



Erect and dismantle formwork for footings and slabs on ground

CPCCCA2003



SAFE WORK METHOD STATEMENTS (SWMS)

- Safe work method statements (SWMS) assist a PCBU to consider how certain activities will be carried out safely. The following should be noted:
- SWMS must be easy to understand, signed and dated;
- SWMS must be amended if there is a change in the activity and a copy must be given to the principal contactor;
- All persons affected by changes must be advised of amendments to the work method statement.

JOB SAFETY ANALYSIS (JSA)

- A job safety analysis is a procedure which helps integrate accepted safety and health principles and practices into a particular task or job operation. In a JSA, each basic step of the job is to identify potential hazards and to recommend the safest way to do the job.
- Identifies hazards and potential hazards that may be encountered while working.

STANDARD

- Specifications to ensure products are used as intended, based on industrial and scientific experience.

TRAFFIC CONTROL PLAN (TCP)

- **Traffic control plans** (TCP's) are detailed drawings that show the layout of temporary road signs and devices to warn and guide **traffic** past, around and through the work site safely. A TCP is part of a work health and safety (WHS) requirement of a worksite
- Outline requirements for site isolation and signage for vehicles.

SAFETY DATA SHEET (SDS)

- A safety data sheet (SDS) – previously called material safety data sheet (MSDS) - provides information which allows for the safe handling and use of substance/materials in the workplace. It describes:
- The identity of the product e.g. formulation or chemical name
- The properties and uses of the product
- Health hazard information precautions for use
- Safe handling information
- First aid instructions
- Methods for safe disposal
- Identify materials/substances that the product is incompatible with
- It is important that all waste material is removed from the construction site. This may include; construction materials, oils and fuel, garbage materials such as empty containers, wrappings, excavated soils

DEFINITIONS

PLANS

- Before commencing any job, you will usually receive specific work instructions which will include plans.
- Site safety plan will outline the safety requirements of the site
- The main purpose of plans is to provide a visual representations of the work to be undertaken. If there are hazards and discrepancies between plans and what is on site, a site manage, supervisor or project manager should be notified.

MANUFACTURER SPECIFICATIONS

- Manufacturer guidelines and specifications must always be followed. By law these must be made available/provided at the point of sale by the manufacturer. Manufacturer guidelines and specifications can be available for anything on site, but most likely for materials, tools, equipment, heavy machinery, hazardous substances etc.

ENVIRONMENTAL PLANS

- Addresses clean up management, noise control and waste management

Plan and prepare

The following documentation should be familiarised before work commences

- Assess conditions and report hazards in JSA/SWMS
- Assess work site to determine and calculate the time required to complete the task
- Determine work requirements according to legislation, regulations, safety plans and procedures
- Identify, report and rectify equipment defects

<https://ncc.abcb.gov.au/>

NATIONAL
CONSTRUCTION CODE

Site Safety Plan includes emergency
procedures, points of access, hazards
and risks on site.

- Environmental protections and control measures

DUST

Wetting area down,
using wet/dry vacuum

NOISE

Ensuring public is
alerted by signage.
Conducting activities
after office hours

VIBRATION

Ensuring materials are
appropriately fixed.
Conducting activities
after office hours.

Barricading must be used when working on an open footing/excavation ready for on ground formwork procedures. The correct barricading for this would be temporary lockable fencing.

Safety signs should be placed at eye height, where it is visible and around the work area it relates to.

When completing on ground formwork signs should be erected, for example Do Not Enter, PPE required, Explosive Power Tools In Use, Open Excavation.



PPE

When undertaking work, eyes and face, hands, feet and body protection may need to be worn.

- Head - safety helmets, sun hats;
- Eyes/face - safety spectacles, goggles, face shields;
- Hearing - ear muffs, ear plugs;
- Airways/lungs - dust masks, respirators;
- Hands - gloves, barrier creams;
- Feet - safety boots, rubber boots;
- Body - clothing to protect from sun, cuts, abrasions and burns



- It is essential that tools and equipment are checked for serviceability, and any faults are rectified or reported prior to commencement. This requires you to follow all workplace protocols for rectification and reporting applicable to your organisation. These protocols will require you to complete forms, place signage on equipment, and report faults to supervisors.
- Remember: before you use any equipment identify if there is a maintenance schedule, ensure that there are no discrepancies and that it is signed off.



