

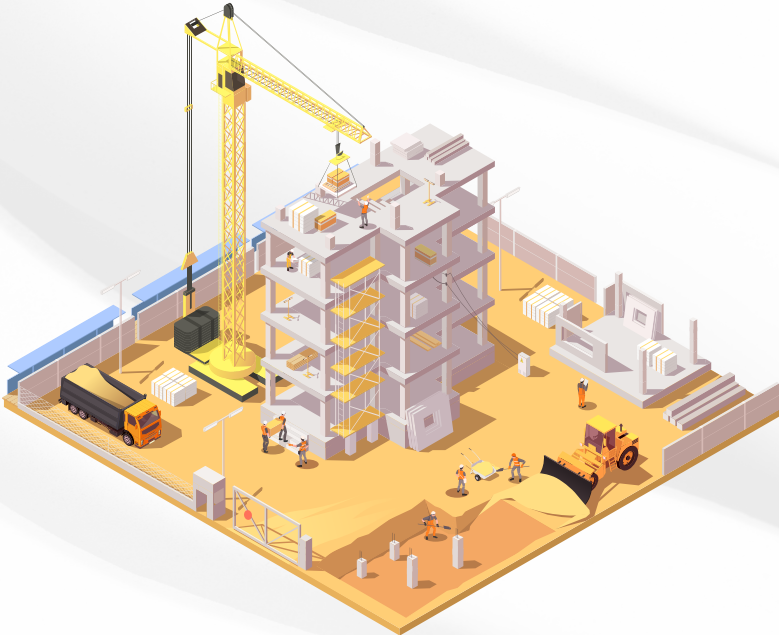


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كصيحتن دان عالم سكيتر

Safety, Health and Environment
National Authority

WORKSITE SAFETY

HANDBOOK



OBJECTIVE AND PURPOSE

The goal of this handbook is to provide small construction businesses and subcontractors with a practical, easily accessible safety resource that helps them prioritise safety, stay compliant with relevant regulations, and minimise accidents on job sites. It is designed to make safety practices straightforward, achievable, and seamlessly incorporated into everyday operations, leading to safer work environments, better productivity, and a reduction in work-related injuries and fatalities.

This acts as general guidance and should not be construed as implying any liability nor should it be taken to encapsulate all the responsibilities and obligations of Principals, Occupiers, Employers and Employees as well as Self-employed persons under the Workplace Safety and Health Act, Cap 277 and its relevant regulations thereunder.

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GENERAL MANAGEMENT



GENERAL MANAGEMENT

- Have all workers, visitors and other persons who enter the worksite attended safety induction to understand the common hazards at this site?
- Are all workers trained, competent and fit to do the job safely without putting themselves or others at risk?
- Have supervisors given clear information and instructions to workers regarding how to do the job safely?
- Have all workers been provided with personal protective equipments that is suitable for their work activities such as a safety harness with double lanyard for work at height?
- Are toolbox talks being conducted before starting any work activities and are workers involved in the discussion?
- Are all working areas and walkways level free from obstructions such as stored material and waste?
- Is the worksite tidy and are materials stored safely?
- Are there proper arrangements for collecting and disposing of waste materials?
- Is the work area adequately lit? Is there sufficient additional lighting provided when work is carried on after dark?
- Has a WSH committee been established and implemented for workplaces with 50 or more persons at work?

CONTRACTING AND SUBCONTRACTING (DUTY AS PRINCIPAL UNDER SECTION 14 & 14A OF THE WSH ACT, CAP 277)

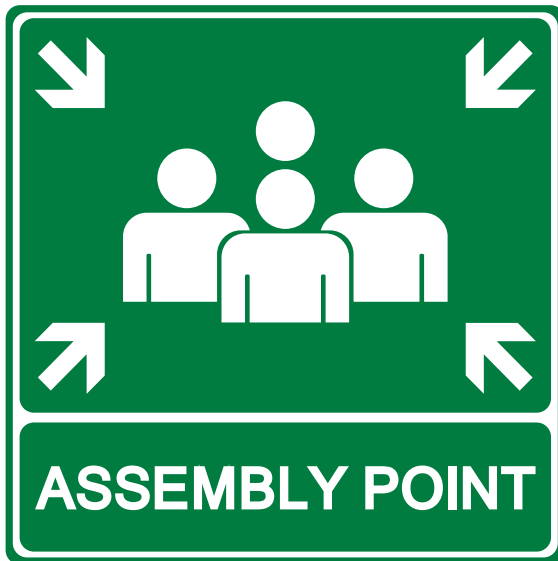
The following questions are provided for Principals to assess the suitability of the contractors and sub-contractors:

