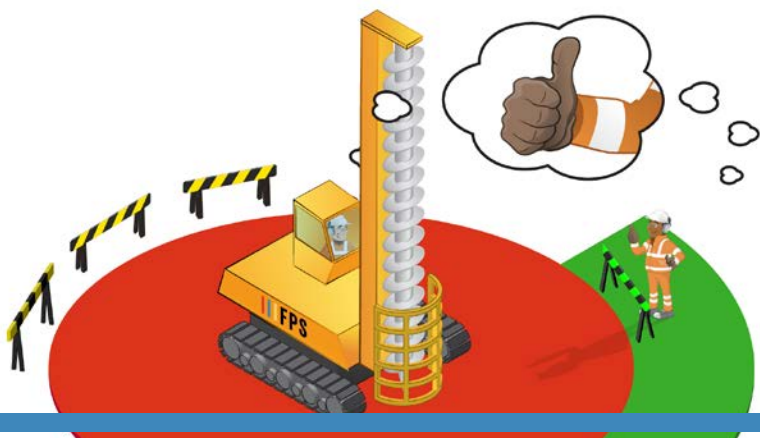


**FEDERATION
OF PILING
SPECIALISTS**

PLANT RESTRICTED ZONES



RESTRICTED ZONE

The design, layout and operation of working areas are key to ensuring that people are segregated from the risk of:

- Collision or entrapment from mobile plant or equipment;
- And, the risk of falling objects striking an individual working within the working area.

This booklet has been produced as a guide for all FPS member companies to assist them in setting up and managing effective working areas and restricted zones that may have people and various items of plant and equipment working in and around them.

**FEDERATION
OF PILING
SPECIALISTS**



PLANNING:

When planning the work, restricted zones must be considered to ensure our staff as well as others are kept out of harm's way. A restricted zone is an area where only authorised persons can enter or stand during normal operations to undertake specific piling related activities. It is important to remember there is a serious risk of injury or death from being struck by falling objects or from moving plant and equipment within a restricted zone.



These are identified in metres (m) and by the 'Red Zone' within this booklet and can only be entered by authorised persons, and only once the plant or equipment is placed in a safe condition by the operator beforehand. The authorised person who wants entry can only enter from the 'Green Zone' and following a 'Thumbs up' from the operator.



Depending on the ground engineering technique, spoil may be produced and will need to be stored nearby pending removal or loaded directly into tipper etc. These areas are still classed as restricted zones and still pose a serious risk of injury. These are identified by a black and white hatched zone within this booklet.



As a reminder, before entering any of the areas above the authorised person must always approach and stand in an area with optimum visibility of the plant operator and receive a 'Thumbs up' from the plant operator before entering. These areas are identified as green within this book.

GENERAL GUIDANCE:

This booklet has been produced by the Federation of Piling Specialists (FPS) to assist members in setting up restricted zones around plant and equipment usually found in a piling worksite. The distances in metres (m) are recommendations only and may change due to the site logistics and site set up. It is important to understand that sufficient space is provided to enable safe operations and the effective separation of people and operational plant. The type of barrier is to be selected by the specialist contractor.

It is the responsibility of the specialist contractor working in collaboration with the client to ensure that appropriate measures are in place, that consider the site-specific logistics, site layout and the impact of other operations being undertaken on a worksite that may have an impact on the piling works.

**FEDERATION
OF PILING
SPECIALISTS**



KEY ROLES AND RESPONSIBILITIES

Rig Operator/Plant Operator:

- Responsible for the safe operation of the piling rig or plant equipment.
- Must ensure the piling rig or plant equipment is placed in a safe condition, before authorised personnel enter the Red Zone.
- Must not move the rig or plant equipment unless they are under the direction of the Rig Attendant.
- Must give the 'Thumbs up' to the person requiring access into the zone and receive a 'Thumbs up' response before they enter.

Rig Attendant:

- This is the person in control of all rig and plant movements within the piling areas.
- The Rig Attendant must receive a 'Thumbs up' confirmation from the Rig Operator/Plant Operator before entering a Red Zone.
- Preventing unauthorised personnel entering the Red Zone and to ensure that authorised personnel only enter the Red Zone from the Green Zone.