DEFECTIVE EQUIPMENT PROTOCOL



Tools for ground formwork

CLAW
HAMMER

TAPE
MEASURE

PINCH
BAR

STRING
LINE

PENCIL

CLAMPS

SHOVEL

Levelling tools used for setting out formwork

LASER
LEVEL

SPIRIT
LEVEL

STRING
LINE

PLUMB
BOB

For high efficiency, you should ensure that you have suitable materials on hand to complete formwork tasks, such as nails, screws, clamps and wire. You should consider:

Where the work is to be undertaken. For example –

- When erecting on ground formwork in rock or compacted-type sub grades, you may require steel pins or star pickets
- When forming the edge board of concrete, you may require timber, steel, block work, bricks, plastic
- If there is a risk of white ants being present in the area, termite barriers may be required to stop white ants travelling from underground to all timber materials where they will eat and destroy all timber structures

The type of work to be undertaken. For example -

- A stamped concrete application would require FFL height
- If services are to be installed, you may need to install block outs first and ensure that they can be affixed to avoid movement. Block outs create a mould in the finished concrete for a later applications e.g., services.
- All cast in services should be fixed so they do not move before pouring concrete

The measurements of the work area. For example –

- Shutters and planks would best suit the application of an 800mm FFL on ground slab
- Edge Board should be braced if the concrete is higher than 150mm

Formwork Requirements

- Formwork is the temporary construction that gives form to and supports the freshly placed concrete. The loads carried by the formwork are considerable and it must be strong enough to support workers, materials and equipment as well as the concrete without movement or fear of collapse. It is often specially designed and supervised by an engineer.
- There are three main principles that must be observed in the design and construction of form work. They are:
 - Quality
 - Safety
 - Economy

The forms, which shape the freshly placed concrete, will imprint in the surface of the concrete any defect present on the face of the form. Forms must be true to size, plumb, and square and correctly aligned in accordance with acceptable tolerances laid down in the specification. Four factors are important to good craftsmanship.

- Accuracy
- Rigidity
- Tightness of joints
- Finish

Quality

Accuracy

Plasticity of fresh concrete allows to be moulded into any shape. Essential forms to be designed accurately.

Rigidity

Formwork should be sufficiently rigid to prevent:
Bulging, Sagging and Movement.

Tightness of joints

must be tight enough to prevent leakage of the cement paste.

Finish

There are several surface finishes, which can be obtained by treating the surface of the form.

Safety

The safety of yourself and other workers on-the-job can be ensured if safe working procedures are practised at all times. The following safety factors must be observed:

- Keep the work area clear of off-cuts and loose materials.
- Make sure that all structural components are firmly fixed before leaving the job; even for a few minutes.
- When you have finished using a particular tool, put it in your tool box. This practice will prevent it from being lost or from falling on a work mate.
- Ensure electric leads and air hoses do not create tripping hazards.
- Always report unsafe equipment or structural components to your supervisor immediately they are noticed and warn your fellow workers.
- Ensure that handrails and kickboards are in place and securely fixed.
- Observe safety signs and wear your safety clothing and equipment at all times while on the job.

Economy

Formwork components and forms are usually designed for re-use, either on the same project or on others. You can contribute to the economic operation of the job by observing the following procedures:

- Timber and plywood form panels are expensive. Never cut these materials without checking your measurements.
- Never cut from a large piece of material when a smaller piece will produce less waste.
- When stripping the forms take care not to damage the ends or edges with your hammer or pinch bar.
- Remove nails and other fixings with care.
- Always store and stack materials and equipment in the designated storage area when not in use.



Removal Process

- To stop sudden collapsing of all components risking the damage or surrounding structures or the crushing of workers, a safe sequence when removing bracing, struts and edge boards should be followed
- When removing formwork the following should apply:
 - **De-nail, clean, store and stack all timber components**
 - **Clean, oil and store all steel components**
 - **Discard damaged formwork after stripping**

Clean Up

- When work is completed the site should be cleaned.
- Excess materials used should be recycled or returned to storage.
- Maintain plant, tools and equipment.
- All tools and equipment used on the job should be cleaned in order to maintain them in good condition. They should be stored safely and correctly in accordance with the manufacturer's recommendations and standard work practices, so as not to damage them.
- Report faults in logbook and in site records.
- All personal rubbish should be placed in a bag and disposed of in the site rubbish bin.

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