

Introduction & Key Statistics

Every year over 5,000 accidents occur which involve mobile plant in the workplace. About 50 of these result in death.

The main causes of injury are:

- People falling off vehicles or plant.
- People being struck or crushed by plant.

This guidance has been produced to help to define the Health and Safety controls associated with Plant and People Interface with a view to providing you with best practice information and instruction to keep you safe from harm.

For more detailed information, please see

TD-P-S-072: People Plant Interface and also:

- TD-P-S-072: People Plant Interface
- TD-P-S-029 Work Equipment
- TD-P-S-035 The Management of Offices and Depots
- TD-P-S-036 Work Place Transport
- TD-P-S-046 Delivery and Collection of Plant Equipment.



Definitions

Plant

Any heavy duty machinery and/or equipment used during construction works. This includes any vehicle used for loading and unloading activities on a public road adjacent to a worksite.

Plant & Vehicle Marshals

Persons trained and competent to Marshal plant and machinery on a work-site within the works zone.

Plant & Vehicle and Pedestrian Management Plans (PVPMP)

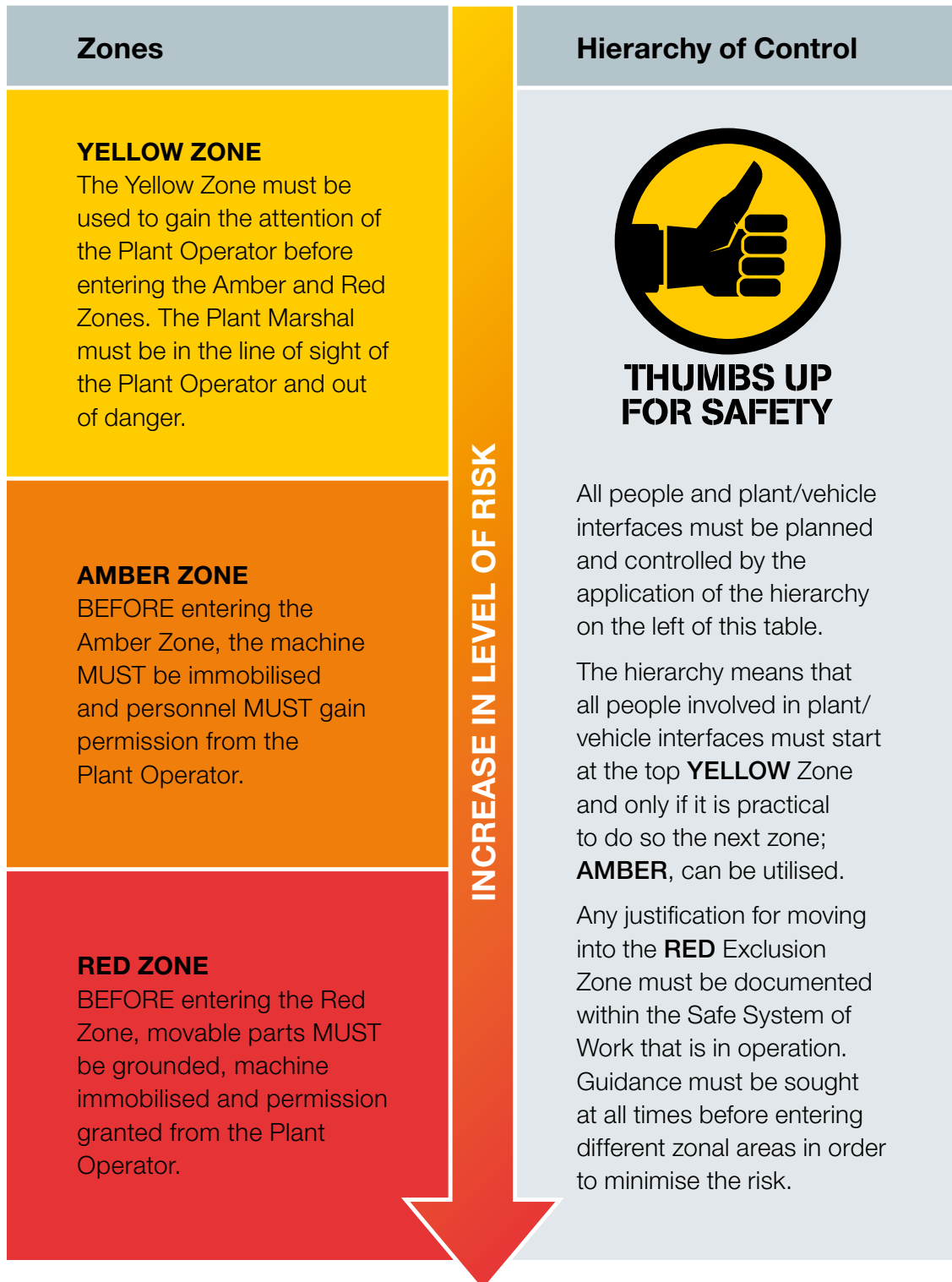
Sets out the site arrangements to ensure that risks involved in the movement of mobile plant and vehicles around the site, and the interface with site personnel are identified and controlled as far as reasonably practicable.