Authorised Person:

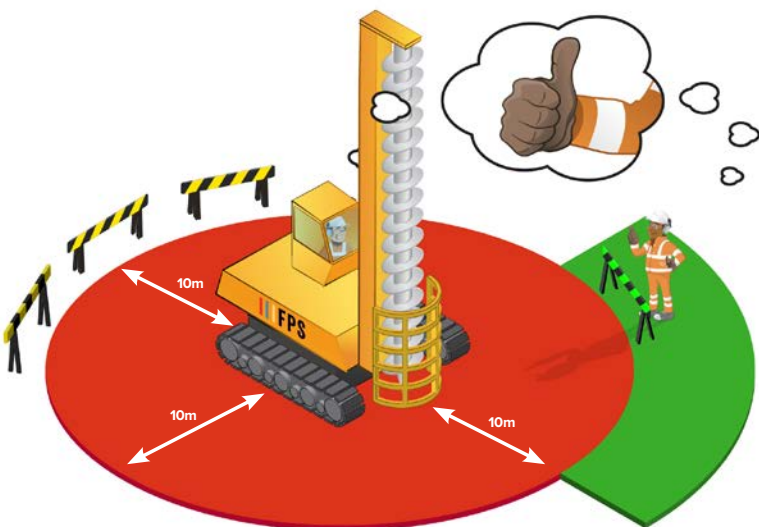
An Authorised Person is a member of the piling crew who has been authorised to work within the piling works area and carry out piling specific duties.

THUMBS UP FOR SAFE ACCESS INTO RESTRICTED ZONE



1. CFA/Rigid Inclusions
2. Concrete Pump
3. LDA
4. Crawler Crane
5. Driven Piling Rigs/VCC/DCIS
6. D Wall
7. Mini Rig
8. MEWP Boom
9. MEWP Scissor Lift
10. Wheeled Loading Shovel
11. 180° Excavator
12. 360° Excavator
13. Lorry Mounted Crane
14. Forward Tipping Dumper
15. Rear Tipping Dumper
16. Telehandler
17. Rough Terrain/Industrial Fork Lift Truck
18. Overhead Gantry Crane

CFA/RIGID INCLUSIONS RESTRICTED ZONE



Red Zone: The Rig Operator must ensure the rig is placed in a safe condition before an Authorised Person enters the Red Zone. The operator must give a 'Thumbs up' to the Authorised Person wanting access confirming it is safe to enter before they enter the Red Zone.



Green Zone: Rig Operators sight line (safe approach), optimum Rig Attendant position.

Note: People entering the Red Zone must be aware of and consider the increased risk of falling objects and plant movements from other plant such as excavators and dumper trucks.

Due to the worksite layout, it might not be possible to maintain a 10m barrier distance behind the counterweight of the rig. In these situations a minimum distance of 2m must be established at all times.

CONCRETE PUMP RESTRICTED ZONE

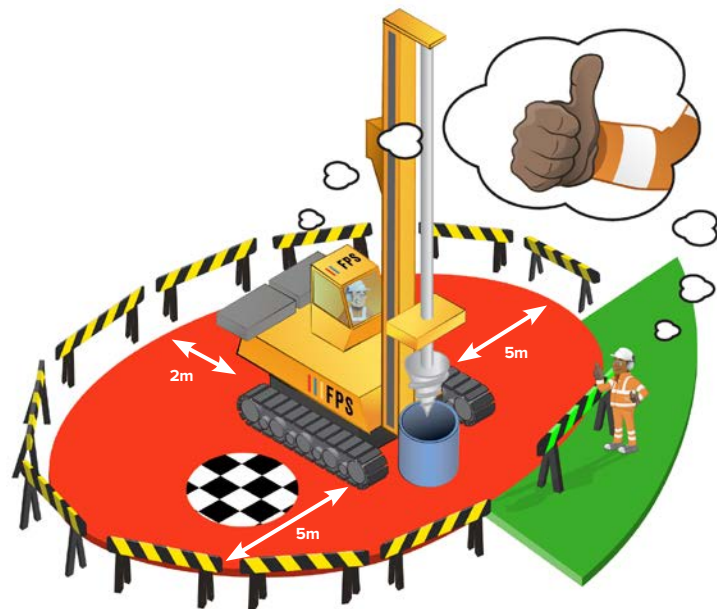





Red Zone: Authorised Person only (pump operator) - this zone must include barriers to demarcate the area. 2m controlled zone from the outer edge of the concrete vehicle when reversing.



