



# Worksafe SmartMove Certificate

## Light Manufacturing Industry Module Study Guide



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# Light Manufacturing Industry

## Learning outcomes

1. Learn about common hazards encountered in the light manufacturing industry
2. Understand how to prevent injuries from common workplace hazards
3. Identify existing and potential hazards at a workplace and learn how to report and record them
4. Learn how to eliminate workplace hazards and reduce risks

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Light manufacturing includes activities such as cabinet making, furniture making and sheet metal work. Each year, the light manufacturing industry has a large proportion of serious workplace injuries in Western Australia.

Areas associated with working safety in the light manufacturing are:

- machinery and equipment
- forklifts
- electricity
- noise
- hazardous substances
- slips, trips and falls

## Machinery and equipment

A 15 year old was severely injured on his first day at work. He was changing a grinding wheel on an angle grinder when he accidentally switched on the machine. He received deep cuts to his hands that required microsurgery.

In light manufacturing, workers work with steel and composite materials like fibreglass. They use mechanical tools and processes, such as lathes, milling machines, robots, hydraulics and pneumatics, angel grinders and metal guillotines.

When working with or near machinery and equipment, the mechanical hazards you may encounter include:

- moving parts that can reach, hit or crush you such as booms or mechanical arms
- ejecting objects (parts, components, products or waste items) that may strike you
- being hit by mobile machinery and equipment, such as forklifts and pallet jacks.

Machine guarding can prevent or reduce access to dangerous areas of the machine. A guard can perform several functions such as protecting you from moving parts, containing ejected parts from the machine, and preventing emissions escaping.

## Examples of dangerous machines and equipment

### Angle grinders

Angle grinders are hand-held tools with a rotating disc used for grinding and polishing work. Angle grinders are designed for grinding, not cutting.

The most common angle grinder injuries are from metal particles lodging in the operator's eye. The most serious injuries are from kick-back, where the disc is thrust back violently towards the operator.



## Metal guillotines

Metal guillotines are used to cut sheets of metal. It is a legal requirement that metal guillotines must be guarded, operators must be trained and safe work procedures must be developed to prevent injuries.

The most common metal guillotine injuries are crushed or amputated fingers. Other injuries are from fingers jamming under the sheet of metal being cut, and strain injuries while handling large and awkward sheets of metal.



## Power presses

Power presses are large machines used to stamp, cut or form metal material using dies (or tools). It is a legal requirement that all dangerous parts of power presses be securely fenced or guarded to prevent access.

When the machine is unguarded or the guarding malfunctions, it can lead to serious injury, usually amputated finger tips.



## Lathes

Lathes are machines for shaping wood, metal and other materials. Fitting guards on metal lathes can help protect clothing and hands from the parts in motion.

The most common injury from lathes is slicing of hands and fingers, caused by hands being sucked into the machine.



## How do you stay safe when using mechanical equipment?

- Operate all machinery and equipment correctly and safely. Follow safe work procedures. Ask your supervisor to show you if safe work procedures are not available. Switch machinery and equipment off when not in use.
- Keep all guards in place. Any guard removed during cleaning must be replaced before you use the machine. It is there to protect you from moving parts.
- When first using machinery and equipment, you must be supervised until you are competent. You may be buddied up with and experienced workers so skills, knowledge and experience can be shared.
- Don't work alone with machinery unless it has a 'deadman' switch. This stops the machine straight away if the pressure on the hand or foot pedal or lever is released.
- Wear all PPE given to you and wear clothing that won't get caught.
- Keep the area around the machinery clean.