“Nothing that we do is so important that we can’t take the time to do it safely - safety is at the forefront of all that we do.”

Plant Interface Zones

Plant segregation areas are 'highlighted' using Yellow, Amber and Red colour zones; see Plant & Person Interface posters from page 7 onwards.



Hierarchy of Control

Level	Description	Risk Control Measures
1 Eliminate	People plant interface removed	Large fenced off area with people eliminated from the work area. Plant operates without marshalling.
2 Minimise	Full, physical segregation of people and plant	Observe the Plant Safe Zones by physically restricting people from entering the RED and AMBER exclusion zones. Erect physical barriers around a single operation outside the maximum reach of the machine. This must be marshalled.
3 Minimise	Partial segregation of people and plant	Observe the Plant Safe Zones by restricting people from entering the RED and AMBER exclusion zones using visual means, cones or spray marks that denote the zones. This requires increased supervision and measures to prevent unauthorised access.
4 Mitigate	No segregation of people and plant	<p>Exceptional tasks that require essential personnel to enter the AMBER Plant Safe Zone (for example, kerb laying, disconnecting attachments, slinging loads, off-loading materials from fork lift trucks or lorry beds) must be mitigated through a robust site and task specific Safe System of Work.</p> <p>These tasks must only be conducted with:</p> <ul style="list-style-type: none"> • Clear communication between the plant operator or vehicle driver and essential personnel performing the task. • A method of preventing non-authorised access. • A full time Plant & Vehicle Marshal/Machine Controller. • Increased supervision, and a strict discipline in executing the task exactly as written. <p>Personnel must not enter the RED zone unless the machine is fully isolated, engine switched off and a method for preventing it restarting is in place (for example the ignition keys are removed from the cab).</p>

Plant Interface Zones; Points to Remember

All plant, including vehicles:

- Have blind spots.
- Can travel in any direction.
- Have the ability to operate without warning in a 360 degree circle.
- Have the potential to cause harm.

Too many people have been seriously hurt or worse by coming into contact with plant and vehicles.

Points to remember:

- Eliminate the need to perform any activity when on a vehicle and load any equipment adequately.
- Ensure falls from height systems are fitted and suitable for any works undertaken.
- Ensure falls from height systems are used correctly.
- Ensure all interface zones are established, known and adhered to.
- Machines are always moving and the interface zones move with them – imagine the zone as a protective bubble around the machine.
- Never enter interface zones unless it is safe to do so!

- As an operator of a machine, always engage the machine's movement limiters (height, reach or slew). Switch the machine off when not in use, when stopped or if any individual approaches.
- All plant movements on site must be controlled by Plant and Vehicle Marshals.
- Machine operators must ensure there is effective communication and visibility with the Plant and Vehicle Marshal to control movement(s) safely.
- Plant and Vehicle Marshals must continually assess the worksite for changes as they are in control of the safe movement of plant as well as controlling access to and around plant.

Before approaching any item of plant, always make eye contact with the operator and indicate that you would like to approach. Wait for the operator to lower any booms, engage the safety mechanism and switch off the machine. Only approach once the operator has signalled that it is safe to do so; by giving you the THUMBS UP!

Adopt a common sense approach when in the vicinity of all mobile plant. Each interface zone cannot be measured prescriptively. Specific zones may require larger areas dependant on slew radius, blind spots or any movement of the machine.

