Handle construction materials

CPCCCM2004A

Overview

- By the end of this topic, you should be able to:
  - Plan and Prepare for construction work
  - Manually handle, sort, stack and store construction materials
  - Prepare for mechanical handling of materials.
  - Clean up

National Construction Code

The National Construction Code (NCC) replaces what was formerly known as the **Building Code of Australia** (**BCA**) and also now incorporates the **Plumbing Code of Australia**.

Master Builders Qld states:

The National Construction Code (NCC) incorporates all on-site building and plumbing requirements into a single code, setting out the minimum requirements for the design, construction and performance of buildings throughout Australia.

- In Queensland we also refer to the **Queensland Development Code (QDC)**, which contains, amongst other things, Queensland variations to the National Construction Code and consolidates Queensland-specific building standards into a single document.
- The QDC covers Queensland matters that are outside the scope of, and in addition to, the National Construction Code (e.g. requirements for energy efficiency).

- The **Building Code of Australia** (BCA) and **Plumbing Code of Australia** (PCA) are given legal status in Queensland by reference in the ***Building Act 1975*** and the **Plumbing and Drainage Regulation**.
- If you're not working with the right version of the NCC, you're in breach of their statutory and contractual obligations, so make sure you're across the recent changes:

- Work instructions and operational details are obtained, confirmed and applied from a variety of sources and documents during work preparation. During pre-start meetings and before undertaking tasks, you may need to access:
  - Plans and specifications
  - Australian Standards
  - Safe Work Method Statement (SWMS)
  - Manufacturer instructions and guidelines
  - Hazard assessment documents such as JSA, JSEA, Take 5
  - Environmental management plans
  - Safety Data Sheets (SDS)
  - Traffic management plans and more

Preparing to handle construction materials

- Safety (WHS) requirements can be found within the Site Safety Plan- this includes appropriate emergency response procedures for the site
- Other safety plans, policies and procedures such as the evacuation plan are written and meet the requirements specified in the site safety plan
- The environmental management plan specifies how environmental protection actions are to be carried out on-site.
- If you recognise a hazard that requires controls, you can verbally communicate this to your supervisor.

Traffic management plans, barriers and signs

- Traffic management plans are designed to show signage and barrier requirements and specify traffic and pedestrian routes related to the site and work tasks.
- Barriers are erected to reduce the risk of unauthorised personnel and others coming into contact with materials or machinery.
- When placing signs, ensure that these are placed:
  - Around the work area it relates to
  - At eye height
  - Where drivers and pedestrians can see it

Preparing to handle construction materials

- When preparing to receive, move, store and dispose of construction materials, you may be required to determine:
  - Has the correct/specified material been delivered?
  - Where should the material be stored/located?
  - How should the material be handled during relocation?
  - Calculations may be needed when determining amounts of materials for work locations?
  - How can this material be disposed of to ensure environmental protection?
  - Does the material need protecting during storage?
- These questions may all be relevant when materials appropriate to the work application are identified, obtained, prepared, safely handled and located ready for use. Plans, Drawing, specifications and schedules may all be used to determine amount of material needed and location requirements
- Environmental requirements must be identified for the project in accordance with environmental plans and statutory and regulatory authority obligations.

PPE

- PPE requirements are determined using various means:
  - May be shown on signs at site entry
  - Documented on SWMS and/or instructions
  - Specified during pre-start talks
  - Located in the SDS for material along with first aid treatments
- After you have selected the appropriate PPE for the task and site, you should make sure the items are in good condition, fit well and meet industry standards
- PPE you are likely to be using includes:
  - Hard hat, gloves, steel cap boots, hi-viz clothing, eye protection, ear protection, dust masks and other specialised PPE for tasks.

Handling construction material

- Handling construction materials involves diverse operations:
  - Manual handling
    - Carrying bags or materials
    - Unpacking materials
    - Disposal of waste materials
  - Mechanical handling using
    - Forklift
    - Crane
    - Rigging
    - Truck
  - Stacking and storing of drums, barrels, timber, metal, bagged materials and pallets of materials and more.
  - Hazardous construction materials you may handle include
    - Solvents
    - Glues and paints
    - Flammable materials