### **Remember:**

*The most common mechanical equipment injuries are to the hands and fingers.*

## Quiz – Machinery and equipment

1. The most common mechanical equipment injuries are to:
  - a. body and arms
  - b. hands and fingers
  - c. legs and feet
  - d. ears and eyes

2. Guards are fitted to machinery to:
  - a. protect you from moving parts
  - b. contain ejected parts from the machine
  - c. prevent emissions escaping
  - d. all of the above
  
3. Which of the following statements is not correct?
  - a. The most common injuries from metal guillotines are crushed or amputated fingers.
  - b. The most serious injuries from angle grinders are from kick-back, where the disc is thrust violently away from the object it is grinding and back towards the operator.
  - c. It is safe to work on unguarded power presses.
  - d. The most common injuries from lathes are slicing of hands and fingers, caused by hands being sucked into the machine.

## Forklifts

*An operator dismounted the forklift he was driving while it was still moving. He tripped forward towards the ground, breaking his fall by extending both hands out in front. As the operator was on the ground, the forklift continued rolling forward onto his left foot, causing multiple fractures.*

A forklift is a high risk load shifting machine that can lead to serious injuries or fatality if not operated properly. In Western Australia, forklift operators must be over 18, hold a license to perform high risk work and wear a seatbelt when operating the machine. The seatbelt is to keep the operator in the forklift in the event of a roll over.

In Western Australia, forklift operators must hold a licence to perform high risk work with the required classes of licence \*LO or \*\*LF endorsement.



\*LO stands for *Order-picking forklift truck*

\*\* LF stands for *Forklift truck*

The most frequently reported injuries from forklifts are:

- operators falling while getting into or out of forklifts
- operators suffering muscular stress due to a combination of inappropriate seating, vibration and manual handling
- operators and others being hit by falling objects while in forklifts
- co-workers or pedestrians being hit by moving forklifts or moving parts of a forklift
- co-workers or pedestrians being trapped or caught between a moving forklift, or moving parts of a forklift and a stationary object
- collisions between forklifts and other vehicles or stationary objects
- forklifts tipping over.

## What to look out for if you have forklifts in your workplace?

Forklift routes should be safe for both forklift operators and pedestrians. They should be clearly sign-posted to indicate vehicle movement, well lit, well maintained and free from damage to surfaces, obstructions, grease or slippery substances.

When forklifts are operated nearby, you should:

- understand everyone's tasks clearly
- wear a high visibility vest so that the forklift operator can see you
- be aware of your surroundings by looking out for other vehicles or forklifts using the area. Remember that operators cannot always see pedestrians
- not be distracted with:
  - talking or texting on a phone
  - walking around listening to music through earphones
  - day dreaming.

### **Remember:**

*Under safety laws in Western Australia forklift drivers or operators must be at least 18 years of age and be properly trained and licensed.*

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## Quiz – Forklifts

4. Who can operate the forklift?
    - a. Any worker
    - b. Truck drivers
    - c. Only trained and licensed workers
    - d. All of the above
  5. In Western Australia, it is a legal requirement that forklift drivers or operators must be at least \_\_\_\_\_ years of age and be properly trained and licensed.
    - a. 16
    - b. 18
    - c. 21
    - d. If you are capable, a forklift can be operated at any age.
  6. When forklifts are operated nearby in the workplace, you should:
    - a. be aware of your surroundings by looking out for other vehicles or mobile plant using the area
    - b. wear a high visibility vest
    - c. not talk or text on a phone
    - d. all of the above
-

## Electricity

Electric shocks happen when a person becomes part of an electrical circuit and the current flows through their body. Electricity passing through the body can cause convulsions (involuntary contractions of the muscles) and the heart to stop beating, as well as internal and external burns. It can also cause secondary injuries resulting from falls or collisions and fire hazards resulting from an electrical fault.

Incidents with electricity are usually caused by:

- broken equipment or dangerous working conditions such as frayed or broken power cords, plugs or power points
- installation and/or repairs being undertaken by an unqualified repairer
- absence of a residual current device (RCD) and lack of testing of RCDs
- a lack of experience, training or supervision.