- Do the contractors and sub-contractors have the expertise to carry out their work safely?
- Have you regularly checked the safety performance of the contractors and sub-contractors?
- Have you provided the contractors and subcontractors with sufficient information they need for their work?
Have you provided all contractors and sub-contractors with sufficient tools, machinery and plant to carry out their tasks safely such as safe scaffolding, appropriate plant and access to amenities?
- Do the contractors and sub-contractors have their method statement and risk assessment for their work activities?

PREPARING FOR EMERGENCIES

- Are there standard emergency procedures in place?
- Are people onsite aware of these emergency procedures and who to contact in case of emergency?
- Is there a designated assembly point in place and is it at a safe distance from the construction activity?
- Have the evacuation routes been identified and are free from obstruction or blockage?
- Have you ensured that there is a general alarm procedure is in place?
- Have you ensured fire drills and emergency exercises have been conducted and recorded for different scenarios?
- Has the rescue plan been verified?
- Have you ensured that the location of all fire extinguishers is free from obstruction or blockage?
- Have you ensured that the fire extinguishers have been serviced, maintained and tagged at intervals not exceeding one year by a competent person?
- Do you conduct a visual inspection of the fire extinguishers (weekly)?

- Have you ensured that a sufficient number of nominated and trained staff/employees are available as first aiders, fire marshals and other relevant roles?
- Have the details of the nominated and trained staff/employees as first aiders, and fire marshals suitably posted in the workplace?
- Is there a first aid box available at prominent locations?



PROTECTION OF THE PUBLIC

Public is defined as anyone who is not involved in the work activity, and they are not authorised to enter the perimeter at all times.

- Is the worksite fenced off or otherwise protected from the public?
- When work has stopped for the day:
 - Are the gates secured?
 - Is the perimeter fencing secured and undamaged?
 - Are excavations and openings securely covered or fenced off?
 - Are all equipment's immobilized to prevent unauthorised use?
 - Are bricks and materials safely stacked or stored?
 - Are flammable or dangerous substances locked away in secure storage places?

- Are dropped/falling objects properly secured to ensure the objects do not fall outside the worksite boundary, for example, by using toe-boards, brick guards, safety netting, and canopy (covered walkways)?
-

- For the tower crane, is the collapse zone (area where the counterweight, jib, machinery, etc. are located) within the boundary of the worksite and the public is not exposed to risk of dropped objects?
-

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Has adequate personal protective equipment, such as a safety helmet, safety boots, safety spectacles, safety gloves and ear protection, been provided?

Has additional personal protective equipment for a specialised job provided? e.g. safety harness, dust mask, safety goggles, etc.

Is the personal protective equipment in good condition and worn by all who need it?

Have workers been trained in the safe use, care and storage of personal protective equipment?

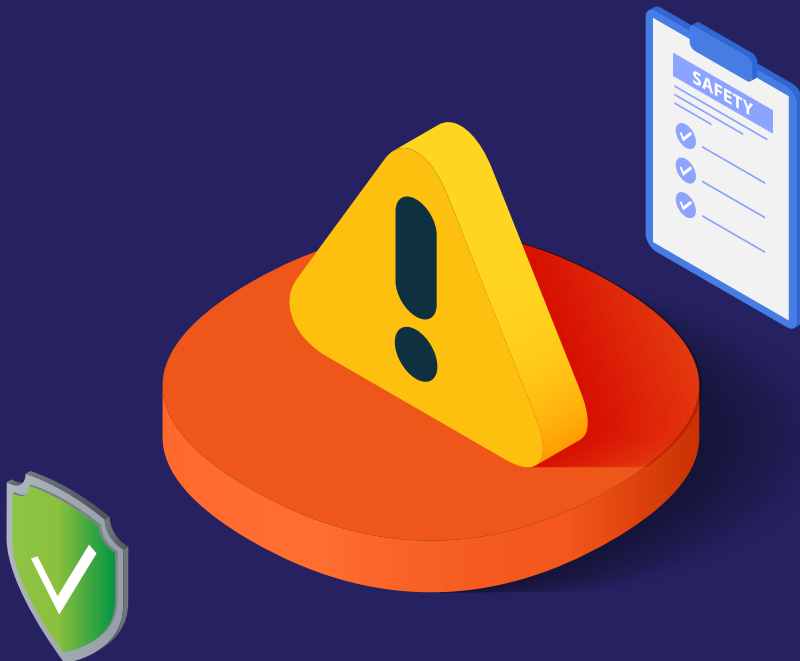
Do workers wear their protective equipment, and do they wear it correctly so that it fits?

