doing
- using a buddy system to monitor safety
- knowing the procedures for emergencies, location of the first aid kit, fire extinguishers, and emergency exits
- reviewing safety procedures as the project goes on and making adjustments as needed.

Using safe practices

A strong health and safety culture in the workplace is everyone's responsibility. There are lots of things workers can do to contribute, and small efforts can make a big difference.

Lead by example

It's really important that you follow all safety procedures in the workplace. When others see you taking safety seriously, they're more likely to do the same.

- Always make safe practices a priority, even when you're on a tight deadline.
- Recognise good safety practices used by others.

Participate in training

Attend all health and safety training sessions provided by your teacher/employer. Learning about safe practices and emergency procedures shows that you value a safe workplace. This might include a workplace induction process or first aid course.

Communicate clearly

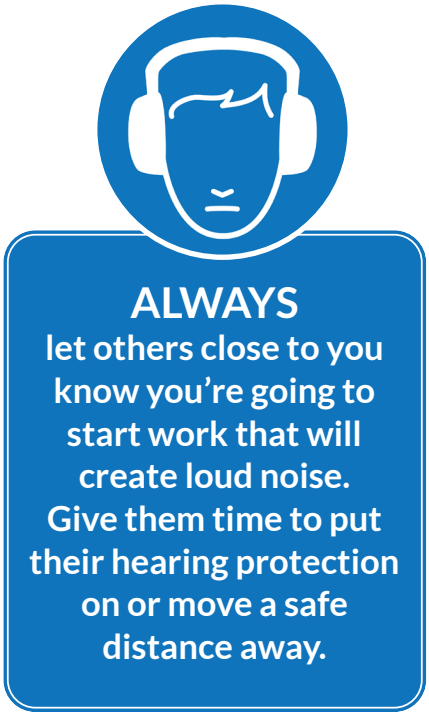
Speak up about any concerns you have when there is a meeting or toolbox talk and encourage others to do the same. This will lead to workplace issues being addressed quickly.

Report near misses

This will help to prevent accidents. Reporting near misses also helps teachers/employers improve safety measures.

Keep your workplace clean and organised

A clean and tidy workplace reduces the risk of trips, falls, and other incidents. Take responsibility for keeping your area tidy.



A back injury can impact a person's quality of life for many years. Thousands of New Zealanders suffer from chronic pain because of back injuries.

Safe lifting

Poor handling of materials can lead to many different injuries (e.g. sprains, strains, hand and foot injuries, torn ligaments, spinal injuries).

You can lower the risks of moving heavy/awkward materials by using correct lifting techniques and equipment.

- Make sure you can safely lift the load without straining.
- Can you make the load lighter (e.g. move smaller loads at a time rather than the whole lot)?
- Ask someone to help.
- Use a trolley or wheelbarrow.
- Bend your knees and keep your back straight.
- Position your body as close to the load as possible.
- Stand up using your leg muscles to lift the weight (not your back).
- Wear gloves to protect your hands from sharp edges or splinters.
- Make sure your path is clear when you're walking with a load.

Stacking materials

- Stack materials so they cannot slip or fall.
- Arrange stacks in clear lines with walking space between them.
- The height of any stack is restricted to the amount of weight the lower layers can withstand.
- Store long lengths of timber low in the rack and make sure they don't stick out into walkways.
- Keep heavy loads low for safety and ease of handling.
- Make sure all racks are neat, tidy, and secure.

Care for tools and PPE

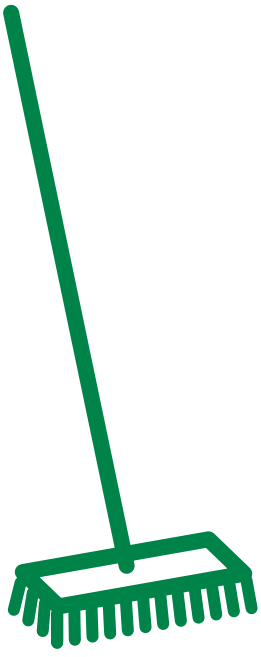
It is very important to keep the workplace clean and tidy while you are working and when you're finished.