Green Zone: Always signal 'Thumbs up' to the pump operator and or concrete delivery driver and receive a positive 'Thumbs up' response before entering. Keep in driver's line of site when reversing the truck, always get the 'Thumbs up' before entering Red Zone.

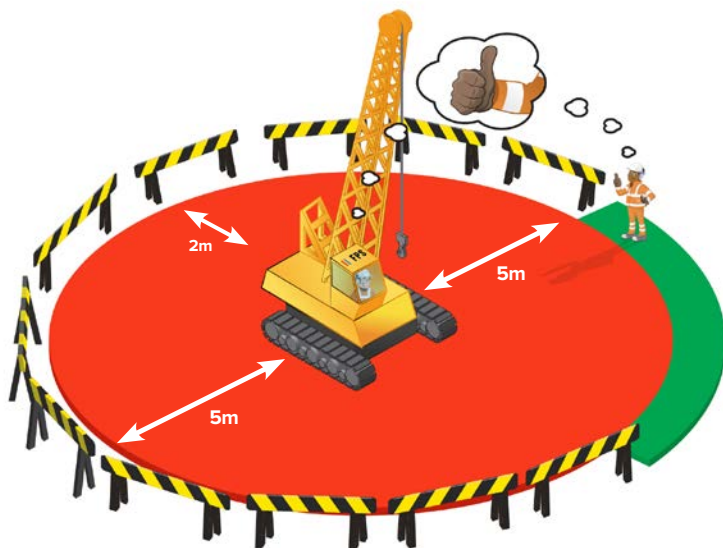
LDA RESTRICTED ZONE



- 
Red Zone: The Rig Operator must ensure the rig is placed in a safe condition before an Authorised Person enters the Red Zone. The operator must give a 'Thumbs up' to the Authorised Person wanting access confirming it is safe to enter before they enter the Red Zone.
- 
Green Zone: Rig Operators sight line (safe approach), optimum Rig Attendant position.
- 
Black and White: Auger spin off area/Tipper loading area (this can be on either side of the rig).

Note: People entering the Red Zone must be aware of and consider loads being lifted above height and other plant movements in this area.

CRAWLER CRANE RESTRICTED ZONE



Red Zone: The crane operator must ensure the crane is in a safe condition before an Authorised Person can enter the Red Zone. The Red Zone includes all areas below the hook and the mast during lifting activities which may extend past 10m.

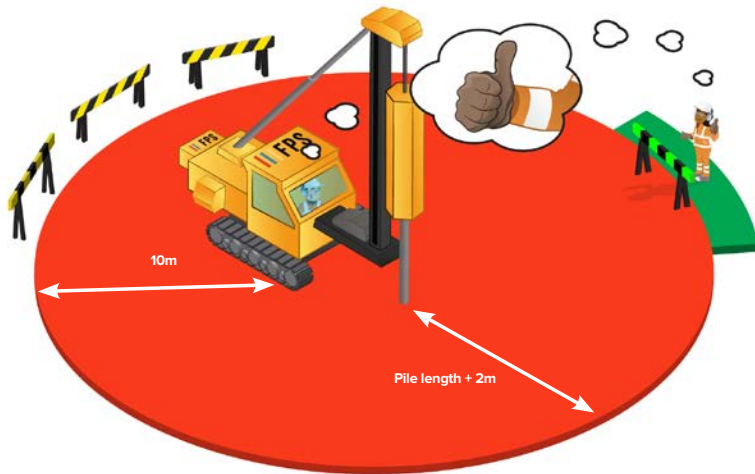


Green Zone: Slinger/signaller must be within the line of sight to the operator during lifting operations. Give the 'Thumbs up' recognition to the crane operator and receive a positive 'Thumbs up' response before entering the Red Zone. Ideally the load should be grounded before entering Red Zone.

Note: Under no circumstances should anyone stand below a raised load during lifting operations. Barriers are only required when the crane is static and not tracking. A minimum distance of 2m must be established at all times behind the counterweight.

DRIVEN PILING RIGS /VCC/DCIS RESTRICTED ZONE

5



Red Zone: The Rig Operator must ensure the rig is placed in a safe condition before an Authorised Person enters the Red Zone. The operator must give a 'Thumbs up' to the Authorised Person wanting access confirming it is safe to enter before they enter the Red Zone.



Green Zone: Rig Operators sight line (safe approach), optimum Rig Attendant position.

Note: People entering the Red Zone must be aware of and consider loads being lifted by the rig and the increased risk of falling objects and plant movements from other plant such as excavators and dumper trucks.

