DOGGING
SAFETY & LICENCE GUIDE

LLN READY

Dogging

LICENCE

Training support material for:
CPCCLDG3001
Licence to perform dogging

Produced by:
EASY GUIDES
Australia Pty Ltd

1

Contents

2

Introduction to Dogging

3

What is dogging?

A dogman is responsible for:

- Selecting the correct lifting equipment for the job and inspecting it for damage and defects
- Working out the weight of loads
- Determining and using the correct technique to sling loads
- Communicating with the crane operator about the crane and the load
- Guiding the crane operator in the lifting, movement and placement (landing) of loads.

When selecting the correct slings and slinging technique, inspecting slings and directing the crane operator in the load movement (particularly when it is out of view to them) you **must:**

- **hold a dogging licence**

or

- **be enrolled in a dogging course with an RTO and under the supervision of a licenced dogman.**

4

Types of cranes

As a dogger it is likely that you will work with many **different types of cranes.**

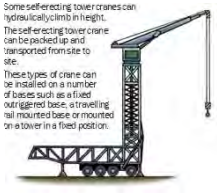
The dogger must talk with the crane operator to find out the cranes rated capacities under all configurations.

These are some examples of the types of cranes that you may work with.

Self-erecting tower crane

The self-erecting tower crane is commonly used on building construction sites for lifting a wide range of construction materials to elevated locations on the jobsite.

- Some self-erecting tower cranes can hydraulically climb in height.
- The self-erecting tower crane can be packed up and transported from site to site.
- These types of crane can be installed on a number of bases such as a fixed outriggered base, a travelling rail mounted base or mounted on a tower in a fixed position.



Luffing boom tower crane

The luffing boom tower crane is commonly used on building construction sites for lifting a wide range of construction materials to high-elevated locations on the jobsite.

- These tower cranes can hydraulically climb in height.
- Erection of the tower crane is performed by an auxiliary crane.
- These types of crane can be installed on a number of bases such as a fixed counterweighted base, an anchored base, a travelling rail mounted base or mounted in a fixed position.

5

Identifying workplace hazards

Workplace hazards need to be notified **before** you start work.

Take a good look at your workplace and decide if anything could possibly cause injury to you or anyone else in the area.

Zones/areas to check for hazards:

Above eye level

You should check above eye level for:

- Powerlines
- Buildings
- Trees
- Clearance heights
- Other obstructions
- Other overhead services
- Bridges.

Ground to eye level

You should check around eye height for:

- Other equipment
- Machinery
- People
- Pedestrians
- Things in the path of travel
- Other obstructions
- Facilities.

Ground level (and below)

You should check the ground to see if:

- There is debris or rubbish in the way
- The surface is strong enough to support the weight of any equipment or materials
- If there are any open trenches or recently filled trenches
- Underground services.

6

QUESTION 1.1

You need to plan the path for the crane and load.

What do you need to think about?

Keeping people out of the path way.

Do you need a spotter?

How will you communicate with the crane operator?

Are there any powerlines overhead?

...CONTINUED ON NEXT PAGE

7

Overhead hazards

Powerlines

Always check the site for overhead powerlines.

You **must** keep the crane at a safe distance from powerlines at all times.

A crane boom and load can become electrically charged when working near radio, TV or microwave transmitters.

Overhead services

You should check for service pipes for gas, water or electrical cables and direct the crane operator to avoid making contact with any of these with the crane boom or the load.

8

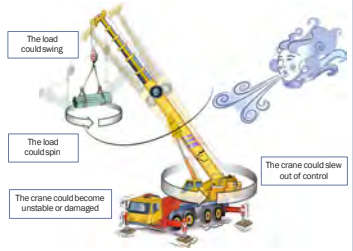
QUESTION 1.6

A crane is moving a load on a windy day.

What hazards can the wind cause and what controls can be put in place to minimise the risk?