At the end of each day or sometimes before a break:

- **Collect the rubbish**
  - Gather all rubbish and dispose of it properly. This includes scraps, packaging, and any other waste materials.
  - Check for sharp objects and dispose of them carefully to avoid injury.
- **Organise the tools**
  - Inspect the tools for damage and clean them before they are put away.
  - Charge batteries.
- **Clean surfaces and floor**
  - Wipe down your bench.
  - Sweep the floor.
- **Check the PPE**

  Poorly fitting and unmaintained PPE is uncomfortable to wear and unlikely to protect against hazards.

  To keep PPE well maintained:
  - Clean the lenses of safety glasses after each use.
  - Clean earmuffs and check the pads for damage.
  - Throw away used earplugs.
  - Check gloves for tears or damage.
  - Sterilise respiratory protection equipment and change filters regularly.
  - Wash overalls and keep clothing clean and tidy.
  - Clean and inspect the soles of safety boots/shoes.
  - Check that hard hats are in good condition and free of cracks or splits.
  - Store all PPE correctly in an easily accessible place.
- **Final check**
  - Do a walk-through of the workplace to check for anything that might have been missed.
  - Report any issues or damage to your teacher.



You can refuse to work on any item of equipment if you:

- **have not been shown how to use it safely**
- **do not feel confident you can use it safely**
- **think the equipment is in a dangerous state, such as:**
  - **missing safety guards**
  - **unprotected wiring**
  - **switches that aren't working properly.**

Evaluating safety procedures

Throughout your project, evaluate (assess) the safety procedures to make sure they are keeping people safe and working well. Changes may need to be made.

- Identify what worked well, for example:
  - hazards were well controlled
  - other people were kept safe.
- Identify what needs to be improved, for example:
  - were some hazards missed?
  - were there any incidents?
  - was PPE always worn/used?

What could happen if practices in the workplace aren't safe?

Unsafe practices in a construction environment are like driving without a seatbelt—you might get away with it for a while, but one mistake can have serious consequences.

Injuries and disabilities

Without proper safety measures, workers can suffer accidents like falls, electric shocks, or injuries from heavy machinery. These can lead to life-changing disabilities that make it hard or impossible to work again.

Physical health problems

Breathing in dust, chemicals, or asbestos over time can cause lung diseases like asthma, cancer, or other serious conditions. These effects might not show up right away but can appear years later.

Emotional damage

For families of injured workers, the emotional pain can last a lifetime. It's not just numbers or statistics, it's real people and their loved ones.

Reputation damage

Unsafe practices can ruin a company's reputation, making it harder for them to get work in the future. They might lose clients, funding, or could even face fines or legal action if safety laws are ignored.

Loss of skilled workers

If workers get hurt, the trades lose experienced people. This makes projects harder to complete and can lead to mistakes.

You have rights and responsibilities for health and safety in the work-place. You must:

- ☑ go through a safety induction 
- ☑ follow all rules and procedures to keep safe 
- ☑ be confident to ask for help if you need it. 

The law

Health and Safety at Work Act 2015

The Health and Safety at Work Act (HSWA) sets out the requirements for identifying and controlling hazards in workplaces (including schools) in New Zealand.

Under the HSWA, everyone is responsible for health and safety in the workplace. The most important roles that you need to know about are:

- **Person Conducting a Business or Undertaking (PCBU)** – for BCATS this is your school (or your supervisor if you are learning through the Gateway programme)
- **Worker** – this is you and your teacher in the BCATS workplace.

Role of the PCBU

As a PCBU, your school must make sure teachers and learners (workers) are healthy and safe, as well as people who might be affected by their work.

PCBUs also need to:

- provide a safe working environment
- make sure tools, machinery, and equipment are safe for workers to use
- make sure workers are properly trained or supervised before using tools, machinery, and equipment.

Role of the worker

You have a legal responsibility to always work safely.
You are responsible for:

- identifying and reporting hazards
- protecting yourself and others from the hazards
- taking steps to control the hazards
- listening carefully to safety instructions
- being honest if you're not sure about the task you're being asked to do or the materials/equipment you need to use.

Make a final check before you get started.

- ☑ Do you understand your legal responsibilities?
- ☑ Do you have all your paperwork organised?
- ☑ Do you want to be a safe and responsible team member?