### What is a residual current device (RCD)?

An RCD is a safety switch or life-saving device designed to prevent you from receiving an electric shock if you touch something live, such as a bare wire. If you are using portable electrical equipment and extension leads at work, it must have an RCD installed at the switchboard, built into a fixed socket or through a portable RCD outlet. The RCD must be regularly tested. This is a legal requirement.

### Lockout procedure

When cleaning, maintaining or adjusting machinery and equipment, a lockout procedure is required to safeguard the workers who carry out the tasks. Lockout is a safety procedure to ensure that dangerous machines and equipment are properly shut off and are not able to be started up again prior to the completion of the maintenance or repair work.

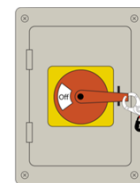
The lock procedure is used when:

- servicing or repair work places in danger
- a machine guard is removed for servicing.

There are three specific steps involved in locking out machines and equipment. These steps are: lock, tag and test.

#### Step 1: Lock

This means the electrical circuits must be shut down and locked. There are a wide range of locks that can be used in this process. These can be: switches with a built-in lock; chains and jaws or hasps.



#### Step 2: Tag

Tag refers to the information tag attached to a power source or piece of equipment warning others not to operate it. Tags have information about the name of the person working on the equipment, the time and date of the work and the equipment that's being isolated. Types of tags are commonly used in the lockout procedure are danger tags and out of service tags.





### Step 3: Test

This means that all power sources need to be checked with proper test instruments to make sure everything is right before going ahead with work.



### How can you keep safe around electricity?

- Understand the lockout procedure. Do not operate or use machinery and equipment that is being logged and/or tagged.
- Always switch off electrical equipment at the power point before you pull out the plug.
- Use equipment properly. Regularly check and clean the equipment that you use and follow the equipment's operating instructions.
- Report any breakdowns or faulty equipment to your employer. It is the responsibility of your employer to make sure equipment is in good working order.
- Don't overload power boards with lots of appliances. Only use power boards fitted with overload protection.
- Be aware of the locations of all safety switches and what equipment they cover in case equipment needs to be switched off in an emergency. You may ask this question during your induction.
- Know emergency procedures for electrical hazards.
- Leave repairs to the experts. When electrical repairs are undertaken by people who are not qualified, serious and fatal injuries can occur.

#### **Remember:**

*Your employer must provide residual current devices (RCDs) or safety switches to reduce the risk of electric shock and electrocution.*

*Never use a machine that has a lock or a tag on it, which means someone is maintaining or working on it or it is unsafe.*

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### Quiz – Electricity

7. A residual current device (RCD):
  - a. can be a circuit breaker
  - b. is a safety switch to prevent electrical shock
  - c. is required to be installed at the switchboard, built into a fixed socket or through a portable RCD outlet at work
  - d. all of the above
8. There are three specific steps in locking out machine and equipment. These steps are:
  - a. lock, look and tag
  - b. lock, tag and test
  - c. tag, do and test
  - d. lock, test and try

9. A lockout procedure is used whenever:
    - a. the servicing work to be done places workers in danger
    - b. a machine guard is removed for servicing
    - c. repair work to be done places workers in danger
    - d. all of the above
- 

## Manual tasks

Manual tasks are any activity or sequence of activities that require a person to use their body (musculoskeletal system) physically to perform work.

The most common injuries and health issues that can arise from performing manual tasks are musculoskeletal injuries. In the manufacturing industry, body-stressing injuries as a result of performing manual tasks is highest cause of serious injury.

Examples of musculoskeletal injuries are:

- sprains and strains of muscles, ligaments and tendons (e.g. back strain)
- joint injuries
- disc protrusion or disc herniation of the back
- nerve injury or compression
- muscular and vascular disorders (e.g. carpal tunnel syndrome or repetitive strain injury)
- soft tissue injuries.

## How does performing a manual task result in injury?

Contrary to popular belief, it's not just the weight of an object that creates the risk of musculoskeletal injuries. Workers are at risk of suffering injuries due to overexertion, awkward positions, applying pressure on one part of the body, performing the same action quickly and repeatedly and lifting heavy objects.