Are the PPEs' expiries monitored?



HAZARDS AT CONSTRUCTION SITE

This chapter provides questions to help manage the hazards and risks at the worksite.

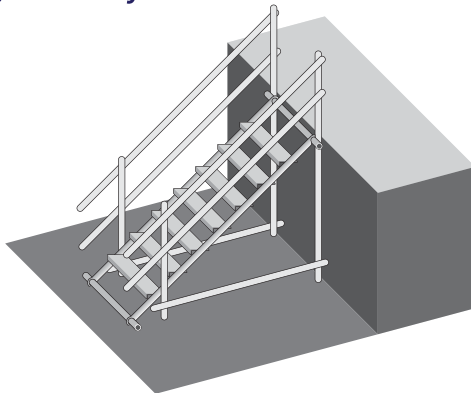


WALKWAYS, SAFE ACCESS AND EGRESS

- Are all means of access and egress to the worksite is safe and in good condition so everyone can reach their place of work safely, e.g. roads, gangways, passageways, passenger hoists, staircases, ladders and scaffolds?
- Can everyone get to their place of work safely and work there safely?
- Are all access routes well-defined with signages, in good conditions and clear of debris and material?
- Is the worksite tidy? Are materials segregated and stored safely?
- Is there sufficient and suitable lighting for access and egress? Can people perform their work safely?

WORKING AT HEIGHT

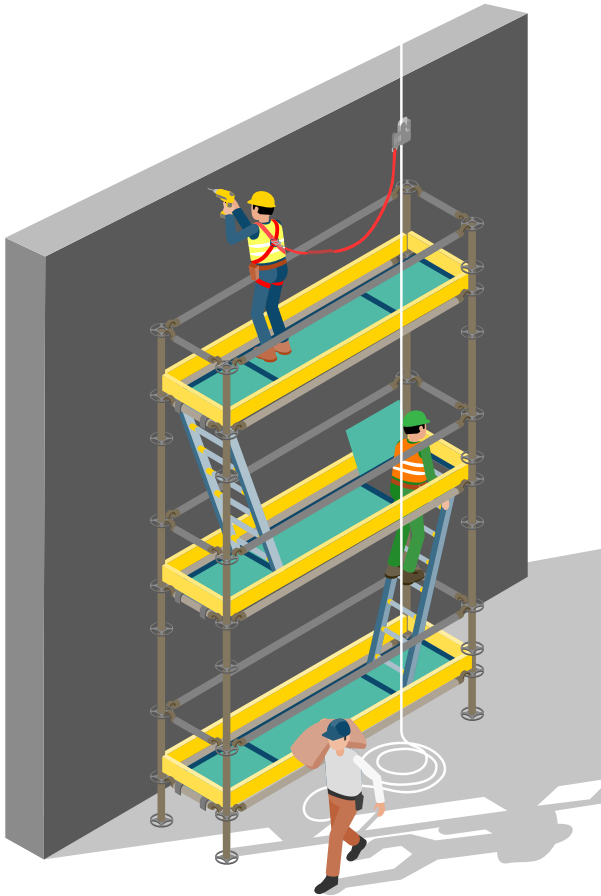
- Have you planned the work properly and identified suitable precautions to ensure work can be carried out safely (precautions may include safe access, management of hazards such as fragile roof surface, open hole at the ground, unprotected edge, adverse weather, etc.)?
- Can you avoid working at height by conducting the work from the ground?
 - If work cannot be done from the ground, ensure that there are fall preventions controls in place such as:
 - Are there guard rails or equivalent protection to stop falls from open edges on scaffolds, mobile elevating work platforms, buildings, gangways, excavations, etc.?
 - Are holes and openings securely guard railed, provided with an equivalent standard of edge protection or provided with fixed, clearly marked covers to prevent falls?
 - Have the workers been supervised and have they received clear information and instructions on how to work at height safely?