Safety documents

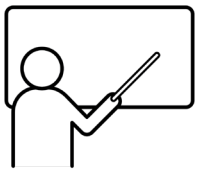
The purpose of safety documentation is to make sure everyone understands the risks involved and follows procedures to protect themselves and others on site.

Whether you're using hand tools, operating machinery, or just moving materials, safety must always come first. This section outlines safety documents, emergency procedures, and expectations for conduct you will probably be expected to follow in the workshop.

You will need to understand and complete some important documents in the BCATS workplace. This might include:

- Induction and training and records
- Hazard register
- Toolbox records
- Standard operating procedures
- Emergency response plan
- Maintenance checklist
- Incident report

Induction and training records



One of the first things to happen at a workplace will be a safety induction.

Your teacher will walk you through the workshop or site and point out important safety features and hazards (for example fire extinguishers, first aid kit, tools, and machinery).

It is your job, as a worker, to listen and to learn the processes. You will need to sign off to show you understand and accept the terms and conditions.

Hazard register

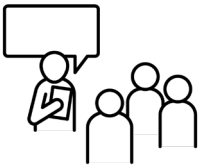
Hazards that are identified on site are listed in a hazard register.

This list of hazards should also include:

- their risks to people and/or the environment
- how they are controlled
- who is responsible.

Having this document means all workers and anyone else who enters the workplace knows about the hazards, risks, and controls.

Toolbox records



Toolbox meetings, usually held each morning in a workplace, are used to discuss safety (and other topics) with all workers.

You might need to sign a record to show you understand the safety advice given.

The toolbox record keeps track of:

- the date and time of the meeting
- topic(s) covered (for example, working at height, avoiding electrical hazards)
- people who attended the meeting
- any actions required (e.g. new PPE needed).

Standard operating procedures

Standard operating procedures (SOPs) are step-by-step instructions that tell you how to do your work tasks safely. They are also important for preventing mistakes and making sure projects get finished on time.

SOPs cover things like:

- **Safety guidelines:** how to use PPE and handle tools/equipment without getting hurt.
- **Specific tasks:** instructions for jobs like mixing concrete or setting up scaffolding so the work is done safely and correctly.

Emergency response plan

This document is like a guidebook for what to do if something goes very wrong in the workplace.

A plan usually includes:

- **Types of emergencies** (e.g. fire, chemical spill, severe weather).
- **Emergency procedures:** clear instructions for what to do for each type of emergency (e.g. where to go, how to evacuate).
- **Assembly points:** safe areas where everyone should gather.
- **Contact information:** phone numbers for emergency services, first aid responders etc.
- **Roles and responsibilities:** who is in charge of specific tasks (e.g. calling for help, managing the evacuation, providing first aid).

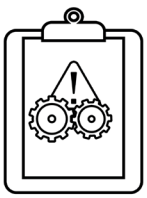
Maintenance checklist

This is like a to-do list that helps make sure everything in the workplace is working properly. It's a guide that all workers use to regularly inspect and maintain tools, machinery, and other equipment. It also helps to extend the life of equipment.

A maintenance checklist usually includes:

- **Equipment checks:** making sure machines like excavators or drills are in good condition, checking for wear and tear, loose parts, leaks etc.
- **Tool maintenance:** inspecting smaller items (e.g. hammers or saws) to make sure they're safe to use and not damaged.
- **Safety features:** confirming safety systems, like fire extinguishers, alarms or emergency exits are working.
- **Site cleanliness:** making sure debris and waste are cleared to prevent accidents or delays.
- **Record-keeping:** writing down the findings so everyone knows what has been checked and what needs fixing.

Incident report



If something does go wrong in the workplace (like a near miss or accident), you might need to help complete an incident report. This provides details on what happened and how it can be prevented in the future.

An incident report usually includes:

- **Details of the incident:** what happened, when and where (e.g. a worker tripped over equipment and hurt their leg).
- **People involved:** names of people who were affected or saw the incident.
- **Injuries or damage:** description of any harm to people, equipment, or the environment.
- **Actions taken:** how the situation was handled (e.g. first aid).
- **Follow-up measures:** what will be done to stop similar incidents happening in the future.

BCITO
He Hunga Hanga Mātou
building people