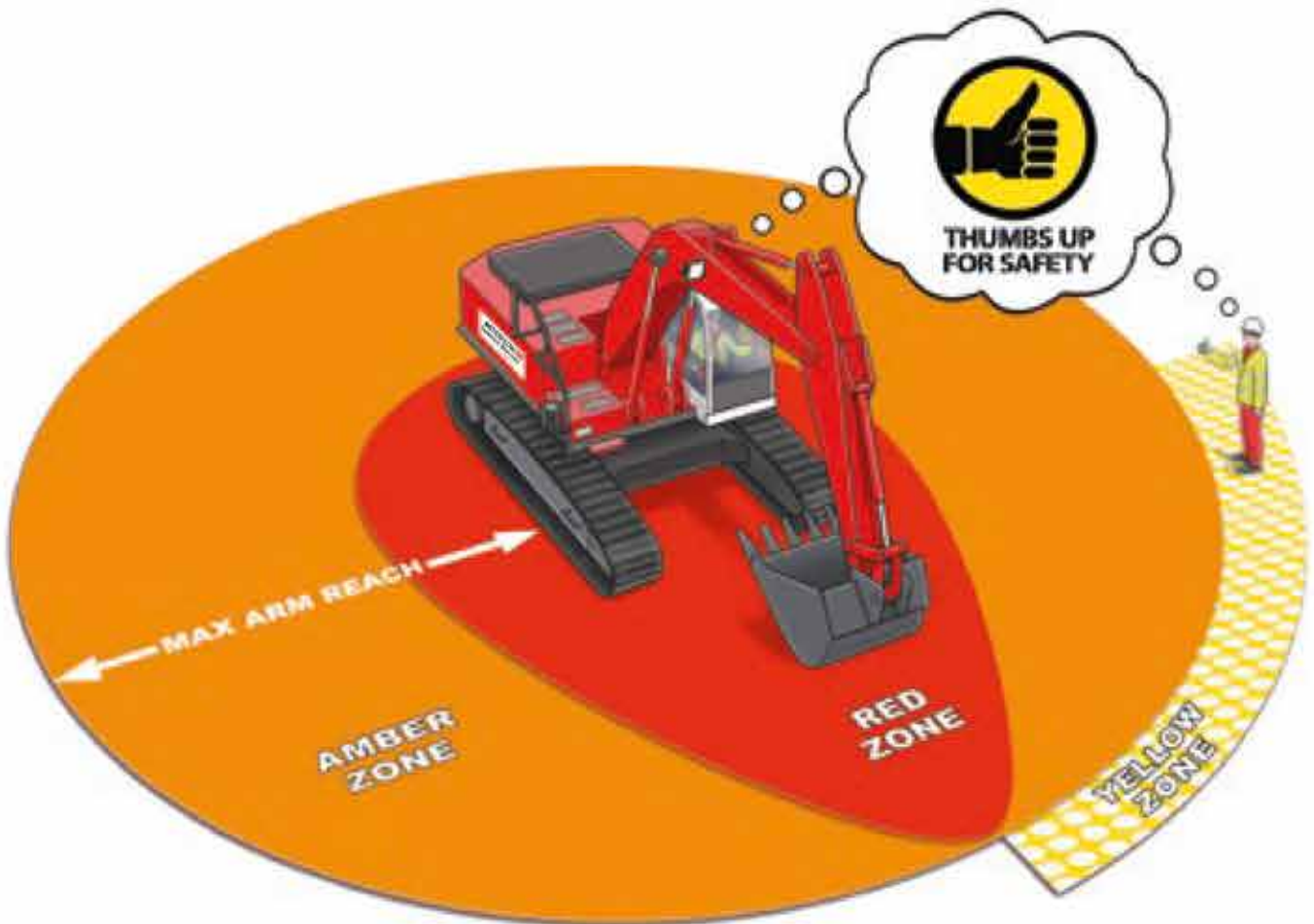
FAQ

When should a Plant & Vehicle Marshal be used?	A Plant and Vehicle Marshal is required on all sites where mobile plant is in operation. A Plant and Vehicle Marshal's role is to prevent unauthorised access to the work area around plant and to assist the plant operator when the machine is tracking.
Can a Plant & Vehicle Marshal enter/work within the Exclusion Zone?	If there is a need for the Plant and Vehicle Marshal to enter the Exclusion Zone whilst plant is operating, additional controls must be adopted and documented within the risk assessment. Time spent within the Exclusion Zone must be limited to minimise the risk of harm.
Could there be more than one Plant & Vehicle Marshal?	There should only be one (1) to avoid any confusion.
Is an Exclusion Zone required around all operating plant/ vehicles?	Yes - adequate controls, including an exclusion zone must be established around all operating plant/operating mobile plant.
Could I work within the RED Zone?	Only in exceptional circumstances and with prior approval from the site supervisor. Clear communication between the plant operator and field operator is of paramount importance here to ensure isolation of machinery. Additional controls must be adopted to reduce the risk of contact with all persons.