Common hazardous manual tasks in this industry include welding, deburring, grinding, lifting and transferring metal, unloading raw materials, transporting materials on the shop floor, process and assembly work at workstations, packing stillages and loading and handling finished products.

## What can your employer do to keep you safe?

Your employer has a responsibility to provide and maintain a safe workplace. If you are about to perform hazardous manual tasks and you are unsure how to go about it, ask your employer or supervisor for assistance.

Your employer should provide you with *\*risk management* and *\*\*task specific training* where hazardous manual tasks have been identified at your workplace.

*\*Risk management is the steps taken to manage workplace hazards described as **SAMM** – Spot the hazard; Assess the risk; Make the changes; Monitor and follow-up.*

*\*\*Task specific training is the practicing of actual tasks that will be performed.*

Task specific training should be provided:

- during induction to a new task
- as part of your refresher training
- when work tasks are about to be changed or new ones introduced.

After the training, you should be able to:

- recognise the risks and the sources of those risks and, in discussion with your employer or supervisor, decide the best way to minimise them
- prepare the workplace layout and surroundings to perform manual tasks safely
- prepare the load for manual handling, where applicable
- organise the task and work flow to minimise the risk of injury
- use relevant mechanical aids and handling devices provided to you
- use tools or equipment provided to you.

There is a variety of ways you can be trained to perform hazardous manual tasks. Training methods include a buddy system, demonstrations, observation, staff meetings, toolbox talks and practice sessions.

**Remember:**

*Speak up if you think the task is too much for you. The effects of injuries from manual tasks can last a lifetime.*

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## Quiz – Manual tasks

10. The most *common* health problems that can arise from hazardous manual tasks are:
  - a. musculoskeletal injuries
  - b. cold and flu
  - c. bone cancer
  - d. food allergies
11. When should you receive task specific training to perform manual tasks?
  - a. During induction to the task
  - b. As part of your refresher training
  - c. When work tasks are about to changed or introduced
  - d. All of the above
12. If you are not sure how to perform a hazardous manual task safely, you should ask your employer or supervisor.
  - a. True
  - b. False

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## Noise

Noise can be a workplace hazard. Noisy power tools such as routers, planers, cutting tools, sanding tools and machines are the main source of noise in manufacturing. They can generate noise levels that can cause permanent hearing loss.

The hazard noise poses are dose related. The higher the dose of noise, the greater the risk to the worker's hearing. The noise dose is dependent on three factors:

- intensity/loudness: measured by a noise level meter and is described as decibels (dB).
- frequency: the number of sound vibrations in one second and is measured in hertz (Hz).

- duration: the length of time workers have been exposed to noise.

In Western Australia, the law sets a workplace exposure standard averaged over eight hours to be 85 dB(A) (e.g. the typical sound levels of a front-end loader), or a peak noise level of 140 dB (e.g. the impact noise of sledge-hammering or the explosive noise of a gunshot). Any noise exposure above 140 dB can create almost instant damage to hearing.

If you have to raise your voice to be heard, the noise level is likely to be 85 dB(A) or more.

## What can your employer do?

Where the exposure standard is exceeded, your employer must provide solutions to noise hazards such as:

- choosing quieter equipment
- keeping equipment in good working order
- arranging the workshop layout so noisy processes are located away from workers not involved in their operation
- using portable noise barriers around static equipment like generators and concrete pumps
- scheduling the noisy work for times when as few workers as possible are present
- using job rotation to alternate noisy tasks with quiet ones
- providing you with hearing protectors (e.g. earplugs and earmuffs) to use along with all other control measures.

## What can you do to save your hearing?

To safeguard your hearing, you must wear the hearing protectors that have been given to you. It might seem like there is nothing wrong with your hearing, but the damage is done without you noticing it.