D WALL RESTRICTED ZONE



Red Zone: The Rig Operator must ensure the rig is placed in a safe condition before an Authorised Person enters the Red Zone. The operator must give a 'Thumbs up' to the Authorised Person wanting access confirming it is safe to enter before they enter the Red Zone.



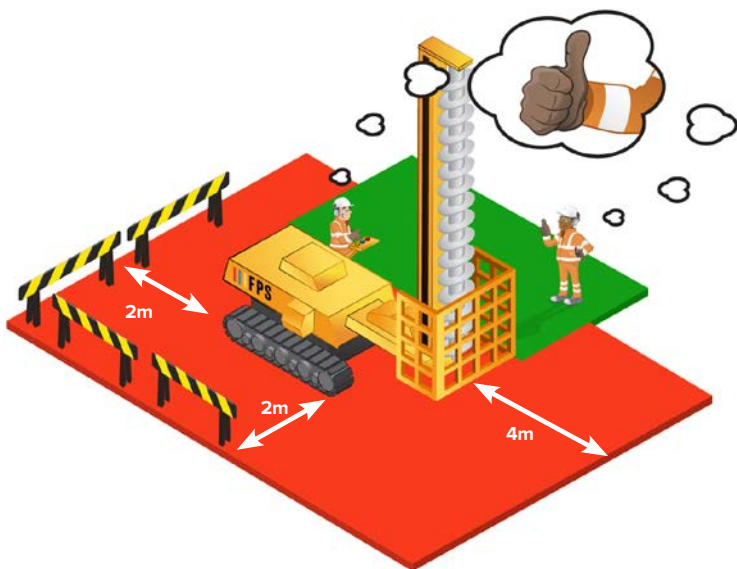
Green Zone: Rig Attendant must be within the line of sight of the Rig Operator at all times. Give the 'Thumbs up' recognition to the Rig Operator and receive a positive 'Thumbs up' response before entering the Red Zone.



Black and White: Grab spin off area/Tipper loading area (this can be on either side of the rig).

Notes: People entering the Red Zone must be aware of and consider other plant moving in this area and loads being lifted above head height.

MINI RIG RESTRICTED ZONE



Red Zone: The Rig Operator must ensure the rig is placed in a safe condition before an Authorised Person enters the Red Zone. The operator must give a 'Thumbs up' to the Authorised Person wanting access confirming it is safe to enter before they enter the Red Zone.



Green Zone: Rig Operators sight line (safe approach), optimum Rig Attendant position.

Notes: People entering the Red Zone must be aware of and consider other plant and equipment working in this area. When the rig operator is using a remote control to move the rig, they may also assume the rig attendant role as they have full control at all times.

MEWP (BOOM) RESTRICTED ZONE

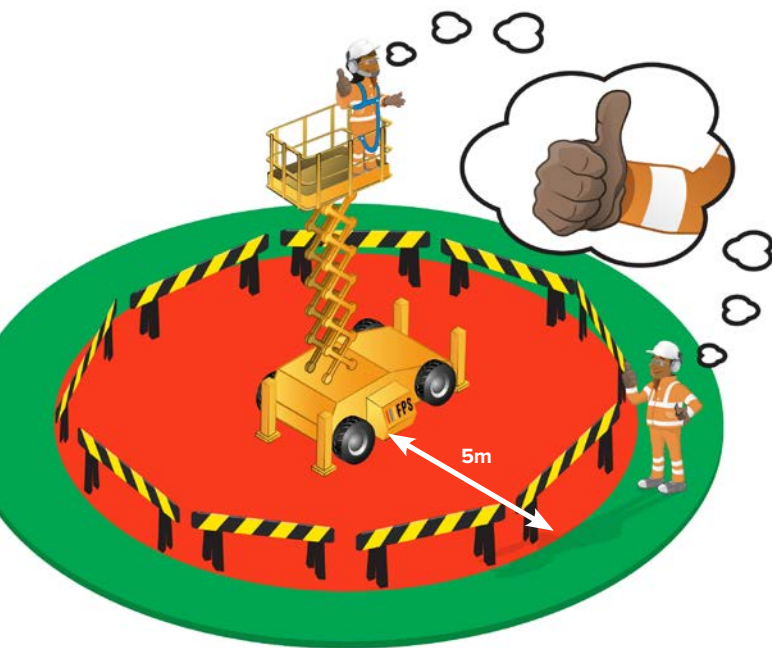


Red Zone: Keep out of this area at all times. Except in emergency situations.