Materials and handling guideline

Material	PPE	Procedures/guidelines
Insulation	Eye protection Dust mask Site required PPE	• Keep fiberglass material in original packaging until you are ready to install it. • Use hand tools to cut and shape the insulation whenever possible. • Put scrap insulation in a covered container. • Maintain adequate ventilation in the work area
Joinery units	Eye protection Ear protection Site required PPE	• Use mechanical aids for heavy items, alternatively a two person lift • Plan the route • Ensure all walkways are clear and power cords do not run across the floor • Keep the floor surface free from dust to stop workers from slipping on wood dust
Metal sheeting/ glass sheets	Heavy-duty gloves Eye protection Safety boots Site required PPE	• Lift one side to vertical • Two man lift holding ends • Pallet jack or forklift for moving • Glass stored vertically in appropriate frame
Paints and sealants	Eye protection Impervious gloves Overall Site required PPE	• Keep containers closed when not in use • Store in a cool dry well ventilated place out of direct sunlight • Do not store with incompatible materials • Dispose of according to SDS
Plaster or fibre cement sheeting	Heavy-duty gloves Eye protection Safety boots Site required PPE	• Lift one side to vertical • Two man lift holding ends • Pallet jack or forklift for moving
Reinforcement materials	Cut resistant gloves Safety boots Site required PPE	• 2 man lift • Transport using mechanical lifting and slings • Cover with polyethylene sheeting or other appropriate material if the rebars are kept out of doors

Tools and equipment

- Tools and equipment suited to the task must be selected and checked for serviceability before use. A variety of tools and equipment are used when handling construction materials and include:
  - Moving aids such as wheelbarrows, pallets and pallet jackes, forklifts and hand trolleys
  - Tools to separate packaged items or used items such as formwork for cleaning and storage. You may need to use a pinch bar or crow bar or even tin snips or a hammer such as a claw hammer to remove nails
  - When tools or equipment are faulty or have issues, do not use, tag out the item or component and record and report the issue
- Construction materials and related components should be handled:
  - According to SDS requirements
  - Stacked and stockpiled to make easy identification and retrieval, on pallets where required
  - Sorted, stacked and banded by material type and size
  - Separate hazardous materials to avoid cross-contamination and maintain workplace safety. To avoid cross-contamination for sand and similar loose materials, you should move each in a separate container or bag
  - Store all materials clear of access ways and positioned ready for installation.

- Before moving materials the following considerations apply:
  - Safest route to the destination – plan this before hand.
  - Two-person lift – is help needed for large or bulky materials?
  - Is equipment such as wheelbarrow, pallet jack or trolley available to move heavier items?
  - Is a bag or box available to carry smaller items or components in?
  - Do fastenings of components need to be cut and tools suited.
  - Appropriate lift techniques.

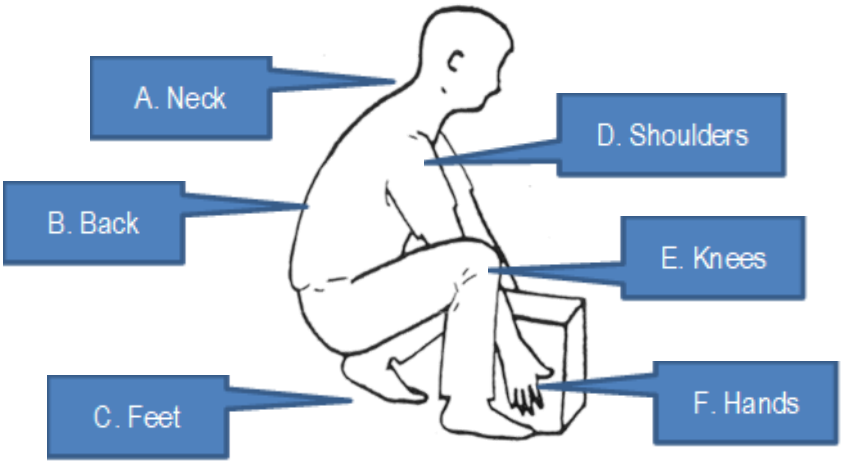
See YouTube video from WorkSafe Qld here:

https://www.youtube.com/watch?v=dLGoXRb51dE

Manual handling

- Lifting objects is a major cause of injuries in the workplace.
- Improper storing and handling of materials can cause injury. Hazards to watch out for include:
  - Incorrect and unsafe lifting techniques
  - Being stuck by materials or caught in pinch points
  - Being crushed by machines or improperly stored materials
  - Incorrect cutting ties or securing devices as not all construction materials are banded or stacked in the same way
- Seek help by organising a 2- person lift when:
  - a load is too bulky to grasp or lift
  - You can not see around or over the load
  - You cant safely handle the load
  - To avoid back strain
  - To avoid materials such as metals bending or being scratched
- Lift with legs, keep back straight and do not twist. Avoid lifting above shoulder height
- Incorrect manual handling can lead to sprains, strains, long term injuries, bad back, bad knees, slips falls, crush injuries and more.
- To determine if you need to organise a 2-person lift you can complete a personal hazard assessment such as a take 5 or JSA