Hearing protectors, like earplugs and earmuffs, should be regularly cleaned, repaired and stored near noisy areas. Make sure you wear them! It might seem like there is nothing wrong with your hearing, but the damage is done without you noticing it.

### **Remember:**

*The most important factor for effectiveness of hearing protection is wearing it!*

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## Quiz – Noise

13. Noise levels are measured in:

- a. decimals or dM
- b. decibels or dB
- c. millimetres per second
- d. dBs per second

14. To prevent hearing loss at work, the law sets a workplace exposure standard averaged over eight hours to be \_\_\_\_\_ dB(A).

- a. 85
- b. 95
- c. 140
- d. 200

15. The most important factor for effectiveness of hearing protection devices is:
- style
  - appearance
  - colour
  - wearing it
16. What controls at your workplace can reduce noise exposure?
- keep equipment in good working order
  - keep noisy work away from other workers
  - using sound absorbing material
  - all of the above
- 

## Hazardous substances

*A young worker received third degree burns to half of his body at a woodworking factory. He spilt solvent on his overalls when trying to pour 20 litres of solvent into another container. The solvent caught fire and his overalls were set alight.*

### What is a hazardous substance?

A hazardous substance can be any solid substance, liquid, gas or dust that may cause you harm. Hazardous substances shouldn't be a problem most of the time, but things can go wrong if you:

- get them on your skin
- eat or drink them by mistake
- breathe them in
- mix substances so they become deadly
- mistake one substance for another.

The chemicals used in woodworking can cause a number of health problems and can be dangerous. For example, the substances used to treat, preserve, paint, remove paint, varnish, stain, lacquer, clean, seal and glue furniture and wood products are considered hazardous.

### Example of hazardous substances in light manufacturing

#### Solvents

These are used as cleaners or degreasers and as ingredients in paints, inks, glues and varnishes. They are used for cleaning wood products and stripping paint. Solvent droplets, or vapours, irritate the eyes, nose and throat. When inhaled, solvent fumes have a narcotic effect. Symptoms include dizziness, headaches, light-headedness and nausea. At high concentrations, they can cause unconsciousness and damage to the nervous system, liver and the kidneys.

#### Resin and coatings

Resins and coatings are used for decorative finishes and to protect timber. Isocyanate curing agents can cause asthma. Epoxy resins can cause dermatitis and asthma.

#### Glues and MDF

PVA wood glues used to make joints may cause irritation to the skin. Urea formaldehyde glues are commonly used for laminating and gluing veneers and in the manufacture of MDF and chipboard.

They irritate the eyes, nose and throat and sometimes cause shortness of breath, wheezing, coughing and tightness in the chest.

### Spray paints

Spray paints may contain harmful substances that can cause dermatitis, and high or frequent exposure to paints could damage your brain, reproductive system, kidneys or liver, and oil-based paints are usually flammable.

### Fibreglass

Fibreglass is a synthetic fibre used for insulation, surfboards, pools, boats, etc. It can cause headaches, nausea and dizziness, skin and eye burns and nose and throat irritation. Long term use may cause slower reaction times and possible genetic damage.

## How can you keep safe from hazardous substances?

- Read the label and look for warning pictograms and signs. Always follow the danger safety warnings.
- Read the SDS (safety data sheet) for more information about a product and how to use it safely. Your employer must provide (or have available) safety information documents for any substances or products that are hazardous.
- Check the hazardous substance register at your workplace. It is a legal requirement that your employer keeps a current register of each hazardous substance that may be used or stored in the workplace.
- Make sure you follow safe work procedures.
- Don't eat, drink or smoke when you are using or are near to a hazardous substance and dangerous goods.
- Don't keep food or drink near the hazardous substance.
- Wash your hands, face and other exposed areas with soap and water before going to the toilet or eating and drinking.
- Always use the PPE such as appropriate respirators, goggles, gloves and protective clothing given to you when around or handling hazardous substances. To protect yourself, you should wear gloves when cleaning with solvent.
- Know what to do and where to go if a substance affects you. Know the location of the first aid facilities. If you don't know, check with your employer.
- Keep ignition sources away from any chemicals that are potentially flammable.
- Maintain good housekeeping standards. Declutter and avoid build-up of combustible materials like wooden pallets, cardboard boxes, dry leaves, etc. around any chemical storage.
- Don't smoke near solvents and paints. Most solvents used in the woodworking industry are highly flammable.