Safety Zones



Safety Zones



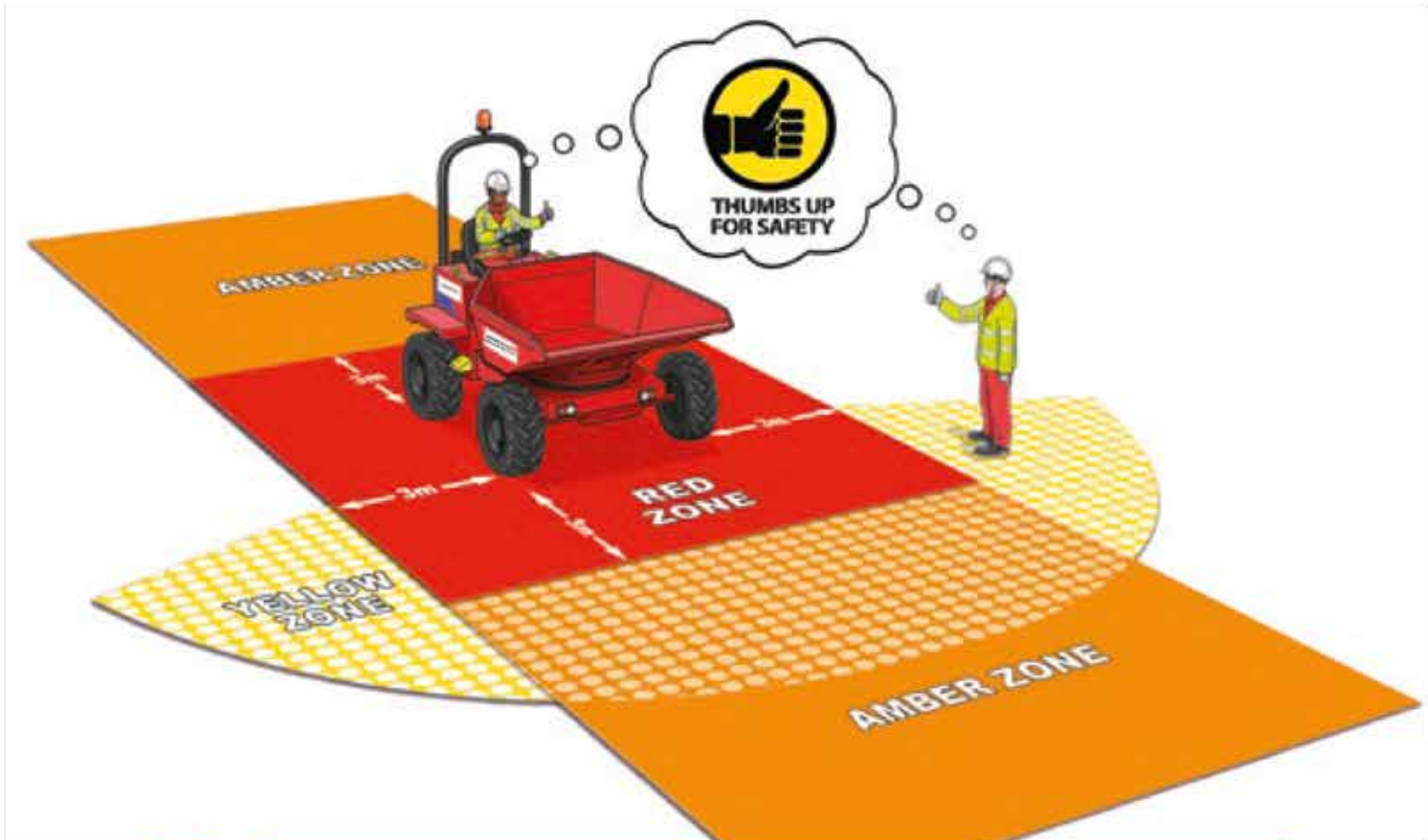
The Yellow Zone must be used to gain the attention of the operator before entering the Amber and Red Zones. You are in the line of sight of the operator and out of danger.



BEFORE entering the Amber Zone - machine **MUST** be immobilised and personnel must gain permission from the plant operator.

BEFORE entering the Red Zone - Excavator **MUST** have the bucket grounded, be immobilised and permission granted from the plant operator.