SCAFFOLDING

- ❑ Are scaffolds erected, altered and dismantled by competent persons?
- ❑ Is there safe access to the scaffold platform?
 - Are all uprights provided with base plates (and where necessary; timber sole plates) or prevented in some other way from slipping or sinking?
- ❑ Are all the standards, ledgers, braces, toeboards, guardrails and transom in position?
- ❑ Is the scaffold sufficiently secured to the building or structure in enough places to prevent collapse?
 - Are there adequate guard rails and toe boards or an equivalent standard of protection at every edge from which a person could fall at any height?
- ❑ Are the working platforms fully boarded and arranged in a way to avoid tipping or tripping?
 - Are there effective barriers or warning notices in place to stop people from using an incomplete scaffold e.g. where working platforms are not fully boarded?
- ❑ Has the scaffolding been designed and constructed to cope with the load of the materials on it and are the distributed evenly?

- Has the competent person inspected the scaffolding regularly e.g. at least once a week, always after it has been substantially altered, damaged and following extreme weather?
- Is the result of the inspection recorded?



USE OF MOBILE ELEVATING WORK PLATFORM (MEWP) FOR WORK AT HEIGHT

- Is the operator trained and competent?
 - Has the Mobile Elevating Work Platform (MEWP) been pre-inspected before use for any visible damage, ensure that all safety systems are operational, and have inspected the platform, guardrails, and controls?
- Has the work plan and the risk been assessed before using the MEWP for the required height, ground conditions, overhead obstacles, weather conditions, and power lines?
- Is the operator wearing suitable PPE, including the use of a safety harness with a lanyard secured at the designated anchor point?
 - Has the work area been well-defined and cordoned off to prevent unauthorized access, with the use of barriers, cones, or caution tape to establish a safe perimeter?
- Has the MEWP operated within its limit as specified by the manufacturer (overloading can lead to instability and equipment failure therefore consider the combined weight of workers, tools, and materials when calculating the load)?
- Has the MEWP been examined by the Authorised Examiner and does it have a valid test certificate?

SAFE USE OF LADDERS AND STEP LADDERS

- Are ladders including stepladder the right means of access for the job?
- Are all ladders including stepladder in good condition?
- Are they secured to prevent them from slipping sideways or outwards?
- Do the ladders rise at a sufficient height above their landing place?
 - If yes, are you practicing a buddy system?
 - If not, are there any other hand-holds available?
- Are the ladders positioned so that users do not have to stretch over or climb over obstacles to work?
- Does the ladder rest against a solid surface that is not fragile or made of insecure materials?
- Are three points of contact at the working positions maintained (two feet and one hand)?
- Are the locking devices for the step ladder engaged?
 - Is a distance of 1 unit maintained for every 4 units height for maximum stability when the ladder is positioned against the wall (for e.g. the ladder should be 1 foot away from the wall for every 4 feet the ladder rises)?

WORKING ON THE ROOF

- Are there enough barriers and other edge protection to stop people or materials falling from roofs?
- Do the roof barriers provide safe hand and foot holds? If not, are crawling ladders or boards provided and used?
During industrial roofing, are precautions taken to stop people from falling from the lead edge of the roof or from fragile or partially fixed sheets which could potentially give way?
- Are suitable barriers, guard rails or covers, etc. provided where people pass or work near fragile material such as asbestos cement sheets and roof lights?
- Are crawling boards provided where work on fragile materials cannot be avoided?
Are people excluded from the area below the roof work?
- If this is not possible, have additional precautions been taken to stop debris falling onto them such as safety net, toe-board, canopy (walkway), etc.?