## Dust hazards

### Silica dust

The recent health monitoring of workers in the stone benchtop industry in Australia has found numerous cases of workers suffering silicosis caused by inhaling silica dust.

Silica (or silicon dioxide – SiO<sub>2</sub>) is very common mineral found in sand, stone, concrete and mortar. It is used to make a variety of products, including composite stone to fabricate kitchen and bathroom benchtops, bricks, tiles and some plastics. Composite stone contains more than 80% silica. The processes of cutting, grinding, sanding, polishing and installation produce dust.

There are serious health risks caused by exposure to silica dust for workers. It only takes a very small amount of airborne silica dust to create a health hazard. Cumulative exposure to silica dust may cause serious and fatal health effects including silicosis, lung cancer and chronic lung conditions.

### *What can you do to be safe from silica dust?*

If you are working with material that may contain silica, your employer must provide you with information, training and instruction about:

- the risks associated with the work and exposure to silica dust
- the control measure at the workplace
- the correct use and maintenance of RPE (respiratory protective equipment)
- health monitoring of workers.

Use the PPE and RPE given to you. For example, safety goggles suitable for dust protection and masks that cover your nose and mouth. RPE must be suitable and comfortable, be tested for fit, and well maintained.

#### **Remember:**

*Silica dust is harmful. If you are required to work with silica and be exposed to silica dust, talk to your employer about the control measures and how to work safely. You must be given RPE and PPE.*

### **Wood dust**

Woodworking activities produce dust from machining operations (e.g. sawing, routing and turning) and hand or machine sanding.

High exposure to wood dust may cause:

- skin disorders such as allergic dermatitis
- asthma and impaired lung function
- nose irritation, rhinitis (runny nose), violent sneezing, blocked nose and nose bleeds
- throat irritation
- sore and watering eyes
- chemicals from some types of woods can cause headaches, breathlessness, giddiness, cramps and irregular heartbeat.

### *What can you do to be safe from wood dust?*

- If your work activities produce wood dust, your workplace must have an industrial ventilation system to reduce dust.
- Keep tools and blades sharp and in good working order. Dull tools can cause more dust to be released into the air.
- Wear PPE and RPE (such as respirators and goggles), and protective clothing given to you.
- Practice good hygiene by regularly washing your hands and face.
- Avoid dust accumulation in work areas to help prevent combustible dust explosions. Vacuum that has a HEPA filter, and use wet clean-up methods.
- Ask for training to work with woods safely. Check with your employer or experienced workers to find out what type of wood you'll be working with and all the hazards associated with that specific type.

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## **Quiz – Hazardous substances**

17. Wood dust is not harmful when inhaled as it is organic and natural.

- a. True
- b. False

18. Respirators prevent harmful fumes, dust, vapours, and gases from entering the:

- a. respiratory system
- b. blood stream

- c. nervous system  
d. none of the above
19. What are the documents that provide information about hazardous substances called?
- a. Safety data sheet  
b. Label  
c. Hazardous substance register  
d. Read me sheet
20. When cutting, grinding, sanding and polishing stone bench tops, workers may be exposed to \_\_\_\_\_.
- a. silica dust  
b. wood dust  
c. dust mites  
d. none of the above
21. Which of the following statements is correct?
- a. To keep safe, wear gloves when cleaning with solvent.  
b. Most solvents used in the woodworking industry are highly flammable.  
c. To know how to handle hazardous substances safely, follow all directions on the SDS.  
d. All of the above.
22. Resins and coatings are used for decorative finishes and to protect timber. Exposure to epoxy resins can cause \_\_\_\_\_ and \_\_\_\_\_.
- a. dermatitis, asthma  
b. high fever, cough  
c. cough, dermatitis  
d. asthma, high fever