Controls:

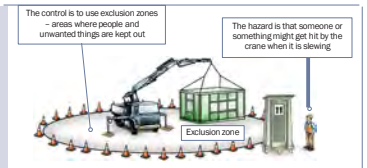
- Check the crane operator is using slew brakes (if the crane has them)
- Use guy ropes and braces
- If the wind gets too strong, stop working.



9

QUESTION 2.4

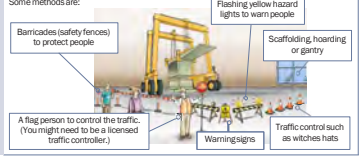
What are the **hazard** and **control** methods for workmates and things close to a slewing crane?



QUESTION 2.5

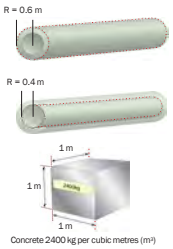
How will you keep workers and pedestrians out of the pathway of the crane and load?

Some methods are:



10

Calculate the volume using Pi as the formula $\pi = 3.14$



Concrete 2400 kg per cubic metres (m³)

To work out the volume of the cylinder:

1. Work out the volume of the outer cylinder.
R in **(m)** × **R** in **(m)** × **3.14** × **L** in **(m)**
3.14 m × 0.6 m × 0.6 m × 5 m = 5.652 cubic metres

2. Work out the volume of the inner cylinder.
R in **(m)** × **R** in **(m)** × **3.14** × **L** in **(m)**
3.14 m × 0.4 m × 0.4 m × 5 m = 2.512 cubic metres

3. Take the inner circle volume away from the outer circle volume.
5.652 cubic metres – 2.512 cubic metres = 3.14 cubic metres

4. Multiply the volume by the weight of material.
3.14 cubic metres × 2400 kg = 7.536 kg (7.6 t)

Rule of thumb formulas

You can use **rule of thumb formulas** to work out how much weight a sling can hold, or what size sling you need to lift a certain weight.

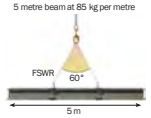
11

Calculate

Formula = √ Load ÷ Number of slings ÷ 8
2000 kg ÷ 2 = 1000 kg
1000 kg ÷ 8 = 125 kg
√ 125 = 11.180 mm
(Rounded up to 12 mm)

Using this total load – Calculate

5 metre beam at 85 kg per metre



Part 1

Calculate the weight of the beam
5 m × 85 kg per metre = 425 kg

Calculate the minimum slings required to lift the beam
425 kgs ÷ 8 ÷ 0.5 ÷ 1.73 = √ 61.416 = 7.83 mm
(Rounded up to 8 mm)

12

Select and inspect equipment

Element 2

 13

13

Selecting lifting equipment

Depending on the type, weight and dimensions of the load, different lifting equipment may be needed to move it safely. For example, synthetic slings or FSWR for timber trusses. A pallet cage for a pallet of loose objects.

Check that all the equipment is available **before** you start the job

The dogger is responsible for **inspecting** the lifting equipment

All lifting gear that you are using **under** the hook needs to be added to the weight of the load and checked against the hook and crane that will be used.

All lifting gear you are using **below** the head of the crane boom is part of load the crane has to lift.

Most cranes have multiple hook blocks; each hook block will have its own mass and safe working load.

 14

14

Set up task

Element 3

 15

15

Communication

When planning a job, you will need to think about how you are going to communicate with the crane operator during the lift. There are a number of ways that you can communicate directions or instructions to the driver.

Sometimes the type of communication method depends on the crane that you will be working with and the worksite.

Make sure you listen to information and ask questions if you do not understand what you have been told.

Crane operators and doggers can communicate by two way radio, whistles, horns or hooters when they are out of sight from the person dogging the load.

Doggers can use hand signals if they are in plain view of the crane operator.

 16

16

Other personnel

It is important that you include any other people who will be working with you during the lift or who are responsible for the work happening on the worksite.