LIFTING OPERATIONS

- Is everyone made aware of and fully understood the lifting and hoisting procedures applicable to the lift?
- Has everyone attended the toolbox talk?
 - Has a pre-use inspection of the lifting equipment been carried out and are the lifting accessories tagged or marked with:
 - Safe Working Load
 - A unique identification number
 - A valid certification date
- Are all safety devices functional?
- Is everyone aware of the lifting supervisor (Person In Charge) of the lift?
- Is everyone competent and aware of his or her tasks?
- Is there a current “Lift Plan” and Job Safety Analysis (JSA) and does everybody understand the job and precautions to be taken?
- Is everyone aware of the environmental limits (e.g. maximum permissible wind speed) for the lift?
- Is the lift area controlled and clear of people if the load falls or swings?
- Are signalling methods and communication used agreed and clear to you?

MATERIAL HOIST

- Is the hoist protected by a substantial enclosure to prevent someone from being struck by any moving part of the hoist or from falling down the hoistway?
- Are gates provided at all landings, including the ground level?
- Are the gates kept shut except when the platform is at landing?
- Are the controls arranged so that the hoist can be operated from one position only?
- Is the hoist operator trained and competent?
- Is the hoist's safe working load clearly marked?
- If the hoist is used for materials only, is there a warning notice on the platform or cage to stop people from riding it?
- Is the hoist inspected weekly and thoroughly examined every six months by an Authorised Examiner?
- Are the results of the inspection recorded?

MANUAL HANDLING

- Can the movement of loads be eliminated, for example,
 - can the task be re-designed to avoid moving loads or could delivery be arranged to the point of use?
 - Can the operations be automated?
- Can mechanical devices be used instead? For e.g.
 - trucks, barrows, rollers, handling aids, forklift, and sack trucks?
- Is there a suitable and sufficient risk assessment of the
 - risk of injury of any hazardous manual handling operations that cannot be avoided?
- Is the risk of injury for manual handling so far as is reasonably practicable? This can be done by
 - improvements to the task and load (for e.g. reducing the load size and/or distance travelled; consider a team load).
- Have the workers been provided with sufficient
 - information, training and instruction on the best lifting technique?



EXCAVATION

- Is there an adequate supply of timber, trench sheets, props or other supporting material available before excavation work could begin?
- Is the material strong enough to support the sides of the excavation?
- Is a safe method being used for putting in the support, i.e. one that does not rely on people working within an unsupported trench?
- If the sides of the excavation are sloped back, is the angle of the slope sufficient to prevent collapse?
- Where the depth of any excavation in a worksite exceeds 4 meters, is there adequate shoring by underpinning, sheet piling, bracing or any other means of shoring has been made or erected in accordance with the design of a professional engineer to prevent collapse of the excavation, or any structures adjoining or over areas to be excavated?
- Is there safe access to the excavation e.g. by a sufficient long, secured ladder?
- Are there guard rails or any other equivalent protection to stop people from falling in?
- Are there properly secured stop blocks provided to prevent tipping vehicles from falling in?
- Has the identified area for excavation been assessed by a competent person to ensure underground pipes and cables are not affected?

- Does the excavation affect the stability of neighboring structures?
- Are materials and equipments stored away from the edge of the excavation in order to reduce the likelihood of a collapse of the side?
- Is the excavation supervised by a competent person at the start of every shift and after any accidental collapse or event that is likely to have affected its stability?



MACHINERY

- Is the right machinery being used for the job?
- Are all dangerous parts adequately guarded e.g. exposed gears, chain drives, projecting engine shafts?
- Are the protective guards secured and in good condition?
- Is the machinery maintained, in good condition and are all safety devices operating correctly?
- Are all operators trained, and competent and have they received adequate work instruction?
- Have the tests, inspection and maintenance of all machineries been conducted by authorised persons, i.e., qualified mechanics, examiners, etc. according to the manufacturer's recommendation?

FIRE HAZARDS

- Is the quantity of flammable liquids and gases on site kept to a minimum?

Are there a designated storage areas for flammable liquids and gases e.g. Liquid Petroleum Gas (LPG) and acetylene?
- When not in use, are they placed upright, securely tied up and placed in a well-ventilated area?
- Are the flammable liquids and gases returned to the designated storage area at the end of the shift?