Green Zone: Always signal a 'Thumbs up' to the Plant Operator and receive a positive 'Thumbs up' response before entering Red Zone.

MEWP (SCISSOR LIFTS) RESTRICTED ZONE



Red Zone: Keep out of this area at all times. Except in emergency situations.

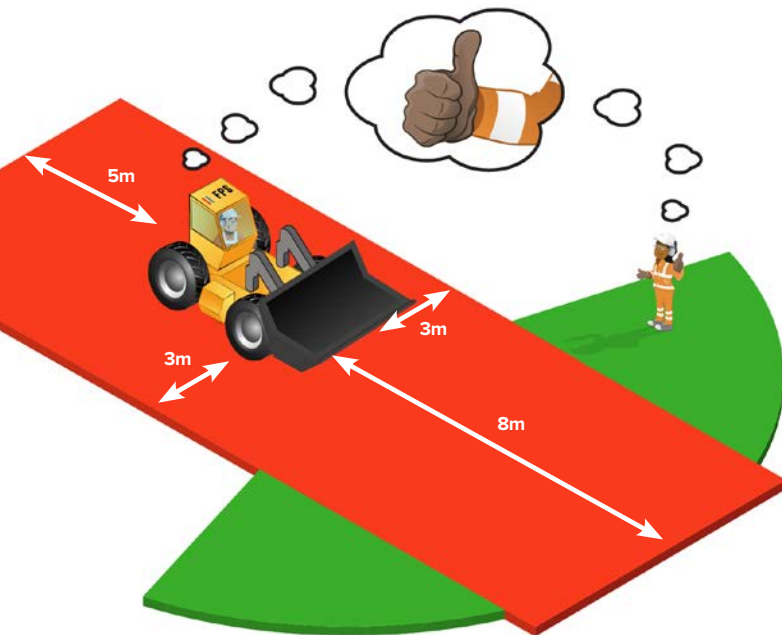


Green Zone: Always signal a 'Thumbs up' to the Plant Operator and receive a positive 'Thumbs up' response before entering Red Zone.

Note: Always consider overhead obstructions before raising the platform as these could also be classed as Restricted Zones.

WHEELED LOADING SHOVEL RESTRICTED ZONE

10

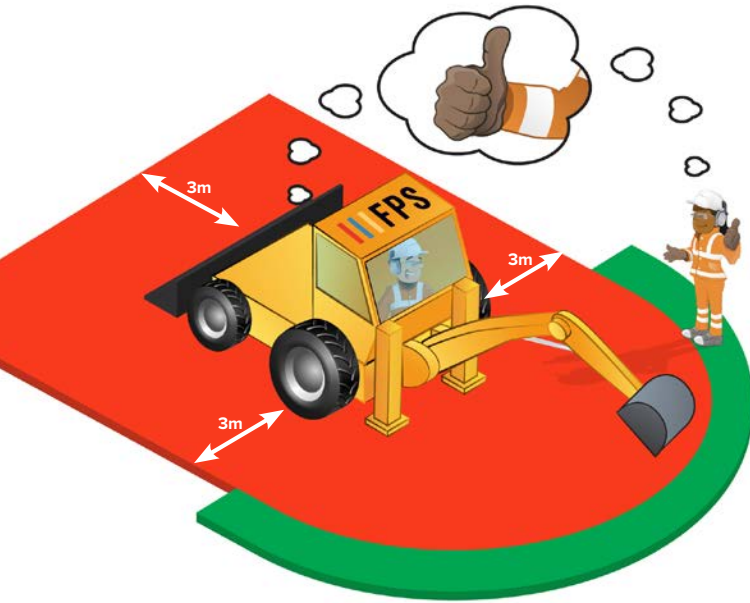


Red Zone: Keep out of this area at all times. No personnel to enter area unless the bucket is on the ground and the machine is placed in a safe condition.



Green Zone: Always signal 'Thumbs up' to the Plant Operator and receive a positive 'Thumbs up' response before entering Red Zone. Vehicle Marshaller must be within the line of sight of the operator.

180° EXCAVATOR RESTRICTED ZONE



Red Zone: No personnel to enter area, length to be determined by the boom length and slew radius.