Safety Zones



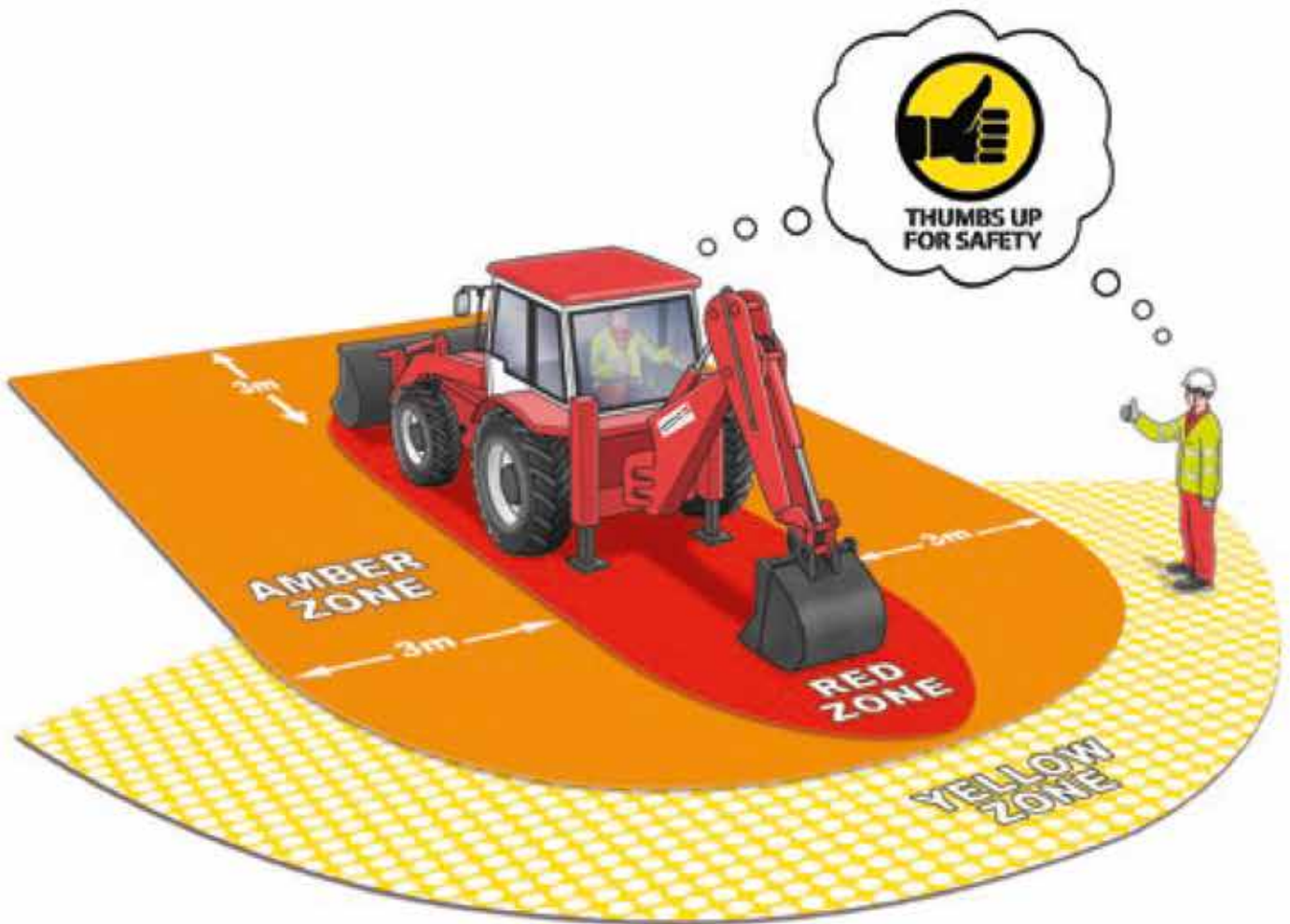
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BEFORE entering the Amber Zone - machine **MUST** be immobilised and personnel must gain permission from the plant operator.

BEFORE entering the Red Zone - Dumper **MUST** have the bucket grounded, be immobilised and permission granted from the plant operator.

Safety Zones



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BEFORE entering the Amber Zone - machine **MUST** be immobilised and personnel must gain permission from the plant operator.

BEFORE entering the Red Zone - Excavator **MUST** have the bucket grounded, be immobilised and permission granted from the plant operator.

Safety Zones



The Yellow Zone must be used to gain the attention of the operator before entering Amber and Red Zones. You are in the line of sight of the operator and out of danger.



BEFORE entering the Amber Zone - machine MUST be immobilised and personnel must gain permission from the plant operator.

BEFORE entering the Red Zone - Lorry MUST have the bucket grounded, be immobilised and permission granted from the plant operator.

Safety Zone



BEFORE entering the Red Zone - Lorry MUST have the equipment immobilised and permission granted from the plant operator.



Safety Zone



DANGER ZONE (3 ft / 1m). The forklift operator **MUST** ground the forks / load and immobilise the forklift prior to personnel entering the red zone.



WARNING ZONE (6 ft / 2m). Requires equal focus by both the operator and pedestrian. Both must make eye contact; the pedestrian must indicate their intentions and the operator is required to yield the right of way.