If liquids are transferred from their original containers, are the new containers suitable for flammable liquids and gases?
- Is smoking banned in areas where gases or flammable liquids are stored and used?
- Are other ignition sources also prohibited?
- Are the flammable liquids and gases, and its associated equipment in good condition?
- When gas cylinders are not in use, are the valves fully closed?
- Are adequate bins or skips provided for storing waste?
- Is flammable and combustible waste removed regularly?
- Are there a sufficient number of emergency kits, e.g. fire extinguishers, spill kits, etc. available and accessible?

TRAFFIC AND VEHICLE MANAGEMENT

- ❑ Are the vehicles and pedestrians physically separated by barriers, markings, and/or signages?
- ❑ Have one-way systems or turning points been provided to minimise the need for reversing?
- ❑ Where vehicles have to reverse, are they controlled by properly trained banksman (signalman)?
- ❑ Are vehicles maintained to ensure the steering, handbrake, footbrake, etc. work properly?
- ❑ Have drivers received proper training?
- ❑ Before using heavy machinery, such as cranes, has the ground been assessed to ensure it can take the load?
- ❑ Are all the vehicles well maintained and are the maintenance records kept updated?
- ❑ Are all operators of cranes, forklifts, excavators, shovels, mobile elevated working platforms, and pilling machines competent and have a valid certificate from Approved Training Provider (ATP)?
- ❑ Are persons prevented from riding in dangerous positions? (no person is allowed to ride on the loads, buckets, skips, cars, slings or hooks of the machinery).

TRAFFIC MANAGEMENT FOR WORK ZONE ALONGSIDE THE ROAD

- Have the road users been warned well in advance of the change of road environment e.g. a warning sign indicating “work ahead” (depending on the speed limit on the road in question)?
- Are there installations of warning/hazard lights that are highly visible under all road conditions e.g. portable amber rotating lamp?
- Are safety barriers placed to demarcate access to safe routing for road users and to ensure the safety of the workers?
- Are the workers provided with high-visibility clothing or work vests to be more conspicuous and visible day and night?
- Is there a lead vehicle to warn oncoming traffic and to shield workers such as Mounted Attenuators (TMAs)?
- Are proper risk management arrangements developed for the activity and site suitably managed for the work?

WORKING WITH ELECTRICITY

- Are tools and equipment with the lowest supply voltage necessary for the job (could battery-operated tools and reduced voltage systems e.g. 110V or even lower be used even in wet conditions)?
- Where main voltage is used, are trip devices e.g. Residual Current Devices (RCDs) provided for all equipment?
- Are RCDs protected from damage, dust and dampness and checked daily by users?
- Are cables and leads protected by sheathing protective enclosures or by positioning away from causes of damage?
- Are all connections to the system properly made and suitable plugs used?
- Is there an appropriate system of user checks, formal visual examinations by site managers and combined inspection and lead by a competent person for all tools and equipment?
- Are scaffolders, roofers etc. or cranes or other people, working near or under overhead lines? Has the service provider been contacted and are precautions in place to avoid electrocutions?
- Have you contacted the relevant authority before commencing any digging activity to identify and assess the underground services?
- Is there a final check to confirm safe isolation before start of work?

OCCUPATIONAL HEALTH

This chapter provides questions to help manage hazards and risks affecting worker's health.



CONTROL OF HAZARDOUS SUBSTANCES

- ❑ Have all harmful materials e.g. asbestos, lead, solvents, paints, etc. been identified?
- ❑ Is there a register that lists all the hazardous chemicals?
- ❑ Do you have a current safety data sheet for any hazardous chemical used?
- ❑ Have you assessed the risk of everyone exposed to these substances?
 - Have precautions been identified and put in place? e.g.
 - ❑ are PPE provided and used, and are workers and others who are protected kept away from exposure such as
 - Doing the work in a different way
 - Using less hazardous material
 - Using forced ventilation
- ❑ Have you installed warning signs?
 - Have the workers received adequate information and
 - ❑ training, so they know what the risks they are exposed to and how to avoid them?
- ❑ Are PPE, Respiratory Protective Equipment (RPE) and any other safety equipment provided?
- ❑ Do you have procedures and PPE to prevent contact with wet cement (this can cause dermatitis and cement burn)?