Green Zone: Safe area - Plant Operators line of sight. Always signal 'Thumbs up' to the Plant Operator and receive a positive 'Thumbs up' response before entering Red Zone.

360° EXCAVATOR (TRACKED OR WHEELED) RESTRICTED ZONE



Red Zone: To be determined by the boom length and slew radius. No personnel to enter area unless the attachment is on the ground and the machine is placed in a safe condition.

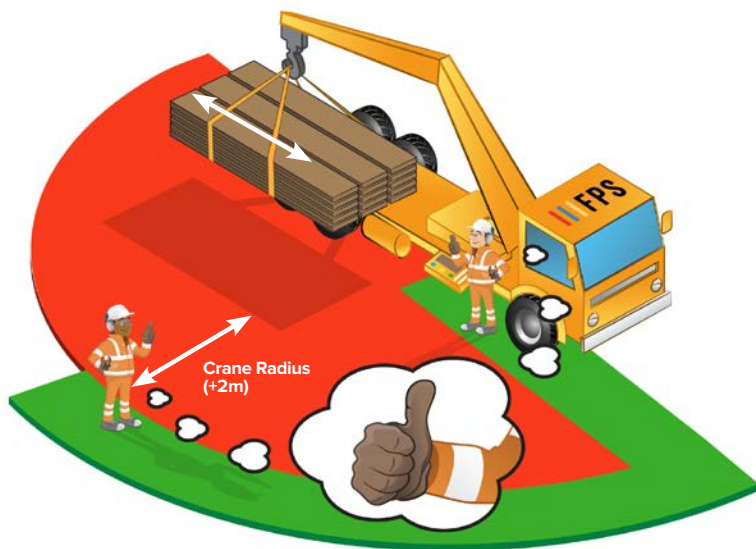


Green Zone: Safe area - Plant Operators line of sight. Always signal 'Thumbs up' to the Plant Operator and receive a positive 'Thumbs up' response before entering Red Zone.

Note: The slew radius of the machine will vary dependant on the machine type and size.

LORRY MOUNTED CRANE (HIAB) RESTRICTED ZONE

13



Red Zone: Keep out of this area at all times. Authorised Person (slinger/signaller) only. This zone should be determined by the working radius of the lorry mounted crane plus 2m (factor load size - ie piling cages length).



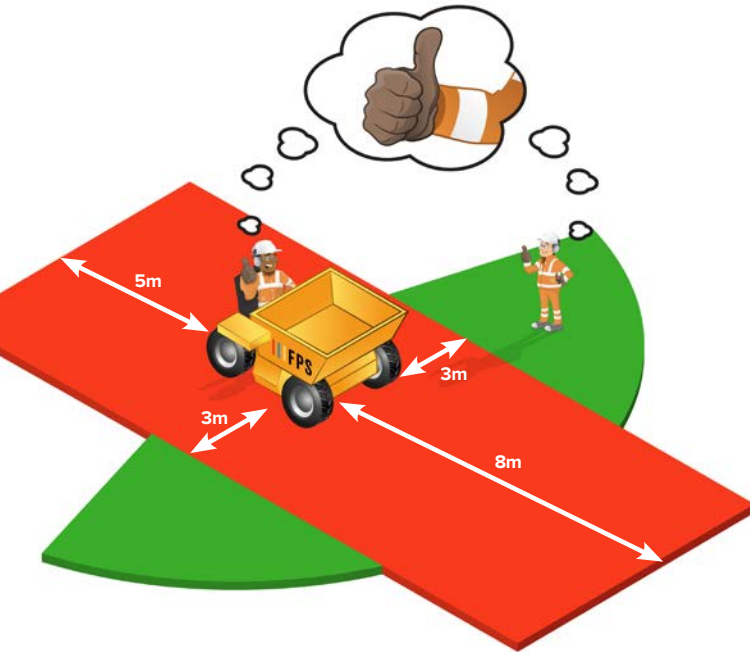
Green Zone: Always signal 'Thumbs up' to the Plant Operator and receive a positive 'Thumbs up' response before entering Red Zone. The Red Zone is determined by the operators position (some may have remotes).

Note: Red & Green Zone illustrated may differ depending which side the load is being lifted.

Do not walk beneath elevated loads.