Manual handling

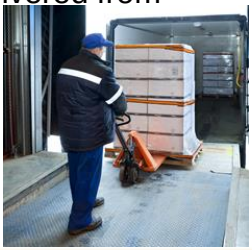


Neck	Should be held upright
Back	Should follow the natural curve
Feet	Should be flat facing the load to be lifted
Shoulders	Should be level
Knees	Bend and lift using knees
Hands	Should maintain a good grip on the item

Note: when moving materials you should avoid sudden jerky movements and maintain a safe posture as much as possible

Mechanical handling equipment

- Proper training must be provided to workers who use:
  - Forklifts
  - Cranes
  - Slings
- Forklift operators must know how to centre the load and travel with the load at the lowest position. They must also know how to pick up various loads relevant to their work.
- Crane operators must receive training in appropriate chains or slings, loads and weights.
- All slings, ropes and chains must be checked before use.
- Pallets and pallet jacks are often used to hold items securely. They may be delivered from manufacturer this way to avoid excess movement and damage. This may be the method recommended by manufacturer for all relocation of the material.
- Operators transferring pallets from trucks to designated lay down areas require sufficient space to manoeuvre equipment such as forklift safely.



Mechanical handling equipment

Suction Grips	Lift and carry glass
Magnetic Grabs, Tongs	Lift and carry a sheet of steel
Hook or hoist	Lift and load heavy material into a wheelbarrow

Work instructions

- Before tasks, review the work instructions relating to the manual or mechanical handling of the materials. You may need to refer to the plans and specifications to determine amounts of material needed and where these should be placed. Adhere to the guidelines and instructions related to the materials as these are documented to:

  - Describe how to correctly use manual and mechanical equipment
  - Meet WHS legislation such as WHS Act and Regulation and Codes of Practice
  - Are written to support worker health and safety and provided to support you to maintain your own and others health and safety.
  - Note: Formula for determining area: Length (L) x Width (W); Formula for determining perimeter: L+ W + L + W.

Environmental management

- Controlling dust on site:
  - Limit heavy equipment movement
  - Wet down dust areas
  - Install wind barriers
  - Cover areas such as stockpiles with tarps or covers
- SDS are provided by manufacturers/suppliers of hazardous products and describe the ingredients, handling, storage, first aid treatment and more. It is important to read the SDS related to materials so that you can handle and store according to manufacturer recommendations and to keep you and others safe.
- Materials may need to be protected from damage both on-site and during transport or handing, this can be achieved by:
  - The use of pallet wrap or banding
  - Stacking correctly onto bearers or pallets
  - Covering with a tarpaulin or suitable cover
  - Installing barriers around the material or material storage area
- Managing waste materials efficiently will include things such as:
  - Reuse and recycle
  - Only opening packaging as needed
  - Careful selection of land fill materials
  - Using appropriate waste receptacles

- Various methods of communication are applied in the workplace.
  - During planning and preparation for a job, the team meeting provides the most suitable method to share information and confirm schedules etc with multiple others.
  - Hand signals are used when verbal communication is not suitable and to share a short message such as ‘stop’ or ‘up’ within a visual range.
  - Two-way radio is used to communicate with others who are out of visual range or this is the safest method available due to noise or other factors.
  - Signage is installed to share information with workers and others.

Stacking

- Materials should be stacked, racked or blocked according to type and size and manufacturer requirements. DO NOT store incompatible materials together
- Bricks should be stored in a manner to keep them from falling
- Lengths such as timber and box steel are banded together for transport to avoid loss or damage
- Timber hardwood is stacked on level packers and soft wood in a stable arrangement where it is protected from the weather
- Plywood and medium density fibre board sheets are stacked horizontally
- Bagged cement should be stored on wooden pallets to be lifted from the ground and avoid contact with damp.

Housekeeping

- Storage areas should be kept free from accumulated materials that may cause trips or falls, fires or explosions or that may harbor pests
- Adhere to instructions and environmental management requirements for appropriate waste disposal
- Solvent waste, oily rags and flammable liquids must be kept in fire resistant covered containers
- During clean up, you may need to use tools such as wheelbarrows to move materials and waste, pinch bars or hammers to separate components such as used formwork and remove nails for safe handling.

Clean up

- During clean up activities workers are required to:
  - appropriately dispose of materials that cannot be recycled or reused.
  - Clean all plant, tools and equipment used
  - Undertake routine maintenance tasks on tools and equipment
  - Report and record issues and faults in appropriate log or site record
  - Store all cleaned and maintained tools and equipment in designated storage location
  - When faults and issues are recognised before or during work, you should stop what you are doing with the item, tag is as faulty, record and report the issue

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