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## Slips, trips and falls

*A 16-year-old school student undergoing a traineeship program at a manufacturing workplace had three fingers severely crushed. The student was in the process of cutting when he slipped, lost his balance and fell forward, inadvertently placing three fingers into the operational area of the machine. At the same time the student accidentally activated the foot control, bringing the machine's clamping device down and crushing his fingers.*

Slips, trips and falls are common cause of injury found in the light manufacturing industry. They can result in serious harm and lengthy time off work. These types of injuries can also affect young workers in their everyday social and school lives and may mean they cannot play sport or engage in physical activities or hobbies.

A slip, trip or fall may cause injuries, including:

- broken bones when colliding with an object or hitting the ground
- cuts if it occurs near sharp objects



- sprains or strains.

## What cause slips, trips and falls?

Common causes include:

- slippery floors from mud, oil or water spills
- unstable, loose or uneven surfaces like broken tiles or torn carpet
- wearing unsuitable shoes
- objects on the floor such as boxes, bag or equipment left in walkways
- poor lighting
- stairs or steps, especially when carrying items that obscures the view of the floor
- incorrect use of steps or ladders
- being hit by falling objects.

## What can your employer do to prevent slips, trips and falls?

Your employer should:

- allow safe movement in the workplace, including entries and exits that are free of obstructions
- ensure floors and surfaces in the workplace are well-maintained and installed with task appropriate surfaces
- provide adequate lighting for safe movement
- ensure sufficient space to work
- maintain workplaces to keep them in a clean and tidy condition
- provide tools and equipment to assist you to work safely
- ensure workers wear suitable footwear with appropriate treads that are kept clean
- provide information, instruction, training and supervision so that workers are not exposed to slip, trip and fall hazards.

## How can you prevent slips, trips or falls at work?

Understand the risks associated with slips, trips and falls and try to minimise them. For example, you should:

- wear suitable shoes with treads that are kept clean – incorrect footwear can cause slips and trips
- clean up spillages straight away and dry the floor to ensure the surface is not left wet – don't leave spills for someone else to clean up
- remove waste/rubbish regularly from work areas
- keep walkways clear of obstacles especially during busy work times
- Keep your work area tidy so there is nothing to fall over (e.g. power cords, trolleys)
- carry items only at a height that you can safely see over to avoid trip hazards and bumping into things
- attend training on how to prevent slips, trips and falls in your workplace.

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## Quiz – Slips, trips and falls

23. What may cause slips, trips and falls at a workplace?

- a. Slippery floors
- b. Objects on the floor such as boxes, bags or equipment left in walkways
- c. Poor lighting
- d. All of the above

24. You are less likely to slip if you wear shoes with non-skid soles and flat heels.
- True
  - False

## Spot the hazards

### Joe's Custom Design Furniture

There are 6 hazards in this area. Try and find them all.



### Hazard notebook

Fill in the hazard notebook.

#	Spot the hazard	Assess the risk	Make the change	Monitor and follow-up
1	The extracting fan is blocked by a pot plant	Moderate	Move the plant so that the fan is completely unobstructed	Make sure the fan is always unobstructed
2				
3				
4				
5				
6				

## Light manufacturing industry – Knowledge quiz

1. The most common mechanical equipment injuries are to:
  - a. body and arms
  - b. hands and fingers
  - c. legs and feet
  - d. ears and eyes
  
2. Guards are fitted to machinery to:
  - a. protect you from moving parts
  - b. contain ejected parts from the machine
  - c. prevent emissions escaping
  - d. all of the above
  
3. Which of the following statements is not correct?
  - a. The most common injuries from metal guillotines are crushed or amputated fingers.
  - b. The most serious injuries from angle grinders are from kick-back, where the disc is thrust violently away from the object it is grinding and back towards the operator.
  - c. It is safe to work on unguarded power presses.
  - d. The most common injuries from lathes are slicing of hands and fingers, caused by hands being sucked into the machine.
  