FORWARD TIPPING DUMPER RESTRICTED ZONE

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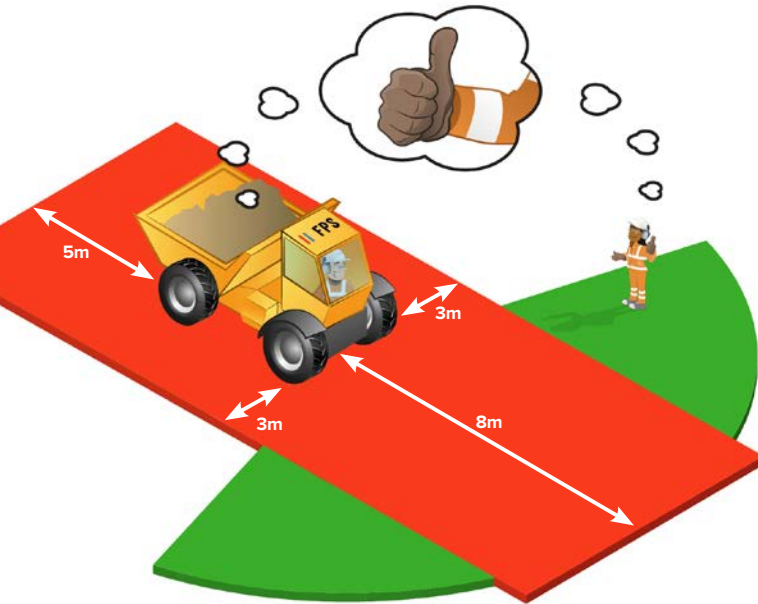
Red Zone: Keep out of this area at all times - 8m to front, 3m to each side, 5m to rear.





Green Zone: Always signal 'Thumbs up' to the Plant Operator and receive a positive 'Thumbs up' response before entering Red Zone. Keep in Plant Operators line of sight.

Note: Larger dumpers such as a 9 ton may require an extended Red Zone.

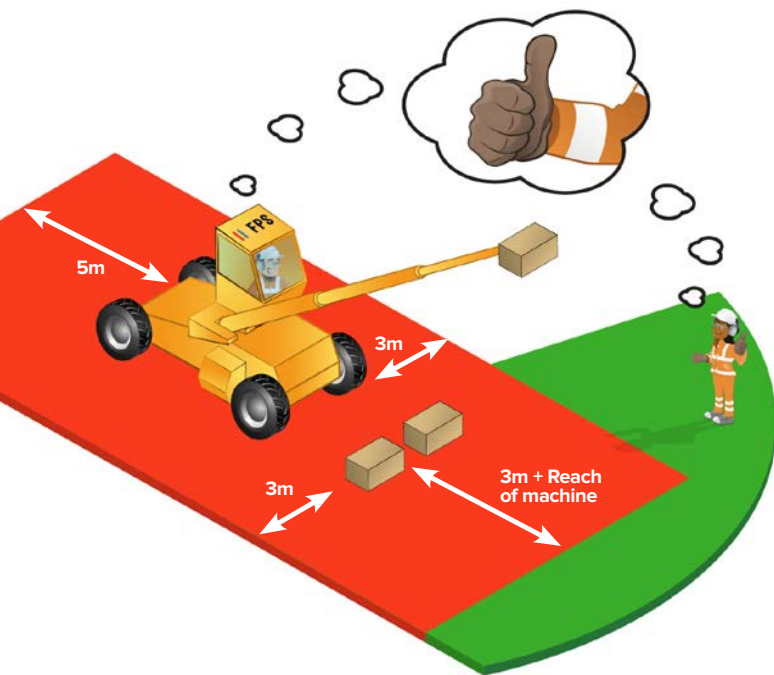
REAR TIPPING DUMPER RESTRICTED ZONE



TRAVEL & LOADING

-  **Red Zone:** Keep out of this area at all times - 8m to front, 3m to each side, 5m to rear.
-  **Green Zone:** Always signal 'Thumbs up' to the Plant Operator and receive a positive 'Thumbs up' response before entering Red Zone. Keep in Plant Operators line of sight.