When planning the job and the methods of communication you are going to use you may need to talk to:

- Other doggers
- Riggers
- Crane operator
- Site supervisor
- Authorised managers
- Other personnel working in the area who may be affected by the crane movement
- Any other personnel shown on the Safe work method statement.

Signage

Signage can be used to warn of danger and give instructions or directions.

 17

17

Perform task

Element 4

 18

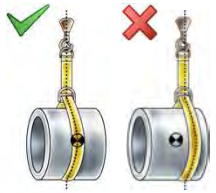
18

Position the hook above the load

The crane hook needs to be positioned directly above the load centre of gravity and the lifting gear connected.

If the load is not over the centre of gravity the load may try to tip, be snigged (dragged) or swing when lifted clear of the ground.

Do a test lift to make sure the load is balanced, the slings are connected correctly and the load is safe to lift.



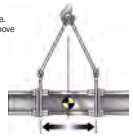
19

Finding the centre of gravity

Finding the **centre of gravity** is simple with a regular shaped load. If it is not marked on the load you can measure and/or calculate to find it.

Measure the length of the beam and halve the measurement to find the centre

Place the slings equal distances from the centre. Make sure the hook is above the centre of gravity.



You can also measure from corner to corner.

The point where the two measurements cross will be the centre.

20

Finding the centre of gravity (continued)

Irregular shaped loads can be more difficult.

This load is an irregular shape and the centre of gravity can be more difficult to find.

It may require an experienced person to find the centre of gravity.

You will need to do a test lift before moving a load to check the balance of the load.

This will allow you to make adjustments if the load is unstable.

21

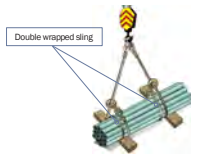
Lifting loads

When lifting loads that can slip or be damaged if not correctly lifted, special equipment or slinging methods should be used.

A load which has parts that can slip should be double wrapped with the sling.

Loads such as roof trusses or air conditioning duct work can be easily damaged by compression forces or unsupported sections bending.

These should be lifted using special equipment such as spreader bars or long slings to reduce the compression forces as slings try to move to directly under the hook.



Spreader bar

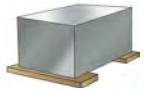
Long slings

22

Prepare load destination

You may be moving a load to a spot on the ground, a loading platform, a suspended floor or onto a vehicle.

Before you start to move a load you need to make sure the load destination (the place where you are moving the load to) is ready for the load. The load may need to be **landed** on supports if the slings can be crushed or jammed preventing easy removal. Loads will need to be chocked if there is any chance of the load rolling.



Ground

Loading dock

Suspended floor

Loading onto a vehicle

23

Releasing a heavy load from the crane hook

You need to control boom deflection when you are releasing a heavy load from the crane hook.

Cranes using a hoist rope

To release the tension from the boom and hoist rope:

1. Lower the load with the hoist rope until it is resting on the ground.
2. Lower the boom to release the tension on the hoist rope and sling.

Cranes not using a hoist rope

1. Lower the boom to release the tension on the hoist rope slings.

The boom will not be under tension so it will not spring up.

24

PC 4.7 PERFORM TASK

Remove the lifting equipment

The hook should be positioned at a suitable height to disconnect the lifting gear.

 25

25

Pack up and clean up

Element 5

 26

26

PC 5.1 PACK UP AND CLEAN UP

QUESTION 118

You have finished in the work area.

What are some examples of cleaning and packing up you might have to do?

Pack up and clean any tools

Pack up extra equipment

Pack up the crane and lifting gear

Clean up any mess

 27

27

PC 5.1, 5.2 PACK UP AND CLEAN UP

QUESTION 119

When is the best time to get rid of extra materials around the work area?

As soon as you can

QUESTION 120

Why must you report any faulty equipment to your supervisor?

Your supervisor will know the site rules (procedures) you must follow when you find a fault with your equipment.

If you ignore faulty equipment, you or one of your workmates could be badly injured or killed.

 28

28