4. Who can operate the forklift?
  - a. Any worker
  - b. Truck drivers
  - c. Only trained and licensed workers
  - d. All of the above
  
5. In Western Australia, it is a legal requirement that forklift drivers or operators must be at least \_\_\_\_\_ years of age and be properly trained and licensed.
  - a. 16
  - b. 18
  - c. 21
  - d. If you are capable, a forklift can be operated at any age.
  
6. When forklifts are operated nearby in the workplace, you should:
  - a. be aware of your surroundings by looking out for other vehicles or mobile plant using the area
  - b. wear a high visibility vest
  - c. not talk or text on a phone
  - d. all of the above

7. A residual current device (RCD):
  - a. can be a circuit breaker
  - b. is a safety switch to prevent electrical shock
  - c. is required to be installed at the switchboard, built into a fixed socket or through a portable RCD outlet at work
  - d. all of the above
  
8. There are three specific steps in locking out machine and equipment. These steps are:
  - a. lock, look and tag
  - b. lock, tag and test
  - c. tag, do and test
  - d. lock, test and try
  
9. A lockout procedure is used whenever:
  - a. the servicing work to be done places workers in danger
  - b. a machine guard is removed for servicing
  - c. repair work to be done places workers in danger
  - d. all of the above
  
10. The most *common* health problems that can arise from hazardous manual tasks are:
  - a. musculoskeletal injuries
  - b. cold and flu
  - c. bone cancer
  - d. food allergies
  
11. When should you receive task specific training to perform manual tasks?
  - a. During induction to the task
  - b. As part of your refresher training
  - c. When work tasks are about to be changed or introduced
  - d. All of the above
  
12. If you are not sure how to perform a hazardous manual task safely, you should ask your employer or supervisor.
  - a. True
  - b. False
  
13. Noise levels are measured in:
  - a. decimals or dM
  - b. decibels or dB
  - c. millimetres per second

- d. dBs per second
14. To prevent hearing loss at work, the law sets a workplace exposure standard averaged over eight hours to be \_\_\_\_\_ dB(A).
- 85
  - 95
  - 140
  - 200
15. The most important factor for effectiveness of hearing protection devices is:
- style
  - appearance
  - colour
  - wearing it
16. What controls at your workplace can reduce noise exposure?
- keep equipment in good working order
  - keep noisy work away from other workers
  - using sound absorbing material
  - all of the above
17. Wood dust is not harmful when inhaled as it is organic and natural.
- True
  - False
18. Respirators prevent harmful fumes, dust, vapours, and gases from entering the:
- respiratory system
  - blood stream
  - nervous system
  - none of the above
19. What are the documents that provide information about hazardous substances called?
- Safety data sheet
  - Label
  - Hazardous substance register
  - Read me sheet

20. When cutting, grinding, sanding and polishing stone bench tops, workers may be exposed to \_\_\_\_\_.
- a. silica dust
  - b. wood dust
  - c. dust mites
  - d. none of the above
21. Which of the following statements is correct?
- a. To keep safe, wear gloves when cleaning with solvent.
  - b. Most solvents used in the woodworking industry are highly flammable.
  - c. To know how to handle hazardous substances safely, follow all directions on the SDS.
  - d. All of the above. (✓)
22. Resins and coatings are used for decorative finishes and to protect timber. Exposure to epoxy resins can cause \_\_\_\_\_ and \_\_\_\_\_.
- a. dermatitis, asthma
  - b. high fever, cough
  - c. cough, dermatitis
  - d. asthma, high fever
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