TELEHANDLER RESTRICTED ZONE



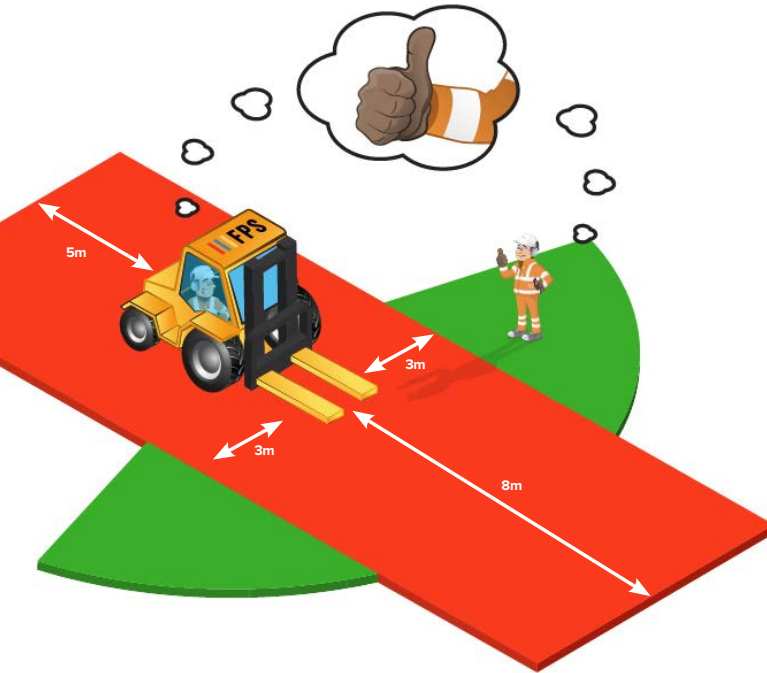
Red Zone: Keep out of this area at all times. 3m + reach of machine to front, 3m to each side, 5m to rear. No personnel to enter area unless the attachment is on the ground and the machine is placed in a safe condition.



Green Zone: Vehicle Marshaller must be within the line of sight of the Plant Operator at all times and give 'Thumbs up' recognition before entering Red Zone.

Note: Under no circumstances should anybody stand below a raised boom or raised load. Where outriggers are fitted they should be lowered before lifting loads. Refer to the duty charts in the cab.

ROUGH TERRAIN / INDUSTRIAL FORK LIFT TRUCK RESTRICTED ZONE



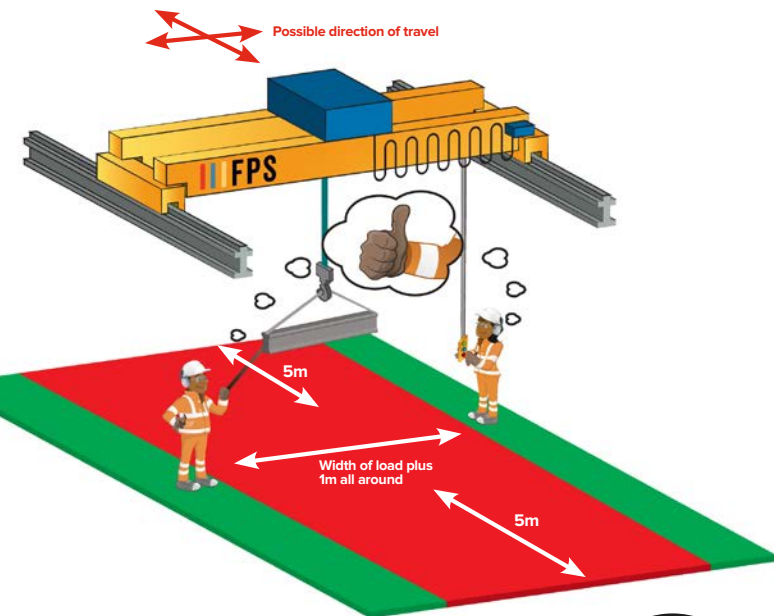
Red Zone: Keep out of this area at all times - 8m to front, 3m to each side, 5m to rear.



Green Zone: Always signal 'Thumbs up' to the Plant Operator and receive a positive 'Thumbs up' response before entering Red Zone. Keep in Plant Operators line of sight. Ideally the load should be grounded before approach.

OVERHEAD GANTRY CRANE RESTRICTED ZONE

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Red Zone: This zone is directly below the hook and the length of the load. The crane operator, slinger/signaller must not stand in this area (ideal standing position is width of load plus 1m as this will account for any load swing).



Green Zone: Always signal 'Thumbs up' to the crane operator and receive a positive 'Thumbs up' response before entering, ideally the load should be grounded before entering Red Zone.

Note: No persons should stand below a raised load and must always consider the potential for movement during crane operation. Tag lines should be used to guide the load.