- Have you arranged health monitoring for workers exposed to certain hazardous substances such as asbestos, lead, silica, cement, coatings, etc.?
- Are there adequate wash facilities made available such as emergency eyewash and safety shower station?
- Are hazardous chemicals stored and disposed appropriately?
- Has a spill kit been provided?

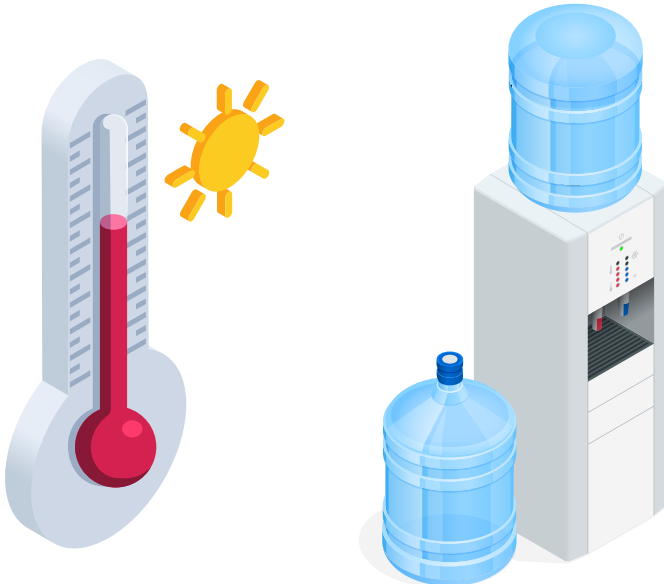


NOISE

- Have you identified and assessed workers' exposure to the noise level and duration of exposure?
- Do you monitor the workplace for changes that affect noise exposure?
 - Will the noise be reduced by using different working methods such as breakers and other plant or machinery fitted with silencers or erected barriers to minimise the spread of noise?
- Is work sequenced in a way that minimises the number of people exposed to noise?
- Are others who are not involved in the work kept away?
- Are suitable hearing protection provided and worn in noisy areas?
- Have hearing protection zones been identified and signed appropriately?
 - Have you provided audiometric testing (including baseline testing) for workers who are exposed to high levels of noise?

HEAT STRESS

- Can you organize the work in a way that reduces exposure to the sun during peak Ultraviolet (UV) radiations times?
- Are there shades/shelters available onsite?
Are the workers using appropriate work clothing that protects them against the sun and other environmental risk factors such as wearing lightweight, loose fit and light-coloured clothes?
- Is there drinking water available onsite and are there water refill stations provided?
- Can heavy physical work to be rescheduled to a cooler time of the day?
- Are plants, machinery and equipment used to reduce physical workload?



WELFARE FACILITIES

- Have suitable and sufficient numbers of toilets been provided and are they kept clean?
- Are clean wash basins and soap provided?
- Are suitable clothing provided for those who must work in wet, dirty or otherwise adverse conditions?
- Are there facilities for changing, drying and storing clothes?
- Is drinking water provided?
- Is there a rest area or accommodation where workers can sit and eat, or prepare food?
- Are there adequate first aid provisions such as:
 - Sufficient number of first aid boxes that are provided and maintained
 - Appointment of a first aider who is readily available during working hours
 - Provide and maintain suitable facilities for emergency treatment within the work area
- Are welfare facilities easily and safely accessible to all who need to use them?

SILICA DUST HAZARD

- Have you identified work activities that generate airborne silica dust?
- Can you eliminate silica dust exposure by using other products that do not have silica?
- Can you isolate silica dust exposure by limiting work to an enclosed or segregated area?
- Can you substitute silica-containing products with material containing less or no silica?
- Are there administrative control in place to control exposure to silica dust such as training, supervision, signage, or information?
- Have you provided appropriate PPE to workers for e.g. face protection to limit the exposure?
- Have you identified the need for health monitoring programs for workers?

ASBESTOS

- Have you identified that the materials you are working with are free of asbestos, especially during demolition or renovations of old buildings?
- Are you aware of what to do in the presence or potential presence of asbestos?
- Have you engaged a competent asbestos removal contractor?



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